Utilities and Roading Committee

Agenda

Tuesday 18 June 2019

4.00pm

Waimakariri District Council Chambers
215 High Street
Rangiora

Members:
Cr Paul Williams (Chairperson)
Cr Robbie Brine
Deputy Mayor Kevin Felstead
Cr John Meyer
Cr Sandra Stewart
Mayor David Ayers (ex officio)
The Chairperson and Members

WAIMAKARIRI DISTRICT COUNCIL

A Meeting of the UTILITIES AND ROADING COMMITTEE will be held in the COUNCIL CHAMBERS, 215 HIGH STREET, RANGIORA on TUESDAY 18 JUNE 2019 to commence at 4.00pm.

Adrienne Smith
Governance Coordinator

Recommendations in reports are not to be construed as Council policy until adopted by the Council

BUSINESS

1 APOLOGIES

2 CONFLICTS OF INTEREST

Conflicts of interest (if any) to be reported for minuting.

3 CONFIRMATION OF MINUTES

3.1 Minutes of a meeting of the Utilities and Roading Committee held on Tuesday 16 April 2019

RECOMMENDATION

THAT the Utilities and Roading Committee:

(a) Confirms, as a true and correct record, the minutes of a meeting of the Utilities and Roading Committee held on Tuesday 16 April 2019.

4 MATTERS ARISING

5 DEPUTATION

5.1
6 REPORTS

6.1 Request for Approval to Undertake a Speed Limit Review in the Tuahiwi Area – Joanne McBride (Roading and Traffic Manager) and Bill Rice (Senior Transportation Engineer)

RECOMMENDATION

THAT the Utilities and Roading Committee:

(a) Receives report No. 190606079692;

(b) Approves staff undertaking a review of speed limits in the wider Tuahiwi area generally within the boundary of (but excluding) Llineside Road / Main North Road / Rangiora Woodend Road and Boys Road;

(c) Notes that a further report will be brought to the Rangiora-Ashley, Kaiapoi-Tuahiwi and Woodend-Sefton Community Boards on the proposed changes and requesting approval from Council to consult prior to going out to the community;

(d) Notes that speed limits will be assessed using NZTA’s Speed Management Guide (2016);

(e) Circulates this report to the Rangiora-Ashley, Kaiapoi-Tuahiwi and Woodend-Sefton Community Boards for information.

6.2 Belfast to Kaiapoi Cycleway Consultation – Bill Rice (Senior Transportation Engineer) and Hari Pillay (Roading Design Engineer)

RECOMMENDATION

THAT the Utilities and Roading Committee

(a) Receives report No. 190412055544;

(b) Approves public consultation on the cycleway route(s) as shown on the attached drawing (Attachment ii);

(c) Approves consultation with the adjacent property owners and residents;

(d) Notes that Project Control Group aims to have the cycleway completed by October 2020 to coincide with the opening of the CNC cycleway;

(e) Notes that a speed limit review is proposed on Main North Road and Tram Road, in conjunction with this project;

(f) Notes that safety audits will be carried out by an independent audit team at concept design, detailed design and post construction stages;

(g) Notes that the total estimated cost of the cycleway is $1.5m ($810,000 for section between Tram Road and the edge of the Kaiapoi urban area, and $610,000 for the section within the Kaiapoi urban area)

(h) Notes that $1.022m has been allocated in the Long Term Plan for construction of the Tram Road to Kaiapoi urban area section of cycleway in years 2018/19 and 2019/20, and that $500,000 per
annum has been allocated for the construction of urban cycleways in Rangiora and Kaiapoi for each of the years from 2018/19 to 2020/21.

(i) **Notes** that minor improvements on Main North Road (near Hellers and Clement Drilling properties) are proposed to be designed and built in conjunction with this project, with funding to come from the Minor Improvements budget;

(j) **Notes** that this report has been presented to the Kaiapoi-Tuahiwi Community Board at their June meeting;

(k) **Circulates** this report to the all Boards for their information.

6.3 **Stockwater Race Bylaw Review 2019-2021 – Libica Hurley (Technical Administrator) and Kalley Simpson (3 Waters Manager)**

**RECOMMENDATION**

**THAT** the Utilities and Roading Committee:

(a) **Receives** report No. 190528075199.

(b) **Notes** the proposed scope of the Stockwater Race Bylaw 2019 review including the following sub-projects:

- Works in Private Property
- Road Reserve Race Maintenance
- Managed Aquifer Recharge
- Environmental Benefits
- Firefighting Benefit
- Ponds
- Fencing of Water Races
- Biosecurity and Contamination Risks

(c) **Notes** that staff have commenced the Stockwater Race Bylaw 2019 as requested by Council and this review is expected to take 2 years.

(d) **Circulates** this report to the Water Race Advisory Group (WRAG), Waimakariri Water Zone Committee (WWZC) and Community Boards for their information.

6.4 **Central Rangiora Gravity Capacity Sewer Upgrade – Stage 4 Increase in Scope – Gavin Hutchison (Wastewater Asset Manager)**

**RECOMMENDATION**

**THAT** the Utilities and Roading Committee

(a) **Receives** report No. 190531077797.

(b) **Approves** the increase in the Stage 4 scope for the 2019/20 financial year to include the Johns Road to George Street section of pipework on King Street.

(c) **Notes** that there is sufficient budget of $1,095,000 in the 2019/20 financial year to complete the proposed increase in Stage 4 scope.
(d) Notes that an expression of interest will be issued for Stage 4 in June 2019 and tendered in July 2019.

(e) Circulates to the Rangiora Ashley Community Board for their information.

6.5 Sea Foam Testing – Update on Summer 2018 Results – Simon Collin (Infrastructure Strategy Manager) and Sophie Allen (Water Environment Advisor)

RECOMMENDATION

THAT the Utilities and Roading Committee:

(a) Receives report No. 190605078713.

(b) Approves an additional expenditure of $41,000 over and above the original $75,000, to allow ongoing sampling and testing of sea foam to be carried out.

(c) Approves funding coming from the beach monitoring budget of the Eastern Districts Sewer Scheme, which has $32,870 available.

(d) Notes that the faecal source tracking test will only be carried out if the E.coli and Enterococci counts are sufficiently high for the detection level of this test.

(e) Notes that it is not certain that the proposed sampling and testing programme will provide a definitive result of whether there is a source of contamination from the ocean outfall in the sea foam.

(f) Notes that the Eastern Districts Sewage Scheme ocean outfall continues to meet its consent conditions, with respect to water quality at point of discharge.

(g) Circulates a copy of this report to the Kaiapoi –Tuahiwi and Woodend-Sefton Community Boards

(h) Circulates a copy of this report to the Rūnanga Liaison Committee

6.6 Cust Rural Drainage Advisory Group – Owen Davies (Drainage Asset Manager)

RECOMMENDATION

THAT the Utilities and Roading Committee

(a) Receives report No. 190513067176.

(b) Approves the dis-establishment of the Cust Rural Drainage Advisory Group.

(c) Notes that Council Drainage Staff will continue to seek input and advice relating to the on-going maintenance of the Cust Rural Drainage Scheme, directly from schemes ratepayers as required rather than via an advisory group.
(d) **Notes** that only one ratepayer of the Cust Rural Drainage Scheme responded and indicated interest in being a member of the Cust Rural Drainage Advisory Group.

(e) **Notes** Staff will write to all ratepayers to advise them that the group no longer formally exists.

(f) **Circulates** this report to the Oxford Ohoka Community Board for their information

### 6.7 Risk Assessment of arsenic in groundwater for the wider Kaiapoi area – 
**Sophie Allen (Water Environment Advisor)**

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**RECOMMENDATION**

THAT the Utilities and Roading Committee recommends:

THAT the Council:

(a) **Receives** report No. 190527075121.

(b) **Notes** the scope of the risk assessment, which aims to define an area(s) where any elevated risk of arsenic in groundwater exists, which includes testing for arsenic in 50 private wells and geochemical data interpretation for the wider Kaiapoi area.

(c) **Approves** an additional budget of $37,000 from the general rate to be allocated under the Environmental Health account, against the Environmental Surveys GL (10.571.829.2465), for a risk assessment of arsenic in groundwater for the wider Kaiapoi area.

(d) **Notes** that approximately $12,000 of the allocated budget will be for Water Unit sampling and laboratory analysis of 30 private wells. Approximately $15-20,000 of the allocated budget is for a consultant to undertake data analysis, existing geochemical data review, report writing and recommendations. The remaining $5,000 is for project contingency.

(e) **Notes** that specific communication will be undertaken by WDC staff with individual landowners and general communication with the wider community following obtaining test results and the risk assessment.

(f) **Notes** that a sole source supplier will be approached for the data analysis role, due to the limited market of suppliers for the service, and existing knowledge about arsenic within groundwater in the District.
6.8 **Horrellville/Carleton Effluent Spill – Update and Next Steps – Sophie Allen – (Water Environment Advisor)**

**RECOMMENDATION**

**THAT** the Utilities and Roading Committee

(a) **Receives** report No. 190529076343.

(b) **Notes** that WDC staff will work with Waimakariri Irrigation Ltd. and other parties to capture the response to the incident response, any lessons learnt, recommendations, and improvements to procedures.

(c) **Notes** that costs of approximately $7,000 have been paid by Council for water quality sampling and analysis in relation to the effluent spill.

(d) **Notes** that WDC staff will investigate whether costs incurred by the Council can be recovered.

(e) **Notes** that an incident report from Environment Canterbury is being prepared for release.

(f) **Acknowledges** the work by Waimakariri Irrigation Ltd to manage the effluent spill response.

6.9 **20 February 2018 Storm Event - Summary of Service Requests – Kalley Simpson (3 Waters Manager)**

**RECOMMENDATION**

**THAT** the Utilities and Roading Committee

(a) **Receives** report No. 190606079750.

(b) **Notes** that of the 21 drainage assessments identified from the 208 service requests, 19 have been completed and the remaining 2 in The Pines Beach and Waikuku Beach areas are still ongoing.

(c) **Notes** that of the 11 upgrade projects related to the 208 service requests, 3 has been completed, a further 2 will be completed this financial year, 2 have been carried over to next financial year and 4 will be completed in future years.

(d) **Notes** that the webpage has been setup on the Council’s website to provide updates on the status of drainage works underway in The Pines Beach and Waikuku Beach.

(e) **Circulates** this report to the Council for information.


**RECOMMENDATION**

**THAT** the Utilities and Roading Committee

(a) **Receives** report No. 190529076363

(b) **Endorses** the 2019 - 2020 Road Safety Action Plan (Doc 190529076366)
(c) Circulates this report to the Community and Advisory Boards

7 MATTERS REFERRED FROM COMMUNITY BOARDS

8 PORTFOLIO UPDATES

8.1 Roading – Councillor John Meyer
8.2 Drainage and Stockwater – Councillor Sandra Stewart
8.3 Utilities (Water Supplies and Sewer) – Cr Paul Williams
8.4 Solid Waste– Cr Robbie Brine

9 QUESTIONS

10 URGENT GENERAL BUSINESS

11 MATTERS TO BE CONSIDERED WITH THE PUBLIC EXCLUDED

Section 48, Local Government Official Information and Meetings Act 1987

RECOMMENDATION

THAT the public be excluded from the following parts of the proceedings of this meeting.

The general subject of each matter to be considered while the public is excluded, the reason for passing this resolution in relation to each matter and the specific grounds under section 48(1) of the Local Government Official Information and Meetings Act 1987 for the passing of this resolution, are as follows:

<table>
<thead>
<tr>
<th>Item No</th>
<th>Minutes/Report of:</th>
<th>General subject of each matter to be considered</th>
<th>Reason for passing this resolution in relation to each matter</th>
<th>Ground(s) under section 48(1) for the passing of this resolution</th>
</tr>
</thead>
<tbody>
<tr>
<td>11.1</td>
<td>Report of Fraser Scales (Senior Project Engineer), Kalley Simpson (3 Waters Manager), Duncan Roxborough (Project Mgr District Regeneration) and Joanne McBride (Roading and Transport Manager)</td>
<td>Kaiapoi East Enabling Works and Beswick SMA Project Update</td>
<td>Good reason to withhold exists under Section 7</td>
<td>Section 48(1)(a)</td>
</tr>
</tbody>
</table>

This resolution is made in reliance on section 48(1)(a) of the Local Government Official Information and Meetings Act 1987, and the particular interest or interests protected by Section 6 or Section 7 of that Act which would be prejudiced by the holding of the whole or relevant part of the proceedings of the meeting in public are as follows:

<table>
<thead>
<tr>
<th>Item No</th>
<th>Reason for protection of interests</th>
<th>Ref NZS 9202:2003 Appendix A</th>
</tr>
</thead>
<tbody>
<tr>
<td>11.1</td>
<td>Protection for privacy of natural persons To carry out commercial activities without prejudice</td>
<td>A2(a) A2(b)ii</td>
</tr>
</tbody>
</table>
PRESENT

Councillor P Williams (Chairperson), Mayor D Ayers, Deputy Mayor K Felstead, Councillors R Brine (until 6.17pm), J Meyer and S Stewart.

IN ATTENDANCE

Councillors D Gordon, N Atkinson, W Doody, A Blackie, K Barnett, J Palmer, (Chief Executive), G Cleary (Manager Utilities and Roading), K Simpson (3 Waters Manager), B Rice (Senior Transport Engineer), J McBride (Roading and Transport Manager), G Hutchison (Wastewater Asset Manager), S Allen (Water Environment Advisor), and A Smith (Governance Coordinator)

1 APOLOGIES

An apology for departure at 6.15pm was received and sustained from Councillor Brine.

2 CONFLICTS OF INTEREST

There were no conflicts of interest recorded.

3 CONFIRMATION OF MINUTES

3.1 Minutes of a meeting of the Utilities and Roading Committee held on Tuesday 19 March 2019

Moved Councillor Brine Seconded Councillor Meyer

THAT the Utilities and Roading Committee:

(a) Confirms, as a true and correct record, the minutes of a meeting of the Utilities and Roading Committee held on Tuesday 19 March 2019.

CARRIED

4 MATTERS ARISING

There were no matters arising.

5 DEPUTATION

5.1 Mandeville Residents Association

Present on behalf of the Mandeville Residents Association were James Ensor, Tom McBrearty, Rosina Rouse and other supporters of the Association. T McBrearty and R Rouse spoke on the Flooding and drainage sites in Mandeville, Eyreton and Swannanoa that had been identified with Council drainage staff. The feedback from Council staff had been appreciated by the
Association members T McBrearty spoke on the issues, noting that there needs to be a holistic approach and if there is to be any long term expansion plan of developing their properties or getting more domestic properties in to the area, the flooding issue has to be addressed.

R Rouse noted that about 31 sites had been visited by WDC Staff members, K Simpson, O Davies and several members Mandeville Residents Association (MRA). Information on the issues at these sites has all been documented, and included with this, is possible options, the Associations recommendations and suggested timeframe, the Council’s response to the recommendation, and final recommendation from the MRA Drainage Group. R Rouse and T McBrearty highlighted the drainage issues at these site. T McBrearty suggested that the undercurrent level is rising and suggested that if there is another 2014 rain event, there will be a lot of angry residents. It was noted that there have been discussions with Council staff on some of these matters. T McBrearty said when they brought into this area, they did not expect to have lakes forming around their house, when there is heavy rain during the winter. Residents would like a continuation of the work that Council is doing, and also for funding to be available to bring more of the work forward. D Lines noted that the 2014 rain event was significant, but there were bigger events in the late 1980s. This was prior to the subdivisions, and now the problem has become greater.

Councillor Gordon noted the significant amount of work that the residents had put into preparing the report which has only just been completed. G Cleary confirmed that this is a submission to the Council’s Annual Plan process, a staff report will come to Council in response to this with staff advice.

Councillors Blackie referred to comments that there may be alterations to drains which is impacting on water flow. The Council has a Drainage Bylaw which was reviewed in 2018, though it does not have the staff resources to monitor all drains. The best way for members of the public to advise the Council is through the Service Request system.

Councillor Stewart asked if the members of the Residents Association would be supportive of bringing forward the Council reviewing a district wide drainage rate. This is currently scheduled for 2020/21. Members agreed with this suggestion.

There was discussion on testing of water in private water supplies. G Cleary advised that there has been no previous discussion regarding the Council providing free testing of private water supplies. The Council has an allocation of $10,000 in the draft annual plan to carry out some monitoring of private water supplies. This comes under the ZIPA funding.

J Ensor confirmed the MRA will be submitting and speaking at the annual plan process and thanked the Council staff who have assisted the group.

6 REPORTS

6.1 High Occupancy Vehicle Lane and Shared Use Path Waimakariri River to Tram Road – Bill Rice (Senior Transport Engineer)

J McBride and B Rice presented this report, seeking approval from the committee to construct a High occupancy Vehicle (HOV) lane and a Shared User Path (SUP) between the Christchurch Northern Motorway and the Main North Road/Tram Road intersection. NZTA are currently working on a business case and the application for funding will go to their Board on the 1st May. The HOV and SUP will both connect with similar proposals on the Christchurch Northern Arterial.
J McBride spoke to a PowerPoint presentation and provided background information on this NZTA project, with construction underway. The opening of the Christchurch Northern Corridor is due on 20 June 2020 and it is intended to have a High Occupancy Vehicle lane on this corridor feeding into Christchurch. Information on the process to date was provided, including options for a cycleway connecting with the Passchendaele Path. Several options were considered for this and each was assessed and scored considered on road safety, CPTED, directness and coherence, connectivity to other destinations, local business impacts, resident/wider community impact, operational and network impacts, ease of construction and costs and risk to the project. Explanation of the proposed layout at the Main North Road intersection and the Tram Road intersection were provided. B Rice pointed out that with all the plans these are still subject to safety audit and not yet final plans. There has been discussion with the owner of the property that is bound by the Main North Road, Tram Road and the motorway. Staff have also spoken with all the tenants who are likely to be affected. The property owner has advised that they are generally supportive of the proposed works and would like to be involved in the detailed design of the proposed works. The business tenants response has been similar, general support but all wishing to have input into the details of the layout at their accessways. All were supportive of traffic signals at the Tram Road/Main North Road intersection and also for a reduction in the speed limit, which will possibly be 60kmh.

Following a question from Councillor Atkinson, B Rice advised that the discussions had not been held with business owners who operate further down Wrights road from the intersection.

J McBride noted that the detail of the cycleway along the Main North Road and through Kaiapoi is still to be determined. There will be further workshops with the Boards and this committee on how the cycleway will link with existing connections.

Following a question from Councillor Gordon on costings, B Rice noted that there would be significant costs involved in widening the bridge at Tram Road over the Motorway and NZTA would not have considered this. Crs Gordon and Blackie both noted minimal use by pedestrians of the footpath over the bridge and suggested there could be space available for a slip lane. B Rice said this possibility would be suggested to NZTA. Mayor Ayers noted that there are footpaths on both sides of the bridge, and that the path on the south side could be narrowed to allow wider space for vehicles.

Councillor Atkinson also noted the need to accommodate the volume of traffic from Woodford Glen events, and B Rice noted that this is also being taken into account.

Councillor Barnett also noted the need to accommodate cyclists coming from the direction of Oxford on Tram Road and going into Christchurch.
Moved Councillor Meyer seconded Councillor Brine

THAT the Utilities and Roading Committee:

(a) Receives report No. 190403049793.

(b) Approves the construction of the proposed shared User path and roading changes within Council’s network, as shown in concept on the attached drawings (Trim 190403049854)

(c) Notes that these layouts are subject to review and safety audit, and therefore details may change

(d) Notes that, NZTA proposes to fully fund the construction of these works, and that there is no funding obligation on Council

(e) Notes that speed limits on Main North Road and Tram Road will be reviewed in conjunction with these works

(f) Notes that staff will update the Committee, all Community Boards and Council on progress of these works.

CARRIED

Councillor Meyer believes this is good progress and noted that there is potential for an increase in cyclists on the roads in this district and nationwide. Councillor Meyer also agrees with the introduction of traffic lights and this will make it safer for all road users. Councillor Meyer noted his concerns with the traffic count on Peraki Street.

Councillor Atkinson has concerns with cycle lanes being located right beside traffic lanes, and noted the potential traffic movements of trucks, and traffic from the service station. The cycleway needs to be away from the road where possible, and Councillor Atkinson suggests the Council should look at using the railway corridor for the shared path and that this would be a safer option. Councillor Atkinson would like this matter to come back to the Council for further discussion.

Councillor Blackie also would strongly advocate for the cycleway to be off the road.

Councillor Barnett supports this report and the progress is a step forward for the district. A positive aspect is this being an NZTA fully funded cycleway with no impact on the ratepayers. Councillor Barnett does have concerns with the traffic lights and the amount of straight through traffic. This is a gateway for the entire district and Councillor Barnett applauds the staff and everyone involved in the project.

Mayor Ayers noted the need for a decent flow of traffic onto the motorway during peak hours.

Councillor Williams also believes the cycle lane needs to be put on the other side of the road and supports the comments of Councillor Atkinson. Commented on the timber yard with traffic entering and exiting there, there needs to be thought given to the safety aspect of this.

Councillor Gordon would like to see a further lane included for safety reasons. This is a positive move for the district and Councillor Gordon thanked the staff for all the work that has gone on behind the scenes and this is a positive move forward.
Councillor Meyer, acknowledged the comments of Councillor Atkinson. He noted some concerns with the shared pathway along the Main North Road, but is confident that the finished product will be safe. The Council has a responsibility for this safety aspect to be accounted for. This cycleway is adding to the existing cycle ways and tracks in the district.

At this time, the deputation from the Mandeville Residents Association was taken. Refer to Item 5.1 in the minutes, which are taken in order of the agenda.

6.2 Kaiapoi River – Implications of Increasing Saline Intrusions – Sophie Allen (Water Environment Advisor)

S Allen (Water Environment Advisory) and K Simpson (3 Waters Manager) presented this report. Referred to the report of Adrian Meredith from Environment Canterbury titled “Assessment of the state of a tidal waterway – the Lower Kaiapoi River (March 2018).” This report in response to this, looks at the implications for our Council and our community, or increasing saline incursions. It was noted that implications are wide ranging, including ecological, social and economical.

Although these current increasing saline incursions are not as a result of sea level rises, information on strategies from the Ministry for the Environment was included with the report on possible future impacts of this. MfE guidance has a range of strategies to respond to coastal hazards. It is suggested that there needs to be the start of community discussion.

Councillor Atkinson expressed concern that there was nothing definitive in the report. S Allen noted that there needed to be some monitoring data from ECan and also some modelling of the system, and it is a complex scenario. The report indicates that this is a direction, or a trend and staff don’t have enough information to be sure.

As saline testing of the water in Kaiapoi River has only been undertaken in the last six years, it could be that the incursions were as a result of the earthquakes. Councillor Atkinson noted, possibly liquefaction was the result of the death of willow trees. S Allen said that the reason for the observed changes in the lower Kaiapoi River were most likely due to the increased saline incursions in the Kaiapoi River.

Councillor Stewart asked what things the Council could be doing to improve the situation and the community would want to see the detail on the monitoring being undertaken. How will the Council develop the recommendations into something more succinct? G Cleary noted that there are matters that the Council is already doing, for example any engineering works that the Council is doing is taking into account that it will be in a saline environment and will make an accommodation for that. Also noted that the planting along the river bank as part of the rehabilitation programme, is being done in a staged approach.

S Allen noted that there is other reports being done on this matter, and linking with climate change.

Moved Mayor Ayers seconded Councillor Williams

THAT the Utilities and Roading Committee

(a) Receives report No. 190115003326.
(b) **Notes** the strategy recommended by 3 Waters staff is for the Council to work with the community and other management agencies to discuss response strategies, with an increasing saline environment in the lower Kaiapoi River.

(c) **Notes** that there will likely be changes to the ecology, flora and fauna which will affect local community perceptions, recreational amenity, and the visitor experience of the lower Kaiapoi River area.

(d) **Notes** that buildings and infrastructure such as stop banks and pipes will over time face an increasingly changing environment, with saline and/or tidal groundwater in the lower Kaiapoi River area.

(e) **Advocates** for further monitoring to be carried out by Environment Canterbury to assess the frequency and degree of saline intrusions to enable salinity modelling and predictions. In addition, for Environment Canterbury to determine and employ methods to monitor water quality and aquatic ecology health trends of the tidal section of the Kaiapoi River.

(f) **Circulates** this report to Council, Kaiapoi River Rehabilitation Working Party, and the Kaiapoi –Tuahiwi Community Board.

Mayor Ayers noted there are likely to be a number of variables which will contribute to the Kaiapoi River changes, and acknowledged the comment of staff on looking at the wider coastal area. Of these variables that are contributing to this issue, there are some that the Council will have no control over locally (i.e. sea level rises). The Kaiapoi River will continue to be a challenge in the future.

Councillor Blackie noted the report of Adrian Meredith was done in 2016-2017 which were drought years and the river levels were low. Since August 2017 the drought has broken and the river flows are much different. Councillor Blackie would like to see some further testing be undertaken of the current readings and to see what these are in the river now. Referring to river water flows and push back against incoming salt water, Councillor Blackie questions if the data is accurate enough but does support ongoing investigation.

Councillor Stewart proposed an amendment with an additional recommendation, that specifically focuses on mitigation and prevention methods, with the addition of recommendation (g) below:

Moved Councillor Stewart seconded Councillor Meyer

(g) **Request** a report into options, including costs of mitigating and preventing salt water intrusion into the Kaiapoi River system. Three options to include but are not limited to:

- Instigate the process to raise the minimum flows – outlined in ECan’s current state/Tipa cultural report and the ZIPA for the Kaiapoi/Silverstream and its tributaries streams – Ohoka, Cam, Cust Main Drain and Silverstream – as a matter of urgency.
- Investigate and cost the operation of the existing Cam River flood gate as a tide gate to prevent salt water intrusion up the Cam River and provide a flushing effect of fresh water into the Kaiapoi River
- To cost a tidal/flood barrage on the Waimakariri/Kaiapoi Rivers confluence
- And any other mitigation options
Councillor Stewart noted that the mitigation possibilities were discussed at the Kaiapoi River Rehabilitation subcommittee meeting. Noted that what was discussed at this meeting was not reflected in this report. The community does not accept that the Kaiapoi River is going to turn into a saltwater estuary. Councillor Stewart noted that there is significant investment in the Kaiapoi, with a desire that the river is a focus for the town. Believes that the Council needs to focus on some measures that can be investigated and costed and not just sit back and watch what is happening. This is in addition to the recommendations in the report and urges members to support this.

Councillor Meyer said the Council has a responsibility to look after the river and there needs to be something done for the flows in the Kaiapoi River, Ohoka Stream, Cam River and Cust Main Drain. Councillor Meyer would not feel right if something was not done to improve the current situation and it is very important for the district to get this right. Councillor Meyer spoke on the shutting of the flood gate to stop the salt water going up the Cam River. It was pointed out that this flood gate had not been closed for a long time. He suggest that closing this should be tried to see if it will work, as it would provide enough pressure of water flow to stir up the water to push the saltwater out.

Councillor Barnett acknowledges the concerns of others around the council table, especially the Kaiapoi members and also acknowledged that the Kaiapoi River is an icon of the district and well loved. She noted that the current recommendations covers the intent of the amendment. Referring to recommendation (e), Councillor Barnett noted concerns that this would send a signal to the Kaiapoi community that this could fix the issue right now and she doesn’t believe this is the case. Councillor Barnett also has concerns this would impose extra rating on the community. Though not able to vote, Councillor Barnett would not support this amendment.

Mayor Ayers said this recommendation is beyond the scope of the report before the committee and the matters raised in this amendment are not raised in this report. The Draft Annual Plan process is the time for this to be discussed, on how the Council spends money in support of the ZIPA. There are multiple variables as noted in the staff report and so there could be many options.

Councillor Atkinson supports the recommended amendment which “requests a staff report and options including costs” and believes this should be looked at. This is an addition to give people some focus going forward, and provides clarification. The original motion still stands and there is no harm done by this additional recommendation. Although not part of this committee, Councillor Atkinson urges members to support it.

Councillor Felstead asked if staff had the expertise to answer these questions and if not, what price would it cost for consultants to produce a report. G Cleary said Council does not have the expertise in house to carry out a report of this nature and would need to get some external advice on what is requested in this amendment (g). To get a high level of confidence on the costing and to look at all of the mitigation options, it could be tens of thousands of dollars at the least. This would be fairly substantial work and G Cleary’s recommendation would be that it be done in a staged manner. G Cleary noted that there is a lot of uncertainty on what is causing the saline intrusion. G Cleary advised that there is not funding in the current budget to do the work that is requested today.

The amendment was then put

Moved Councillor Stewart seconded Councillor Meyer
(g) **Request** a report into options, including costs of mitigating and preventing salt water intrusion into the Kaiapoi River system. Three options to include but are not limited to:

- Instigate the process to raise the minimum flows – outlined in ECan's current state/Tipa cultural report and the ZIPA for the Kaiapoi/Silverstream and its tributaries streams – Ohoka, Cam, Cust Main Drain and Silverstream – as a matter of urgency.
- Investigate and cost the operation of the existing Cam River flood gate as a tide gate to prevent salt water intrusion up the Cam River and provide a flushing effect of fresh water into the Kaiapoi River.
- To cost a tidal/flood barrage on the Waimakariri/Kaiapoi Rivers confluence.
- And any other mitigation options.

**LOST**

A division was called
For Councillors Stewart and Meyer
Against Mayor Ayers, Councillors Felstead, Brine and Williams

The original motion was then put and subsequently became the substantive motion..

Moved Mayor Ayers seconded Councillor Williams

**THAT** the Utilities and Roading Committee

(a) ** Receives** report No. 190115003326.

(b) **Notes** the strategy recommended by 3 Waters staff is for the Council to work with the community and other management agencies to discuss response strategies, with an increasing saline environment in the lower Kaiapoi River.

(c) **Notes** that there will likely be changes to the ecology, flora and fauna which will affect local community perceptions, recreational amenity, and the visitor experience of the lower Kaiapoi River area.

(d) **Notes** that buildings and infrastructure such as stop banks and pipes will over time face an increasingly changing environment, with saline and/or tidal groundwater in the lower Kaiapoi River area.

(e) **Advocates** for further monitoring to be carried out by Environment Canterbury to assess the frequency and degree of saline intrusions to enable salinity modelling and predictions. In addition, for Environment Canterbury to determine and employ methods to monitor water quality and aquatic ecology health trends of the tidal section of the Kaiapoi River.

(f) **Circulates** this report to Council, Kaiapoi River Rehabilitation Working Party, and the Kaiapoi –Tuahiwi Community Board.

**CARRIED**

Councillor Atkinson noted that there is nothing in the report which is definitive. The Council needs to make sure that this river has some attention and
acknowledged comments of Councillor Meyer, that it will be ten years before there are any increasing the minimum flow requirements.

Councillor Stewart supports the recommendation in this report and for staff to focus their attention on identified response strategies. Councillor Stewart said the Council has a responsibility to the Kaiapoi population who have invested millions of dollars to making the river a feature of the community and to encourage people to enjoy the river. The report of Adrian Meredith predicts low flows, algal blooms, sea lettuce and this is not acceptable. The response strategies need to focus on exploring a solution. The three suggested options have come up several times in community discussions and were part of the discussion at the Kaiapoi River Rehabilitation subcommittee meeting. Council needs to focus on response strategies with urgency.

7 MATTERS REFERRED FROM COMMUNITY BOARDS

Nil

8 PORTFOLIO UPDATES

8.1 Roading – Councillor John Meyer
8.2 Drainage and Stockwater – Councillor Sandra Stewart
8.3 Utilities (Water Supplies and Sewer) – Cr Paul Williams
8.4 Solid Waste– Cr Robbie Brine

Portfolio updates were held over until the following meeting of the Committee.

9 QUESTIONS

There were no questions.

10 URGENT GENERAL BUSINESS

There was no urgent general business.

11 MATTERS TO BE CONSIDERED WITH THE PUBLIC EXCLUDED

Section 48, Local Government Official Information and Meetings Act 1987

Moved Mayor Ayers seconded Councillor Felstead

THAT the public be excluded from the following parts of the proceedings of this meeting.

The general subject of each matter to be considered while the public is excluded, the reason for passing this resolution in relation to each matter and the specific grounds under section 48(1) of the Local Government Official Information and Meetings Act 1987 for the passing of this resolution, are as follows:
Item No | Minutes/Report of: | General subject of each matter to be considered | Reason for passing this resolution in relation to each matter | Ground(s) under section 48(1) for the passing of this resolution
---|---|---|---|---
11.1 | Minutes from the Public Excluded portion of the 19 March 2019 meeting of the Utilities and Roading Committee | Confirmation of minutes | Good reason to withhold exists under Section 7 | Section 48(1)(a)

This resolution is made in reliance on section 48(1)(a) of the Local Government Official Information and Meetings Act 1987, and the particular interest or interests protected by Section 6 or Section 7 of that Act which would be prejudiced by the holding of the whole or relevant part of the proceedings of the meeting in public are as follows:

<table>
<thead>
<tr>
<th>Item No</th>
<th>Reason for protection of interests</th>
<th>Ref NZS 9202:2003 Appendix A</th>
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</table>
| 11.1 | Protection of privacy of natural persons  
To carry out commercial activities without prejudice | A2(a)  
A2(b)ii |

CARRIED

There being no further business the meeting closed at 6.25pm.

CONFIRMED

__________________________
Chairperson

__________________________
Date
WAIMAKARIRI DISTRICT COUNCIL

REPORT FOR DECISION

FILE NO and TRIM NO: RDG-31 / 190606079692

REPORT TO: Utilities & Roading Committee

DATE OF MEETING: 18 June 2019

FROM: Joanne McBride - Roading & Transport Manager
Bill Rice – Senior Transportation Engineer

SUBJECT: Request for Approval to Undertake a Speed Limit Review in the Tuahiwi Area.

SIGNED BY: ____________________________
Department Manager
______________________________
Chief Executive

1. SUMMARY

1.1. The purpose of this report is to seek approval to undertake a speed limit review process in the wider Tuahiwi area, within the perimeter of Lineside Road / Main North Road / Rangiora Woodend Road and Boys Road.

1.2. A meeting was held at Tuahiwi Marae on 3rd May 2019 where a number of issues were discussed including road safety and speed in the wider Tuahiwi area. This meeting was requested and facilitated by Mahaanui Kurataiao Ltd.

1.3. There have also been a number of service requests received requesting a review of or changes to speed limits in the area which supports these wider concerns.

1.4. Nationally there is a move towards more consideration being given to safe and appropriate speeds within the roading network. This is just one of the measures being used to help reduce deaths and serious injuries because the results of all crashes are strongly influenced by impact speed.

1.5. It is proposed that staff undertake a review of the speed limits in the area including undertaking speed counts and a review of any physical works which would be required prior to going out to wider consultation on proposed speed limits.

1.6. Consideration will also be given to road safety initiatives in the area to support safe and appropriate speed limits.

1.7. The safe and appropriate speed for these roads will be assessed using NZTA’s Speed Management Guide (2016).

2. RECOMMENDATION

THAT the Utilities & Roading Committee:

(a) Receives report No. 190606079692;
Approves staff undertaking a review of speed limits in the wider Tuahiwi area generally within the boundary of (but excluding) Lineside Road / Main North Road / Rangiora Woodend Road and Boys Road;

(c) Notes that a further report will be brought to the Rangiora-Ashley, Kaiapoi-Tuahiwi and Woodend-Sefton Community Boards on the proposed changes and requesting approval from Council to consult prior to going out to the community;

(d) Notes that speed limits will be assessed using NZTA’s Speed Management Guide (2016);

(e) Circulates this report to the Rangiora-Ashley, Kaiapoi-Tuahiwi and Woodend-Sefton Community Boards for information.

3. BACKGROUND

3.1 A meeting was held at Tuahiwi Marae on 3rd May 2019 where a number of issues were discussed including road safety and speed in the wider Tuahiwi area.

3.2 The meeting was facilitated by Mahaanui Kurataiao Ltd and involved a number of residents from the Tuahiwi area. There were a number of concerns discussed including the following:

- Speed through the village and the wider MR873 area
- Safety for people using the footpaths including elderly and children
- Volumes of traffic increasing
- Pedestrian and cycling facilities

3.3 Staff have considered this request and it is agreed that a review of road safety including speed limits should be undertaken within the wider area. This is likely to result in safety improvements being undertaken and changes to speed limits.

3.4 Previously a speed limit review has been carried out for Rangiora Woodend Road / Gressons Road / Boys Road and as such these are not included within the speed limit review area.

3.5 Lineside Road and Main North Road (Woodend to Pine Ares corner) are controlled by NZTA and as such they are responsible for the setting of speed limits on these roads. Staff will liaise with NZTA about wider effects as part of this project.

3.6 Staff are working to develop a ‘Speed Management Implementation Plan’ which will outline the proposed phasing for review of speed limits across the wider district. This will be brought to the Utilities & Roading Committee and Council before the end of the year.

3.7 The speed limit review in Tuahiwi is being carried out ahead of the completion of the ‘Speed Management Implementation Plan’ to address ongoing concerns raised by Ngai Tūāhuriri and through service requests.

3.8 A memo has been sent to all Community Boards outlining this issue and the proposed timeline for consultation.

4. ISSUES AND OPTIONS

4.1. It is acknowledged that there has been an increase in traffic using the Tuahiwi area due to a number of factors including; traffic shortcutting the roadworks on Rangiora Woodend Rd, traffic shortcutting to avoid congestion in Southbrook and drivers shortcutting due to difficulties turning out onto the State Highway.
4.2. There are plans for increased development in the MR873 Maori Reserve area and it is acknowledged that this will result in an increase in traffic and demand for walking and cycling.

4.3. Nationally through the Safer Journeys programme there has been a move towards ensuring safe and appropriate speed within the roading network. This is just one of the measures being used to help reduce deaths and serious injuries because the results of all crashes are strongly influenced by impact speed.

4.4. Expectation is that by 2020 all Road Controlling Authorities apply a nationally consistent approach to speed limits that considers the Safe System approach. This approach will be reinforced by a consistent set of messages about what the appropriate speed is for different kinds of routes/situations and taking into account all road users (e.g. pedestrians and cyclists).

4.5. Staff have considered the feedback from Ngāi Tūāhuriri, service requests, the road environment and reviewed NZTA Safe and Appropriate speeds information. A review of speeds is considered to be appropriate in this area, supported by safety improvements.

4.6. The following is the proposed timeline for reviewing speed limits and complementary traffic calming measures in the area:

**June 2019**
- 18th June - U&R Committee Meeting – Report seeking approval to undertake a speed limit review in the wider area.
- Carry out speed surveys in the area identified for a speed limit review. This is to be done once the road works are complete on Rangiora Woodend Road, and traffic volumes revert to a normal flows. These surveys will include the following information:
  - Total vehicle numbers
  - Speeds
  - Proportion of heavy vehicles

**July 2019**
- Technical / design work and speed limit review to be carried out.

**August 2019**
- Reports to the Rangiora-Ashley, Kaiapoi-Tuahiwi and Woodend-Setfon Community Boards seeking a recommendation to Council to consult on proposed speed limits, and speed limits for approval prior to formal speed limit change consultation.

**September 2019**
- 3rd September – Approval sought from Council to consult on proposed speed limits, and speed limits for approval prior to formal speed limit change consultation, including a preliminary outline of physical works to support speed limits.

**November 2019**
- 5th November - Briefing to the new Council prior to formal consultation beginning.
- 10th November – Formal speed limit consultation starts and is open for 4 weeks.

**December 2019**
- Consultation closes mid-December
- Review feedback and prepared report to Council late December

**February 2020**
- Report to Council for adoption at the first meeting of the year.

4.7. The area of speed limit review proposed is as shown in the diagram below.
4.8. The Management Team have reviewed this report and support the recommendations.

5. **COMMUNITY VIEWS**

5.1. **Groups and Organisations**

5.2. A meeting was held at Tuahiwi Marae on 3rd May 2019. The meeting was facilitated by Mahaanui Kurataiao Ltd and attended by Ngāi Tūāhuriri members. Issues of concern raised at the meeting included road safety and speed in the wider Tuahiwi area.

5.3. Seven service requests have also been formally lodged during the last two years regarding speed.

5.4. **Wider Community**

5.5. No specific wider community views have been sought at this time however this would be carried out through the formal consultation process.

6. **IMPLICATIONS AND RISKS**

6.1. **Financial Implications**

6.2. The costs of undertaking the review and implementation of signage changes can be managed from within existing Roading budgets.
6.3. There are likely to be physical works which will need to be undertaken to help improve safety and reinforce slower speeds through the area. Some minor works can be accommodated within existing Road Safety budgets however there is no budget if more significant work is required.

6.4. **Community Implications**

6.5. The community will be consulted through the next phase of the speed limit review process.

6.6. Road safety and speed have been raised as issues by Ngāi Tūāhuriri at the annual hui for a number of years. Any changes will need to be done in consultation with Ngāi Tūāhuriri.

6.7. **Risk Management**

6.8. There is a risk with this process being undertaken over a period when local body elections are taking place, as this could cause further delays.

6.9. There is a risk that the process outcomes may not meet expectation.

6.10. **Health and Safety**

6.11. Reviewing and implementing safety improvements helps promote and maintain public health & safety.

6.12. Any field work required will be undertaken under the guidelines of the Safe Working in the Field manual.

7. **CONTEXT**

7.1. **Policy**

This is not a matter of significance in terms of the Council’s Significance and Engagement Policy.

7.2. **Legislation**

Section 145 of the Local Government Act 2002 empowers the Council to make a bylaw for its district to protect, promote and maintain public health and safety.

The Land Transport Rule: Setting of Speed Limits Rule (2017) requires that permanent speed limits be set by Bylaw.

The Speed Limits Bylaw 2009 enables the Council to set speed limits by Council resolution.

7.3. **Community Outcomes**

This report consider the following outcomes:

*There is a safe environment for all*

- Harm to people from natural and man-made hazards is minimised.
- Our district has the capacity and resilience to quickly recover from natural disasters and adapt to the effects of climate change.
- Crime, injury and harm from road crashes, gambling, and alcohol abuse are minimised.
Transport is accessible, convenient, reliable and sustainable

- The standard of our District’s roads is keeping pace with increasing traffic numbers.
- Communities in our District are well linked with each other and Christchurch is readily accessible by a range of transport modes.

7.4. Delegations

The Speed Limits Bylaw 2009 enables the Council to set speed limits by Council resolution.
1. **SUMMARY**

1.1. This report is seeking approval to commence consultation on a new cycleway from Tram Road to the existing Passchendaele cycleway, via Kaiapoi. The preferred route for the cycleway consists of two sections, namely:

1.2. **Tram Road to Vickery Street**: The preferred route runs along the west side of Main North Road over this section. The proposed treatment of this section consists of a two way shared path separated from the road (similar to the Woodend to Rangiora path).

1.3. **Vickery Street to Passchendaele Path**: The preferred route for this section follows Vickery Street, Wilcock Street, Hills Street, Carew Street, Peraki Street, Black Street, Raven Quay, Mafeking footbridge. Options for the treatment of this section are to be investigated further. Possible options include neighbourhood greenways (see Figure 1) or one way separated paths (see Figure 2).

*Figure 1 Examples of Neighbourhood Greenway*
1.4. The Christchurch Northern Corridor (CNC) Alliance is constructing the Northern Arterial from Cranford Street to the Waimakariri River. This project includes a Shared Use Path from Cranford Street to the northern side of Tram Road. All costs associated with the construction of the Shared Use Path up to the northern side of Tram Road (including the signalisation of the Main North Road, Tram Road intersection) will be met by NZTA.

1.5. The proposed cycleway within Waimakariri District will therefore link with the CNC shared use path, and commence on the northern side of Tram Road.

1.6. The opening of the Shared Use Path from Christchurch City through to Tram Road is scheduled for October 2020.

1.7. A Multi Criteria Analysis (MCA) was carried out in a two-stage process to assess all possible routes.

Stage One Assessment (Plans of the options considered are attached in Attachments i and ii)

1.8. Staff from NZTA, the CNC alliance and Council took part in stage one of the MCA process. The following broad routes from Tram Road to the Passchendaele cycleway were assessed in this stage:

- The Waimakariri River under the Main North Road and railway bridges, along the river stop bank to Doubledays Road, then following the existing recreational cycle path.
- Main North Road to Doubledays Road, then following the existing recreational cycle path.
- The KiwiRail corridor
- Main North Road to Williams Street, then a route through Kaiapoi (to be determined in Stage 2 of the MCA)
- Main North Road to the Kaikanui Stream, then following the esplanade reserve around the western side of Kaiapoi
- The NZTA Corridor adjacent to the Northern Motorway

Stage One of the MCA identified that Main North Road, then a route through Kaiapoi was the preferred option.
**Stage Two Assessment** (The full MCA results are included as Attachments iii and iv)

1.9. Stage Two of the MCA process assessed the detailed alignment along the preferred route through Kaiapoi. Options were assessed were assessed for each of three sections:

1.10. Tram Road to Vickery Street. The following two options were assessed for this section:
- Eastern side of Main North Road
- Western side of Main North Road

The assessment indicated that western side of Main North Road was the preferred option.

1.11. Vickery Street to Central Kaiapoi. The following three options were considered for this section:
- Williams Street
- Vickery Street, and Peraki Street
- Vickery Street, Willock Street, Carew Street, and Peraki Street

The assessment indicated that the Vickery Street, Carew Street, Peraki Street route was the preferred option by a very slim margin over the Vickery Street, Peraki Street route. It is therefore proposed to consult on this as the preferred option, with the second option as an alternative.

1.12. Central Kaiapoi to Passchendaele Path. The following two options were assessed for this section
- Black Street (on existing shared path), Raven Quay
- Hilton Street (on existing shared path), Rich Street, Raven Quay

These two routes scored equal scores in the assessment.

1.13. Details of the MCA assessment are discussed further in Section 4 Issues and Options.

1.14. Workshops have been held with all Community Boards on this subject and feedback is discussed in Section 4.

1.15. The proposed cycleway is part of the National Urban Cycleway Programme and will provide cycle linkage between Christchurch, Kaiapoi and ultimately to the wider Waimakariri District.

1.16. This will supplement the existing road link between the towns, and will provide a safe and viable choice of transport modes other than private motor vehicles, which is consistent with national, regional, and district strategies.

**Attachments:**

i. MCA Stage 1 Plan (TRIM 190528075211)
ii. MCA Stage 2 Plan (TRIM 190528075210)
iii. Detailed MCA for Stage 1 (TRIM 190604078364)
iv. Detailed MCA for Stage 2 (TRIM 190604078365)
v. Draft Kaiapoi Network Plan including preferred option (TRIM 190604078465)
vi. Communications Plan (TRIM 190605079388)
2. **RECOMMENDATION**

THAT the Utilities & Roading Committee:

(a) **Receives** report No. 190412055544;

(b) **Approves** public consultation on the cycleway route(s) as shown on the attached drawing (Attachment ii);

(c) **Approves** consultation with the adjacent property owners and residents;

(d) **Notes** that Project Control Group aims to have the cycleway completed by October 2020 to coincide with the opening of the CNC cycleway;

(e) **Notes** that a speed limit review is proposed on Main North Road and Tram Road, in conjunction with this project;

(f) **Notes** that safety audits will be carried out by an independent audit team at concept design, detailed design and post construction stages;

(g) **Notes** that the total estimated cost of the cycleway is $1.5m ($810,000 for section between Tram Road and the edge of the Kaiapoi urban area, and $610,000 for the section within the Kaiapoi urban area)

(h) **Notes** that $1.022m has been allocated in the Long Term Plan for construction of the Tram Road to Kaiapoi urban area section of cycleway in years 2018/19 and 2019/20, and that $500,000 per annum has been allocated for the construction of urban cycleways in Rangiora and Kaiapoi for each of the years from 2018/19 to 2020/21.

(i) **Notes** that minor improvements on Main North Road (near Hellers and Clement Drilling properties) are proposed to be designed and built in conjunction with this project, with funding to come from the Minor Improvements budget;

(j) **Notes** that this report has been presented to the Kaiapoi-Tuahiwi Community Board at their June meeting;

(k) **Circulates** this report to the all Boards for their information.

3. **BACKGROUND**

3.1. The Waimakariri District Council have committed to improving the mobility and transport options of our communities through increased cycling and walking opportunities. Providing safe and accessible facilities that meet the needs of the community is included in the strategies that underpin this commitment.

3.2. The Government Policy Statement (GPS) 2018/19-2027/28 prioritises supporting mode shift in urban areas from private vehicles to more efficient, low cost modes like walking, cycling and public transport. In line with the GPS objective of ‘enabling transport choice and access’, GPS 2018 supports investment towards improving the safety of cyclists and pedestrians.

3.3. Cycling as a mode of transport is growing in the district and bicycles are now capable of travelling greater distances for less rider effort, increasing their attractiveness to wider sectors of the community. E-bikes are becoming mainstream and can greatly reduce commuting times. Providing for active travel modes can also bring other benefits to the existing network such as improved parking demand and reduced congestion at peak times.

3.4. The Waimakariri District Council Walking and Cycling Strategy (Trim 160907092274) is relevant to this project. This strategy aims to encourage people to walk and bike both for
recreation, and transport. It also provides a way to identify and prioritise new or improved walking and cycling opportunities throughout the District. The strategy provides a clear vision, identified priorities and direction going forward for the Council and the community. It also helps to ensure that Council can make the most of any opportunities for funding of walking and cycling projects.

3.5. The construction of the cycle connection between Kaiapoi and Belfast will provide an accessible safe link for cyclists between the Waimakariri District and Christchurch City and vice versa. Improved access into recreational areas from the District’s town centres may provide additional opportunity to benefit from cycling tourism on routes such as the Hurunui Heartland Ride, which will pass through our district.

3.6. There are a number of significant changes proposed on Main North Road between the old Waimakariri Bridge and Kaiapoi, and Tram Road between Main North Road and west of the motorway off ramp. These include:

- The proposed traffic signals at the Main North Road, Tram Road intersection
- The proposed traffic signals at the intersection of Tram Road and the motorway on ramp
- The presence of an HOV lane starting adjacent to the Tram Road, Main North Road intersection
- The presence of a cycleway alongside Main North Road

3.7. These changes on their own warrant a review of speed limits in this area. Other factors which support a speed limit review include:

- A number of recent crashes near the Hellers and Clement Drilling accesses
- Christchurch City Council is currently consulting on reducing the speed limit on Marshland Road and Main North Road, including the old Waimakariri Bridge to 60km/h

3.8. It is therefore proposed to review speed limits on Main North Road and Tram Road prior to the opening of the CNC and associated HOV lane, and Shared Use Path.

3.9. There have been a number of crashes on Main North Road at, or near, the Hellers and Clement Drilling accesses. It is therefore proposed to do some safety improvements at these accesses. These improvements are likely to include right turn bays and/or a flush median at the accesses. This work will be designed and built in conjunction with any access alterations required to accommodate the cycleway. However, any upgrades to Main North Road will be funded from the Minor Improvements budget.

3.10. This report will be presented to the Kaiapoi Tuahiwi Community Board at their meeting on 17th June 2019. Verbal feedback following that meeting will be provided to the Utilities and Roading Committee meeting.
4. **ISSUES AND OPTIONS**

4.1. A Multi Criteria Analysis (MCA) has been used to assess the route options for this cycleway. Table 1 shows the criteria used for assessment, the factors considered in each criterion, and the weighting given to each.

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Factors Considered</th>
<th>Weighting</th>
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<tbody>
<tr>
<td>Road Safety</td>
<td>• Safety along route for other users;</td>
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<td>• Relative conflict with other road users;</td>
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<td>• Pedestrians, residents, traffic, crossing business access</td>
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<td>• Perceptions of risk, noise, proximity to traffic</td>
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<td>Social Safety, Comfort &amp; Attractiveness</td>
<td>• Greenspace routes need open aspect;</td>
<td>15%</td>
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<td>• Consider CPTED(^1) for routes off-street;</td>
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<td>• Lighting;</td>
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<td></td>
<td>• Comfort of users</td>
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<td>Directness &amp; Coherence</td>
<td>• Time &amp; distance to travel (Waimakariri Bridge to Mafeking Bridge and Waimakariri Bridge to Kaiapoi River Bridge on Williams Street)</td>
<td>12.5%</td>
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<td></td>
<td>• Connectivity to Kaiapoi CBD;</td>
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<td>• Match to desire lines;</td>
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<td>• Easy to recognise route;</td>
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<td>• Limited changing of facility types;</td>
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<td>• Few complicated manoeuvres / few turns</td>
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<td>Connectivity to Other Destinations</td>
<td>• Good connections to:</td>
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<td></td>
<td>• Residential areas within Kaiapoi,</td>
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<td>• Local schools</td>
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<td>• Other public spaces</td>
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<td>• Links to other destinations</td>
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<td>• Integrates with land uses</td>
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<td>Local Business Impact</td>
<td>• Impact on local business interests</td>
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<td></td>
<td>• Loading zone loss</td>
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<td>• Effects on access</td>
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<td>• Parking space loss</td>
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<td>• Effect on patronage</td>
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\(^1\) “CPTED (Crime Prevention Through Environmental Design) aims to reduce opportunities for crime and antisocial behaviour through designing environments that make committing these acts less easy” (Auckland Council Design Manual)


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<thead>
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<th>Local Resident Impact/Wider Community</th>
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<tbody>
<tr>
<td>• Impact on local residents</td>
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<td>• Access to properties</td>
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<tr>
<td>• Impact on on-street parking</td>
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<tr>
<td>• Amenity / shelter belts</td>
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<tr>
<td>• Effect of changes to the network</td>
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<td>• Public transport routes affected</td>
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<td>• Operation costs for street cleaning, rubbish collection</td>
<td></td>
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<td>• Rural mail delivery</td>
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<td>• Effect on maintenance of roading &amp; other infrastructure</td>
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<tr>
<th>Ease of Construction &amp; Costs</th>
<th>10%</th>
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<tr>
<td>• Increased costs due to:</td>
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</tr>
<tr>
<td>o Property purchase</td>
<td></td>
</tr>
<tr>
<td>o Complicated facilities (eg bridges retaining)</td>
<td></td>
</tr>
<tr>
<td>o Requires other services to be relocated</td>
<td></td>
</tr>
<tr>
<td>• Budget risks</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Risks to Delivery</th>
<th>10%</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Programme delays due to:</td>
<td></td>
</tr>
<tr>
<td>o Land/property purchase</td>
<td></td>
</tr>
<tr>
<td>o Legal processes (eg consents, access)</td>
<td></td>
</tr>
<tr>
<td>o Archaeological site</td>
<td></td>
</tr>
<tr>
<td>o Contaminated land</td>
<td></td>
</tr>
<tr>
<td>o Ecological</td>
<td></td>
</tr>
</tbody>
</table>

4.2. The assessments have been carried out based on the assumption that the primary purpose of this cycleway is to act as a "commuter" connection between the wider Waimakariri District, including Kaiapoi, and northern Christchurch, rather than a recreational cycleway. The weightings given to Directness and Coherence and to Connectivity to Other Destinations reflect this assumption.

4.3. It is also considered that options which are not direct, and have poor connectivity to other destinations are less likely to attract commuter cyclists. These cyclists are likely to use direct routes. This can result in a counterintuitive reduction in the overall level of safety if a very safe facility is provided on a less direct route, but suitable facilities are not provided on more direct routes.

4.4. This cycleway project has been approved for a 50% NZTA subsidy. NZTA does not normally subsidise recreational cycle facilities.

MCA

4.5. The following options have been considered for Stage 1 of the assessment:

**Doubledays Road via Waimakariri River Bank.**

4.6. This option consists of the following:

- Waimakariri River park to cross under Main North Road at old Waimakariri River Bridge, and under railway bridge
- Northern Waimakariri River stopbank to Doubledays Road at ECan gravel extraction area
• Doubledays Road to existing walkway / cycleway at eastern end of road

• Existing walkway / cycleway on paper road through dairy farm. This route crosses a farm track, which appears to be regularly used by dairy cows travelling to and from milking (see Figure 3)

Figure 3 Farm Track Crossing Existing Walkway

• Existing footbridge across Courtney Stream

• Parallel to existing path through reserve area to Kaikanui Street

• Across Courtenay Drive

• Along reserve area parallel to railway to Bowler Street

• Along Bowler Street to Raven Quay

• Along Raven Quay to Mafeking Bridge (crossing Williams Street)

**Doubledays Road via Main North Road.**

4.7. This option consists of the following:

• From end of Waimakariri River Bridge to Main North Road via northern stopbank

• Western side of Main North Road to Tram Road

• Crossing Main North Road at new Tram Road signals

• Eastern side of Main North Road to Doubledays Road

• Doubledays Road to existing walkway / cycleway at eastern end of road.

  o The existing Doubledays Road carriageway crosses into private land on both the left and right side of the road in a number of locations (see Figure
4). Consequently, the path will need to cross Doubledays Road a number of times in order to remain within the road reserve. The alternative is to acquire land from the adjacent property owners in order to accommodate the path.

- Remainder of route as per Doubledays Road route via Waimakariri River bank

![Figure 4 Doubledays Road encroaching into private property](image)

**KiwiRail Corridor.**

4.8. This option:

- Crosses under the old Waimakariri River Bridge at Main North Road
- Follows the KiwiRail corridor to Kaiapoi.

**Main North Road Corridor via Central Kaiapoi.**

4.9. This option:

- Follows Main North Road to Vickery Street
- Travels through Kaiapoi to Raven Quay.

4.10. Stage 1 of the MCA identified this as the preferred option. Stage 2 then considered sub options for the following 3 sections of this route:

(i) **Tram Road to Vickery Street**

4.11. The following sub options considered for this section

- East side of Main North Road to Vickery Street (preferred option)
- West side of Main North Road to Vickery Street

(ii) **Vickery Street to Central Kaiapoi**

4.12. The following sub options considered for this section

- Williams Street to Raven Quay
- Vickery Street, Wilcock Street, crossing Ohoka Road, the existing walkway from Ohoka Road to Hill Street, Hill Street, Carew Street, Peraki Street, Black Street (including the existing shared path from Fuller Street to Raven Quay)
- Vickery Street, crossing Ohoka Road, Peraki Street, Black Street (including the existing shared path from Fuller Street to Raven Quay)

4.13. Viable, cost effective options were not able to be identified to address the safety issues associated with the very large number of property access crossing a 2 way path on Williams Street. This option was therefore not evaluated further. The option using Vickery Street, Wilcock Street, the existing walkway, Hills Street, Carew Street and Peraki Street scored higher than the other option by a very small margin. However, the viability of this option is dependent on gaining access to the strip of land between the existing walkway and the existing low hedge at the western end of Council’s housing complex (see Figure 5: Land Required at Council Housing Complex).

4.14. It is therefore recommended that consultation identifies this as the preferred route, with the Vickery Street, Peraki Street route as an alternative.

(iii) Central Kaiapoi to Passchendaele Path

4.15. The long term preferred option for this section may depend on development which may happen on the regeneration land bound by Hilton Street, Rich Street, Raven Quay and Black Street. There are existing shared paths on Black Street (from Hilton street to Raven Quay), and on Hilton Street from Peraki Street to Kaiapoi Borough School. Rich Street and Raven Quay are both residential streets with low traffic volumes (290 and 1260 vehicles per day respectively). Both of these streets are considered suitable for a neighbourhood greenway treatment with minimal additional traffic calming measures. It is therefore recommended that:

- Low cost treatments, such as neighbourhood greenways are installed on one or both of Rich Street or Raven Quay initially, and

- The treatment over this section is reviewed once the nature of development on the regeneration site is confirmed.

Main North Road Corridor via Kaikanui Stream Esplanade Reserve

4.16. This Option:

- Follows Main North Road to north of the Kaikanui Stream

- Follows the Kaikanui Stream Esplanade reserve to the northern motorway

- Follows the Council reserve adjacent to the motorway or Robert Coup Road to Ohoka Road

- Crosses Ohoka Road
• Follows Otaki Street to Fuller Street
• Follows Fuller street west to the existing rail underpass
• Crosses under the railway line
• Follows the existing path along the Adderley Terrace stop bank to the Mafeking Bridge.

**NZTA Motorway Corridor**

4.17. This option:

• Follows the motorway corridor from the end of the Waimakariri River Bridge to Ohoka Road

• Crosses Tram Road at the motorway onramp.

**Assessment Summary**

4.18. The full MCA results are included as Attachments iii and iv. The key pros and cons of each option are summarised in Table 2.

*Table 2 Option Pros and Cons*

<table>
<thead>
<tr>
<th>Option</th>
<th>Pros</th>
<th>Cons</th>
</tr>
</thead>
<tbody>
<tr>
<td>NZTA Corridor</td>
<td>• Direct route to Passchendaele path</td>
<td>• Not a direct route to Kaiapoi CBD</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Poor connectivity to other destinations</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Land purchase required for section between Waimakariri Bridge and Tram Road</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Not supported by NZTA</td>
</tr>
<tr>
<td>MAIN NORTH RD via Kaiapoi Town Centre</td>
<td>• Most direct route to Kaiapoi CBD and Passchendaele path</td>
<td>• Will require significant engineering solutions to ensure the cycle facility is safe for users cycling adjacent to a busy road, and across commercial vehicle entrances.</td>
</tr>
<tr>
<td></td>
<td>• Good connectivity to other destinations, and the Kaiapoi residential areas</td>
<td></td>
</tr>
<tr>
<td>MAIN NORTH RD via Esplanade Reserve</td>
<td>• Direct route south of Kaiapoi, and to Passchendaele Track.</td>
<td>• Will require significant engineering solutions to ensure the cycle facility is safe for users cycling adjacent to a busy road and across commercial vehicle entrances.</td>
</tr>
<tr>
<td></td>
<td>• Attractive route alongside river would attract recreational users.</td>
<td>• Poor connectivity to Kaiapoi CBD, and other destinations.</td>
</tr>
<tr>
<td>KiwiRail Corridor</td>
<td>• Direct route to Kaiapoi CBD</td>
<td>• Rail line is not consistently located within rail corridor, limiting options.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Poor CPTED</td>
</tr>
</tbody>
</table>
| DOUBLEDAYS RD via Main North Road | • Two new 25m span bridges required.  
• Land acquisition will be required as rail embankment is high along route, and will not accommodate a cycleway within the rail corridor.  
• Kiwirail have not agreed in principle to a cycleway along this corridor. |
| --- | --- |
| DOUBLEDAYS RD via Waimakariri River Bank | • High level of road safety  
• Attractive route along river  
• Would complement the existing recreational cycle tracks in the Waimakariri River Park  
• Poor CPTED  
• Not a direct route, unlikely to be used by Kaiapoi residents west of Williams Street  
• Poor connectivity to other destinations  
• Significant impact on dairy farm, requiring underpass and agreement of farm owner  
• Significant culvert will require extension, and existing level crossing will need to be upgraded  
• Possible underpass through dairy farm adds to cost  
• Would need agreement of dairy farm |

4.19. The MCA process has identified the preferred route is via Main North Road, Vickery Street, Carew Street and Peraki Street.

4.20. The MCA process and results has been reviewed by the Senior Principal Transport Engineer (Road Safety) at Stantec. This review has identified no issues with the process or results. It did note that there were potential safety issues at the crossings of the business accesses on Main North Road. However, it concluded that these issues could be mitigated with appropriate design.

4.21. The proposed cycleway is part of the National Urban Cycleway Programme and will provide cycle linkage between Christchurch, Kaiapoi and ultimately to the wider Waimakariri District via the Passchendaele Path and Rangiora to Woodend cycle way. Linkages to existing and proposed cycle facilities in Kaiapoi are shown on the draft Kaiapoi Network Plan (Attachment v).

4.22. The Management Team have reviewed this report and support the recommendations.
5. COMMUNITY VIEWS

5.1. Groups and Organisations

Feedback will be sought from property owners, businesses, and residents along the route.

North Canterbury Cycling Club will be consulted during the consultation stage for their feedback. As interested and regular cyclists their experience constantly coping with the dangers faced by the cyclists will provide important cycle safety information to be aware of during the design and Safety in Design stages.

5.2. Community Boards

The preferred route and the MCA process to determine the route was promoted at all Community Boards. The response from the Community Boards have been very satisfactory and the perception is that the Board Members agree with the process, and although there was an inclination for Rail Corridor as a relatively more direct route, there was general acceptance for the Main North Road as the preferred route. The following table gives an overview of the Community Boards' feedback:

<table>
<thead>
<tr>
<th>Community Boards</th>
<th>Workshop Date</th>
<th>Meeting Venue</th>
<th>Feedback</th>
</tr>
</thead>
<tbody>
<tr>
<td>Woodend-Sefton Community Board</td>
<td>13 May 2019</td>
<td>Woodend Community Centre</td>
<td>Generally supportive of the cycleway concept.</td>
</tr>
<tr>
<td>Rangiora-Ashley Community Board</td>
<td>15 May 2019</td>
<td>Rangiora Town Hall</td>
<td>Generally supportive of the cycleway concept</td>
</tr>
<tr>
<td>Oxford-Ohoka Community Board</td>
<td>16 May 2019</td>
<td>Rangiora Town Hall</td>
<td>Generally supportive of the cycleway concept</td>
</tr>
<tr>
<td>Kaiapoi-Tuahiwi Community Board</td>
<td>20 May 2019</td>
<td>Kaiapoi Service Centre</td>
<td>Concerns raised:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Some members of the KTCB expressed concern at installing the cycle path adjacent to Main North Road, and suggested that the rail corridor should be explored further. Others suggested that a route utilising Doubledays Road would be preferred.</td>
</tr>
</tbody>
</table>
5.3. **Wider Community**

Views have not yet been sought from the wider community, however approval of the recommendations in this report will see public consultation with the wider community undertaken for the preferred route.

The consultation will include:

- Letter drops to:
  - All adjacent property owners
  - Businesses
  - North Canterbury Cycling Community
  - ECan (for public transport)

- Publicity through:
  - Social media
  - Local newspapers
  - Council website

A communications plan is attached that outlines the medium and extent of communication for a wider community and stakeholder engagement. The dates in the plan are indicative and are to be revised dependent on the outcome of this report.

6. **IMPLICATIONS AND RISKS**

6.1. **Financial Implications**

Council’s 2018 to 2028 Long Term Plan includes a total budget of $1.022m for the design and construction of Council’s section of the Kaiapoi to Belfast cycleway over the 2018/19 to 2020/21 financial years. This project terminates at the edge of the Kaiapoi urban area, as the Passchendaele and Rangiora to Woodend paths have done.

In addition $500,000 has been budgeted for Urban Cycleway Projects within the Rangiora and Kaiapoi urban areas for each of the 2018/19 to 2020/21 years. This funding will cover the section of cycleway between the urban edge of Kaiapoi and the Passchendaele Path.

Cost estimates have been prepared based on the scheme plans of the preferred option. The current cost estimate for the section between Tram Road and the edge of the Kaiapoi urban area is $810,000, and $690,000 for the section within the Kaiapoi urban area. This is a high level estimate that excludes any land-purchases that may be required. This estimate will be updated as the consultation and designs progress.

Improvements to the Hellers and Clement Drilling accesses will be funded from the Minor Improvements budget.

6.2. **Community Implications**

The primary purpose of the cycleway is to provide an alternative mode of transport for commuting between Christchurch and the Waimakariri District, and within the District. Since it will be separated from the traffic lane it will give a sense of security and, therefore, may encourage ‘interested but concerned’ riders to ‘get on the bike’.

It is also expected that it will be used as a linkage by recreational cyclists who are wanting to access the Waimakariri River Park and surrounding tracks.
6.3. Risk Management

The MCA process included consideration of likely risks to the project, including risks to delivery such as Land Purchases, Legal Issues, Land Use Agreements, Archaeological & Ecological risks.

These risks will be monitored and addressed during consultation and detailed design phases.

There is also a risk that the cycleway project may not be completed in time to connect to the cycleway being constructed by the CNC alliance for NZTA. This risk can be mitigated by prioritising the construction of the Tram Road to Vickery Street section.

Negative public reaction to the proposed facility and associated changes to the road environment is a risk for a project such as this. This risk can be mitigated by clear and comprehensive communication and consultation.

6.4. Health and Safety

The physical works for this project will be tendered. The health & Safety aspects of the works will be managed through the physical works contract.

The preferred route has a number of identified safety risks for the end user. These risks are primarily regarding the proximity of adjacent vehicles, and the conflicts between path users, and commercial vehicles entering one of the commercial properties along the route. The risks associated with this aspect of the project will be mitigated through a thorough Safety in Design process, as well as external Safety Audits that will be carried out during the design process.

7. CONTEXT

7.1. Policy

This matter is not a matter of significance in terms of the Council’s Significance and Engagement Policy.

7.2. Legislation

The Land Transport Management Act and Local Government Act are relevant in this matter.

7.3. Community Outcomes

There is a safe environment for all

- Harm to people from natural and man-made hazards is minimised
- Crime, injury and harm from road crashes, gambling, and alcohol abuse are minimised

There is a healthy and sustainable environment for all

- Harm to the environment from the impacts of land use, use of water resources and air emissions is minimised

Transport is accessible, convenient, reliable and sustainable

- The standard of our District’s roads is keeping pace with increasing traffic numbers.
- Communities in our District are well linked with each other and Christchurch is readily accessible by a range of transport modes.
• Opportunities to increase the occupancy of commuter vehicles is actively encouraged.

7.4. Delegations

The Utilities and Roading Committee have delegated authority to approve this report, and its recommendations.
<table>
<thead>
<tr>
<th>Corridor</th>
<th>Road Safety</th>
<th>Road Safety &amp; Traffic Access</th>
<th>Environment &amp; Sustainability</th>
<th>Community to Other Rocklands</th>
<th>Local Business Benefits</th>
<th>Local Resident Impact/Wider Community</th>
<th>Implementation &amp; Network Impact</th>
<th>Time &amp; Cost of Construction &amp; Implementation</th>
<th>Risks &amp; Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCA Stage 1.XLSX</td>
<td>Good connections within Kaiapoi, local schools, shops, parks, sports facilities, other public areas</td>
<td>• Good connections to residential areas</td>
<td>• Good observation from motorway but limited ability to act</td>
<td>• Proximity to motorway may be uncomfortable</td>
<td>• Steep grade onto Tram Road fill batter</td>
<td>• Impact on local residents, access to properties, impact on on-street parking, amenity / shelter belts</td>
<td>• Programme delays due to land/property purchase, legal processes, access, Archaeological site, Contaminated land, Ecological issues</td>
<td>• Program delays due to land/property purchase, legal processes, access to Kiwirail corridor, Ecan approval at the river</td>
<td>• Property purchase delay, approval required to access Kiwirail corridor, Ecan approval at the river, KiwiRail have identified a number of possible issues during a site walkover</td>
</tr>
<tr>
<td>Rangiora to Woodend Cycleway – Scheme Options Multicriteria Analysis (0.4km longer than the shortest route)</td>
<td>• Direct • Follows desire line (continuous from west side south of Tram Rd) • Easily recognised. • 3 facility types. • Moderate turns.</td>
<td>• Good observation from motorway but limited ability to act</td>
<td>• Proximity to motorway may be uncomfortable</td>
<td>• Steep grade onto Tram Road fill batter</td>
<td>• Impact on local residents, access to properties, impact on on-street parking, amenity / shelter belts</td>
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<td></td>
</tr>
<tr>
<td>MAIN NORTH ROAD</td>
<td>• Connects to Businesses (on west side Main North Road) • Directly connects to CBD • Connects to north Kaiapoi via Mandeville footbridge and other existing paths • Connects to residential areas west of Williams Street</td>
<td>• Good observation from motorway but limited ability to act</td>
<td>• Proximity to motorway may be uncomfortable</td>
<td>• Steep grade onto Tram Road fill batter</td>
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<td></td>
</tr>
<tr>
<td>MAIN NORTH ROAD CORRIDOR via ESPLANADE west</td>
<td>• Significant impact on dairy farming operations with increased cycle numbers passing through the property</td>
<td>• Good observation from motorway but limited ability to act</td>
<td>• Proximity to motorway may be uncomfortable</td>
<td>• Steep grade onto Tram Road fill batter</td>
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<td></td>
</tr>
<tr>
<td>KIWIRAIL CORRIDOR</td>
<td>• Few conflicts with traffic (at road crossings only) • Route fully remote from roads</td>
<td>• Good observation from motorway but limited ability to act</td>
<td>• Proximity to motorway may be uncomfortable</td>
<td>• Steep grade onto Tram Road fill batter</td>
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<tr>
<td>MAIN NORTH ROAD</td>
<td>• Less Direct • Not a desired line • Some sharp turns</td>
<td>• Good observation from motorway but limited ability to act</td>
<td>• Proximity to motorway may be uncomfortable</td>
<td>• Steep grade onto Tram Road fill batter</td>
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</tr>
<tr>
<td>MAIN NORTH RD via Adderley Tce</td>
<td>• Longer • Not on desire line • Not direct for cyclist heading to Kaiapoi town centre</td>
<td>• Good observation from motorway but limited ability to act</td>
<td>• Proximity to motorway may be uncomfortable</td>
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</table>

Risks & Benefits: • Property purchase delay • Approval required to access Kiwirail corridor • Ecan approval at the river • KiwiRail have identified a number of possible issues during a site walkover • Erosion management may be required depending on site • Property purchase may be required at Hellers • Existing kiwirail underpass may need upgrading at Adderley Tce.
<table>
<thead>
<tr>
<th>Criteria</th>
<th>Description</th>
<th>Weighting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety</td>
<td>number</td>
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<tr>
<td>Accessibility &amp; Comfort</td>
<td>number of users satisfied</td>
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<tr>
<td>Traffic Efficiency</td>
<td>number of vehicles per hour</td>
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<td>Local Business Impact</td>
<td>number of businesses affected</td>
<td>12.5%</td>
</tr>
<tr>
<td>Local Resident Impact</td>
<td>number of residents affected</td>
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<tr>
<td>Operational &amp; Network Impact</td>
<td>number of service disruptions</td>
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<tr>
<td>Ease of Construction &amp; Costs</td>
<td>number of buildings affected</td>
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</tr>
<tr>
<td>Risks to Delivery</td>
<td>number of incidents</td>
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### Criteria Details

**Main North Road - Tram Road to Vickery Street**

- West
  - Close to high volume traffic
  - Separated 2-way path adjacent to road
  - Crosses commercial business access
  - Busy intersections, 3-way signal
  - 
  - Wide berm (north of Tram Rd to Neeves Rd) will provide ample separation

- East
  - Close to high volume traffic
  - Separated 2-way path adjacent to road
  - Number of power poles close to road
  - Crossing narrow roads (including Access Road) & East St
  - 
  - Open aspect on-road
  - Proximity to busy road reduces attractiveness
  - Limited lighting

**Directness & Coherence**

- West
  - Direct
  - Follows desire line (continuous from west side south of Tram Rd)
  - Easily recognised
  - No change in facility type
  - No turns

- East
  - Direct but have to cross Williams St and Main North Rd
  - Follows desire line (continuous from west side south of Tram Rd)
  - Easily recognised
  - No change in facility type
  - No turns

**Connectivity to Other Destinations**

- West
  - Connects to: - River park - Businesses on MNRd & Williams St

- East
  - Need to cross Main North Rd or Williams St to connect to any significant destination

**Local Business Impact**

- West
  - Cyclist access to businesses improved for staff & customers
  - Negative impact on vehicle access

- East
  - Cyclist access to fewer businesses south of Tram Rd improved for staff & customers
  - Negative impact on vehicle access

**Local Resident Impact**

- West
  - Little impact on local residents
  - Little impact on street parking

- East
  - Little impact on local residents
  - Little impact on street parking

**Operational & Network Impact**

- West
  - No impact on public transport
  - No impact on rubbish collection
  - Likely reduced speed (speed review likely regardless of project)

- East
  - Limited property purchase
  - No service relocations
  - Moderate budget risks
  - Median island at crossing point to cross to Braidwood Rd
  - Alterations to existing flush median at Kaikanui Stream bridge

**Ease of Construction & Costs**

- West
  - No identified risks

- East
  - Few identified risks

**Risks to Delivery**

- West
  - 0

- East
  - 0
## Criteria

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<thead>
<tr>
<th>Description</th>
<th>Road Safety</th>
<th>Social Safety, Comfort &amp; Attractiveness</th>
<th>Directness &amp; Coherence</th>
<th>Connectivity to Other Destination</th>
<th>Local Business Impact</th>
<th>Local Resident Impact/Wider Community</th>
<th>Operational &amp; Network Impacts</th>
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<tr>
<td>• Less leg at start</td>
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<tr>
<td>• Off-road facility on Willock St</td>
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<td>• Less leg at start</td>
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<td>Safety</td>
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<td>• On-road facility</td>
<td>Criteria</td>
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<td>• Close to moderate traffic volume</td>
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<td>potential for cars backing into cyclists (but potential for an off-road facility)</td>
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<td>• Attractive</td>
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<td>Weighting</td>
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<td>• No operational/network impacts</td>
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<td></td>
<td>• Easy to construct</td>
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<td>• Few identified risks</td>
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<td></td>
<td>• Impact on local residents</td>
<td>Criteria</td>
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<td></td>
<td>• Access to properties</td>
<td>Criteria</td>
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<td>• Impact on on-street parking</td>
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<td>• Amenity / shelter belts</td>
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<tr>
<td></td>
<td>• Effect of changes to the network (speed limits)</td>
<td>Criteria</td>
<td>Description</td>
<td>Weighting</td>
</tr>
<tr>
<td></td>
<td>• Public transport routes affected</td>
<td>Criteria</td>
<td>Description</td>
<td>Weighting</td>
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<tr>
<td></td>
<td>• Operation costs for street cleaning, rubbish collection</td>
<td>Criteria</td>
<td>Description</td>
<td>Weighting</td>
</tr>
<tr>
<td></td>
<td>• Effect on maintenance operations (lines company, maintenance)</td>
<td>Criteria</td>
<td>Description</td>
<td>Weighting</td>
</tr>
<tr>
<td></td>
<td>• Programme delays</td>
<td>Criteria</td>
<td>Description</td>
<td>Weighting</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Route C</th>
<th>Hillton St/Rich St/Raven Quay</th>
<th>Criteria</th>
<th>Description</th>
<th>Weighting</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Mostly off-road facility</td>
<td>Criteria</td>
<td>Description</td>
<td>Weighting</td>
</tr>
<tr>
<td></td>
<td>• Open aspect</td>
<td>Criteria</td>
<td>Description</td>
<td>Weighting</td>
</tr>
<tr>
<td></td>
<td>• Attractive</td>
<td>Criteria</td>
<td>Description</td>
<td>Weighting</td>
</tr>
<tr>
<td></td>
<td>• Slightly indirect</td>
<td>Criteria</td>
<td>Description</td>
<td>Weighting</td>
</tr>
<tr>
<td></td>
<td>• Slightly off-desired line</td>
<td>Criteria</td>
<td>Description</td>
<td>Weighting</td>
</tr>
<tr>
<td></td>
<td>• Direct connection to - River (via Black St shared path) - School (KBS)</td>
<td>Criteria</td>
<td>Description</td>
<td>Weighting</td>
</tr>
<tr>
<td></td>
<td>• Slightly indirect connection to KTC</td>
<td>Criteria</td>
<td>Description</td>
<td>Weighting</td>
</tr>
<tr>
<td></td>
<td>• Connects to existing cycleway (Hilton St to Rich St and to School)</td>
<td>Criteria</td>
<td>Description</td>
<td>Weighting</td>
</tr>
<tr>
<td></td>
<td>• Minimal business impact</td>
<td>Criteria</td>
<td>Description</td>
<td>Weighting</td>
</tr>
<tr>
<td></td>
<td>• No impact on local residents</td>
<td>Criteria</td>
<td>Description</td>
<td>Weighting</td>
</tr>
<tr>
<td></td>
<td>• No operational/network impacts</td>
<td>Criteria</td>
<td>Description</td>
<td>Weighting</td>
</tr>
<tr>
<td></td>
<td>• Likely loss of parking west of Rich St</td>
<td>Criteria</td>
<td>Description</td>
<td>Weighting</td>
</tr>
<tr>
<td></td>
<td>• Easy to construct</td>
<td>Criteria</td>
<td>Description</td>
<td>Weighting</td>
</tr>
<tr>
<td></td>
<td>• Few identified risks</td>
<td>Criteria</td>
<td>Description</td>
<td>Weighting</td>
</tr>
<tr>
<td></td>
<td>• Impact on local residents</td>
<td>Criteria</td>
<td>Description</td>
<td>Weighting</td>
</tr>
<tr>
<td></td>
<td>• Access to properties</td>
<td>Criteria</td>
<td>Description</td>
<td>Weighting</td>
</tr>
<tr>
<td></td>
<td>• Impact on on-street parking</td>
<td>Criteria</td>
<td>Description</td>
<td>Weighting</td>
</tr>
<tr>
<td></td>
<td>• Amenity / shelter belts</td>
<td>Criteria</td>
<td>Description</td>
<td>Weighting</td>
</tr>
<tr>
<td></td>
<td>• Effect of changes to the network (speed limits)</td>
<td>Criteria</td>
<td>Description</td>
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<tr>
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<td>• Public transport routes affected</td>
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<td></td>
<td>• Effect on maintenance operations (lines company, maintenance)</td>
<td>Criteria</td>
<td>Description</td>
<td>Weighting</td>
</tr>
<tr>
<td></td>
<td>• Programme delays</td>
<td>Criteria</td>
<td>Description</td>
<td>Weighting</td>
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</tbody>
</table>
Purpose

This Communication and Engagement Plan provides an outline for communication and engagement activities to help Council establish a preferred route north of the Kaiapoi Town Centre for a commuter cycle path from Belfast to Kaiapoi. It establishes key communication channels and activities that will be carried out during the consultation period.

This plan is in draft format, with dates to be confirmed once U&R Committee has approved to consult.

1.0 Background

A safe and well connected network of cycle facilities in the Waimakariri District is critical if the Council seeks to reinforce the Walking and Cycling Strategy 2017-2022, by encouraging people to walk and bike for both recreation and transport to and from work.

The Council’s role within the Strategy is:

- **A Service Provider**
  - ‘Provide walking and cycling infrastructure’
- **A Leader**
  - ‘Plans to meet current and future needs’

Cycling as a mode of transport is growing in the District. E bikes are becoming more mainstream and can significantly reduce travelling times, making them an attractive option for commuting longer distances. They also open cycling up to a wider range of people.

The Waimakariri District Council has committed to improving the transport options of its communities through increased walking and cycling opportunities. The objective of this project is to provide a safe and user-friendly cycleway along Main North Road as a link between Belfast and Kaiapoi.

While a preferred route has been established by Council staff based on a multi-criteria analysis, the Council is seeking community feedback on the preferred route, along the westerns side of Main North Road, and through the north of the Kaiapoi township. Sub-options for the portion of the route through Kaiapoi have been developed for consultation. These include:

1. Vickery Street onto Peraki Street
2. Vickery Street/Willock Street/Hills Street/Carew/Peraki Street

The preferred route then leads onto Raven Quay and across the Mafeking Bridge where it connects to the Passchendaele Memorial Path.

NZTA are designing and constructing the southern section of the cycleway from Wrights Road, through to and across the Tram Road intersection that will link in with the Waimakariri District Council project north of Tram Road. The cycleway is a 2.5m asphalt path.
2.0 Communications Approach

Based on the IAP2’s Public Participation Spectrum, the suitable level of public engagement for the Belfast to Kaiapoi Cycleway and Improvements is to: Consult.

<table>
<thead>
<tr>
<th>CONSULT</th>
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</thead>
<tbody>
<tr>
<td>Public Participation Goal</td>
</tr>
<tr>
<td>Promise To The Public</td>
</tr>
</tbody>
</table>

3.0 Communication Objectives

To support the delivery of the Belfast to Kaiapoi Cycleway and improvements, the communication objectives are to:

- Seek community feedback on the preferred route to connect the cycleway from the Kaiapoi Town Centre to the Mafeking Bridge and the Passchendaele Memorial Path, and Kaiapoi Town Centre to NZTA’s cycleway currently under construction as part of the Christchurch Northern Corridor.
- Raise resident awareness of the cycleway within the District as a viable commuter route into Christchurch City, and within Waimakariri District, with wide ranging benefits.
- Encouraging ‘interested but concerned’ bike riders to consider using the off-road path for cycling to commute.
- Promote the objectives of this project to provide a safe and user-friendly cycleway linking Belfast, Kaiapoi, and the wider Waimakariri District, and encourage people to use the path as a commuter link.
- Promote the cycleway as an accessible, safe and healthy way for people to bike between Christchurch, Kaiapoi, and the wider Waimakariri District.
- Ensure details of the cycle path are easy to find and accessible.
- Ensure it is easy to provide feedback, and that a variety of feedback methods are available to suit the different needs within the community.
- Ensure all business owners and property owners within the vicinity of the path are provided with information on the project and have the opportunity to give feedback.
- Make sure other relevant stakeholder groups are provided with information on the project and have the opportunity to have a say.

4.0 Risks and Mitigation

<table>
<thead>
<tr>
<th>Communication issue or risk</th>
<th>Mitigation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Backlash from members of the public or business owners who disagree on the</td>
<td>Closely monitor social media channels and use prompt replies to encourage</td>
</tr>
<tr>
<td>Proposed route, or disagree that Council should be funding the construction of a new cycleway when two have been completed recently.</td>
<td>Complainants to provide feedback with their concerns. Quickly address any concerns as they arise, and meet face to face if required. Correct misinformation if required.</td>
</tr>
<tr>
<td>---</td>
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</tr>
<tr>
<td>The public are apathetic about the cycleway proposal resulting in lack of feedback.</td>
<td>Widely promote the cycleway proposal and its benefits. Use multiple communication channels.</td>
</tr>
<tr>
<td>The Community feel that they haven’t been consulted well.</td>
<td>Use multiple mediums of communication to reach residents and businesses. Make sure it’s easy to provide feedback. Hold public drop-in sessions. Use advertising and local media. Ensure community board members and resident associations, cycling interest groups and businesses are well informed.</td>
</tr>
<tr>
<td>Key stakeholders don’t receive information, read communication material or engage with the consultation.</td>
<td>Use multiple mediums of communication to target key stakeholders. Target key user groups or stakeholders to make sure they receive written information about the cycleway.</td>
</tr>
</tbody>
</table>

5.0 Audiences and stakeholders

<table>
<thead>
<tr>
<th>Directly affected</th>
<th>• Business Owners &amp; Land Owners within the Kaiapoi Town Centre. • Hellers • EasyLawn Canterbury • Go Bus • NZTA (including the Christchurch Northern Corridor Shared Use Path design team) • LINZ • All affected residents and property owners • KiwiRail • Clemence Drilling</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal</td>
<td>• Project Control Group • Woodend -Sefton Community Board • Kaiapoi-Tuahiwi Community Board • Mayor and Councillors • Communication and Engagement Manager (Alistair Gray) • Simon Hart (Business &amp; Centres Manager)</td>
</tr>
<tr>
<td>Interest Groups</td>
<td>• Residents of the Waimakariri District • Schools in the vicinity of the cycleway • North Canterbury Cycling Club</td>
</tr>
</tbody>
</table>
- Waimakariri Access Group
- Waimakariri MP Matt Doocey
- Enterprise North Canterbury
- Visit Waimakariri and iSite Kaiapoi
- Blind Foundation/Access Group
- North Canterbury Fish and Game
- NZ Trucking Association
- WDC Facebook and Twitter users
- Local media
- Environment Canterbury
- Blind Foundation
- Christchurch City Council
6.0 Key messages

Key messages will be focussed on all residents and businesses of Kaiapoi.

Key messaging:

- The Council is seeking feedback from residents on preferred routes out of the Kaiapoi Town Centre via either Vickery and Peraki Street or Vickery and Willock Street through to the Mafeking Bridge to the north of Kaiapoi.
- The new cycle path will connect Rangiora and Kaiapoi with Christchurch.
- This is a cycle route designed to attract those considering commuting by bike.
- The Council wants to encourage people to ride bikes by providing safe cycling environments.
- The Council and the NZ Transport Agency are working together to create safe and efficient cycling connections between Christchurch and the Waimakariri District, and within the District.

7.0 Communications Approach

Communication tools will be adapted to best address the project requirements and key milestones of the development of the Belfast to Kaiapoi Cycleway and Improvements.

| Community/Stakeholder Engagement: | • Seek feedback and input on the proposed routes from local cycling advocacy groups or bike riders during consultation period. |
| | • Mail-out to every resident and landowner along the proposed route. |
| | • Mail-out to interest groups. |
| | • Drop-In sessions in Kaiapoi and Rangiora |
| | • Two public drop-in sessions, timed to best suit those who may use it as a commuter route (evenings or weekends - TBC) |
| | • Personal contact such as door knocking important stakeholders such as Hellers, Easy Lawn and Clemence Drilling. Contact with the North Canterbury Cycling Club, the Cycling Reference Group and schools near the route to keep them informed. |
| | • Ongoing communications with elected members. |

| Media/Advertising: | • Media release directly before the consultation period. |
| | • Regular newspaper adverts through consultation period. |
| | • Regular social media posts. |
| | • Information page and feedback form on Council website. |
| | • News articles on Council website. |
8.0 Tactics and Action Plan

<table>
<thead>
<tr>
<th>TACTIC</th>
<th>STAKEHOLDER</th>
<th>TIMING</th>
<th>COMPLETED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Website latest news item</td>
<td>Media, North Canterbury residents/commuters</td>
<td>Before consultation launches (TBC)</td>
<td></td>
</tr>
<tr>
<td>Website – Let’s Talk consultation page to be set up under ‘Have a Say’</td>
<td>All stakeholders</td>
<td>Live on day consultation launches. (TBC)</td>
<td></td>
</tr>
<tr>
<td>Survey Monkey online feedback form on consultation page.</td>
<td></td>
<td>One week lead time required to prepare material and carry out web updates.</td>
<td></td>
</tr>
<tr>
<td>Let’s Talk Flyer – A4 Let’s Talk Flyer and freepost feedback form</td>
<td>North Canterbury residents/commuters</td>
<td>TBC</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Available at Ruataniwha Kaiapoi Civic Centre, Rangiora Service Centre and Library.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Direct mail to key stakeholders and North Canterbury Cycle Club members and other cycling advocacy groups.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Look for local events as opportunity to promote</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public drop in sessions</td>
<td>All stakeholders, in particular Waimakariri residents/commuters</td>
<td>Dates TBC but preferably evenings to capture those who may look to commute to work.</td>
<td></td>
</tr>
</tbody>
</table>
| **Newspaper advertising** | Run of paper adverts in local newspapers including:  
  - The North Canterbury News  
  - The Northern Outlook (including the Community Noticeboard)  
  - The Kaiapoi Advocate | First week of consultation opening and final week as consultation closes. Community Noticeboard in between.  
Dates to be confirmed. |
<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Internal stakeholder updates</strong> – to executive teams, elected members and other staff</td>
<td>Internal audiences, as identified in this plan.</td>
<td>As and when appropriate.</td>
</tr>
<tr>
<td><strong>Engage with affected stakeholders</strong></td>
<td>Face to face visits with affected businesses along the cycleway route.</td>
<td>Prior to the first public notice being released, and on-going throughout project as necessary.</td>
</tr>
<tr>
<td><strong>Electronic screens</strong></td>
<td>Update with a Let’s Talk screen slide and promote during the consultation period across all digital screens.</td>
<td>On-going throughout consultation period.</td>
</tr>
<tr>
<td><strong>Social media</strong></td>
<td>Sponsored ‘Let’s Talk’ post on the Council’s Facebook page and share with the North Canterbury Cycling Club, residents associations and other interest groups.</td>
<td>First week of consultation opening and boost again towards end of consultation if required. Dates TBC.</td>
</tr>
</tbody>
</table>
1. SUMMARY

1.1 As part of the adoption of the Stockwater Race Bylaw 2019, which included only minor changes, Council recommended that staff undertake an extensive review of the bylaw over the following 2 years to address larger issues which have not been addressed to date.

1.2 This report provides an update to Utilities and Roading Committee as to the proposed scope of the Stockwater Race Bylaw review. The proposed scope includes the following sub-projects:

- Works in Private Property
- Road Reserve Race Maintenance
- Managed Aquifer Recharge
- Environmental Benefits
- Firefighting Benefit
- Ponds
- Fencing of Water Races
- Biosecurity and Contamination Risks

1.3 It is intended that the work on the identified sub-projects be completed by June 2020, in order for consultation to be undertaken in the second half of 2020 and the revised bylaw being updated by June 2021.

2. RECOMMENDATION

THAT the Utilities and Roading Committee:

(a) Receives report No. 190528075199.

(b) Notes the proposed scope of the Stockwater Race Bylaw 2019 review including the following sub-projects:

- Works in Private Property
- Road Reserve Race Maintenance
- Managed Aquifer Recharge
- Environmental Benefits
- Firefighting Benefit
- Ponds
3. **BACKGROUND**

3.1 The Stockwater Bylaw Review 2019 addressed only minor changes due to time constraints, requiring an extensive review to be undertaken over the following 2 years as requested by Council.

3.2 A staff workshop has been held that has scoped the following seven sub-projects:

- Works in Private Property
- Road Reserve Race Maintenance
- Managed Aquifer Recharge
- Environmental Benefits
- Firefighting Benefit
- Ponds
- Fencing of Water Races
- Biosecurity and Contamination Risks

3.3 There has been community interest in some of the issues proposed as sub-projects of the review, therefore consultation and investigation is required to determine what the best outcome may be for the District.

4. **ISSUES AND OPTIONS**

Sub-projects of the Stockwater Race Bylaw 2019 review are as follows;

*Works in Private Property*

4.1 A review is underway into the rights Council and its agent (Waimakariri Irrigation Limited) have in terms of access to the races on private property for the purpose of race maintenance.

4.2 Also to be addressed by the review is the legal establishment of the stockwater scheme, ownership of the channels, powers to make changes, provisions to undertake maintenance and provision to undertake inspections.

*Road Reserve Race Maintenance*

4.3 An investigation will be undertaken by Waimakariri Irrigation Limited (WIL), Drainage and Roading Staff to assess if it is considered safe for land owners to be carrying out maintenance of water races within the road reserve, on roads with high traffic counts.

4.4 There should also be a cost assessment undertaken to determine the comparison of rating impacts between; all maintenance being managed by Council, an increase on particular roads or no change.

*Managed Aquifer Recharge*

4.5 Managed aquifer recharge was an issue initially raised by the Waimakariri Water Zone Committee (WWZC) as part of the Stockwater Race Bylaw 2007 Review. Discussion was focussed on the benefits that the scheme may have on ground water. It was suggested...
that the whole District benefits from the aquifer recharge thought to be a result of water loss from the water race network.

4.6. A stocktake will be undertaken to determine the historic changes to the water race network including closures, over the last 10 years. This will establish what length of the original scheme has been closed and establish the amount of diversions and closures that should be expected over the next 10 year period. These results could be graphed in terms of race length, areas of high permeability and approximate flow distribution.

4.7. In association with research for the Stockwater Race Bylaw 2019 review, review of whether the Stockwater Race Closure Policy is adequate will be undertaken after the current process is Promapped. Process improvements will be added to the Promapp process.

4.8. In the Zone Implementation Programme Addendum (ZIPA), the Waimakariri Water Zone Committee (WWZC) make mention of Water Race Losses. It is proposed in Recommendation 4.12 that any race network changes should be subject to wider consideration by Environment Canterbury (ECan) and the Waimakariri District Council (WDC). This is because of the perceived existing benefits of race losses in diluting nitrate concentrations, and supporting groundwater levels and stream flows. This is a non-statutory recommendation, therefore Council Staff can start implementing this now, regardless of any changes to the sub-regional chapter of the Land and Water Regional Plan.

4.9. Investigation into the water leakage of the water race scheme will be undertaken. This will include a review of the 2004 OPUS report which investigated water losses from a race efficiency perspective.

Environmental Benefits

4.10. Council Staff are aware that there is a requirement for environmental benefits to be examined as part of this review, with particular interest in habitat. This current focus is on a developing educational material for race owners. However to what extent this will impact on the bylaw has not yet been determined.

Firefighting Benefit

4.11. Council staff will contact the Fire Risk Manager for the Waimakariri District seeking information related to the following questions, in order to determine the benefits of the network on firefighting.

a) Do they see the stockwater races as providing benefit in terms of water supply in the event of a house fire or a rural fire?

b) Do they want to be consulted if we are going to close off or alter a portion of the water race network?

c) Would they see holding ponds on the stockwater race system as more of a benefit than the races themselves? Differentiation between irrigation ponds and smaller stockwater ponds to be noted, though both are private assets.

Ponds

4.12. There potentially is a need to better track and control of the location and construction of domestic stockwater ponds and irrigation holding ponds.
4.13. While these ponds are considered to be private assets the review will consider whether the bylaw provisions are adequate to appropriately control the loss of water from ponds, the health and safety aspects of ponds and potential contamination risks in the vicinity of ponds.

**Fencing of Water Races**

4.14. In the Zone Implementation Programme Addendum (ZIPA), the Waimakariri Water Zone Committee (WWZC) make recommendation 1.15 that Environment Canterbury (ECan) strengthen the Land Water Regional Plan (LWRP) rules on stock exclusion to exclude intensively farmed stock from all open drains and other artificial watercourses, (including irrigation canals and water races) with surface water in them that discharge into a stream, river or lake.

4.15. The ZIPA also makes recommendation 1.16 which proposes that Environment Canterbury (ECan) strengthen the Land Water Regional Plan (LWRP) rules on stock exclusion to exclude non-intensively farmed cattle and deer on the plains from all open drains and other artificial watercourses, (including irrigation canals and water races) with surface water in them that discharge into a stream, river or lake.

4.16. Recommendations 1.15 and 1.16 to exclude stock from all water courses, including water races would require fencing to be established along the water race network. These recommendations are to ECan, if implemented WDC will give effect to these as well. No action should be taken in relation to this matter until ECan make a decision based on the recommendations.

**Biosecurity and Contamination Risks**

4.17. Consideration will be given to aspects related to biosecurity requirements and the potential water quality contamination risks associated with activities that occur in relation to water races. This will include review with Environment Canterbury of resource consent and farm environment plan requirements for farming activities. Additionally the requirements related to Mycoplasma Bovis and other biosecurity risks will be reviewed.

4.18. The Management Team have reviewed this report and support the recommendations.

5. **COMMUNITY VIEWS**

5.1. **Groups and Organisations**

5.2. There are multiple groups and organisations that will be involved in the sub-projects of the review as well as the overall bylaw review. The full extent of involvement required is not yet known but is expected to include; ECan, WWZC, Water Race Advisory Group, Community Boards, Fire and Emergency NZ (FENZ), Mahaanui Kurataiao Limited (MKT) and Waimakariri Irrigation Limited (WIL).

5.3. **Wider Community**

5.4. It is expected that there will be substantial community interest in the sub-projects proposed, under the Stockwater Race Bylaw 2019 review.

5.5. Councillors have approached Council staff to convey the concerns he has had explained to him from members of the public in relation to the operation and maintenance of the scheme.
5.6. It is proposed to undertake wider consultation as part of a Special Consultative Procedure in the second half of 2020. The following table provides an overview of the proposed timeline of works.

Table 1: Proposed timeline of Stockwater Race Bylaw 2019 review

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</tr>
</thead>
<tbody>
<tr>
<td>Scope review and related sub-projects, create timeline &amp; commence investigation</td>
<td>Complete investigation of sub-projects</td>
<td>Consult with WWZC, WRAG, Runanga</td>
<td>SCP – Public Consultation</td>
<td>Consult with WWZC, WRAG, Runanga</td>
<td>If required, hold hearing</td>
<td>Community Boards</td>
<td>Utilities &amp; Roading</td>
<td>Adopted by Council</td>
</tr>
</tbody>
</table>

6. **IMPLICATIONS AND RISKS**

6.1. **Financial Implications**

The extent of financial implications produced as a result of these sub-projects and the overall review are unknown at this time.

6.2. **Community Implications**

The extent of community implications resulting from these sub-projects and the overall 2019-2021 review are unknown at this time.

6.3. **Risk Management**

The extent of possible risks resulting from these sub-projects and the overall 2019-2021 review are unknown at this time and should be reported on when work has been undertaken in relation to each sub-project.

6.4. **Health and Safety**

If any site inspections are undertaken under the sub-projects of the 2019-2021 review, before leaving the office staff should complete a Take 5 form, and follow Council policy relating to Health & Safety.

7. **CONTEXT**

7.1. **Policy**

This matter is not a matter of significance in terms of the Council’s Significance and Engagement Policy.

7.2. **Legislation**

The current Stockwater Race Bylaw 2019 was established under the Local Government Act (LGA) 2002. It is consistent with Section 146(i), for the purpose of managing, regulating against or protecting from, damage, misuse, or loss associated with water races.

7.3. **Community Outcomes**

- There are wide ranging opportunities for people to contribute to the decision making that effects our District
There is a safe environment for all

There is a healthy and sustainable environment for all

The distinctive character of our takiwā - towns, villages and rural areas is maintained

Core utility services are provided in a timely and sustainable manner

7.4. **Delegations**

The Council has authority to direct staff as to the actions of this review, required under Council decision at the time of the Stockwater Race Bylaw 2019 review.
1. SUMMARY

1.1. This report is to request that the scope for Stage 4 of the Central Rangiora Gravity Capacity Sewer Upgrade be increased to include a portion of Stage 5.

1.2. Extension of the Stage 4 scope from Johns Road to George Street will increase the level of service ahead of the original programme, reducing the risk of overflows in the Ward Park area.

1.3. The increase in scope would make Stage 4 similar in size to Stage 3 in terms of pipe length installed so is considered to be a realistic package of work to be delivered in the 19/20 financial year.

1.4. There is sufficient budget in the 2019/20 financial year to complete the recommended increase in Stage 4 scope.

1.5. Increasing the scope of Stage 4 would allow Stage 5 to be extended in the 2020/21 financial year. This would provide further opportunity to deliver the Central Rangiora Gravity Capacity Sewer Upgrade project ahead of programme and within budget.

2. RECOMMENDATION

THAT the Utilities and Roading Committee:

(a) Receives report No. 190531077797.

(b) Approves the increase in the Stage 4 scope for the 2019/20 financial year to include the Johns Road to George Street section of pipework on King Street.

(c) Notes that there is sufficient budget of $1,095,000 in the 2019/20 financial year to complete the proposed increase in Stage 4 scope.

(d) Notes that an expression of interest will be issued for Stage 4 in June 2019 and tendered in July 2019.

(e) Circulates to the Rangiora Ashley Community Board for their information.
3. **BACKGROUND**

3.1 The Rangiora Gravity Capacity Sewer Upgrade project was approved by Council in 2015. This purpose of this project is to improve the Level of Service, reduce wastewater overflows and accommodate future growth.

3.2 The project consists of 10 stages. Stages 1 and 2 are completed. Stage 3 is due to be completed before the 30th June 2019.

3.3 Stage 4 has a budget of $1,045,000 in the 2019/20 financial year. This part of the project is to install a new sewer main in King Street along Charles Street and Johns Road (Refer Figure 3.1 below).

3.4 Stage 5 is scheduled for 20/21. This part of the project is to install a new sewer main in King Street between Johns Road and Queen Street.

![Figure 3.1: Stage 4 Current Scope – Charles Street to Johns Road](image_url)

4. **ISSUES AND OPTIONS**

4.1. A review of the scope of the Stage 4 works determined that it would not be appropriate to stop the upgrade in the middle of the King Street and Johns Road roundabout intersection. It is considered a better outcome to reduce disruption to extend this stage further north away from the intersection.
4.2. There are two options for the extending the gravity main along King Street within the existing budget. These are described below.

**Option 1 – Johns Road to 96 King Street (additional 70m)**

4.3. Option 1 (refer to the figure below) will intercept a DN150 main directly upstream of Ward Park which has a history of overflows. This will relieve the in the area of Ward Park that is constrained and has a history of overflows.

![Option 1 - 70m Extension of Stage 4](image)

**Figure 4.1: Option 1 – 70m Extension of Stage 4**

**Option 2 – Johns Road to George Street (additional 210m)**

4.4. Option 2 (refer to the figure below) extends to George Street intercepting a local DN150. Although this option does not greatly improve the LoS above that of option 1 it is the recommended option for the following reasons:

- It provides the maximum increase in LoS of the two options
- The total length of new gravity main is similar to Stage 3. This is a reasonable package of works that would attract a number of competent contractors and can be successfully completed next financial year.
- Provides an ideal starting point for Stage 5
4.5. There is sufficient budget to install a section of DN375mm sewer main from Johns Road to George Street.

4.6. This increases the overall length of the Stage 4 gravity section from approximately 314m to 525m.

4.7. The Management Team have reviewed this report and support the recommendations.

5. **COMMUNITY VIEWS**

5.1. **Groups and Organisations**

There has been no consultation with any groups or organisations. Directly affected property owners will be consulted once alignment is finalised.

5.2. **Wider Community**

There has been no consultation with the wider community.
6. IMPLICATIONS AND RISKS

6.1. Financial Implications

There is sufficient budget for the proposed increased Stage 4 scope in 2019/20. The table below summarises the estimated cost of the capital works and available budgets.

<table>
<thead>
<tr>
<th>Stage</th>
<th>Capital Works Cost</th>
<th>2019/20 Budgets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 4</td>
<td>$680,000</td>
<td>$1,045,000</td>
</tr>
<tr>
<td>Stage 5 portion</td>
<td>$415,000</td>
<td>$50,000</td>
</tr>
<tr>
<td>Total</td>
<td>$1,095,000</td>
<td>$1,095,000</td>
</tr>
</tbody>
</table>

6.2. Community Implications

Completion of the proposed Stage 4 works will improve the level of service and reduce the risk of overflows a year ahead than planned.

The increase of Stage 4 scope will result in less overall disruption to road users of Johns Road/King Street intersection.

6.3. Risk Management

There is no increase in risk through increasing the Stage 4 works. Project risks will be managed within the usual project management framework.

6.4. Health and Safety

The design of all Stage 4 works will include a safety in design review.

7. CONTEXT

7.1. Policy

This matter is not a matter of significance in terms of the Council’s Significance and Engagement Policy.

7.2. Legislation

There is no legislation applicable to this report.

7.3. Community Outcomes

- Harm to the environment from sewage and stormwater discharges is minimised.
- Council sewerage and water supply schemes, and drainage and waste collection services are provided to a high standard.
1. SUMMARY

1.1 This report provides the committee with an update regarding the test results for sea foam from December 2018.

1.2 On 3 December 2018 conditions creating sea foam were reported by beach walkers to Council. WDC staff were able to collect samples for testing at four locations; at the ocean outfall, to the north of the outfall, south of the outfall, and at the mouth of the Waimakariri River.

1.3 The results of the 3 December 2018 samples were considerably higher for both *E. coli* and *Enterococci* than found for the previous sample from 15 January 2018. However, the laboratory noted that the results should be treated with caution as the temperature of the samples upon arrival at the laboratory was higher than the required 8 degrees Celsius.

1.4 Three further rounds of sea foam sampling were anticipated to be made in the second round of sampling in the summer 2018/19. Further sea foam sampling was hoped to clarify whether lack of chilling of samples had been a factor in the high *E. coli* and *Enterococci* results obtained. However, no further sampling alerts were received from the regular beach walkers, despite reminders that sampling was still desired. The Water Unit also not able to obtain any sea foam samples when undertaking weekly water sampling for the ocean outfall compliance monitoring.

1.5 Ongoing sampling and testing is therefore proposed, in an effort to gain sufficient data to establish if the sea foam does contain sufficient bacteria to be a cause for concern, and if so what is the source of contamination.

1.6 Approval is therefore sought to increase the originally approved amount of $75,000 for this work by a further $41,000.

1.7 Notwithstanding the proposed ongoing sampling and testing, the Eastern Districts Sewage Scheme ocean outfall has met consent conditions to-date for 2018-19 with respect to water quality at point of discharge.

Attachments:

i. Sea foam update report (TRIM SEW-03-18-01/190605078752)
ii. Memo outfall sea foam testing protocol October 2018 (TRIM 181009117118)
iii. Request for budget for Ocean Outfall and Beach Testing report (TRIM 160608053630)

2. **RECOMMENDATION**

**THAT** the Utilities and Roading Committee:

(a) **Receives** report No. 190605078713.

(b) **Approves** an additional expenditure of $41,000 over and above the original $75,000, to allow ongoing sampling and testing of sea foam to be carried out.

(c) **Approves** funding coming from the beach monitoring budget of the Eastern Districts Sewer Scheme, which has $32,870 available.

(d) **Notes** that the faecal source tracking test will only be carried out if the *E.coli* and *Enterococci* counts are sufficiently high for the detection level of this test.

(e) **Notes** that it is not certain that the proposed sampling and testing programme will provide a definitive result of whether there is a source of contamination from the ocean outfall in the sea foam.

(f) **Notes** that the Eastern Districts Sewage Scheme ocean outfall continues to meet its consent conditions, with respect to water quality at point of discharge.

(g) **Circulates** a copy of this report to the Kaiapoi–Tuahiwi and Woodend-Sefton Community Boards

(h) **Circulates** a copy of this report to the Rūnanga Liaison Committee

3. **BACKGROUND**

3.1 Over the summer of 2015/16 there was a complaint from a member of the public that a build-up of foam on the beach along Pegasus Bay was caused by the ocean outfall discharge. A subsequent report to the Utilities and Roading Committee (TRIM 160608053630) sought funding to carry out an investigation into the issue. The Committee resolved to allocate $75,000 to the investigation.

3.2 A report (SEW 01-05 / 180301021693) by former Wastewater Asset Manager Chris Parton was presented to the Utilities and Roading Committee on 20 March 2018 regarding sea foam testing. The report set out the results of a sample of sea foam collected and tested on 15 January 2018. The sample was collected as part of the 5 days a week staff beach visits regime that ran from 8 January to mid-April 2018.

3.3 The 15 January 2018 sample was sent to ESR (Institute of Environmental Science and Research) for analysis.

3.4 Results of this analysis showed that there were slightly elevated levels of *Enterococci* and *E. coli* in the seawater tested and elevated levels of *Enterococci* and *E. coli* in the Waimakariri River water tested. The test results as presented in the 20 March 2018 report are shown in Table 1.

Table 1 – Test Results from Sea Foam Analysis
3.5 The March 2018 report noted that the levels of both *Enterococci* and *E. coli* in both the sea and river water were still well below action or alert levels as defined by the Ministry for the Environment, and that Council staff would continue to engage members of the public that frequent the beach to alert us to the presence of sea foam.

3.6 A report to the Utilities and Roading Committee from Sophie Allen and Rob Frizzell on 21 August 2018 regarding avian botulism annual summary 2017-18, combined with a deputation from Mr Bate resulted in a request from the Committee to renew attempts by staff to collect and test sea foam samples from the vicinity of the ocean outfall.

3.7 Following the August 2018 meeting, the sea foam testing methodology was subsequently reviewed and a memo (TRIM 181009117118) provided to the Water Unit outlining the protocols for a second programme of sampling and testing of sea foam. Samples were to be tested for *Enterococci* and *E. coli* levels, as an indicative assessment of any potential human health risk from the sea foam.

3.8 Sea foam was reported on 3 December 2018 by beach walkers to WDC staff, which was sampled and sent off to Hill Laboratories for testing. The wind was a strong (20-30km/h) ENE wind at the time of sampling.

3.9 The sampling process was not ideal as there was only a limited amount of sea foam, which caused sampling difficulties. In addition the bottles did not reach the lab chilled to below 8 degrees Celsius, the recommended temperature to prevent multiplication of bacteria, notwithstanding the frozen slicker pads in the Styrofoam sample box to chill the samples.

3.10 The results show significantly higher levels of *E. coli* and *Enterococci* than the earlier January 2018 results, as shown in the table below. The laboratory report noted that the results should be viewed with caution, due to the samples not being below 8 degrees on arrival at the laboratory.

<table>
<thead>
<tr>
<th>Sample Number</th>
<th>Sample Location</th>
<th>E. coli</th>
<th>Action Level*</th>
<th>Enterococci</th>
<th>Action Level*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1 km south of Ocean Outfall</td>
<td>13.3</td>
<td>550</td>
<td>24200</td>
<td>280</td>
</tr>
<tr>
<td>2</td>
<td>1 km north of ocean outfall</td>
<td>10.7</td>
<td>550</td>
<td>2100</td>
<td>280</td>
</tr>
<tr>
<td>3</td>
<td>Adjacent to Ocean Outfall</td>
<td>13.3</td>
<td>550</td>
<td>55</td>
<td>280</td>
</tr>
<tr>
<td>4</td>
<td>Waimakariri River mouth</td>
<td>194.3</td>
<td>550</td>
<td>213</td>
<td>280</td>
</tr>
</tbody>
</table>

*As established by Ministry for the Environment.

4. **ISSUES AND OPTIONS**

4.1. The most recent results indicate that further sampling and testing should be carried out so as to confirm if that sample was an aberration caused by high temperature in the samples or not. Samples of seawater at the collection sites should be taken at the same time. This
is because some scientific articles have suggested that sea foam can have significantly higher levels of bacteria such as *Enterococci* than the associated sand and water. Natural consolidation of bacteria within sea water into sea foam occurs by a process known as ‘bubble scavenging’.

### 4.2.
If further sampling replicates the high levels shown in the December samples, it should be possible to utilise the faecal source tracking testing offered by ESR. This may provide a clear indication of what the sources of contamination are. With previous samples the counts of *E. coli* and *Enterococci* have been too low for this technique to be used. The faecal source tracking tests, although expensive, should be able to determine if the contamination sources are from animals or humans. Note that this technology is not perfect and a definitive result may not be the result, even if *E. coli* and *Enterococci* counts in the samples are high.

### 4.3.
ESR developed the faecal source tracking techniques, and there are no alternative suppliers at this point in time.

### 4.4.
For the most recent sampling, the Waimakariri River results for *E. coli* are 4.3 times greater than the results from the beach, and 4.4 times greater for *Enterococci*. This aligns with the previous sampling results where the *E. coli* results were a minimum of 14.6 times higher than the beach samples and the *Enterococci* results a minimum of 3.4 times higher. The river is a possible source for animal effluent contamination, and therefore needs further investigation, especially when the relative flows are considered.

### 4.5.
Comparing a typical low flow from the river at 55 m$^3$ per second, with the maximum recorded flow in 17/18 from the outfall at 0.62 m$^3$ per second, and factoring in the minimum ratio of *E. coli* between the river and beach sites, shows that the river is delivering an absolute minimum of 380 times more *E. coli* into the sea than the ocean outfall (300 for *Enterococci*).

### 4.6.
The alternative option of not carrying out any further sampling is not recommended. Notwithstanding that the Council is still meeting its discharge consent conditions with respect to water quality at point of discharge, the most recent sea foam testing results are a cause for concern and warrant further testing.

### 4.7.
The Management Team have reviewed this report and support the recommendations.

## 5. COMMUNITY VIEWS

### 5.1. Groups and Organisations

#### 5.1.1.
The primary concern regarding human health risk from sea foam comes from a concerned community member. The results of the December 2018 samples and testing have been reported verbally to the community member in a meeting in January. When the issue was first raised in 2016, the Kaiapoi-Tuahiwi Community Board also showed some desire to carry out further testing.

### 5.2. Wider Community

#### 5.2.1.
There has been no concern expressed from the wider community about this issue.

## 6. IMPLICATIONS AND RISKS

### 6.1. Financial Implications

#### 6.1.1.
On the basis of the June 2016 report (TRIM 160608053630) $75,000 has been approved for investigation of this issue. To date $55,000 has been spent.
6.1.2. Based on the previous quote provided by ESR for their faecal source tracking testing, the estimated cost to run a suite of tests at the four locations previously used, for both sea water and sea foam is $36,000. This figure is based on the assumption that 3 samples of sea foam would be sampled over the summer months, while noting that the practicality of obtaining sea foam samples in the past has proved problematic. The estimate also includes an interpretive report. Note that the faecal source tracking would only be carried out if the E.coli and Enterococci results were sufficiently high.

6.1.3. In addition, if it proves necessary to reinstate the daily staff beach visits for 5 days a week in order to locate the sea foam, an additional $25,000 would be required. This amounts to a total estimate of $61,000.

6.1.4. Approval is therefore sought to spend up to an additional $41,000, above the original approved expenditure of $75,000.

6.1.5. It is proposed that the funds would come from the beach monitoring budget of $32,870. If approved it would mean this budget would be overspent.

6.2. Community Implications

6.2.1. The community implication from the recommendations is the additional cost on the ratepayer to pay for the sea foam sampling and analysis.

6.3. Risk Management

6.3.1. There are no significant risks that would result from the recommendations in this report.

6.4. Health and Safety

6.4.1. There are no new health and safety issues arising from this additional testing not already covered by existing testing procedure protocols and the ‘Safe Working in the Field’ manual.

7. CONTEXT

7.1. Policy

This matter is not a matter of significance in terms of the Council’s Significance and Engagement Policy.

7.2. Legislation

7.2.1. The legislation relevant to this decision are the ocean outfall consent conditions which are set under the Resource Management Act (1991).

7.3. Community Outcomes

7.3.1. Relevant Community outcomes are

- The Council takes account of the views across the community including mana whenua.
- Harm to the environment from the impacts of land use, use of water resources and air emissions is minimised
- Harm to the environment from the spread of contaminants into ground water and surface water is minimised
- People enjoy clean water at our beaches, rivers and lakes.

7.4. Delegations
7.4.1. The Committee has the delegation to authorise proposed over expenditure of up to 20% in any line of activity provided that the source of funding for the proposed over-expenditure is identified.
Certificate of Analysis

Client: Waimakariri District Council  
Contact: Sophie Allen  
C/- Waimakariri District Council  
Private Bag 1005  
Rangiora 7440

Lab No: 2090911  
Date Received: 04-Dec-2018  
Date Reported: 05-Dec-2018  
Quote No: 94491  
Order No: P0015017  
Client Reference:  
Submitted By: Sophie Allen

Sample Type: Saline

<table>
<thead>
<tr>
<th>Sample Name</th>
<th>Sample No</th>
<th>Method Description</th>
<th>Default Detection Limit</th>
<th>Sample No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Escherichia coli</td>
<td>North 03-Dec-2018 10:20 am</td>
<td>MPN count using Colilert 18 (Incubated at 35°C for 18 hours). Analysed at Hill Laboratories - Microbiology; 101c Waterloo Road, Hornby, Christchurch. APHA 9223 B, 22nd ed. 2012.</td>
<td>10 MPN / 100mL</td>
<td>1-4</td>
</tr>
<tr>
<td>Enterococci</td>
<td>Outfall 03-Dec-2018 10:00 am</td>
<td>MPN count using Enterolert, Incubated at 41°C for 24 hours. Analysed at Hill Laboratories - Microbiology; 101c Waterloo Road, Hornby, Christchurch. MIMM 12.4, APHA 9230D.</td>
<td>10 MPN / 100mL</td>
<td>1-4</td>
</tr>
<tr>
<td>Escherichia coli</td>
<td>South 03-Dec-2018 10:40 am</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enterococci</td>
<td>River Mouth 09-Dec-2018 11:00 am</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

MPN / 100mL

537 #1

534 #1

845 #1

3,650 #1

-

#1 Please interpret this result with caution as the sample was > 8 °C on receipt at the lab. The sample temperature is recommended by APHA to be less than 8 °C on receipt at the laboratory (but not frozen). However, it is acknowledged that samples that are transported quickly to the laboratory after sampling, may not have been cooled to this temperature.

Summary of Methods

The following table(s) give(s) a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively clean matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis. Unless otherwise indicated, analyses were performed at Hill Laboratories, 28 Duke Street, Frankton, Hamilton 3204.

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

Samples are held at the laboratory after reporting for a length of time depending on the preservation used and the stability of the analytes being tested. Once the storage period is completed the samples are discarded unless otherwise advised by the client.

This certificate of analysis must not be reproduced, except in full, without the written consent of the signatory.

Yu (Dominique) Gao BASc  
Laboratory Technician - Microbiology

This Laboratory is accredited by International Accreditation New Zealand (IANZ), which represents New Zealand in the International Laboratory Accreditation Cooperation (ILAC). Through the ILAC Mutual Recognition Arrangement (ILAC-MRA) this accreditation is internationally recognised.

The tests reported herein have been performed in accordance with the terms of accreditation, with the exception of tests marked *, which are not accredited.
Following Chris Parton work with Louise Weaver of ESR regarding the testing of sea foam in the vicinity of the WDC Ocean Outfall, and my subsequent discussion with Hill Laboratories, the following items outline the protocols for the second programme of sampling and testing of sea foam. Samples will be tested for *Enterococci* and *E. coli* levels, as an indicative assessment of human health risk of the sea foam.

**What to Sample**

Foam that is to be tested should be of a “bluish-greenish-brownish” hue. However, Michael Bate has requested that any foam (even if it is e.g. white / light-brown) should also be tested if it not foamy, but instead ‘oily’ or ‘slimy’ in appearance.

**Where to Sample**

When foam that fits the above description is found, samples should be taken at 4 different locations. Those are:
- 1 km north of where the ocean outfall enters the ocean,
- 1 km south of where the ocean outfall enters the ocean,
- At the point where the ocean outfall enters the ocean,
- At the mouth of the Waimakariri River

The attached map (Map 1) shows these locations in more detail.

**Best Time for Sampling**

There is no best time of day to find and sample sea foam. The presence of foam should not be influenced by whether or not the tide is either incoming or outgoing. If sea foam is present, then it should remain for several hours, maybe even a full tidal cycle, after initial detection.

**How to Sample**

When the appropriate sea foam is detected, the following methodology should be followed for collecting the sample:
• Sample bottles should be kept out of sunlight to avoid degradation of the sample.
• Hill Laboratories have supplied the bottles for the appropriate tests. Labelling is required after the sample is taken.
• A minimum 100ml sample of foam (and associated seawater) should be collected if and when foam is found. The sea foam should bubbled down to a liquid that can be filtered for the Enterococci and E. coli tests.

Map 1: The four sampling locations
WAIMAKARIRI DISTRICT COUNCIL

REPORT

FILE NO and TRIM NO:  SEW-03-18-01-01 / 160608053630

REPORT TO:  Utilities and Roading Committee

DATE OF MEETING:  21st June 2016

FROM:  Ric Barber, Wastewater Asset Manager

SUBJECT:  Request for budget for Ocean Outfall and Beach Testing

SIGNED BY:  (for Reports to Council or Committees)

Department Manager  Chief Executive

1. SUMMARY

1.1. The purpose of this report is to seek approval to for a new budget of $100,000 for the 2016/17 financial year for further testing of the beach and Ocean Outfall discharge.

1.2. This further testing has eventuated from concern from the community, Kaiapoi Community Board, Runanga and Councillors regarding a foam build-up on the beach near to the Ocean Outfall.

1.3. ESR have undertaken testing of this sea foam which determined that there was the presence of marine diatoms consistent with those found in naturally occurring sea foam.

1.4. Council staff provided a report of this analysis to the Utilities and Roading Committee and to the Kaiapoi Community Board with the results of the sea foam analysis and were requested to undertake further testing to confirm the presence of any faecal indicator bacteria.

1.5. Council staff and ESR developed a testing programme to determine whether there are any of the same faecal indicator bacteria present in the Ocean Outfall discharge to those is present in the sea foam.

1.6. The cost to carry out this further testing is expected to be approximately $100,000, which would mean an increase of the Eastern District Sewer Scheme rate of 1.6% which equates to a one-off increase of $8.45.

1.7. There is an option to do nothing as Environment Canterbury have closed their investigation into the sea foam in Pegasus Bay and the Ocean Outfall is operating fully within the resource consent conditions therefore there is no regulatory driver to carry out any further work.

Attachments

1 – Proposal from ESR for faecal source tracking testing work
2. **RECOMMENDATION**

**THAT** the Utilities and Roading Committee recommends:

**THAT** the Council:

(a) **Receives** report No. 160608053630

(b) **Approves** a new operational budget of $100,000 for faecal source tracking testing of the Ocean Outfall and beach samples.

(c) **Approves** the award of the testing and analysis work to ESR through a sole source proposal.

(d) **Notes** that this has an effect of a 1.6% increase on the Eastern District Sewer Rate in the 2017/18 financial year.

(e) **Circulates** a copy of this report to all Boards for their information.

(f) **Circulates** a copy of this report to the Water Zone Committee for their information.

3. **ISSUES AND OPTIONS**

3.1. The purpose of this report is to seek approval to for a new budget of $100,000 for the 2016/17 financial year for further testing of the beach and Ocean Outfall discharge.

3.2. **Background**

3.3. Over the summer of 2015/16 there was a complaint from a member of the public that a build-up of foam on the beach along Pegasus Bay was attributed to the Ocean Outfall discharge.

3.4. A foam on the tide line was present at times on the beach at various places over the summer. This is shown in Figure 1.

![Image of sea foam near The Pines Beach](image)

Figure 1: Sea Foam near The Pines Beach

3.5. At this time Council staff sought further advice from Lesley Bolton-Ritchie who is a Senior Coastal Water Quality Scientist at Environment Canterbury (ECan). Her advice was “based on samples collected at beaches in Pegasus Bay that we [ECan] have submitted to Cawthron in the past, there can be blooms of surf diatoms notably Attheya armatus. These blooms produce scummy brown foam which discolours the waves and
leaves scum lines on the beach. The surf diatom is a non-toxic species. The blooms are patchy, i.e. there can be a hundred metres or so of 'brown foam on the waves' then hundreds of metres of white foam on the waves, and then another patch of brown foam. I have seen bloom patches at South Brighton, North Beach, Waimairi Beach, out from Bottle Lake Forest, on the west coast of the south island and the west coast of the North Island.”

3.6. As part of the summer monitoring of the swimming beaches that is undertaken by Environment Canterbury the samplers look for signs of surf diatom and any other blooms including discoloured water and waves, foam lines on the beach and anything else unusual. Such observations have been carried out for a number of years.

3.7. Council staff sampled some of the sea foam to test for marine diatoms, which is what Lesley Bolton-Ritchie believed the sea foam to be based on photographs. These samples are shown in Figure 2.

Figure 2: Samples of Sea Foam taken in March 2016

3.8. ESR carried out analysis of these samples and determined that there was a presence of marine diatoms and dinoflagellates that are “naturally occurring members of aquatic systems. Diatoms and dinoflagellates are both important members of the marine phytoplankton, and play an important role in the carbon cycle by fixing atmospheric carbon, turning it into complex sugars which they release into the water column. Consequently they are often associated with the development of sea foams which results from the wind and wave driven churning of organic rich waters. The results of this preliminary study have shown the presence of these protozoa with sea foam”. If the Council wishes to investigate further, a more detailed analysis would be required to determine the relationship of the protozoa with the sea foam, and to ascertain the role, if any, the wastewater ocean outfall effluent play in creation of sea foam.

3.9. Environment Canterbury were satisfied with this analysis of the sea foam and have closed their investigation into the cause of this.

3.10. Throughout this time, the Ocean Outfall discharge has consistently met all of the resource consent conditions and operated as normal.
3.11. Council staff provided a report of this analysis to the Utilities and Roading Committee and to the Kaiapoi Community Board with the results of the sea foam analysis and were requested to undertake further testing to confirm the presence of any faecal indicator bacteria.

3.12. Council staff and ESR developed a testing programme to determine whether there are any of the same faecal indicator bacteria present in the Ocean Outfall discharge to what is present in the sea foam.

3.13. This is carried out by faecal source tracking testing which provides a “fingerprint” of the faecal indicator bacteria so different samples can be compared to determine if their origin is the same.

3.14. Further to this, the ten year review of the Ocean Outfall consent has shown that the testing carried out at Woodend Beach and at The Pines Beach shows an increase in faecal indicator bacteria over the ten years. This is converse to a decrease in levels of faecal indicator bacteria in the Ocean Outfall discharge over the same period. This would make it very unlikely that the Ocean Outfall discharge is contributing to the increase in faecal indicator bacteria at the beach sites.

3.15. Options

3.16. Option 1 – Do Nothing

Environment Canterbury have closed their investigation into the sea foam in Pegasus Bay and the Ocean Outfall is operating fully within the resource consent conditions therefore there is no regulatory driver to carry out any further work. However there is still some concern among Councillors and the Kaiapoi Community Board regarding the quality of effluent discharge from the Ocean Outfall.

3.17. Option 2 – Wait and see if there is another sea foam occurrence

As marine diatoms are photosynthetic organisms, they congregate more in the summer months, therefore the sea foam was present in the summer months, but is not on the beach at present. There is a possibility that there will not be another occurrence for a number of years. There is an option to not plan any further work until there is another sea foam occurrence at which point a further report, proposal and testing could be considered. This approach is not recommended as it does not provide the flexibility to sample the sea foam if there is another occurrence over a short time period.

3.18. Option 3 – Engage ESR to undertake the Ocean Outfall and Beach testing

Council staff and ESR scientists have determined a testing regime that will provide certainty whether the Ocean Outfall discharge is contributing to the sea foam occurrence within Pegasus Bay. This should provide Councillors and the Community Boards with sufficient information to determine whether there is any detriment to the environment being caused by the Ocean Outfall discharge and whether any further treatment to the discharge is required.

3.19. Staff believe that ESR provide fair value for their work. This specialist scientific analysis can only be carried out by a handful of laboratories in the country and the Christchurch ESR lab provides the service which includes taking the samples, analysing them and providing expert advice that would be more difficult from a remote location.
3.20. **Recommendation**

3.21. The recommended approach is option 3, to undertake the testing as per the ESR proposal. However it is noted that there is also a strong option to do nothing further as there is no regulatory requirement or specific scientific evidence showing any correlation between the Ocean Outfall discharge and the sea foam.

3.22. The Management Team has reviewed this report and supports the recommendations.

4. **COMMUNITY VIEWS**

4.1. The Kaiapoi Community Board have been consulted on this matter twice and have shown some desire to carry out further testing to categorically determine if there is any link between the sea foam and the Ocean Outfall discharge.

4.2. The Water Zone Committee, ECan and Runanga have also been consulted and are being kept updated on the progress of this work.

5. **FINANCIAL IMPLICATIONS AND RISKS**

5.1. The estimated total cost of this project is $100,000, with $72,000 for the ESR testing and reporting plus a $28,000 contingency for any further testing or analysis required.

5.2. This new operational budget would lead to an increase in the Eastern District Sewer Scheme rate of 1.6%. This increase in rates would take place in 2017/18 and equates to a one off increase of $8.45 per ratepayer.

5.3. There is a risk that this further testing indicates that there is a correlation between the sea foam and the Ocean Outfall discharge at which point this would generate further work in determining the level of increased treatment required to ensure the Ocean Outfall discharge is having no detrimental effect to the marine environment it discharges into.

6. **CONTEXT**

6.1. **Policy**
This matter is not a matter of significance in terms of the Council’s Significance Policy.

6.2. **Legislation**
This project is not covered by specific legislation.

6.3. **Community Outcomes**
This project is consistent with the following community outcome of:
- Core utility services are provided in a timely, sustainable, and affordable manner.

Ric Barber  
Wastewater Asset Manager
ATTACHMENT 1 - Proposal from ESR for faecal source tracking testing work
Sea foam proposal

Preliminary studies undertaken by ESR for Waimakariri District Council identified presence of protozoan species in the sea foam found on the beach in close proximity to the ocean outfall (Pantos & Weaver, 2015). Diatoms, dinoflagellates and ciliates were found in the samples taken but no inference to the implications of their presence was made. Diatoms and dinoflagellates are both important members of the marine phytoplankton, and play an important role in the carbon cycle by fixing atmospheric carbon, turning it into complex sugars which they release into the water column. Consequently they are often associated with the development of sea foams which results from the wind and wave driven churning of organic rich waters. The results of this preliminary study have shown the presence of these protozoa with sea foam. A more detailed analysis is required to determine the relationship of the protozoa with the sea foam, and to ascertain the role, if any, the wastewater ocean outfall effluent play in creation of sea foam.

Further study is proposed after consultation with Ric Barber to identify whether the sea foam is related to the wastewater discharge from the ocean outfall.

Aim for this research: Compare the profile of sea foam and beach sea water samples with effluent leaving the wastewater treatment works (Woodend and Kaiapoi) as it enters the ocean outfall. The profiles generated using faecal source tracking (FST) and identification of protozoa present will enable identification of the role of wastewater discharge on production of sea foam, if any.

A study is proposed to identify at each site:

A. protozoan community composition (diatoms, dinoflagellates and ciliate),
B. faecal indicator organisms (enterococci and E. coli),
C. faecal source tracking (FST) markers (sterols),
D. faecal source tracking (FST) (microbial diversity), and,
E. inorganic nutrient analysis.

Note: D. is proposed to enable comparison of the difference in the microbial composition of the wastewater compared to the sea foam, beach sand and seawater samples. If the wastewater is not impacting on the area surrounding the outfall it would be assumed that the community composition will be distinct.

Samples will be taken of:

1. Wastewater effluent before it enters the ocean outfall,
2. Foam/scum on the edge of the wastewater ponds at Kaiapoi if present,
3. Sea foam from Kaiapoi beach around the ocean outfall and other sites (e.g. New Brighton beach) around the Canterbury region,

4. Beach sand (sediment),

5. Seawater samples on the beach around the ocean outfall and,

6. Seawater samples on the beach further afield (>1 km away from the ocean outfall site).

The study is proposed to be conducted on 6 occasions in total: 3 when sea foam is present at the outfall site and 3 when it is not present (as a baseline).

From this further study, the impact of the ocean outfall on the presence of sea foam will be determined. FST markers provide a method for identifying the source of faecal contamination, being human or animal source. The similarity or difference in protozoan communities present in the wastewater and sea foam coupled with presence or absence of FST markers will enable us to determine if the sea foam is composed of material from the wastewater discharging through the ocean outfall.

**Price estimate:**

<table>
<thead>
<tr>
<th>Analysis proposed</th>
<th>Cost per sample ($, excl GST)</th>
<th>Total Number of samples</th>
<th>Total cost ($, excl GST)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Protozoa ID</td>
<td>$315</td>
<td>36</td>
<td>$11,340</td>
</tr>
<tr>
<td>B. Faecal indicator organisms</td>
<td>$35</td>
<td>36</td>
<td>$1,260</td>
</tr>
<tr>
<td>C. Faecal source tracking (sterols)</td>
<td>$450</td>
<td>36</td>
<td>$16,200</td>
</tr>
<tr>
<td>D. Faecal source tracking (microbial diversity)</td>
<td>$300</td>
<td>36</td>
<td>$10,800</td>
</tr>
<tr>
<td>E. Inorganic analysis</td>
<td>$200 (Hill Labs)</td>
<td>36</td>
<td>$7,200</td>
</tr>
</tbody>
</table>

**Sampling**

$11,520

**Reporting**

$13,200

**Total cost (excl GST)**

$71,520
1. SUMMARY

1.1. The purpose of this report is to obtain approval from the Utilities and Roading Committee to formally disestablish the Cust Rural Drainage Advisory Group. Drainage Staff will continue to manage on-going maintenance of the Cust Rural Drainage Scheme, on behalf of the schemes ratepayers in the absence of an advisory group.

1.2. The Cust Rural Drainage Advisory Group has not been meeting since March 2014. Meetings ceased because some longstanding members of the group did not wish to continue their membership, and therefore did not stand for re-election. This significantly reduced the number of active members.

1.3. Letters were sent to ratepayers on the Cust Rural Drainage Scheme in July 2018, seeking feedback as to the future of the Cust Rural Drainage Advisory Group, including how they would like the scheme to be managed. The form (shown as attachment i) asked ratepayers to either support the continuation of the Cust Rural Drainage Advisory Group, or to support Drainage Staff making recommendations on behalf of ratepayers in relation to the scheme. Of the 11 letters sent, one was returned which indicated that the customer was happy with the current arrangement.

1.4. Drainage Staff have been managing the Cust Rural Drainage Scheme since 2014, on behalf of ratepayers without input from the Cust Rural Drainage Advisory Group, and the scheme is functioning satisfactorily. No complaints regarding management of the scheme, have been received from ratepayers.

Attachments:

i. Exemplar letter sent to Cust Rural Drainage Scheme Ratepayers with attached Feedback Form and associated maps
ii. Cust Rural Drainage Advisory Group Rating Area Map
iii. Water Races and Rural Drainage Advisory Groups Policy
2. **RECOMMENDATION**

    THAT the Utilities and Roading Committee:

    (a) **Receives** report No. 190513067176.

    (b) **Approves** the dis-establishment of the Cust Rural Drainage Advisory Group.

    (c) **Notes** that Council Drainage Staff will continue to seek input and advice relating to the on-going maintenance of the Cust Rural Drainage Scheme, directly from schemes ratepayers as required rather than via an advisory group.

    (d) **Notes** that only one ratepayer of the Cust Rural Drainage Scheme responded and indicated interest in being a member of the Cust Rural Drainage Advisory Group.

    (e) **Notes** Staff will write to all ratepayers to advise them that the group no longer formally exists.

    (f) **Circulates** this report to the Oxford Ohoka Community Board for their information

3. **BACKGROUND**

3.1 The Cust Rural Drainage Scheme has the smallest number of ratepayers of any drainage scheme, within the Waimakariri District. The scheme lies west of the Cust township and north of the Cust River. Its eastern boundary runs roughly around the western edge of Summerhill and is located approximately 20 km from Rangiora on the Oxford Road. A map outlining the rating area is included in Attachment ii.

3.2 The catchment of the scheme covers 374 hectares of land across 14 properties. The length of drains maintained by Council is approximately 6.0 kilometres.

3.3 The roles and functions of water race and rural drainage advisory groups are covered by the Water Races and Rural Drainage Advisory Groups Policy (refer attachment iii).

3.1 The purpose of the Cust Rural Drainage Advisory Group is to:

    a. provide advice to Council on maintenance and development of the drainage assets within the scheme,

    b. to provide recommendations to Council on annual budgets for maintenance, development and

    c. for monitoring these works.

3.4 Elections for Advisory Group members are held every three years, however only one nomination was received in the last election cycle in 2017.

3.5 Ratepayers on the scheme were asked by letter in July 2018, to provide feedback in regard to future of the scheme and how they would like the scheme to be managed (refer attachment i). Only one response was received from the same ratepayer who responded to election nominations in 2017.

3.6 The only respondent to the survey, was happy with the way that the drainage network is currently being managed, by Council staff. He suggested drainage staff contact landowners directly if there was an issue. This is the way the scheme is being run at present.
4. **ISSUES AND OPTIONS**

4.1. There are currently seven rural drainage schemes managed by the Waimakariri District Council, five of which have active Drainage Advisory Groups. Loburn Lee and Cust do not currently have active Drainage Advisory Groups. Loburn Lee has never had an advisory group due to its small size.

4.2. The Utilities and Roading Committee could direct staff to re-engage with the schemes ratepayers by holding a meeting inviting them all to discuss the purpose of the Advisory Group and member responsibilities. This is not recommended as staff have already sought interest from the Cust Rural Drainage rate payers and the scheme has been functioning since 2014 without the group.

4.3. The Utilities and Roading Committee could approve the de-establishment of the advisory group and staff continuing to manage maintenance of the scheme.

4.4. Should there be interest or a need to re-establish the group a report would be brought back to the Utilities & Roading Committee in the future.

4.5. The Management Team have reviewed this report and support the recommendations.

5. **COMMUNITY VIEWS**

5.1. **Groups and Organisations**

5.2. Ratepayers of the Cust Rural Drainage Advisory Group had opportunity in 2017 to apply to become members of the group. Later in 2018 they were asked for feedback in relation to the scheme. Both instances where engagement with ratepayers was sought, only one ratepayer responded on both occasions.

5.3. The Oxford Rural Drainage Advisory Group were asked at their meeting held 21 June 2018, if they would consider assisting the operation of the Cust Rural Drainage Advisory Group. The options tabled to the group are as follows;

1. Status Quo (No Cust Rural DAG)
2. Reinitiate Cust Rural DAG
3. Amalgamate Cust Rural & Oxford Rural DAG Meetings but keep the schemes separate
4. Amalgamation of Cust Rural & Oxford Rural Schemes including the rates and boundaries

5.4. It was agreed by the group that unless a full review of the drainage scheme boundaries was undertaken, there would be no benefit to the Oxford Rural Drainage Advisory Group in providing assistance. This has challenges as the rating approaches are different and would require a Special Consultative Procedure (SCP). Therefore possible options were not investigated any further.

5.5. **Wider Community**

5.6. It is considered by Drainage Staff that only the ratepayers on the Cust Rural Drainage Scheme are affected by this matter.

6. **IMPLICATIONS AND RISKS**

6.1. **Financial Implications**
6.2. There are no significant financial implications resulting from discontinuation of the Cust Rural Drainage Advisory Group.

6.3. Community Implications

6.4. There are no community implications resulting from discontinuation of the Cust Rural Drainage Advisory Group. If in the future ratepayers wish to re-establish the Advisory Group, drainage staff will refer the request back to the Utilities and Roading Committee for a decision.

6.5. Risk Management

6.6. There are no additional risks expected as a result of the conclusion of the Cust Rural Drainage Advisory Group.

6.7. Health and Safety

There are no additional health and safety concerns expected as a result of the conclusion of the Cust Rural Drainage Advisory Group.

7. CONTEXT

7.1. Policy

7.2. This is not a matter of significance in terms of the Council’s Significance and Engagement Policy.

7.3. The operation of the Cust Rural Drainage Advisory Group contributes to the attainment of a Community engagement non-financial performance measure, as outlined in the Long Term Plan 2018-2028 (p.140). This performance measure requires that Council facilitate and engage with all drainage and water race advisory groups at a frequency of 3 meetings per annum. If this performance measure cannot be met, approval from Utilities & Roading should be sought to formally de-establish the group and subsequently the requirement to meet the performance measure.

7.4. Legislation

7.5. The Local Government Act 2002 is relevant to this matter.

7.6. Community Outcomes

7.7. The following Community Outcomes are relevant in this matter;

- There is a safe environment for all.
- There is a healthy and sustainable environment for all
- The distinctive character of our takiwā - towns, villages and rural areas is maintained
- Core utility services are provided in a timely and sustainable manner

7.8. Delegations

7.9. The appointment of Advisory Group members is to be confirmed by the Manager Utilities and Roading, as per 4(h) of the Water Races and Rural Drainage Advisory Groups Policy 2013.
Dear ,

Future of Cust Drainage Advisory Group

I am writing to advise you that the Waimakariri District Council wish to seek your feedback as a ratepayer of the Cust Rural Drainage Scheme.

In recent years the Waimakariri District Council have struggled to sustain members within the Cust Drainage Advisory Group as per Waimakariri District Council Water Races and Rural Drainage Advisory Groups Policy.

The purpose of the advisory group is to provide Council with local input and local knowledge in order to manage your rural drainage area. The role of the advisory group is to: a) provide advice to Council on maintenance and development of your schemes drainage assets, b) to provide recommendations to Council on annual budgets for maintenance and development and c) for monitoring these maintenance works.

In the absence of a currently active Cust Drainage Advisory Group, the Waimakariri District Council Drainage Staff have been performing these roles, in order to continue the operation and maintenance of the scheme.

Waimakariri District Council is seeking your feedback in regard to the future of the Cust Drainage Advisory Group. Using the Feedback Form attached, please provide your feedback including any comments you wish to make in relation to the scheme and the future of the group. Please return your Feedback Form to Waimakariri District Council before Monday 20th August 2018 using the prepaid envelope provided.

I have attached a copy of the Waimakariri District Council Water Races and Rural Drainage Advisory Groups Policy and drainage scheme boundary maps for your information.

Please call Libica Hurley on 0800 965 468 extension 8840, if you have any questions about this letter.

Yours faithfully,

Owen Davies
Drainage Asset Manager
Feedback Form
Cust Drainage Advisory Group (DAG)

Your Details:
First name in full:
Surname:
Property location:

Postal address (if different from above):
Phone (optional):
Email (optional):

Please indicate whether you would like the Cust Drainage Advisory Group (DAG) to remain active, or if you would like the Waimakariri District Council Drainage Staff to make recommendations on your behalf in relation to the Cust Drainage Scheme.

☐ I would like the Cust Drainage Advisory Group to make recommendations regarding the Cust Drainage Scheme
☐ I would like the Waimakariri District Council Drainage Staff to make recommendations on behalf of the schemes’ ratepayers regarding the Cust Drainage Scheme

Comments:

If you would like the Cust Drainage Advisory Group to remain active, would you like to be a member of the group?

☐ No
☐ Yes

Comments:

Signature: Date:

Thank you for your feedback
WATER RACES AND RURAL DRAINAGE ADVISORY GROUPS

1 INTRODUCTION
1.1 Stockwater races in the Waimakariri District have supplied water for stock since the system was first introduced in 1896. Since then water has been supplied to livestock on a continuing basis throughout parts of the District. The water race network has and continues to depend on landowners and water users to keep race infrastructure in a sound and serviceable condition and ensure a consistent supply of water is available.

1.2 Prior to European settlement of the Waimakariri District, large portions of the eastern areas of the district was largely swamp which the early settlers set about draining to claim productive farm land. As the district developed and expanded so too did the network of drains which required targeted rates and management by the County Councils to keep the network maintained. After amalgamation in 1989 the Waimakariri District Council set up the Drainage Advisory Groups to assist with the management of rural drainage areas and water races.

2 POLICY CONTEXT
The Council uses advisory groups for local input to, and local knowledge of, the management of its rural drainage areas and water races (the assets).

3 POLICY OBJECTIVE
The purpose of this policy is to provide for the establishment of advisory groups in respect of targeted rated services and activities.

4 POLICY STATEMENT
4.1 The role of the advisory groups is to provide:
• Input and advice to the Council on maintenance and development of the assets;
• Input, advice and recommendations to the Council on annual budgets for maintenance and development of the assets;
• Monitoring of maintenance works.

4.2 The role of the Council is to:
• Provide administrative support to Advisory Groups.
• Own, operate, maintain and manage the assets
• Employ contractors/staff
• Carry out all necessary works to maintain the asset for its life
• Prepare all necessary long term and strategic plans
• Ensure financial accountability
• Set the annual budget and rate accordingly

4.3 Appointment of members to advisory groups:
(a) The term of office of members of an advisory group shall be three years to coincide with the three year term of Council.

(b) At the initial establishment of the advisory group, and thereafter following election of the Council, invitations for membership may be given by public advertisement in newspapers circulating in the District.

(c) Members of the advisory groups are eligible for re-selection.
POLICY

WATER RACES AND RURAL DRAINAGE ADVISORY GROUPS

(d) The preferred range is 4-8 members although there is no set minimum or maximum membership number.

(e) If a greater number apply for membership, then either they will all be appointed, or a postal ballot of the consumers will be taken, or a public meeting and election may be held. The postal ballot will be based on one voting paper per individually rated connected domestic dwelling. The public meeting election will be based on one vote per adult living in the scheme boundaries who is present at the meeting.

(f) The decision on which process will be used will be at the discretion of the Chief Executive Officer.

(g) The results of the ballot or the election will be made public, and will be binding.

(h) The appointment of members is to be confirmed in writing by the Manager Utilities and Roading.

5 LINKS TO LEGISLATION, OTHER POLICIES AND COMMUNITY OUTCOMES

There is sufficient clean water to meet the needs of communities and ecosystems

• The demand for water is kept at a sustainable level
• Harm to the environment from the spread of contaminants into ground and surface water is minimised.

Core Utility services are provided in a timely, sustainable and affordable manner

• Water supplies to communities are of a high quality

6 ADOPTED BY AND DATE

Adopted by Council on 2 April 2013.

7 REVIEW

Review every six years or sooner on request.
APPENDIX ‘A'.

PLANS

Figure 5: A1 - Plan of Serviced Area as of November 2017
WATER RACES AND RURAL DRAINAGE ADVISORY GROUPS

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WATER RACES AND RURAL DRAINAGE ADVISORY GROUPS

(d) The preferred range is 4-8 members although there is no set minimum or maximum membership number.

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- Water supplies to communities are of a high quality

6 ADOPTED BY AND DATE

Adopted by Council on 2 April 2013.

7 REVIEW

Review every six years or sooner on request.
WAIMAKARIRI DISTRICT COUNCIL

REPORT FOR DECISION

FILE NO and TRIM NO: WAT-08-01 / 190527075121

REPORT TO: Utilities and Roading

DATE OF MEETING: 18 June 2019

FROM: Sophie Allen – Water Environment Advisor

SUBJECT: Risk assessment of arsenic in groundwater for the wider Kaiapoi area

1. SUMMARY

1.1 This report recommends the scope for Council to undertake a risk assessment of arsenic in groundwater, for private wells in the wider Kaiapoi area.

1.2 Arsenic has been found above the Maximum Accepted Value (MAV) as defined in the Drinking-water Standards for New Zealand (DWSNZ 2005, amended 2018) in a small number of private wells in the north-west Kaiapoi area. This has led to the issuing of a Notice under Section 69ZZP of the Health (Drinking Water Amendment) Act 2007, to warn users of a contaminated drinking water supply, directed to Waimakariri District Council (WDC) and Environment Canterbury by the Canterbury Medical Officer of Health.

1.3 The Section 69ZZP notice specifies that Waimakariri District Council must ‘ensure that an assessment is made as to whether the drinking water that is not potable has been or is being supplied to any self-supplying buildings in the area bounded by; the coast in the east, Flaxton in the west, the Cust/Waimakariri River to the south, and Woodend in the north.’

1.4 The Section 69ZZP notice states that ‘where self-supplied buildings are found to have water supplies which are contaminated, the district council must:

(b) take all practicable steps—

(i) to warn users of that supply—

(A) that drinking water must not be used for domestic use and food preparation;

(ii) to exercise any other power or take any action to remedy the situation. Such action may include offering a range of treatment options.’

1.5 Environment Canterbury staff have confirmed in a note to their Councillors on 2 May 2019 that they are able to provide technical data and support to WDC under existing budgets.

1.6 Community and Public Health has a role to provide any interpretation of the Section 69ZZP notice and to receive the final assessment. The assessment under Section 69ZZP is required to be completed by 1 March 2020.
1.7 It is recommended by WDC staff that the assessment under Section 69ZZP is a ‘risk assessment’; that defines an area(s) where any elevated risk of high arsenic in groundwater exists, through arsenic test results of approximately 50 representative private wells and interpretation of existing geochemical data, such as for reduced (low oxygen) groundwater zones and/or high levels of iron and manganese that can correlate with arsenic. The risk assessment will also recommend how to minimise any risk to private well owners.

1.8 This report recommends that a budget of $37,000 is allocated from the general rate under the Environmental Health Account for the risk assessment to be undertaken.

1.9 A media release summarising information to-date and with advice for private well owners was released by the WDC Communications Team in early May 2019.

1.10 Council staff have examined staff resourcing and recommend engaging an external consultancy to undertake the risk assessment, with water sampling carried out by the Water Unit.

Attachments:


ii. Arsenic in Private Well Highlights Importance of testing- Media Release (TRIM 190530077281).

2. RECOMMENDATION

THAT the Utilities and Roading Committee recommends:

THAT the Council:

(a) Receives report No. 190527075121.

(b) Notes the scope of the risk assessment, which aims to define an area(s) where any elevated risk of arsenic in groundwater exists, which includes testing for arsenic in 50 private wells and geochemical data interpretation for the wider Kaiapoi area.

(c) Approves an additional budget of $37,000 from the general rate to be allocated under the Environmental Health account, against the Environmental Surveys GL (10.571.829.2465), for a risk assessment of arsenic in groundwater for the wider Kaiapoi area.

(d) Notes that approximately $12,000 of the allocated budget will be for Water Unit sampling and laboratory analysis of 30 private wells. Approximately $15-20k of the allocated budget is for a consultant to undertake data analysis, existing geochemical data review, report writing and recommendations. The remaining $5,000 is for project contingency.

(e) Notes that specific communication will be undertaken by WDC staff with individual landowners and general communication with the wider community following obtaining test results and the risk assessment.

(f) Notes that a sole source supplier will be approached for the data analysis role, due to the limited market of suppliers for the service, and existing knowledge about arsenic within groundwater in the District.

3. BACKGROUND

3.1 A level of arsenic in a private well on Lower Camside Road that is over the Maximum Acceptable Value (MAV) of 0.01 mg/L (as per the Drinking-water Standards for New Zealand 2005, amended 2018) was reported to WDC in early 2019.
3.2 Subsequent testing of five neighbouring private wells on Lower Camside Road by WDC confirmed one additional well that is over the MAV for arsenic. Environment Canterbury monitoring bores have shown two wells in the wider Kaiapoi area, in 1970 and 2007, that measured over the MAV for arsenic, however arsenic has not been routinely tested for.

3.3 Property owners with the wells over the MAV for arsenic have been advised by WDC to install treatment or use bottled water, as well as an option to connect to a community supply well where practicable. The Water Operations Team Leader is progressing a quote to connect one or two of the properties on Lower Camside Road to the Kaiapoi town supply.

3.4 Arsenic contamination in the coastal area of the District has previously been reported. In 2001, a study of arsenic in private wells and surface water by consultants Pattle Delamore Partners Ltd. (PDP) was commissioned by WDC, Environment Canterbury and Crown Public Health for the area of Saltwater Creek - Waikuku - Woodend. The wider Kaiapoi area was not included in this study due to limited samples at the time (one sample) that were over the MAV for arsenic. The conclusion from the report was that the arsenic is likely to be naturally occurring in sediment deposits, rather than from an industrial source.

3.5 The WDC Communications Team issued a media release early May 2019 with information regarding:

- The extent of knowledge regarding the arsenic in private wells in the wider Kaiapoi area to-date, and that it is thought as this stage to be naturally occurring, rather than from an industrial source.
- That public supplies do not have levels of arsenic over the MAV.
- A reminder to private well owners that water quality testing is their responsibility, with a recommendation from WDC for regular testing.

3.6 Arsenic levels can change over time, i.e. between years. This can be due to changes in the oxygen levels in the groundwater. The groundwater around the west of Kaiapoi can change between oxygenated and reduced (low oxygen) levels. When there are reduced oxygen levels, arsenic attached to sediment can be released into groundwater in higher amounts. Therefore it is recommended for private well owners to test water supplies regularly, particularly where there is reduced oxygen levels in groundwater or ‘mixed’ groundwater (sometimes reduced, sometimes oxygenated).

4. ISSUES AND OPTIONS

Risk Assessment

4.1 The risk assessment will be carried out as per a proposal that will be agreed to by WDC and the consultant. The proposal will outline study objectives, scope, exclusions, deliverables, and timeframe, as laid out in this report, with some potential changes following discussion and agreement with the consultant.

Study Objectives

4.2 The objectives of the risk assessment are:

4.2.1 To establish if there are any sub-areas / cross-sections that can be identified as higher risk for arsenic, where private well users should be warned. ‘Higher risk’ would be defined together with the consultant, but potentially could be set at an arsenic level of 0.005 mg/L (½ MAV).
4.2.2. To assess what is the likely source of the arsenic (natural or anthropogenic), based on what is known of the natural geology and chemistry of the area, and other potential arsenic sources in the area.

4.2.3. To hypothesise if there is any correlation with a geochemical factor, such as low oxygen levels in the groundwater, or geological formation of a particular aquifer, which can be used as a proxy indicator for possible elevated arsenic levels.

4.2.4. To hypothesise what is the variation of arsenic levels over time, through a desktop literature search, in order to recommend how often selected private well owners should re-test the level of arsenic.

4.3. Due to the full chemical suite of parameters that are proposed to be sampled, there is a potential opportunity for water quality results to be further analysed at a later date, outside of the scope of this assessment. An example would be valuable information on the prevalence of E. coli in private wells in the wider Kaiapoi area, indicating whether there is potential faecal contamination.

Scope

4.4. The selection of the 30 wells will follow advice from Environment Canterbury groundwater scientists and/or the consultant. Targeted wells to be sampled will be:

4.4.1. Private wells (i.e. excluding WDC and private community water supplies that are already required to test for arsenic and other determinands under the Drinking-water Standards for New Zealand).

4.4.2. Currently, or potentially, used for domestic consumption within the area on Map 1.

4.4.3. Sampled from the well head, or as close to it as possible (i.e. not from a kitchen tap). This is because arsenic could precipitate out when in contact with oxygen.

4.4.4. Sampled for the full chemical suite as defined on the WDC website. In addition to the full chemical suite, additional determinands of; Dissolved Organic Carbon (Non-Purgeable Organic Carbon), Turbidity, Total Suspended Solids, and Ammoniacal-N will be added, as recommended by the 2001 study of Arsenic in Saltwater Creek - Waikuku - Woodend by Pattle Delamore Partners Ltd.
4.5. The geochemical data review will interpret existing analyses, for example a predictive redox status analysis for the Canterbury Region by Murray Close et al. (2016) from the Institute for Environmental Science and Research (ESR).

4.6. The final report will integrate the discussion and recommendations from the 2001 report by PDP for arsenic in the Saltwater Creek- Waikuku-Woodend area, to give an overview of arsenic in groundwater for the coastal area of the Waimakariri District.

Exclusions

4.7. Exclusions from the risk assessment are:

4.7.1. Well water used for stock and other agricultural uses such as crops and bee-keeping.

4.7.2. Surface water samples and non-water samples e.g. watercress or sediment.

4.7.3. The programme to contact and warn private well owners of any arsenic found that is over ½ MAV (0.005 mg/L), as this will be carried out by WDC staff.

4.7.4. Sampling of Council community water supplies, as these are already regularly tested.

Deliverables

4.8. The consultant would provide as contract deliverables:

4.8.1. A proposal of the risk assessment that is approved by WDC staff.

4.8.2. Advice on the selection criteria for the wells to be sampled.
4.8.3. A summary of well sampling data with interpretation in a report format.

4.8.4. An assessment of risk in the defined area (see Map 1) presented in a form that can be used to inform and warn private well owners.

4.8.5. Reference and comparison to the discussion and recommendations from the 2001 report by PDP for arsenic in the Saltwater Creek-Waikuku-Woodend area.

4.8.6. Maps or criteria of any higher risk sub-areas / cross sections for arsenic, and references to geochemical data used as the basis for recommendations.

4.8.7. A presentation of final report findings and recommendations to Council.

4.8.8. Final recommendations on how risk could be mitigated for private well owners.

Timeframe

4.9. The proposed timeframe for the risk assessment is:

<table>
<thead>
<tr>
<th>Date</th>
<th>Task</th>
</tr>
</thead>
<tbody>
<tr>
<td>By July 2019</td>
<td>Scope and budget confirmed by Council with this report.</td>
</tr>
<tr>
<td>By August 2019</td>
<td>Approach to sole source supplier and agreement of risk assessment proposal by WDC.</td>
</tr>
<tr>
<td>By September 2019</td>
<td>Ground-truthing of Environment Canterbury well data by WDC and Environment Canterbury.</td>
</tr>
<tr>
<td>September-November 2019</td>
<td>Private well owners contacted by WDC. Sampling carried out by the Water Unit.</td>
</tr>
<tr>
<td>September-November 2019</td>
<td>Existing geochemical data review and interpretation by contracted consultant.</td>
</tr>
<tr>
<td>September 2019 onwards</td>
<td>Potential programme by WDC staff commences to warn private well users, based on private well testing results.</td>
</tr>
<tr>
<td>November-December 2019</td>
<td>Data analysis by contracted consultant.</td>
</tr>
<tr>
<td>By December 2019</td>
<td>Draft report to WDC staff for review.</td>
</tr>
<tr>
<td>By January 2020</td>
<td>Final report accepted by WDC staff.</td>
</tr>
<tr>
<td>4 February 2020</td>
<td>Final report with recommendations presented to Council by WDC staff and consultant at Council meeting.</td>
</tr>
<tr>
<td>By 1 March 2020</td>
<td>Risk assessment is presented to the Canterbury Medical Officer of Health.</td>
</tr>
</tbody>
</table>

Data quality and data management

4.10. Environment Canterbury groundwater scientists will provide advice and technical support to refine which wells are suitable for sampling within the area.

4.11. Some ground-truthing of Environment Canterbury well data will be required by WDC staff, for example by looking at the location of habitable dwellings that are not connected to a reticulated water supply. Environment Canterbury well data may not identify all wells that would be suitable for sampling in cases such as:

4.11.1. Wells dating from pre-1990’s, with no consent expiry or review carried out since this date

4.11.2. Wells are used for domestic use, though not consented for this use.

4.11.3. A reticulated water supply connection exists, therefore an available well is assumed to not be used for domestic consumption.
4.11.4. Wells not recorded in Environment Canterbury well data, for example if no consent to drill a well has been issued.

4.12. It is recommended that a selective representation of wells are sampled (i.e. 30 wells) as there are approximately 280 active wells in the area according to Environment Canterbury data. The area is recommended to be split into five sub-areas to ensure representation and diversity. A ‘shout-out’ for wells via Council communication channels could provide a basis of wells to start from.

4.13. The sampling of 30 additional wells would bring the total for data analysis to 36 well samples with full/extended chemical test results. This is because 6 private well sampling results have been obtained in preliminary testing from North-West of Kaiapoi.

4.14. The 30 wells are recommended to be selected, in discussion with the consultant, on criteria such as;

4.14.1. close proximity to a well with an identified elevated arsenic level;
4.14.2. evidence of reduced oxygen groundwater conditions and/or high levels of other metals, such as iron and manganese;
4.14.3. representativeness within a sub-area;
4.14.4. depth;
4.14.5. willingness of the landowner to provide a sample;
4.14.6. request from landowner to be sampled; and/or
4.14.7. complaints of illness possibly caused by chronic exposure to arsenic.

4.15. The Management Team have reviewed this report and support the recommendations.

5. COMMUNITY VIEWS

5.1. Groups and Organisations

5.1.1. Lower Camside Road residents with elevated arsenic levels have expressed a desire for wider testing to be carried out, and for private well owners to be warned of the possible elevated high arsenic.

5.2. Wider Community

5.2.1. The wider community has not been consulted on the scope of a risk assessment for arsenic in the wider Kaiapoi area. The wider Kaiapoi community was advised to test water supplies, particularly for arsenic, in a media release from WDC in early May.

6. IMPLICATIONS AND RISKS

6.1. Financial Implications

6.1.1. A total cost of $37k is anticipated for the risk assessment, in addition to WDC staff time (see Table 1).

<table>
<thead>
<tr>
<th>Task</th>
<th>Cost (approximate)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sampling by the Water Unit and water sample analysis – 30 wells over 5 sub-areas</td>
<td>$12,000</td>
</tr>
</tbody>
</table>
Report to analyse results including geochemical data review of the seasonality of arsenic trends and geochemical factors for high arsenic levels $15-20,000
Project contingency $5,000
Total $37,000

6.1.2. Note that the WDC staff time that would be required to warn any private well owners with elevated arsenic levels, and possibly offering advice on treatment options is currently un-scoped at this stage, due to unknown size of this task. Connection to a Council community water supply could be a potential option that is offered to property owners.

6.1.3. Any proposal for a significant extension of a Council community water supply scheme, due to results of the risk assessment, would be brought to Council for consideration as part of the Long Term Plan process.

6.2. Community Implications

6.2.1. A comprehensive and coordinated risk assessment of arsenic in private wells for the wider Kaiapoi area will give the best outcomes for the community. This is because currently water quality testing by private well owners is discretionary, and results are not required to be shared with Council unless as a condition for a subdivision or building consent. Due to this situation, an overview of the level of risk and how to mitigate it, is not able to be carried out.

6.3. Risk Management

6.3.1. Risk to private well owners in the wider Kaiapoi area of exposure to arsenic levels over the MAV will likely be reduced as a result of this assessment and subsequent communication of recommendations.

6.3.2. The programme to warn private well users of any elevated arsenic level will commence as soon as water test results are confirmed. However, this is before the risk assessment report will be finalised. This is because a water test result is sufficient to alert private well owners, and there is a potential risk to human health in delaying communication of results.

6.4. Health and Safety

6.4.1. There are some health and safety considerations of water sampling staff while out in the field, which will be minimised by complying with the ‘Safe Working in the Field’ manual if staff from the Water Unit.

7. CONTEXT

7.1. Policy

7.1.1. This matter is not a matter of significance in terms of the Council’s Significance and Engagement Policy.

7.2. Legislation

7.2.1. Health (Drinking Water Amendment) Act 2007 (Section 69ZZP)

7.3. Community Outcomes

7.3.1. There is a healthy and sustainable environment for all
7.3.1.1. Cultural values relating to water are acknowledged and respected.

7.3.1.2. Harm to the environment from the spread of contaminants into ground water and surface water is minimised.

7.4. **Delegations**

7.4.1. The Council has the authority to approve allocation of new budget.
Dr. Alistair R.G. Humphrey  
Medical Officer of Health (Canterbury)¹

Notice to warn users of a contaminated drinking water supply

Section 69ZZP, Health Act

To:  
Mr. Jim Palmer, CEO  
Waimakariri District Council  
215 High Street,  
Rangiora  
Canterbury 7400

Mr Bill Bayfield CEO  
Environment Canterbury  
200 Tuam St  
Christchurch Central 8011

1. The reasons for this order are:
Heavy metal contaminants (arsenic) have been identified in two monitoring bores on SH71 (0.013g/m³ and 0.0112g/m³) close to SH71 (appendix 2a and 2b). This indicates that an aquifer is contaminated with arsenic from which drinking water is drawn that supplies self-supplied households in the area. Two private bores which draw from the same aquifer and are used for drinking water at 57 Lower Camside Road and 139 Lower Camside Road have also been found to be contaminated with arsenic (0.017gm³ and 0.03gm³ respectively - see appendix 2c and 2d).

2. The action required to be taken is:
Waimakariri District Council must:
(a) ensure that an assessment is made as to whether drinking water that is not potable has been or is being supplied to any self-supplied buildings in the area bounded by the coast in the east, Flaxton in the west, the Cust/Waimakariri River in the south; and Woodend in the north.

Where self-supplied buildings are found to have water supplies which are contaminated, the district council must:

(b) take all practicable steps—
   (i) to warn users of that supply—
      (A) that drinking water must not be used for domestic use and food preparation;
      (ii) to exercise any other power or take any action to remedy the situation. Such action may include offering a range of treatment options.

3. The assessment must be completed by 1st March 2020.

4. The name and address of the Medical Officer of Health who issued this notice is:

Dr. Alistair Humphrey MPH MHL FAFPHM FRACGP  
Medical Officer of Health (Canterbury)  
Community & Public Health  
310 Manchester Street  
Christchurch  
Canterbury 8013

Identification provided as Appendix 1 in accordance with s69ZU Health Act 1956

¹ Community & Public Health Division, Canterbury District Health Board  
PO Box 1475, Christchurch 8140  
Telephone 03 364 1777

30th April 2019
Health Act 1956

69ZU Drinking-water assessors and designated officers must produce identification

1) The Director-General must provide an identity card or other means of identification to each drinking-water assessor and each designated officer.

2) Whenever a drinking-water assessor or designated officer exercises any power under this Part, that drinking-water assessor or designated officer must, on request, produce the identity card or other means of identification for inspection.
## Appendix 2a

### Analytical Report

**Eurofins ELS Limited**

**Domestic Water Supply**

**Sample Site:**

**Map Ref.:**

**Date Sampled:** 14/12/2010 16:53

**Date Received:** 15/12/2010 11:06

**Order No.:** 0

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<th>Result</th>
<th>Units</th>
<th>Comments</th>
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<td>pH</td>
<td>7.3</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>0002</td>
<td>Alkalinity - Total</td>
<td>132</td>
<td>mg/l</td>
<td>Not a NZDWC test</td>
<td>Maryville Canal XTP</td>
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<tr>
<td>0084</td>
<td>Turbidity</td>
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<td>NTU</td>
<td>Below GV of 2.5</td>
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<td>0081</td>
<td>Fluoride</td>
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<td>g/m³</td>
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<td>0062</td>
<td>Chloride</td>
<td>33.5</td>
<td>g/m³</td>
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<td></td>
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<tr>
<td>0003</td>
<td>Nitrate - Nitrogen</td>
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<td>g/m³</td>
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<tr>
<td>0030</td>
<td>Sulphate</td>
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<td>g/m³</td>
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<td>1603</td>
<td>Asmon - Acid Soluble</td>
<td>0.017</td>
<td>g/m³</td>
<td>Falls MAV Limit of 0.14</td>
<td>Richard Duan XTP</td>
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<td>1606</td>
<td>Bromo - Acid Soluble</td>
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<td>1610</td>
<td>Calcium - Acid Soluble</td>
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<td>g/m³</td>
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<tr>
<td>1610</td>
<td>Copper - Acid Soluble</td>
<td>0.019</td>
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<td>1619</td>
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<td>Sodium - Acid Soluble</td>
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<td>g/m³</td>
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<tr>
<td>1641</td>
<td>Zinc - Acid Soluble</td>
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<tr>
<td>1642</td>
<td>Total Hardness</td>
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<td>g CaCO3</td>
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<tr>
<td>1643</td>
<td>Silica</td>
<td>20.3</td>
<td>g/m³</td>
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</table>

**Comments:**

- Sampled by customer using ELS approved containers.
- Report re-issued with amended testing and/or test method.
- This report cancels and replaces report 10561412. Please dispose of all previous versions.

### Comments on Individual Test Results

**pH**

pH measures how acidic or basic the water sample is. Waters with low pH can be corrosive and those with a high pH can promote scale formation in pipes and hot water cylinders. The guideline value for pH in the NZ Drinking Water Standards is 5.5 to 8.5 so the pH of this sample complies with this value.

**Alkalinity - Total**

Alkalinity is a measure of a water's ability to neutralise acid and is not listed in the NZ Drinking Water Standards. It is included here as a general water quality parameter and can be used as part of the Saturation Index calculation.

**Conductivity at 25°C**

Conductivity is not listed in the NZ Drinking Water Standards and is an indicator of how many ions are dissolved in the water such as chlorides, sulphates and iron. The result is used to calculate the Total Dissolved Solids content of a sample.

**Total Dissolved Solids**

Total Dissolved Solids is calculated from the conductivity result and has a Guideline Value in the NZ Drinking Water Standards of 1,000 g/m³. The result for this sample is 220 g/m³ which is within the guideline value.

---

**IANZ Accredited Laboratory**

Wairau
66 Port Road, 7324
Ph: (04) 974-6909
Fax: (04) 974-6908

**Contact:**

- Email: inhouse@ianz.co.nz
- Website: www.ianz.co.nz

---

**Report Number:** 10561412-1

**Issue:** 3

27 December 2010

---

Community & Public Health Division, Canterbury District Health Board
PO Box 1475, Christchurch 8140
Telephone 03 364 1777
## Certificate of Analysis

### Sample Type: Aquous

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<thead>
<tr>
<th>Test</th>
<th>Method Description</th>
<th>Default Detection Limit</th>
<th>Sample No</th>
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<tbody>
<tr>
<td><strong>Routine Water Profile</strong></td>
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</tr>
<tr>
<td><strong>Routine Water profile with Assessment</strong></td>
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<tr>
<td><strong>Total Dissolved Solids</strong></td>
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<tr>
<td><strong>Total Suspended Solids</strong></td>
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<td></td>
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<tr>
<td><strong>Total Arsenic</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Ammonium-N</strong></td>
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<td></td>
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<td><strong>Non-Purgeable Organic Carbon (NPOC)</strong></td>
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<td><strong>Routine Water Profile</strong></td>
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<td><strong>Total Alkalinity</strong></td>
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<td><strong>Free Carbon Dioxide</strong></td>
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<td><strong>Total Hardness</strong></td>
<td>g/L as CaCO₃</td>
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<td><strong>Electrical Conductivity (EC)</strong></td>
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<td><strong>Electrical Conductivity (EC)</strong></td>
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<td><strong>Alkalinity Total Dissolved Solids</strong></td>
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<tr>
<td><strong>Total Calcium</strong></td>
<td>g/L</td>
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<td>&gt; 0.052</td>
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<tr>
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<td><strong>Total Iron</strong></td>
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<tr>
<td><strong>Total Magnesium</strong></td>
<td>g/L</td>
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<td>&gt; 0.015</td>
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<td><strong>Total Nitrate</strong></td>
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<td><strong>Nitrite-N</strong></td>
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<td><strong>Chloride</strong></td>
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### Summary of Methods

The following table gives a brief description of the methods used to conduct the analysis for this job. The detection limits given below are those standards in reasonably clean matrix. Detection limits may be higher for individual samples due to insufficient sample availability, or if the matrix requires that blanks or blanks be performed during analysis. Unless otherwise indicated, analyses were performed at Hill Laboratories, 2 Duke Street, Preston, Hamilton 3204.

This laboratory is accredited by International Accreditation New Zealand (IANZ), which represents New Zealand in the International Laboratory Accreditation Cooperation (ILAC). Through the ILAC Mutual Recognition Arrangement (ILAC-ARR), this accreditation is internationally recognised.
# Appendix 2c

## M35/0724 - KAIAPOI FIRE WELL

<table>
<thead>
<tr>
<th>Parameter Name</th>
<th>Result</th>
<th>Units</th>
<th>Lab</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alkalinity to pH 4.5 as HCO₃</td>
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<td>mg/L as HCO₃</td>
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<tr>
<td>Ammoniacal Nitrogen</td>
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<td>Arsenic, Dissolved</td>
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<td>mg/L</td>
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<tr>
<td>Chloride</td>
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<td>Conductivity</td>
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<td>mS/m</td>
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<td>Conductivity (Field)</td>
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<tr>
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https://ecm.govt.nz/data/water-quality-data/print SAMPLE/TTM1LzA3MjQ=

29/04/2019
### M35/5111 -

Results for Sample ID 165399405 taken 01-Jan 1970 12:00pm

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<td>Sum of cations</td>
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<td>Water Temperature</td>
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Appendix 3

Maximum arsenic concentrations recorded in groundwater (1995 to 2016)²

Arsenic in Private Well Highlights Importance of Testing

Council is reminding owners of private wells to have their water regularly tested, following a few recent private well tests showing elevated arsenic levels in the north-west of Kaiapoi. The arsenic is thought to be naturally occurring, though further investigation is intended to be carried out by the Council.

Utilities and Roading Manager Gerard Cleary advises “there is no need to be concerned if supplied by a Council reticulated water scheme. The Council supplies have regular testing, with no water supply affected by elevated arsenic levels.”

A Kaiapoi landowner brought arsenic in groundwater to the attention of the Waimakariri District Council, after obtaining a water test for their private well supply. The discovery highlights the importance of private well owners to know that they are responsible to undertake their own water monitoring.

The test showed a level of arsenic above the Maximum Acceptable Value (MAV) of 0.01 milligrams per litre (mg/l), as set out in the Drinking-water Standards for New Zealand (DWSNZ).

“Consumption of arsenic over 0.01 mg/L can cause adverse health effects over the long term so it’s important to test regularly – at least annually - to check that water is safe to drink. Arsenic levels can change seasonally. The test for arsenic is particularly important in the coastal areas of our district where groundwater oxygen levels get low” says Council’s Water Environment Advisor Sophie Allen. “Arsenic is just one contaminant that well owners should look for, with testing also recommended for other potential contaminants such as nitrates and E. coli (bacterial contamination).”

Following the notification, Council has carried out testing on five private wells to the north-west Kaiapoi to assess the extent of higher arsenic levels in neighbouring properties, with another property found to be above the MAV. Over the next 10 months the Council, with the support of Environment Canterbury, intends to undertake further work to determine the extent of the issue in the wider Kaiapoi area below Woodend.

High levels of arsenic have been known to be found in some selected private wells in the Waikuku, Saltwater Creek and Woodend area since early 2000’s. “The arsenic in this northern coastal part of the Waimakariri District was concluded in a 2001 study to be from natural sources found in certain sediments, which is released into groundwater when oxygen levels are low.” says Sophie.

Gerard Cleary recommends that people on private wells regularly test their water to ensure it is safe. “This incidence is an important reminder for private well owners to have their water checked by an accredited laboratory ensuring water is safe to drink.”

Standard filters are not adequate for the removal of arsenic, and advice should be sought from a water treatment specialist on the appropriate filtration system for removal.

Any private well owners who have found arsenic levels over 0.01 mg/L in the wider Kaiapoi Area are encouraged to notify Sophie Allen - Water Environment Advisor, Waimakariri District Council.
Find out more:


ECan pamphlet– Do you get your household water from a private well?

Ends
1. SUMMARY

1.1 This report summarises the response by Council and Waimakariri Irrigation Ltd, and next steps to a dairy effluent spill on 16 May 2019 to the east of Oxford. A malfunction of a centre pivot irrigator led to discharge of dairy effluent at one site continuously for a number of hours. This resulted pooling of effluent and run-off, entering the Council’s combined irrigation and stockwater race section ‘R8’.

1.2 The response from Waimakariri Irrigation Ltd (WIL) was to divert water contaminated with effluent away from a connection to Hunters Stream to a dead-end race with a holding pond, and soak pit for containment. Discharge also occurred to a soak pit for stockwater race section R8-1A. The discharge to the soak pit was thought to have possibly led to contamination of groundwater. Subsequently the holding pond was found to not be lined, which is therefore also suspected of leakage to groundwater.

1.3 WIL has taken a lead in the management of the response to the effluent spill event, for example with coordination of a surface water and groundwater sampling programme and communication with neighbouring landowners.

1.4 Environment Canterbury Incidence Response staff were notified on the day of the spill, with compliance sampling undertaken within the stockwater race network. A report on the incident from Environment Canterbury will be provided to Council when it has been released.

1.5 Community and Public Health (CPH) were notified of the effluent discharge on the day of the spill, and have been in discussion with WDC regarding advice for public safety.

1.6 A boil water advisory was issued by the Council to private well owners near the holding pond and soak pit in Horrellville on 17 May 2019, due to concerns that effluent could affect groundwater water quality. A subsequent boil water advisory was sent to selected private well owners in Carleton near the head of the effluent spill on 20 May 2019.

1.7 Waimakariri Irrigation Ltd has contracted Pattle Delamore Partners Ltd (PDP) to carry out water sampling of selected private wells in the Horrellville and Carleton areas. This sampling will continue until a decision to lift the boil water advisory has been made. The boil water advisory for affected residents will be lifted when WDC and CPH are satisfied with the levels of E.coli and length of time since the effluent spill.
1.8 Water testing results have showed no elevated levels of *E. coli*, an indicator of faecal bacterial contamination, at any property, i.e. above 2 *E. coli* per 100ml, except for one private well that was located within 100m of the holding pond to which effluent was diverted. The property that uses this well has subsequently been fitted with a UV water treatment unit. The Drinking-water Standards for New Zealand set a limit of less than 1 MPN (Most Probable Number) of *E. coli* per 100ml for community water supplies, however these is no guideline for private well supplies.

1.9 This report recommends the next steps of:

a. Compilation of an incident response report by WIL and WDC showing timings and initial responses to the effluent spill, including a summary of the lessons learnt and debrief session held.

b. WDC and WIL staff to look into the source of continued elevated *E. coli* levels that have been found in the stockwater race network section R8-1A, beyond that expected to be have been caused by an effluent spill.

c. WDC and WIL to identify locations and review consent conditions for existing holding ponds and soak pits on the stockwater network, whether Council-owned or privately-owned. In particular, there should be a focus on non-lined holding ponds and soak pits which could affect water quality for domestic use.

d. WDC and WIL staff to review if there are any recommendations to improve the spill response procedures for stockwater races, including potential prioritisation of minimising risk to domestic water supplies.

e. WDC and WIL staff to review if there are any recommendations to the company where the effluent spill occurred, or Environment Canterbury to improve effluent irrigation practices to prevent future effluent contamination.

Attachments:

i. Horrellville Private Bore Supplies Boil Water Advisory letter 17 May 2019 (Trim 190529076466)

ii. Carlton Private Bore Supplies Boil Water Advisory letter 20 May 2019 (190520070966)

2. **RECOMMENDATION**

THAT the Utilities and Roading Committee:

(a) Receives report No. 190529076343.

(b) Notes that WDC staff will work with Waimakariri Irrigation Ltd. and other parties to capture the response to the incident response, any lessons learnt, recommendations, and improvements to procedures.

(c) Notes that costs of approximately $7K have been paid by Council for water quality sampling and analysis in relation to the effluent spill.

(d) Notes that WDC staff will investigate whether costs incurred by the Council can be recovered.

(e) Notes that an incident report from Environment Canterbury is being prepared for release.

(f) Acknowledges the work by Waimakariri Irrigation Ltd to manage the effluent spill response.
3. BACKGROUND

3.1 On 16 May a private farm east of Oxford had a centre pivot irrigator malfunction leaking dairy effluent water across a paddock – the overland flow eventually made its way into the irrigation and stock water race network. The spill was contained within two hours by Waimakariri Irrigation Limited. Environment Canterbury and CPH were notified on the day of the spill.

3.2 Residents of part of Horrellville (see Map 1) were recommended to boil their water as a precaution, and infants to avoid well water altogether, until testing could take place as there was a slight risk it could affect private wells. It was also recommended to shut off bores and use the water stored with their on-site water tanks if possible. Water was made available for those affected at the campervan filling point outside 82 High St, Oxford.

3.3 Waimakariri Irrigation Ltd has overseen repeat testing over time for 12 private wells in the Horrellville and Carleton areas, in order to establish if the groundwater has been contaminated as a result of the effluent discharge. Initially sampling was daily, then moved to three times a week. The work is being undertaken with advice from Community and Public Health, Environment Canterbury and Institute for Environmental and Science Research (ESR).

3.4 In addition to the repeat sampling, one-off water quality testing of private wells has also been carried out by WIL on four wells, for example if a landowner has requested testing for example due to a change in water clarity.

3.5 Surface water sampling within the water race network has been carried out by PDP Ltd on behalf of WIL. Samples have been taken upstream, downstream, in the soak pit and holding pond for chemical parameters (such as conductivity, clarity, and oxygen levels) and *E. coli* levels. *E. coli* results have shown levels downstream of the effluent spill above 550 MPN / 100ml, a guideline value for human secondary contact taken from the Microbiological Water Quality Guidelines for Marine and Freshwater Recreational Areas (2003).
4. **ISSUES AND OPTIONS**

4.1. *E. coli* levels in some private wells tested in Horrellville and Carleton were higher than the Drinking-water Standards for New Zealand (2005, amended 2018) of less than 1 *E.coli* / 100ml. Private wells, however, are not required to comply with the standard, and it is not unusual for low levels of *E.coli* to be detected in private wells in New Zealand. Therefore, a result of 1-2 *E.coli* per 100ml in a private well is thought, in advice sought from Community and Public Health water assessors, to not be directly related to the effluent spill.

4.2. One private well has shown consistent levels of *E.coli* ranging from 3 - 19 *E.coli* / 100ml of water sample. Faecal contamination from the effluent spill is a possibility, as the well is less than 100m from the holding pond on the water race network that received effluent-contaminated water. It is also possible that the private well has been contaminated from other faecal sources, such as agricultural run-off and bird faeces from the holding pond, and that the contamination may have been occurring over a longer period. Due to water safety concerns for the tenant of the property, WIL initially distributed bottled drinking water as soon as test results showed an elevated level of *E.coli*. Subsequently a UV treatment unit was subsequently installed, with the cost covered by WIL.
4.3. Levels of *E. coli* (i.e. above 550 *E. coli* / 100 ml) have been detected in sections of the water race network R8 and R8-1A following the effluent spill and up to two weeks afterward. As there is no baseline monitoring to indicate the normal range of *E. coli* in the races, it is unknown whether this is a common occurrence that could be unrelated to the effluent spill. Potentially there are other sources of faecal contamination to the water race network, such as stock movements. Environment Canterbury could investigate whether there are other issues, such as effluent reaching the water race network via other means during routine irrigation with effluent ‘fertigation’ practises. WDC staff intend to investigate if there is any existing data for *E. coli* levels in water race networks in the Canterbury region, and scope whether baseline sampling of *E. coli* levels within the WDC water race network should be carried out.

4.4. WDC staff will discuss with Environment Canterbury staff any ideas for future improvements to resource consent conditions and Farm Environment Plans to irrigate with dairy effluent, to mitigate the size and risk of future spills.

4.5. The WDC West Eyreton water supply, located 6.5km downstream of the soak pit, was tested although not within the boil water advisory area. Results showed compliance with the Drinking-water Standards for New Zealand (2005, amended 2018), i.e. no sign of faecal contamination.

4.6. The Ministry for Primary Industries was also notified, due to a potential for spread of the cow disease *Mycoplasma bovis*. The effluent spill property was not infected with *M. bovis*, and therefore transfer of the disease is unlikely to have occurred.

4.7. The Management Team have reviewed this report and support the recommendations.

5. COMMUNITY VIEWS

5.1. Groups and Organisations

*Waimakariri Irrigation Ltd*

5.1.1. It is the view of WIL that affected residents should be looked after and risks mitigated as much as feasible. Therefore WIL has responded with significant staff resourcing and financial commitment; for example to communicate with affected residents, and funding the majority of the water quality sampling and analysis for the stockwater races and private wells.

*Residents of Horrellville*

5.1.2. More information could have been made available for those living in the general Horrellville area, but not within the boil water advisory area, as they did not receive a notification letter or email from WDC. Some of these residents contacted the Council for more information as they did not realise that they were outside of the boil water advisory area. It is recommended for WDC to continue to focus on collection of email addresses and mobile phone numbers for ratepayers. This will enable timely communication with larger groups, such as all Horrellville residents, to prevent confusion of who was advised to boil water.

5.2. Wider Community

5.2.1. The wider community has not been consulted on views regarding effluents spills, including effects on the water race network and private wells.
6. **IMPLICATIONS AND RISKS**

6.1. **Financial Implications**
6.1.1. WDC has ring-fenced costs, such as for water sampling and analysis; a cost of approximately $7k.

6.2. **Community Implications**
6.2.1. A debrief of lessons learnt and suggestions for improvement to practices has been carried out in order to improve outcomes for the community as the result of any future effluent spills.

6.3. **Risk Management**
6.3.1. It is recommended that there is a prioritisation system in place for WDC and WIL for risk mitigation with future events. Potentially protection of domestic drinking water supplies would be the top priority for risk mitigation, for example above provision of clean stockwater, freshwater ecosystem health, and primary and secondary recreational contact by humans.
6.3.2. WDC staff have sought advice from CPH on the criteria for removal of the boil water advisory. This is to ensure the decision is based on quality advice.

6.4. **Health and Safety**
6.4.1. The holding pond and soak pit that received the majority of effluent contaminated water were on private properties, therefore isolation and signage for the general public to prevent contact with the contaminated water was not deemed necessary.
6.4.2. Health and Safety of water samplers from the Water Unit followed the ‘Safe Working in the Field’ manual, and only sampled private well water, not surface water. Health and Safety of water samplers from PDP has been managed by Waimakariri Irrigation Ltd.

7. **CONTEXT**

7.1. **Policy**
7.1.1. This matter is not a matter of significance in terms of the Council’s Significance and Engagement Policy.

7.2. **Legislation**
7.2.1. Drinking Water Standards New Zealand (2005, amended 2018). Although these standards do not apply to private wells, the DWSNZ can be used as a guideline.

7.3. **Community Outcomes**
There is a healthy and sustainable environment for all
7.3.1. Harm to the environment from the impacts of land use, use of water resources and air emissions is minimised.
7.3.2. Cultural values relating to water are acknowledged and respected.
7.3.3. Harm to the environment from the spread of contaminants into ground water and surface water is minimised.

7.4. **Delegations**
7.4.1. No delegations apply, as this report is for information only.
Dear Sir/Madam,

Horrellville Private Bore Supplies

BOIL WATER ADVISORY

The Waimakariri District Council advises that residents with bore supplies in the Horrellville area bounded by Poyntzts Road, Tram Road, Moderates Road and the Eyre River (refer attached plan) to boil their water until further notice and infants should avoid well water altogether. Water should be boiled on a rolling boil for 3 minutes before consuming.

This advice is being issued as a precautionary measure following an effluent spill into the irrigation and stock water race.

On 16 May a private farm east of Oxford had a centre pivot irrigator malfunction leaking dairy effluent water across a paddock – the overland flow eventually made its way into the irrigation and stock water race network. The spill was contained within two hours by Waimakariri Irrigation Limited. Environment Canterbury and Community and Public Health have been notified.

Residents are recommended to boil their water as a precaution, and infants avoid well water altogether, until further testing can take place as there is a slight risk it could affect private wells. It is also recommended to shut off bores and use the water stored with their on-site water tanks if possible. Water is available for those affected at the campervan filling point outside 82 High St, Oxford.

We will be undertaking daily testing of a selection of private wells in the area in order to establish if the groundwater in the area has been contaminated as a result of the effluent discharge. The work is being undertaken with advice from Community and Public Health.

We will be keeping residents up to date on the testing results through the email notification system. If you do not have your details registered with Council for text / email updates, you can register your details for future updates at the following location:

www.waimakariri.govt.nz/your-council/contact-us/update-contact-information

For general updates on this effluent discharge event please refer to our website.

Yours sincerely

Kalley Simpson
3 Waters Manager
20 May 2019

Dear Sir/Madam,

Carleton Private Bore Supplies

BOIL WATER ADVISORY

The Waimakariri District Council advises for a limited number of residents with bore supplies in the Carleton area to boil their water until further notice and infants should avoid well water altogether. Water should be boiled on a rolling boil for 3 minutes before consuming. Residents in the Carleton area that are believed to possibly have been affected have been contacted by the Council.

This advice is being issued as a precautionary measure following an effluent spill into the irrigation and stock water race.

On 16 May a private farm east of Oxford had a centre pivot irrigator malfunction leaking dairy effluent water across a paddock – the overland flow eventually made its way into the irrigation and stock water race network. The spill was contained within two hours by Waimakariri Irrigation Limited. Environment Canterbury and Community and Public Health have been notified.

Residents are recommended to boil their water as a precaution, and infants avoid well water altogether, until further testing can take place as there is a slight risk it could affect private wells. It is also recommended to shut off bores and use the water stored with their on-site water tanks if possible. Water is available for those affected at the campervan filling point outside 82 High St, Oxford.

We will be undertaking daily testing of a selection of private wells in the area in order to establish if the groundwater in the area has been contaminated as a result of the effluent discharge. The work is being undertaken with advice from Community and Public Health.

We will be keeping residents up to date on the testing results through the email notification system. If you do not have your details registered with Council for text / email updates, you can register your details for future updates at the following location:

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For general updates on this effluent discharge event please refer to our website.

Yours sincerely

Kalley Simpson
3 Waters Manager
WAIMAKARIRI DISTRICT COUNCIL

REPORT FOR INFORMATION

FILE NO and TRIM NO: DRA-18 / 190606079750

REPORT TO: Utilities & Roading Committee

DATE OF MEETING: 18 June 2019

FROM: Kalley Simpson, 3 Waters Manager

SUBJECT: 20 February 2018 Storm Event – Summary of Service Requests

SIGNED BY: (for Reports to Council, Committees or Boards)

Department Manager

Chief Executive

1. SUMMARY

1.1 The purpose of this report is to provide a summary of the drainage service requests received during and following the 20 February 2018 storm event.

1.2 The last update to the Utilities & Roading Committee was in August 2018. Since then the remaining drainage assessments have been completed, with the exception of The Pines Beach and Waikuku Beach areas are still ongoing. The remaining assessment work in these areas includes investigation of drainage issues at the Waikuku Beach Central Area Reserve and in the vicinity of The Pines Beach Community Hall.

1.3 Significant maintenance works have been undertaken since the February 2018 event, particularly in the coastal part of the District. Upgrading of assets is also underway or proposed to address drainage issues identified following the February 2018 event in The Pines Beach, Kaiapoi, Rangiora, Mandeville and Oxford.

1.4 Drainage staff are providing regular updates to various community groups in The Pines Beach, Waikuku Beach and Mandeville and a webpage has been set up on the Council’s website.

2. RECOMMENDATION

THAT the Utilities & Roading Committee:

(a) Receives report No. 190606079750.

(b) Notes that of the 21 drainage assessments identified from the 208 service requests, 19 have been completed and the remaining 2 in The Pines Beach and Waikuku Beach areas are still ongoing.

(c) Notes that of the 11 upgrade projects related to the 208 service requests, 3 has been completed, a further 2 will be completed this financial year, 2 have been carried over to next financial year and 4 will be completed in future years.

(d) Notes that the webpage has been setup on the Council’s website to provide updates on the status of drainage works underway in The Pines Beach and Waikuku Beach.

(e) Circulates this report to the Council for information.
3. BACKGROUND

3.1. A report on the 20 February 2018 storm event was originally presented to Council on the 3 April 2018 (refer TRIM: 180322031170[v03]). Subsequent update reports were presented to the Utilities and Roading Committee on the 18 June 2018 (refer TRIM 180608063569) and 21 August 2018 (refer TRIM 180809090003).

3.2. This report provides a summary of the 208 drainage services requests received over the week of the 20 February 2018 storm event.

4. ISSUES AND OPTIONS

4.1. The 208 service requests have been classified into the categories shown in Table 1.

<table>
<thead>
<tr>
<th>Classification</th>
<th>Description</th>
<th>Number</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintenance Undertaken</td>
<td>This relates to either clearing a blockage or maintaining a drain. This may have been undertaken on the day (e.g., typically clearing of blocked sumps) or over the following weeks (e.g., programmed drain maintenance).</td>
<td>93</td>
<td>Complete</td>
</tr>
<tr>
<td>Maintenance Proposed</td>
<td>This relates to cleaning of Dudley Drain where more substantial maintenance works is required, which will require more planning (refer 4.3 below).</td>
<td>5</td>
<td>Complete</td>
</tr>
<tr>
<td>Signs Erected</td>
<td>This relates to requests where the only works requested or undertaken was to erect flooding signs.</td>
<td>4</td>
<td>Complete</td>
</tr>
<tr>
<td>Advice Provided</td>
<td>This relates to either advice being provided on a private drainage issue or the status of our system (e.g., confirming that Council pumps are operating).</td>
<td>36</td>
<td>Complete</td>
</tr>
<tr>
<td>Drainage Assessment</td>
<td>This relates service requests where further investigation and assessment is required to determine if there is an underlying issue with the drainage system. These have been grouped into 21 drainage assessment areas and are discussed further below (refer 4.4 below).</td>
<td>38</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Roading Investigation</td>
<td>This relates service requests where water is running off the road onto private property or roading infrastructure may not be operating adequately (e.g., soak pits).</td>
<td>8</td>
<td>Complete</td>
</tr>
<tr>
<td>Upgrade Proposed</td>
<td>This relates to flooding in areas where upgrades are proposed to address the issue. These areas are discussed further below (refer 4.11 below).</td>
<td>24</td>
<td>Ongoing</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>208</td>
<td></td>
</tr>
</tbody>
</table>

4.2. It is noted that all service requests have been responded to or acknowledged and have now all been closed off.
Maintenance Proposed

4.3. The Dudley Drain has been maintained between Ohoka Road and the railway line, including an aggressive pruning of vegetation between Ohoka Road and Akaroa Street / Fuller Street and the removal of silt build up along the Porter Place section. This is the most significant maintenance work that has been undertaken on the drain since the works undertaken following the earthquakes.

Drainage Assessments

4.4. The following sites have been identified for further drainage assessments. This works is being undertaken by a combination of engineers from the PDU team and also engineers from Beca.

Table 2 – Status of Drainage Assessment Work

<table>
<thead>
<tr>
<th>Location</th>
<th>Assessment</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>James Drive, Woodend</td>
<td>CCTV inspection. No further action.</td>
<td>Complete</td>
</tr>
<tr>
<td>Island Road / Cosgrove Road, Kaiapoi</td>
<td>CCTV inspection. No further action.</td>
<td>Complete</td>
</tr>
<tr>
<td>Ohoka Road, Kaiapoi</td>
<td>CCTV inspection. Advice provided to landowner in Mansfield Drive.</td>
<td>Complete</td>
</tr>
<tr>
<td>Hilton Street, Kaiapoi</td>
<td>CCTV inspection. Outlet cleared.</td>
<td>Complete</td>
</tr>
<tr>
<td>Bracebridge Street, Kaiapoi</td>
<td>CCTV inspection. Advice provided to landowner.</td>
<td>Complete</td>
</tr>
<tr>
<td>Gray Crescent, Kaiapoi</td>
<td>Drainage system investigation.</td>
<td>Complete</td>
</tr>
<tr>
<td>Murray Place, Kaiapoi</td>
<td>CCTV inspection. Remedial actions being progressed by Roading team.</td>
<td>Complete</td>
</tr>
<tr>
<td>Cridland Street West, Kaiapoi</td>
<td>Drainage system investigation. Pipe to Cam River upgraded.</td>
<td>Complete</td>
</tr>
<tr>
<td>Railway Road, Rangiora</td>
<td>CCTV inspection. Pipe upgrade proposed as part of Lineside Road Drainage Upgrade in 2019/20.</td>
<td>Complete</td>
</tr>
<tr>
<td>Golding Avenue / Kingbury Avenue, Rangiora</td>
<td>CCTV inspection &amp; further assessment (refer TRIM 16051709320 and 4.5 below).</td>
<td>Complete</td>
</tr>
<tr>
<td>Seddon Street / Kinley Street, Rangiora</td>
<td>Investigation to look at solutions. Pipe installed as part of kerb and channel work.</td>
<td>Complete</td>
</tr>
<tr>
<td>Oxford Road, Rangiora</td>
<td>Soak pit investigation. New swale installed at 75 Oxford Road.</td>
<td>Complete</td>
</tr>
<tr>
<td>Carmana Gardens, Rangiora</td>
<td>CCTV inspection (refer TRIM 190221020004)</td>
<td>Complete</td>
</tr>
<tr>
<td>Douglas Street, Rangiora</td>
<td>CCTV inspection (refer TRIM 1602105078932).</td>
<td>Complete</td>
</tr>
<tr>
<td>Belmont Avenue, Rangiora</td>
<td>Soak pit and secondary flow investigation.</td>
<td>Complete</td>
</tr>
<tr>
<td>Acacia Avenue, Rangiora</td>
<td>Drainage system investigation</td>
<td>Complete</td>
</tr>
<tr>
<td>Location</td>
<td>Assessment</td>
<td>Status</td>
</tr>
<tr>
<td>----------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>------------</td>
</tr>
<tr>
<td>Coates Street / Bush Street, Rangiora</td>
<td>CCTV inspection (refer TRIM 16022102004)</td>
<td>Complete</td>
</tr>
<tr>
<td>White Street, Rangiora</td>
<td>Onsite drainage connectivity study. Advice provided to landowner.</td>
<td>Complete</td>
</tr>
<tr>
<td>Pegasus (3 locations)</td>
<td>Swale infiltration check. No further action.</td>
<td>Complete</td>
</tr>
<tr>
<td>The Pines Beach</td>
<td>Area wide investigation (refer 4.6 below).</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Waikuku Beach</td>
<td>Area wide investigation (refer 4.8 below).</td>
<td>Ongoing</td>
</tr>
</tbody>
</table>

4.5. The investigation work undertaken in the Golding Street / Kingsbury Avenue area did not identify any faults (blockages or defects). Maintenance has been undertaken on the drain downstream of Ashley Street and further sit removal is planned. A memo summarising the assessment of the pipework and inlet capacity has been prepared by the Project Delivery Unit (refer TRIM 180817093320). A new budget of $120,000 was included in the 2019/20 Annual Plan for upgrading the pipe along Ashley Street to the North Drain. This is planned to be designed in 2019/20 and constructed in 2020/21.

4.6. The Drainage team have identified 12 areas in The Pines Beach and Kairaki that need to be investigated as listed in Table 3 below.

**Table 3 – Status of The Pines Beach Assessment Work**

<table>
<thead>
<tr>
<th>Location</th>
<th>Assessment</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pines Oval Community Hall – localised ponding</td>
<td>Swale has been formed on east side of Batten Grove and Chichester Avenue swale has been regraded. Further work to improve road drainage to be coordinated with the Roading team.</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Batten Grove / Monks Parade – localised flooding</td>
<td>Investigation complete. Additional works proposed (refer Section 4.7).</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Batten Grove / Chichester Street – drain &amp; culverts</td>
<td>Pipes have been cleaned out and CCTV inspected.</td>
<td>Complete</td>
</tr>
<tr>
<td>Pines Oval Playground – no positive drainage</td>
<td>Five outlets have recently been upgraded as part of the Pines Beach Stormwater Repairs works.</td>
<td>Complete</td>
</tr>
<tr>
<td>Chichester Street to Kairaki Creek – drain &amp; culverts</td>
<td>Temporary bunding has been put in place. Further work to be coordinated between Roading and Environment Canterbury River Engineers to implement a permanent solution.</td>
<td>Ongoing</td>
</tr>
<tr>
<td>39 Dunns Avenue to Kairaki Creek – drain &amp; culverts</td>
<td>Swale and pipe installed by Sicon.</td>
<td>Complete</td>
</tr>
</tbody>
</table>
Kairaki Yacht Club – drainage from car park | Advice provided to yacht club and sump has been installed. | Complete
Kairaki Campground – drainage swale | Inspected and will be monitored. | Complete

4.7. A budget of $160,250 was brought forward to 2019/2020 as part of the 2019/20 Annual Plan to address the flooding in Batten Grove in the vicinity of the playground. It is proposed to construct a new pipe across the reserve to Dunns Avenue to provide a positive drainage outlet from this area (refer TRIM 190514067729).

4.8. In the Waikuku Beach area, 9 areas have been identified that need to be investigated as listed in Table 4 below. The Drainage team has been working with the Roading team to address a number of the maintenance issues as set out in the table.

Table 4 – Status of Waikuku Beach Maintenance Work

<table>
<thead>
<tr>
<th>Location</th>
<th>Assessment</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Swindells Road – culverts &amp; swales</td>
<td>Swales have been reshaped and graded by Sicon. Further work required to replace some driveway culverts on south side of road.</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Reserve Road – culverts &amp; swales</td>
<td>Culverts and swales in the area have been cleaned out by Sicon. Soakpits have been identified at the intersection of Reserve/Broadway and Reserve/Cross and remediated.</td>
<td>Complete</td>
</tr>
<tr>
<td>Broadway Avenue – culverts &amp; swales</td>
<td>Swales reshaped and pipes unblocked. Drain cleaned along Park Terrace.</td>
<td>Complete</td>
</tr>
<tr>
<td>Kwi Avenue Recreational Reserve – pipes &amp; soakpits</td>
<td>Swales reshaped and pipes unblocked. Pipe from northwest corner of park located and inspected.</td>
<td>Complete</td>
</tr>
<tr>
<td>Waikuku Beach Central Area – localised flooding</td>
<td>Investigation in progress.</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Waikuku Beach South Oval – pipes &amp; soakpits</td>
<td>Pipes and soakpits cleaned and tested.</td>
<td>Complete</td>
</tr>
<tr>
<td>Kings Avenue / Alin Drive – drain &amp; culverts</td>
<td>Drains have been cleaned out.</td>
<td>Complete</td>
</tr>
<tr>
<td>Allin Drive – culverts &amp; swales</td>
<td>Culverts and swales have been cleaned out. Soakpits have been installed in Allin Drive and performance is being monitored.</td>
<td>Complete</td>
</tr>
<tr>
<td>Kings Avenue – culverts &amp; swales</td>
<td>Pipe outlet on Kings Avenue being investigated.</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Taranaki Stream – flood gate</td>
<td>Refer section 4.9 below.</td>
<td>Ongoing</td>
</tr>
</tbody>
</table>

4.9. Environment Canterbury River Engineers have cleaned out the Taranaki Stream downstream of the flood gate, which has dropped the upstream water levels by approximately 300mm. The flood gate itself has been inspected by the Environment
Canterbury River Engineers and is operating satisfactory, but requires the seals to be replaced. These are currently being manufactured and will be installed by September 2019.

4.10. Council staff have also been working with a property owner at 6 Waikuku Beach Road regarding flooding at the rear of their garden, which occurs for extended period of times following rainfall events. Localised improvement works have been undertaken in Waikuku Beach Road and Park Avenue to help reduce the amount of stormwater flowing towards the rear of the property and advice has been provided to the landowner in terms of works they can undertake on their property.

4.11. It is proposed to bring a report to the Utilities and Roading Committee in the future that summarises the Waikuku Beach Drainage Assessment work once the investigation work in the Waikuku Beach central area has been completed.

Upgrades Proposed

4.12. The upgrade projects shown in Table 5 are proposed to address some of the flooding identified.

Table 5 – Proposed Upgrade Projects

<table>
<thead>
<tr>
<th>Project</th>
<th>Year</th>
<th>Description</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Belt / Southbrook Road intersection</td>
<td>2017/18</td>
<td>Works to improve sump inlet capacity to commence shortly.</td>
<td>Complete</td>
</tr>
<tr>
<td>Main Street, Oxford</td>
<td>2018/19</td>
<td>Installation of new pipework at West Station Road.</td>
<td>Complete</td>
</tr>
<tr>
<td>King Street, Rangiora</td>
<td>2018/19</td>
<td>Improve drainage outside police station</td>
<td>Complete</td>
</tr>
<tr>
<td>Springbrook development, Rangiora</td>
<td>2018/19</td>
<td>Immediate works complete and further works currently being constructed.</td>
<td>Under construction</td>
</tr>
<tr>
<td>Siena Place / Sillano Place, Mandeville</td>
<td>2018/19</td>
<td>Drainage improvements.</td>
<td>Under construction</td>
</tr>
<tr>
<td>Tui Street / Weka Street, Oxford</td>
<td>2018/19</td>
<td>Installation of new soak pits. Project carried over to 2019/20.</td>
<td>Design complete</td>
</tr>
<tr>
<td>Oxford Road, Rangiora</td>
<td>2018/19</td>
<td>Water race closure approved by U&amp;R in June 2018. Project carried over to 2019/20.</td>
<td>Design complete</td>
</tr>
<tr>
<td>North Brook – Janelle to White, Rangiora</td>
<td>2018/19 &amp; 2019/20</td>
<td>Upgrade of North Brook capacity. Opus have been engaged to undertake the design work.</td>
<td>Design underway</td>
</tr>
<tr>
<td>Fieldwick Drain Catchment Improvements</td>
<td>2018/19, 2019/20 &amp; 2020/21</td>
<td>Improve drainage in Beach Road, Williams Street and Kaiapoi East area.</td>
<td>Strategy underway</td>
</tr>
<tr>
<td>Roscrea Place / McHughs Road, Mandeville</td>
<td>2019/20 &amp; 2020/21</td>
<td>Capacity upgrade.</td>
<td>Investigation complete</td>
</tr>
<tr>
<td>Johns Road, Rangiora</td>
<td>2020/21 &amp; 2022/23</td>
<td>Improve drainage Church Street / Palmer Street area.</td>
<td>Not started</td>
</tr>
</tbody>
</table>
4.13. The Springbrook further works to achieve the 200 year level of protection are currently being constructed and are expected to be completed by the end of June 2019. The installation of new soak pits at Tui Street / Weka Street in Oxford has been delayed as prices for the works were higher than expected. The budget has therefore been carried over to the next financial year and will be combined with other stormwater upgrading work in Park Avenue and Kowhai Street to form a larger package of work. These works have all been designed and are expected to be completed by the end of this calendar year.

4.14. Roscrea Place / McHugh’s Road investigation identified maintenance works that have been progressed and further capacity upgrades are proposed to be undertaken in 2019/20 & 2020/21. The Mandeville Resident Association have raised a number of issues in the wider Mandeville area (refer TRIM 190517069694), which are currently being worked through by Drainage staff.

5. COMMUNITY VIEWS

5.1. Groups and Organisations

5.2. The Springbrook residents have been regularly kept up to date with progress on works to respond to flooding in this development.

5.3. Drainage staff attended a Greenspace drop-in session in Waikuku Beach to answer any Drainage related questions in March 2019. Regular updates have been sent to concern residents in the Waikuku Beach area and updates have been posted on the Council’s website. Regular updates are also being sent directly to landowners at 6 Waikuku Beach Road, relating to this specific issue.

5.4. Drainage staff have met with residents to discuss the wider Waikuku Beach issues and also have met with the Pines Kairaki Beach Association to discuss issues at this location. Regular updates to the Pines Kairaki Beach Association on progress with works in this area have been sent out.

5.5. Drainage staff have presented to the Oxford Ohoka Community Board and have met with the Mandeville Residents Association to discuss the proposed drainage works in the Mandeville area.

5.6. Wider Community

5.7. The wider community was consulted as part of the Long Term Plan on whether we are doing enough to manage flooding. Most submitters either responded that we were doing enough or were neutral, however 22% of submitters thought we could be doing more.

6. IMPLICATIONS AND RISKS

6.1. Financial Implications

6.2. The maintenance work and engineering assessments has been undertaken from existing budgets. This was managed within existing budgets, except for the Ohoka Rural, Coastal Rural, Rural and Central Rural schemes which were overspent by 83%, 13% and 20% respectively last financial year. A separate report on the overspend on the Ohoka Rural scheme will be brought to the Utilities and Roading Committee in the future.

6.3. The proposed upgrades have either already been budgeted or additional budget has been requested from Council.
6.4. It is noted that further upgrades recommended from the engineering assessment works in the Waikuku Beach area may require further budget to be approved by Council.

6.5. Community Implications

6.6. The works undertaken in response to the 20 February 2018 event will improve the overall performance of the drainage system in the district for the wider community.

6.7. Risk Management

6.8. There remains a residual risk of flooding as the groundwater levels in the district remain high and the catchments are saturated.

6.9. Health and Safety

6.10. Safety in Design will be formally considered and documented as part of the detailed design stage.

7. CONTEXT

7.1. Policy

7.2. This matter is not a matter of significance in terms of the Council’s Significance and Engagement Policy.

7.3. Legislation

7.4. Local Government Act 2002 relates to the provision of infrastructure services.

7.5. Community Outcomes

- There are wide ranging opportunities for people to contribute to the decision making that effects our District
- There is a safe environment for all
- There is a healthy and sustainable environment for all
- Core utility services are provided in a timely and sustainable manner

7.6. Delegations

7.7. The Utilities & Roads Committee is responsible for the drainage functions of the Council.
1. SUMMARY

1.1. This report seeks the Utilities and Roading Committee’s endorsement of the Waimakariri Road Safety Action Plan for 2019-2020 (see attachment)

1.2. The 2019-20 Road Safety Action Plan has been developed in collaboration with key stakeholders and approved by the Road Safety Coordinating Committee.

1.3. The plan outlines the road safety activities that will be carried out in the District for the coming year. It provides a focus for the work of the agencies and organisations that have a responsibility for improving road safety in the District.

1.4. The plan focuses on the high risk issues in the District that have been identified by analysing local crash data and feedback from the NZ Transport Agency (NZTA), the Police and the community. The plan is aligned to the Government’s “Safer Journey’s” Strategy to 2020 and follows the principles of the “Safe System” approach.

Attachments:


2. RECOMMENDATION

THAT the Utilities and Roading Committee:

(a) Receives report No. 190529076363

(b) Endorses the 2019 - 2020 Road Safety Action Plan (Doc 190529076366)

(c) Circulates this report to the Community and Advisory Boards

3. BACKGROUND

3.1. Road Safety Action Plans are a primary mechanism for coordination of education, engineering, and enforcement approaches to road safety at a district and sub-regional level. Local Government are best placed to lead Road Safety Action Plan’s as they own and maintain the land transport infrastructure assets and have statutory objectives to promote community wellbeing and improve the performance of the land transport system.
3.2. Road Safety Action Plans have proven to be a useful tool to bring together the Councils' road safety partners into one plan. Reporting on the key focus areas at each road safety committee meeting provides an opportunity for discussion and monitoring of the issues affecting our district. Having an effective Road Safety Action Plan is considered a key element in maintaining a low crash record for our District.

3.3. This plan is aligned to the Government’s Safer Journey’s Strategy to 2020. Later this year the Ministry of Transport will be consulting with the public on a new Road Safety strategy to be implemented in 2020. They have indicated the development of a more ambitious commitment to improving road safety, which references “Vision Zero”.

3.4. “Vision Zero” is an ambition that nobody should be killed or seriously injured on our roads. It was first launched in Sweden in 1997 and has grown into a global movement, adopted in Norway and Denmark, as well as major cities such as New York, London and Toronto.

3.5. Vision Zero is a shift in thinking that says road deaths are not inevitable and safety must continuously be put at the centre of transport decisions. It is a long term vision supported by evidence and clear success measures.


3.7. The Road Safety Action Plan is updated and endorsed on an annual basis.

3.8. The Management Team has reviewed this report and support the recommendations.

4. ISSUES AND OPTIONS

4.1. On average, one person dies on New Zealand’s roads every day and another is injured every hour of every day.

4.2. In the Waimakariri District deaths and serious injuries from road crashes have fluctuated over the past five years. While a downward trend was observed from 2013 to 2016, 2017 saw a marked increase in those killed and seriously injured. Available data for the 2019 year show serious injuries from road crashes in our district are already over half of last year’s whole total.

4.3. Determining a single cause for road crashes is difficult, however, we know that unforgiving road infrastructure, speed, alcohol, failing to give way or stop, and distraction continue to be the main contributing factor in fatal and serious injury crashes. Everyone makes mistakes and we have a road system that is unforgiving of human error.

4.4. A Road Safety Action Plan brings all stakeholders together who have a stake in managing all parts of the roading system. The Road Safety Action Plan sits under the Council’s Transport Activity Management Plan.

4.5. Key priority areas in our district have been identified as “Young drivers, Intersections (rural and urban), Rural run off road/head on (including speed), Motorcyclists, Impaired road users, Older and Vulnerable road users.

4.6. The Road Safety Action Plan does not contain an exclusive list of activities as there are additional safety management systems in place related to road safety under various Council Strategy, policies and procedures.

4.7. Options available for the Utilities and Roading Committee are to either choose to adopt the 2019-2020 Road Safety Action Plan, or to request further work be carried out on the plan.
4.8. Option One – Endorse the 2019-2020 Road Safety Action Plan:
This is the recommended option as it will allow road safety work to progress in the district with clear direction.

4.9 Option Two – Not endorse the 2019-2020 Road Safety Action Plan
This option is not recommended as evidence from relevant stakeholders and data sources has been used to inform the target areas identified and inform the activities as outlined in the plan.

5. COMMUNITY VIEWS

5.1. Groups and Organisations
5.1.1. The Council has engaged with stakeholders including New Zealand Police, ACC, Council roading contractors and the NZ Transport Agency to review, and update the 2019-2020 Road Safety Action Plan.
5.1.2 The Road Safety Co-ordinating Committee which consists of a number of partners who work collaboratively to implement the plan, including, New Zealand Police, New Zealand Transport Agency, AA New Zealand, NZ Trucking Association, New Zealand Road Transport Association, Environment Canterbury ACC and SADD have approved this Road Safety Action Plan at a meeting held on Wednesday 12 June 2019.

5.2 Wider Community
5.2.1 Road safety partners identify problems by evaluating information and intelligence such as local crash data provided by the New Zealand Transport Agency, and local Police information as well as feedback from the community.
5.2.2 There has been no specific wider community engagement or consultation on this Road Safety Action Plan. The Plan is published to the Council website once endorsed.

6. IMPLICATIONS AND RISKS

6.1. Financial Implications
6.1.1 Funding for activities covered under the Road Safety Action Plan are included in the Long Term Plan under relative specific categories for infrastructure and related activities, as well as funding of $120,000 (including 51% NZTA subsidy) for educational and promotional activities.

6.2. Community Implications
6.2.1 There is a risk that in preparing an action plan that the wrong issues will be identified and targeted, however the Road Safety Committee membership is made up of the appropriate local and regional organisations to ensure the district needs have been recognised and are met.

6.3. Risk Management
6.3.1 There are no specific risks to be considered as part of this report.
6.4. **Health and Safety**

6.4.1. There are no specific Health & Safety considerations to be considered as part of this report.

7. **CONTEXT**

7.1. **Policy**

7.1.1. This matter is not a matter of significance in terms of the Council’s Significance and Engagement Policy.

7.2. **Legislation**  N/a

7.3. **Community Outcomes**

7.3.1. **There is a safe environment for all**

- Harm to people from natural and man-made hazards is minimised.
- Crime, injury and harm from road crashes, gambling, and alcohol abuse are minimised

7.4. **Delegations**

7.4.1. The Utilities and Roading Committee has the authority to receive information and endorse this Road Safety Action Plan.
BACKGROUND

In 2010 the New Zealand Government launched Safer Journeys. Safer Journeys is a strategy designed to guide New Zealand's efforts to improve road safety from 2010–2020. Its vision is for: “A safe road system increasingly free of death and serious injury”

To achieve this it takes a Safe System approach, looking across the entire road system to improve safety by creating safer roads and roadsides, safer speeds, safer vehicles and safer road use. Within these categories, it sets a number of areas of concern where action is needed.

Under a Safe System we design the whole transport system to protect road users from death and serious injury. We accept that:

- People make mistakes - We need to recognise that road users make mistakes and some crashes are inevitable.
- Road users are vulnerable - Our bodies have a limited ability to withstand crash forces without being seriously injured or killed.
- We need to share responsibility - Those who design the road system and those who use the roads must all share responsibility for creating a road system where crash forces don't result in death or serious injury.
- We need to strengthen all parts of the system - We need to improve the safety of all parts of the system - roads and roadsides, speeds, vehicles, and road use - so that if one part fails, other parts will still protect the people involved.

Following the release of the Safer Journeys strategy, there have been several Action Plans, including the last Action Plan released in 2016 Safer Journeys Action Plan 2016-2020.

Progress has been made under the Action Plans across all key areas of the Safe System. This includes initiatives such as:

- raising public awareness through advertising campaigns
- lowering blood and breath alcohol levels
- making our high risk roads safer through rumble strips and median barriers

While the Safer Journey’s Action Plan has key areas of national focus, local Road Safety Action Plans are the primary mechanism for co-ordination of education, engineering and enforcement approaches to road safety problems at sub-regional levels.

The Ministry of Transport and its road safety partners are developing a new road safety strategy to drive substantial improvements in road safety in New Zealand. It will outline how we will approach the road safety challenges of the next decade and hold ourselves to account to save lives and meaningfully reduce trauma.

The new strategy will replace the current Safer Journeys strategy, which ends in 2020.
WAIMAKARIRI ROAD SAFETY ACTION PLAN - INTRODUCTION

The Waimakariri Road Safety Action Plan sets out the priority areas, actions, measures and responsibilities in regard to road safety in the Waimakariri District for the 2019-2020 year.

The action plan has been developed in collaboration with various road safety partners who come together as part of the Waimakariri District Road Safety Co-ordinating Committee, (RSCC) which is a working party for the Council’s Utilities and Roading Committee. The membership of the RSCC consists of Waimakariri District Councillors, Council staff, Police, Transport Agency, ACC and other road safety partners and stakeholders.

The purpose of the Committee is to improve road safety in the district by coordinating the work of all the agencies that have district road safety functions to ensure a safe systems approach is followed as envisaged by New Zealand’s road safety strategy, Safer Journeys.

This includes the integration of education, enforcement and engineering programmes and initiatives.

VISION - Towards “Vision Zero”

‘Vision Zero’ is an ambition that nobody should be killed or seriously injured on our roads. It was first launched in Sweden in 1997, and has grown into a global movement, adopted in Norway and Denmark, as well as major cities such as New York, London, and Toronto.

Vision Zero is a shift in thinking that says road deaths are not inevitable, and we must continuously work to put safety at the centre of transport decisions. It is a long term vision supported by evidence and clear success measures.

“Towards Vision Zero” continues to be underpinned by the Safe System approach to road safety.
The key components of the Safe System are the four pillars:

The Safe System approach requires the designers, managers and operators of the land transport system to consider:

- **safe roads and roadsides** that are predictable, promote safe behaviour and are forgiving of human error
- **safe speeds** that suit the function and level of safety of the road, the skill of the driver and the safety of the vehicle
- **safe vehicles** that incorporate emerging collision avoidance technologies and modern warning systems, and are well maintained to help prevent crashes and protect road users from crash forces, and
- **safe use** by having drivers, motorcyclists, cyclists and pedestrians who are skilled and competent, proactive in managing hazards, predictable, alert, unimpaired, compliant and make safe choices.

**Purpose of the Action Plan**

Each stakeholder or partner involved in road safety in the Waimakariri may have a different function, or role to play within the Safe System, however, the collaborative approach and guidance provided under the Road Safety Action Plan ensures all activities focus on achieving the same outcome – a vision of zero deaths and serious injuries on our roads.

This is enabled under the RSAP which:

- Informs and guides co-ordination of various road safety activities within the District and enables outcomes to be monitored and measured;
- Allows the community to see and understand the focus for road safety activities in the District allowing them opportunity to be actively involved in creating a safe road system;
- Supports applications for road safety activities under the National Land Transport Fund.

**Footnote:** While there are specific target areas and topics of concern highlighted in this Action Plan, all aspects affecting road safety and minimizing injury to road users will be included in the various target areas. Of particular note in this regard is ‘speed’ and ‘restraint use’ which are key components of many of the target areas to be addressed.
Target Areas in our District

Young Drivers

Rural Road Loss of Control/Head-On (incl. Speed)

Intersections - Rural and Urban

Motorcyclists

Older Road Users
Of Concern

Vulnerable Road Users

Impaired road users

Having a few drinks? Make sure your mate gets home safely.
### YOUNG DRIVERS (16-24 yrs)

<table>
<thead>
<tr>
<th>KEY TRENDS</th>
<th>GOALS</th>
<th>SAFE SYSTEM</th>
<th>ACTIVITIES – may relate to more than one pillar</th>
<th>LEAD AGENCY</th>
</tr>
</thead>
</table>
| Total Fatal & Serious Injury Crashes (2013-18) where young drivers at fault or part fault in fatal or injury crashes (total 167 crashes)  
- 15-19 yrs 19  
- 20-24 yrs 14 | Reduce fatal and serious crashes involving young drivers  
Safe Speeds  
Encourage increased uptake in training by young drivers | Police enforcement focus on restraints, impairment, distractions, speed  
Promote uptake of [https://drive.govt.nz/](https://drive.govt.nz/) and support community programmes that improve young driver skills  
Support and promote community based programs such as Oxford Community Trust U-Drive young driver mentoring programme and Police Learner Driver Mentoring Programme  
Work with schools, emergency services and groups such as SADD to deliver a programme and/or campaign to upskill and educate young drivers  
Collaborate with partner agencies and Councils on initiatives targeting young drivers | Police  
WMK |
| Why:  
- Poor observation 39%  
- Poor handling 32%  
- Poor judgement 28%  
- Travel Speed 21% | Encourage safer vehicles  
Safe Road Users | Utilise social media and other media channels to engage with young drivers, parents and caregivers to promote skills training & safe vehicles | WMK/NZTA |
| Where:  
- Urban road - 11%  
- Open road – 89%  
- Intersection – 26%  
- Mid-block – 74% | | Provide education and information to both young drivers and parents/caregivers about safe vehicle choice utilizing [http://rightcar.govt.nz/](http://rightcar.govt.nz/) and ANCAP ratings | NZTA/WMK |
| Licence Status:  
- Full – 42%  
- Learner – 16%  
- Restricted – 27%  
- Other – 15% | | | |

SUMMARY

Waimakariri (2013-2018)

- Fatal crashes 10 (10 deaths)
- Serious Injury Crashes 47 (55 seriously injured)

22% of drivers at fault or part fault in the total of fatal and serious crashes were aged 16-24
### RURAL ROAD LOSS OF CONTROL/HEAD ON (incl. Speed)

<table>
<thead>
<tr>
<th>KEY TRENDS</th>
<th>GOALS</th>
<th>SAFE SYSTEM FOUR PILLARS</th>
<th>ACTIVITIES – may relate to more than one pillar</th>
<th>LEAD AGENCY</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Total Fatal &amp; Serious Injury Crashes (2013-18) on 70km/h plus roads - 73</td>
<td>Reduce the number of fatal and serious crashes on rural roads in the Waimakariri District, with particular reference to loss of control/head on crashes</td>
<td>Safe speeds</td>
<td>Police enforcement focus on restraints, impairment, distractions, speed management</td>
<td>Police</td>
</tr>
<tr>
<td>• Deaths 10</td>
<td></td>
<td>Safe road users</td>
<td>Education &amp; promotion of safe driving via various advertising channels including campaigns specifically targeting ‘driving to the conditions’ (e.g. Winter driving); use of restraints, distractions, speed etc;</td>
<td>WMK/NZTA</td>
</tr>
<tr>
<td>• Serious Injuries 73</td>
<td></td>
<td>Safe roads and roadsides</td>
<td>Regular monitoring &amp; reporting on speed data to maximize ongoing enforcement and speed management and inform education &amp; advertising opportunities, particularly where speed limit changes occur;</td>
<td>WMK</td>
</tr>
<tr>
<td><strong>Highest rated factors were:</strong></td>
<td></td>
<td></td>
<td>Source data to monitor and analyse average speeds in the district on nominated routes</td>
<td>WMK/SICON</td>
</tr>
<tr>
<td>• Poor handling 51%</td>
<td></td>
<td></td>
<td>Utilise Speed Indicator Devices to obtain robust data to inform safety and education initiatives</td>
<td>NZTA/WMK</td>
</tr>
<tr>
<td>• Alcohol 38%</td>
<td></td>
<td></td>
<td>Continue to evaluate speed limits across district in line with the Speed Management Guide and related regional and national directives regarding speed management</td>
<td></td>
</tr>
<tr>
<td>• Travel speed 23%</td>
<td></td>
<td></td>
<td>Proactively manage roadside hazards</td>
<td></td>
</tr>
<tr>
<td><strong>Who:</strong></td>
<td></td>
<td></td>
<td>Regular network inspections &amp; maintenance work is carried out on roads &amp; roadsides</td>
<td></td>
</tr>
<tr>
<td>Of the 73 DSI crashes drivers at fault or part fault</td>
<td></td>
<td></td>
<td>Provide education and information to drivers about safe vehicle choice utilizing <a href="http://rightcar.govt.nz/">http://rightcar.govt.nz/</a> and ANCAP ratings</td>
<td></td>
</tr>
<tr>
<td>• 15-24 years - 28%</td>
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<tr>
<td>• 25-39 years – 25%</td>
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<tr>
<td>• 40-49 years - 16%</td>
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<tr>
<td>• 50-59 years – 13%</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>• 60-69 years - 13%</td>
<td></td>
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<tr>
<td>• 70 plus – 3%</td>
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<tr>
<td><strong>Licence status:</strong></td>
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<tr>
<td>• Full – 69%</td>
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<tr>
<td>• Learner – 6%</td>
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<tr>
<td>• Restricted 13%</td>
<td></td>
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<tr>
<td>• Overseas – 3%</td>
<td></td>
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</tr>
</tbody>
</table>

**SUMMARY**

Waimakariri 2013-2018

<table>
<thead>
<tr>
<th>Fatal Crashes</th>
<th>Serious Injury Crashes</th>
</tr>
</thead>
<tbody>
<tr>
<td>9 (10 deaths)</td>
<td>64 (73 seriously injured)</td>
</tr>
</tbody>
</table>

46% of total fatal and serious crashes involved the crash type ‘lost control on bend or straight road/head on’.
## INTERSECTIONS – RURAL AND URBAN

### SUMMARY

Waimakariri 2013-2018
- Fatal Crashes: 9 (10 deaths)
- Serious Injury Crashes: 43 (50 seriously injured)

23% of the total fatal and injury crashes involved ‘crossing/turning movements’

### KEY TRENDS

  - Deaths – 10
  - Serious injuries – 50

  - **Who:** Of the 52 DSI crashes drivers at fault or part fault
    - 15% were aged 15-24 yrs
    - 13% were aged 25-29
    - 27% were aged 30-49
    - 13% were aged 50-64
    - 17% were aged 60-79
    - 15% were aged 80 plus

  - **Where:**
    - Urban Road - 33%
    - Open Road - 67%

  - **Why:**
    - Poor observation – 56%
    - Failed to give way/stop – 62%
    - Alcohol – 21%

### GOALS

- Reduce the number of fatal and serious crashes at Waimakariri intersections

### SAFE SYSTEM

#### FOUR PILLARS

- Safe speeds
- Safe road users
- Safe roads and roadsides
- Safe vehicles

### ACTIVITIES – may relate to more than one pillar

- Police enforcement focus on restraints, impairment, distractions, speed
- Develop campaign to target high risk users e.g. enforcement and education campaigns incl. Cinema Advertising – Jan- April 2017
- Support and promote Age Concern Older Drivers courses in the District reinforcing intersection safety/speed judgement, etc
- Explore ways to influence road user behaviour at intersections
- Proactively consider engineering treatments at problematic locations and routes, utilizing guides such as Urban KiwiRap & High Risk Intersection Guide;
- Regular network inspection and maintenance is carried out at intersections using best practice guidelines
- Provide education and information to drivers about safe vehicle choice utilizing [http://rightcar.govt.nz/](http://rightcar.govt.nz/) and ANCAP ratings and encourage vehicles fit for purpose;

### LEAD AGENCY

- POLICE
- WMK
- WMK/NZTA
- NZTA/WMK
# MOTORCYCLISTS

## KEY TRENDS

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Who:</td>
<td>Of the 36 DSI crashes drivers at fault or part fault</td>
</tr>
<tr>
<td>•</td>
<td>17% were aged 15-24 years of age</td>
</tr>
<tr>
<td>•</td>
<td>25% were aged 25-39 years of age</td>
</tr>
<tr>
<td>•</td>
<td>36% were 40-54</td>
</tr>
<tr>
<td>•</td>
<td>22% were aged 55 years plus</td>
</tr>
<tr>
<td>Where:</td>
<td>Urban Road - 22%</td>
</tr>
<tr>
<td>•</td>
<td>Open Road - 78%</td>
</tr>
<tr>
<td>Why:</td>
<td>Poor handling – 42%</td>
</tr>
<tr>
<td>•</td>
<td>Poor observation – 31%</td>
</tr>
<tr>
<td>•</td>
<td>Alcohol – 31%</td>
</tr>
<tr>
<td>•</td>
<td>Failed to give way/stop – 28%</td>
</tr>
<tr>
<td>•</td>
<td>Poor judgement – 17%</td>
</tr>
<tr>
<td>•</td>
<td>Travel speed – 17%</td>
</tr>
</tbody>
</table>

## GOALS

<table>
<thead>
<tr>
<th>Goals</th>
<th>Reduce the number of fatal and serious injury crashes involving Waimakariri motorcyclists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safe speeds</td>
<td>Safe road users</td>
</tr>
<tr>
<td>Safe roads and roadsides</td>
<td>Safe vehicles</td>
</tr>
</tbody>
</table>

## SAFE SYSTEM

### FOUR PILLARS

<table>
<thead>
<tr>
<th>Pillar</th>
<th>Activities – may relate to more than one pillar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Police enforcement focus on restraints, impairment, distractions, speed</td>
<td>Reinforce safety information and key messages that will help riders take responsibility for their own actions on the road to keep safe.</td>
</tr>
<tr>
<td>Develop campaigns to encourage motorcycle and moped users to undertake Ride Forever training to ensure to minimise their risk of a crash.</td>
<td>Utilise media channels to engage with &amp; promote and educate vehicle drivers re motorcyclists vulnerability/visibility;</td>
</tr>
<tr>
<td>Apply NZTA 'Safer Journeys for motorcycling on NZ roads guide recommendations to local roads and roadsides and encourage uptake of “Making roads motorcycle friendly” by contractors and maintenance crews.</td>
<td>Promote safety benefits of new bikes &amp; safety technology particularly for young and/or returning riders</td>
</tr>
</tbody>
</table>

## LEAD AGENCY

| POLICE | WMK | ACC/MMK | WMK | ACC/MMK |

### SUMMARY

**Waimakariri 2013-2018**

| Fatal Crashes | 6 (6 deaths) |
| Serious Injury Crashes | 30 (32 seriously injured) |

14% of the total fatal and injury crashes involved motorcyclists.
Older Road Users (60yrs +)

**KEY TRENDS**

Total Fatal & Serious Injury Crashes (2013-2018) where older road users (60 plus) involved – 54 crashes

**Who:**
- 60-69 years – 30%
- 70-79 years - 13%
- 80 + years - 22%

**Where:**
- Urban Road 26%
- Open Road 74%

**Why:**
- Poor observation 50%
- Failed Giveway/Stop 33%
- Alcohol 28%
- Poor handling/judgement 22%

**GOALS**

Reduce the number of fatal and serious crashes involving older road users

**SAFE SYSTEM**

FOUR PILLARS

**ACTIVITIES – may relate to more than one pillar**

**LEAD AGENCY**

<table>
<thead>
<tr>
<th>Goals</th>
<th>Activities</th>
<th>Lead Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safe speeds</td>
<td>Police enforcement focus on restraints, impairment, distractions, speed</td>
<td>POLICE</td>
</tr>
<tr>
<td>Safe road users</td>
<td>Engage with local health providers regarding licensing of older drivers</td>
<td>NZTA</td>
</tr>
<tr>
<td>Safe roads and roadsides</td>
<td>Support Older Driver Education Courses and promote and support information and education targeting older drivers</td>
<td>WMK</td>
</tr>
<tr>
<td>Safe vehicles</td>
<td>Provide information/education to support increased tolerance &amp; understanding of older drivers</td>
<td>WMK</td>
</tr>
<tr>
<td></td>
<td>Utilise best practice under guides such as the High Risk Intersection Guide when considering engineering treatments at problematic locations and routes taking into account all road user types, including older drivers</td>
<td></td>
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<tr>
<td></td>
<td>Provide education and information to drivers about safe vehicle choice utilizing <a href="http://rightcar.govt.nz/">http://rightcar.govt.nz/</a> and ANCAP ratings and encourage vehicles fit for purpose;</td>
<td>NZTA/WMK</td>
</tr>
</tbody>
</table>

**SUMMARY**

Waimakariri 2013-2018

Fatal Crashes 8 (9 deaths)
Serious Injury Crashes 46 (53 seriously injured)

24% of the total fatal and injury crashes involved drivers who were aged 60yrs plus
## OF CONCERN

### Drink/Drug Driving

<table>
<thead>
<tr>
<th>KEY TRENDS</th>
<th>GOALS</th>
<th>SAFE SYSTEM</th>
<th>ACTIVITIES – may relate to more than one pillar</th>
<th>LEAD AGENCY</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Fatal &amp; Serious Injury Crashes (2013-2018) where alcohol involved</strong> – 51</td>
<td><strong>Reduce the number of fatal and serious crashes involving drunk or drugged drivers</strong></td>
<td><strong>Safe speeds</strong></td>
<td>Police enforcement focus on restraints, impairment, distractions, speed</td>
<td><strong>POLICE</strong></td>
</tr>
<tr>
<td><strong>Deaths – 8</strong></td>
<td><strong>Safe road users</strong></td>
<td><strong>Support and promote national campaigns targeting drug/drink driving and speed</strong></td>
<td></td>
<td><strong>WMK</strong></td>
</tr>
<tr>
<td><strong>Serious injuries – 51</strong></td>
<td><strong>Safe roads and roadsides</strong></td>
<td><strong>Develop and/or support education campaigns that encourage and promote sober driver use/hospitality courtesy van use;</strong></td>
<td></td>
<td><strong>WMK</strong></td>
</tr>
<tr>
<td><strong>Who:</strong></td>
<td><strong>Safe vehicles</strong></td>
<td><strong>Utilise resources such as Urban KiwiRap and High Risk Rural Roads guide to ensure roads and roadsides adhere to best practice</strong></td>
<td></td>
<td><strong>NZTA/WMK</strong></td>
</tr>
<tr>
<td>Of the 51 DSI crashes drivers at fault or part fault</td>
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<tr>
<td>• 11% were aged 15-24 years of age</td>
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<tr>
<td>• 57% were aged 25-49 years of age</td>
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<tr>
<td>• 24% were aged 50-69 years of age</td>
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<tr>
<td>• 6% were aged 70 plus</td>
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<tr>
<td><strong>Where:</strong></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>• Urban Road - 14 %</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>• Open Road - 86%</td>
<td></td>
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<tr>
<td><strong>Why:</strong></td>
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<tr>
<td>Alcohol plus:</td>
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<tr>
<td>Poor observation – 29%</td>
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<td></td>
</tr>
<tr>
<td>Poor handling – 29%</td>
<td></td>
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<tr>
<td>Travel Speed – 24%</td>
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<td></td>
</tr>
<tr>
<td>Failed to give way/stop – 14%</td>
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<tr>
<td>Position on road – 20%</td>
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</tr>
</tbody>
</table>

*Statistics relate to ‘alcohol’ only*
### Vulnerable Road Users

<table>
<thead>
<tr>
<th>KEY TRENDS</th>
<th>GOALS</th>
<th>SAFE SYSTEM</th>
<th>ACTIVITIES – may relate to more than one pillar</th>
<th>LEAD AGENCY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Fatal &amp; Serious Injury Crashes (2013-2018) where vulnerable road users involved – 21</td>
<td>Reduce the number of fatal and serious crashes involving vulnerable road users</td>
<td>Safe speeds</td>
<td>Police enforcement focus on restraints, impairment, distractions, speed</td>
<td>POLICE</td>
</tr>
<tr>
<td>Fatal - 3</td>
<td>Safe road users</td>
<td>Support national initiatives such as “Share the Road” with local safety campaigns;</td>
<td>WMK</td>
<td></td>
</tr>
<tr>
<td>Serious injury – 19</td>
<td>Safe vehicles</td>
<td>Promote cycle skills education programme in schools</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Who:</td>
<td></td>
<td>Investigate Bikes in Schools programme &amp; similar initiatives to increase cycle skills education amongst children;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Cyclists 10</td>
<td></td>
<td>Work with the Waimakariri Access Group to increase awareness/promote best practice for disabled/sight impaired;</td>
<td>WMK</td>
<td></td>
</tr>
<tr>
<td>• Pedestrians 11</td>
<td></td>
<td>Support education and promotional programs that increase awareness of vulnerable road users;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Where:</td>
<td></td>
<td>Support heavy transport operators with education and awareness programs for both HT drivers and vulnerable road users;</td>
<td>NZTA/WMK</td>
<td></td>
</tr>
<tr>
<td>• Urban Road 62%</td>
<td></td>
<td>Ensure the vision and priorities of the Waimakariri Walking &amp; Cycling Strategy are implemented</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Open Road 38%</td>
<td></td>
<td>Ensure best practice is implemented in regard to signage and infrastructure around schools as outlined in guides</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Why:</td>
<td></td>
<td>Carry out regular audits of school safety signage/environment to maximise safety;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Rear end/obstruction 29%</td>
<td></td>
<td>Follow best practice guidelines when designing cycleways, footpaths and related infrastructure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Crossing/turning 20%</td>
<td></td>
<td>Promote vehicles with safety technologies designed to protect vulnerable road users.</td>
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<td>• Pedestrian 48%</td>
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### SUMMARY

**Waimakariri 2013-2018**

- **Fatal Crashes**: 3 (3 deaths)
- **Serious Injury Crashes**: 18 (19 seriously injured)

13% of the total fatal and injury crashes involved vulnerable road users (not including motorcyclists)
MEASURES & EVALUATION

In order to assess the success of our Road Safety Action Plan, various measures and evaluation methods will be considered in regard to each programme of work, campaign or education initiative undertaken.

A number of the measures and evaluations can be captured through related existing programmes of work such as regular road maintenance and audit procedures and the following quantitative measures.

- Road crash statistics relating to death and serious injury will be sourced from CAS and crash statistics relating to the specific areas of concern monitored and reported on;
- Data relating to the seriousness of injuries will be sourced where possible through ACC and a reduction in the severity of injuries measured;
- Police statistics/reporting on alcohol/drugs, speed, restraints, dangerous and careless driving and high risk drivers
- Uptake of training programmes in the District, e.g. Ride Forever motorcycle training, Oxford Trust U-Drive programme
- Speed management across the district will be monitored and evaluated through speed count data

Qualitative Measures:
Educational and promotional campaigns will utilize a variety of methodology to establish base-lines where possible and record the reach and impact of individual campaigns, where possible.

Road safety research undertaken in 2018 which established base-line data relating to road safety knowledge, understanding, satisfaction and perceptions will be utilised. This will assist to establish any changes in public knowledge of road safety initiatives undertaken in the District and understanding of road safety issues over the 2019/20 period.