Oxford-Ohoka Community Board

Agenda

Thursday 9 August 2018

7.00pm

Ohoka Community Hall
Mill Road
Ohoka

Members:
Doug Nicholl (Chair)
Mark Brown (Deputy Chair)
Wendy Doody
James Ensor
Shirley Farrell
Kevin Felstead
John Lynn
Thomas Robson
Board Members
OXFORD-OHOKA COMMUNITY BOARD

AGENDA FOR THE MEETING OF THE OXFORD-OHOKA COMMUNITY BOARD TO BE HELD IN THE OHOKA COMMUNITY HALL, MILL ROAD, OHOKA ON THURSDAY 9 AUGUST 2018 AT 7PM.

RECOMMENDATIONS IN REPORTS ARE NOT TO BE CONSTRUED AS COUNCIL POLICY UNTIL ADOPTED BY THE COUNCIL

BUSINESS

PAGES

1 APOLOGIES

2 CONFLICTS OF INTEREST

3 CONFIRMATION OF MINUTES

3.1 Minutes of the Oxford-Ohoka Community Board – 5 July 2018

RECOMMENDATION

(a) THAT the Oxford-Ohoka Community Board:
   Confirms the circulated minutes of the Oxford-Ohoka Community Board meeting, held 5 July 2018, as a true and accurate record.

4 MATTERS ARISING

5 DEPUTATIONS AND PRESENTATIONS

6 ADJOURNED BUSINESS
7 REPORTS

7.1 Mandeville Flood Works Update – Kalley Simpson (3 Waters Manager)

**RECOMMENDATION**

THAT the Oxford-Ohoka Community Board:

(a) **Receives** report No. 180727084111.

(b) **Notes** that improvement works will be undertaken in the Siena Place / Sillano Place area and Red Fern Lane area in the 2018/19 financial year.

(c) **Notes** that improvement works are proposed for the Wetherfield Lane / Roscrea Place area and Whites Road area in the 2019/20 and 2020/21 financial years.

(d) **Notes** that investigation on a diversion of the resurgent flow path will commence in 2020/21, with design in 2021/22 and construction in 2022/23.

(e) **Circulates** this report to the Utilities and Roading Committee.

8 CORRESPONDENCE

9 CHAIRPERSON’S REPORT

9.1 Chairperson’s Report for July 2018

**RECOMMENDATION**

THAT the Oxford-Ohoka Community Board:

(a) **Receives** report No 180730084838.

10 MATTERS FOR INFORMATION

10.1 Rangiora-Ashley Community Board meeting minutes – 11 July 2018 (Trim No. 180628071844).

10.2 Kaiapoi Tuahiwi Community Board meeting minutes – 18 June 2018 (Trim No. 180618067116).

10.3 Woodend-Sefton Community Board meeting minutes – 9 July 2018 (Trim No. 180703073671).

10.4 Library Update – report to Community and Recreation Committee 24 July 2018 (Trim No 180706075217).


10.7 Adoption of Stormwater Drainage and Watercourse Protection Bylaw 2018 – report to Council 1 May 2018 (Trim No 180329034013).

RECOMMENDATION
THAT the Oxford-Ohoka Community Board receives the information in items 10.1-10.8

11 MEMBERS’ INFORMATION EXCHANGE
The purpose of this exchange is to provide a short update to other members in relation to activities/meetings that have been attended or to provide general Board related information.

12 CONSULTATION PROJECTS
Flaxton Road
Consultation closes Monday 20 August 2018.
https://www.waimakariri.govt.nz/have-a-say/lets-talk/consultations/flaxton-road

13 BOARD FUNDING UPDATE
13.1 Board Discretionary Grant
Balance as at 2 August 2018: $6,020.

13.2 General Landscaping Fund
Balance as at 2 August 2018 – 12,160.

14 MEDIA ITEMS

15 QUESTIONS UNDER STANDING ORDERS

16 URGENT GENERAL BUSINESS UNDER STANDING ORDERS

NEXT MEETING
The next meeting of the Oxford-Ohoka Community Board is scheduled for Thursday 6 September 2018 commencing at 7.00pm, in the Oxford Town Hall.

Workshop
- Members Forum
MINUTES FOR THE MEETING OF THE OXFORD-OHOKA COMMUNITY BOARD HELD IN THE WEST EYRETON HALL, 3 EARLYS ROAD, WEST EYRETON ON THURSDAY 5 JULY 2018 AT 7.00PM.

PRESENT
D Nicholl (Chair), M Brown, W Doody, J Ensor, S Farrell, K Felstead, J Lynn and T Robson.

IN ATTENDANCE
E Cordwell (Governance Adviser), S Markham (Manager Strategy & Engagement), T Ellis (Development Planning Manager), J McBride (Roading and Transport Manager), B Rice (Senior Transport Engineer) and E Stubbs (Minute Secretary).

Thirty members of the public were present in the gallery for Item 5.1. The meeting adjourned for a short break from 7.53pm to 7.55pm to allow the public to leave.

1 APOLOGIES
Nil.

2 CONFLICTS OF INTEREST
James Ensor advised that he was a member of the Mandeville Residents Association – Item 5.1

3 CONFIRMATION OF MINUTES
3.1 Minutes of the Oxford-Ohoka Community Board – 7 June 2018
Moved S Farrell seconded M Brown
THAT the Oxford-Ohoka Community Board:
(a) Amends the minutes of the Oxford-Ohoka Community Board 7 June 2018, the last paragraph of Item 8.4 should read ‘S Farrell commented that all the Council community buildings that had wooden floors were well booked up and the Oxford A&P building was being used as a community building by OxBox and Yoga at present. It needed maintenance on it to meet Health & Safety standards.’
(b) Confirms the circulated minutes of the Oxford-Ohoka Community Board meeting, held 7 June 2018, as a true and accurate record.

4 MATTERS ARISING
Nil.

5 DEPUTATIONS AND PRESENTATIONS
5.1 Rosina Rouse and T McBrearty Mandeville Residents’ Association (MRA) and Eyre District Environmental Association Inc. (EDEAI) spoke in relation to the Canterbury Landscape Supplies (CLS) activity at Diversion/ South Eyre Roads, Eyreton. R Rouse and T McBrearty introduced themselves and their relationship to a number of community groups in the area. T McBrearty advised that he was the also a local Water Committee Representative for Ohoka, Mandeville and Oxford. They noted the large public gallery supporting their deputation who were also affected by the CLS operation and advised that
they believed that around 300 people were actually affected. They spoke to a tabled presentation (Trim 180706075233).

R Rouse and T McBrearty appreciated the opportunity to speak to matters of concern to the residents including potential impact on ground water, lack of firefighting facilities, unresolved issues and operation of the site.

It was noted that there were three separate Resource Consents for the proposed composting activity. Two to Environment Canterbury (ECan) CRC175344 and CRC175345 for ‘discharge to land and air, with a separate consent application to Waimakariri District Council (WDC) regarding ‘land use’ including stockpiling.

These applications are being processed and addressed separately with the application to ECan being refused by two independent Hearing Commissioners on 26 June 2018. It was acknowledged that the Community Board formally submitted in opposition to the CLS operation.

These same Commissioners have been engaged by WDC, to ensure consistency and to determine whether the consent application to WDC should or should not be publicly notified in accordance with the strict criteria of the Resource Management Act (RMA). This is the first stage of the RMA consenting process and is not subject to interpretation.

The MRA were of the understanding that this decision had already been made and that the WDC consent was to be ‘non-notified and had prepared their material for the Board on that basis.

Staff and Deputy Mayor Felstead confirmed that this was not the case and that no decision had been made and that this is still before the independent Commissioners to determine. K Felstead also advising later in the meeting that the Commissioners’ decision was subject to a 15 day time frame for CLS to appeal and that this had not yet expired. Any such appeal would be heard by the Environment Court and would automatically place the WDC consent on hold pending any Court outcome.

(Post meeting note - this appeal was lodged on 18 July 2018).

R Rouse advised that the MRA believed that the matters were not minor and that the application to WDC must be publicly notified. They were not against compost production or business and agreed with the findings of the Hearing Commissioners to refuse the ECan consent.

R Rouse expressed a number of concerns regarding communication of the consents to local residents. Many residents were distressed, angry and frustrated. She commented that the community had fully and respectively engaged in the entire process because they believed it was the right thing to do out of concern for the environment, for its future protection and necessary remediation. R Rouse commented that they placed trust that the governing authorities: Waimakariri District Council and Environment Canterbury would do the right thing.

R Rouse noted that WDC provided representation at the Mediation meeting through its lawyer Andrew Schultze of Cavell Leitch but that neither staff nor Councillors had attended any of the four days of the ECan Hearing. The Oxford-Ohoka Community Board (Doug Nicholl and John Lynn) had presented their submission.

K Felstead and staff advised that it was imperative that both WDC staff and Councillors maintained scrupulous independence from the ECan process to ensure that the WDC consenting process could withstand any potential challenge or Judicial Review as regards pre-determination or other impropriety.

R Rouse spoke to the issue of water noting local residents relied on their shallow wells to provide safe, good-quality drinking water. Many were located
on a red nutrient water zone where nitrate levels are already high and they
could not afford further nitrates to seep into the ground water. R Rouse
outlined results of various local supplies. Currently her own supply was just
below the Maximum Allowable Value (MAV) for nitrates and she had installed
a reverse osmosis filter at a cost of $900 with additional ongoing costs. She
asked in the case of nitrate levels increasing above MAV who would fund and
supply safe water; it was not fair to expect residents to pay. She had been
advised that it could be done but would be very expensive. Residents did not
want a repeat of the Havelock North situation.

R Rouse requested a WDC report into the feasibility, timeframe required and
cost of providing a safe supply of potable water to the potentially affected
residents of the district. She also requested that the drinking water from her
reverse osmosis filter system be tested so that other residents may have
certainty about the success of this means of dealing with nitrates.

R Rouse spoke to the issues of stormwater and leachate. She commented
that she believed that the site was unsuitable and was located in a sensitive
environment. There was uncertainty regarding what was in the compost
material including pathogens, ponding of water and still no collection of
stormwater and leachates. The material had been on bare ground for over
two years. R Rouse outlined what she believed the requirements needed to
be for the site, including impermeable barriers, permanent bunding, engineer’s
report, safe collection of all polluted water, lining of pad and collection ponds
and assessment of materials.

R Rouse spoke to the issue of fire. She believed that the site Fire Plan needed
to be updated. Water was currently supplied by a neighbour which had initially
been only a short term agreement. There was no well on site yet and no
application for one had been made. Based on pipe diameter R Rouse
suggested that the applicant’s assertion of 15L/s may be overinflated and that
the 25,000L tank was insufficient to fight fires. There were flight restrictions
due to overhead cables so aerial firefighting was not an option. They believed
24/7 monitoring of composting temperatures was required and R Rouse
highlighted what she felt was the poor track record of the applicant with regard
to fires. Residents were also concerned about the speed of progress of fire,
availability to halt a fire in very strong winds, detection, how residents would be
advised of danger and believed there was an unacceptable risk to residents,
property, stock, livelihoods and the Waimakariri River. R Rouse noted there
were a number of unresolved issues including flies and midges, the smell and
transport of hazardous materials and spillages.

T McBrearty commented that in his view the applicant had a long history of
compost production but appeared to have issues with compliance. Changes
to composting operating procedures were post-complaints and in a reactive
rather than proactive way. T McBrearty commented that residents had a lack
of trust in the applicant’s ability to successfully establish and manage the
operation.

In conclusion T McBrearty advised that the Mandeville Residents’ Association
believed that the WDC Resource Consent sought by Canterbury Landscape
Supplies Ltd should be refused. They believed the application for this consent
should be publicly notified.

In addition the Mandeville Residents Association wanted to ensure that this
kind of situation did not happen in the future, suggesting that there could be a
Bylaw that would prevent retrospective consents on any new rural operation.

The Board were advised that the applicant did seem to be removing large
amounts of material from the site in accordance with an ECAn notification.
R Rouse requested that after the removal of material that the land be tested so it was known what condition it was in and there was reassurance it would be reinstated and was safe. This would be a matter to be raised with ECan.

R Rouse referred to photographs on the handout which showed the site after rain events in 2018. Water was ponding and running off.

S Markham noted the appeal period expired in a few days.

S Markham provided an overview of various scenarios depending on whether or not the applicants lodged an appeal to the Environment Court. He also advised of the various types of notifications: non-notified, publicly notified or limited notification.

K Felstead asked staff if the applicant did not appeal would the land use consent application be withdrawn. T Ellis replied that this was likely as WDC could not give effect to a land use consent if there was no discharge consent.

S Markham acknowledged the significance of the community’s concerns. He highlighted that when, or if the land use consent was considered, it would be by the same Commissioners who had considered the discharge consents so they were familiar with the background and had been involved throughout the process.

S Farrell raised concerns about residents not having a platform to be heard in relation to the land use consent (WDC) if it was not notified. T McBrearty replied that he would be disappointed if this were to be the case as the Council had an excellent track record of community engagement but he acknowledged that this was a decision under the RMA, rather than a Council decision, as to notification. R Rouse commented that residents were not experienced in these types of RMA processes and had found it to be lengthy and difficult. However, they had not taken what they had been presented with at face value and had done their research, which included visiting a number of other composting operations including that of Timaru District Council. As a result of their research they felt they understood what best practice at a composting site was — and that this was not happening at the CLS operation. T McBrearty believed the withdrawal of support for CLS from Silver Fern Farms at the hearing when they learnt that CLS was operating without consent, was of note.

J Lynn asked for clarification regarding compost removal and R Rouse advised it was being removed under ECan direction. It was understood that CLS had until the end of the week to supply a plan on how it was to be removed. The removal was expected to go past the deadline.

J Ensor asked what the residents would like to see regarding monitoring water and ensuring safe drinking water. R Rouse advised they would like the reverse osmosis water filtration method to be tested to provide clarity around whether the system worked. If nitrate levels continued to increase there were likely to be other residents who would require a solution. They understood that there other contributing factors in increasing nitrates, but they could not afford any more going into the drinking water. They would like a report to look at the possibility of a potable water supply to protect residents in the future.

The meeting adjourned from 7.53pm to 7.55pm to allow members of the public to leave.

5.2 Joanne McBride (Roading and Transport Manager) spoke to the previously circulated memo (Trim 180703073912) providing an update on roading priorities for 2018-2019. To determine conditions of kerb and channels and footpaths a condition rating is carried out every three years. There was also
coordination with 3Waters and Greenspace. J McBride advised that she was happy to take feedback on the priorities at the meeting or following via phone or email.

J Lynn, as Chair of the Ohoka Residents’ Association, noted that the proposed new footpath in Ohoka, was planned for 2022 which was another four years out, and it had already been raised for the last 10 years. He expressed disappointment at the delay and noted it was for the safety of children walking to Ohoka School. K Felstead asked if the path needed to be sealed or would crusher dust be sufficient. J Lynn replied that in the absence of seal it would suffice. J McBride advised that there was separate funding for walking and cycling projects and that a list of projects would be going to the Utilities and Roading Committee for approval.

M Brown asked with regard to Tram Road (at Woodfields Road) improvements did that include consultation to which J McBride confirmed it did.

M Brown asked whether ‘Roadside Hazard Removal’ projects included roadside drains. J McBride advised it included removing obstacles such as concrete tombstone ends that were close to the road. M Brown asked where roadside drains fell in terms of roading as some blocked culverts under roads that were not being addressed. J McBride replied that it came under roadside maintenance issues, and she was happy to discuss specific sites.

M Brown asked about funding for cattle underpasses as it was his understanding that the farmer paid. J McBride advised that this was usually the case but on occasion, where an underpass was necessary in terms of safety outcomes, the Council would consider assisting but they were heavily subsidised by the NZTA and the farmer.

S Farrell raised a concern regarding shingle spreading onto South Eyre Road from Diversion Road and Browns Road which was causing problems. J McBride advised that over recent years Council had been re-sealing side roads back to the boundary as part of resealing improvements however there were others that did need to be looked at for sealing back.

D Nicholl asked with regards to Browns Road could residents assist with costs. J McBride noted there would be a report to the Utilities and Roading Committee soon regarding the upcoming seal process.

J Ensor noted that following the recent work completed at North Eyre Road it was not sealed back to the boundary which created issues with the Mandeville Sports Club carpark. J McBride advised she would follow up on this. J Ensor also noted problems at Mill Road and was happy to discuss further with J McBride.

M Brown asked if seal back at intersections came under maintenance or capital works. J McBride advised that if a reseal was being completed there would be seal back to the boundary on either side, however if more sealing was required it would be put into the programme to bring to Community Boards.

K Felstead commented that it was good to see the new Oxford footpaths. He noted that a number of years ago Harewood Road was at the top of list for a footpath however residents had requested that drainage issues be fixed first. The drainage works had now been completed and he asked for an update on when the footpath work would be completed. J McBride agreed to follow up on this.

K Felstead noted the Board’s submission to the Long Term Plan regarding German Road, Browns Rock Road and Cust Road being in a rough condition and asked if those road repairs had been programmed. J McBride would follow up on the matter.

T Robson queried the Ashley Gorge Road guard rail project. B Rice advised that it was at the end of the straight heading toward Oxford. T Robson asked
if the Ashley Gorge route assessment would include an assessment of cycling usage as it was a very popular route and cyclists could present a safety risk. J McBride advised that this was a joint project with NZTA and ACC looking at roadside hazards.

W Doody noted that she was pleased to see the guardrails included. She also noted that there were gum trees on the south side of Tram Road that were now affecting the road and creating a ridge.

J Lynn provided feedback from local residents in Ohoka who were concerned that a commercial entity on Mill Road had created a turning bay on the grass verge. They questioned why they had been allowed to do so while farmers had to increase the size of culverts for milk tankers to enter and exit farm driveways. J McBride would follow up and to ascertain if formal permission had been sought for the widening.

S Farrell asked for an update on the hand rail in Meyer Place. J McBride would follow up.

5.3 Trevor Ellis (Development Planning Manager) provided an update regarding the District Development Strategy (DDS) and tabled the finalised Waimakariri 2048 District Development Strategy. S Markham noted it was the lead-in document to the upcoming District Plan review and provided direction. T Ellis also tabled a spatial overview of residential section sizes and growth. Oxford Township was not experiencing rapid growth and zoning within the Oxford Township would be looked at as part of the District Plan Review.

T Ellis advised there was appetite for rural residential development to continue including in Mandeville / Ohoka. There was potential for larger rural residential lots to intensify. The tabled map provided analysis of lot sizes by certificate of titles. It showed there was preference for four hectare subdivision in the eastern part of the district. The review would consider whether the current four hectare minimum rule was sustainable. There were regional provisions to protect and manage primary production land and rural character. There had been an initial briefing to Councillors regarding the potential for up to twelve different ‘character areas’.

S Farrell referred to the planner’s report (Agenda Item 8) which highlighted that there was not much industrial land available in Waimakariri, for example for composting. T Ellis noted there was approximately 60-70 hectares of industrial land in Southbrook that was vacant however it was held by a handful of landowners who could choose when or if they wanted to make it available. Council would continue to monitor the situation. Staff were considering a number of different zoning options and areas as part of the review.

J Ensor referred to subdivisions such as Ohoka Meadows and Mandeville Park which he felt did not have sufficient infrastructure to cope with heavy rain events. He asked why adequate infrastructure was not installed at the time of development rather than needing to fix down the track. T Ellis could not comment on specific examples. Decisions were based on what was known at the time. S Markham advised there was now a proposal for transition from a more reactive approach that was led by private plan changes, to more proactive provisions. There was a parallel stream of work about a more planned approach. Private plan changes created an incremental cumulative effect rather than proactive zoning by the Council. It would be more costly to the Council in the short term as historically the private plan change process relied on the applicant doing a lot of the work.

J Lynn referred to the growth in Woodend and Pegasus and the deferment of the Bypass, asking if there needed to be consideration around the impact of this. S Markham commented there was a paradox, as development would potentially bring the bypass timeframes forward. There was active work ongoing with NZTA. It was a difficult situation that required clarity.
T Ellis noted there was a sum of money for Greater Christchurch to be allocated for mass transit.

D Nicholl expressed concern at the splitting of farmland into small blocks highlighted by the comparative images from the 1980’s to early 2000’s. There had been a significant change to the District over the life of the current District Plan. T Ellis commented that there was a lot of crystal ball gazing going on at the moment around rural futures and what it meant for future land use.

6 ADJOURNED BUSINESS
Nil,

7 REPORTS

7.1 Oxford Area School Pick Up / Drop Off Area on Bay Road – B Rice (Senior Transport Engineer)

B Rice spoke to the report noting that it was in response to a request from the Oxford Area School for a drop-off zone outside the school on Bay Road. Like many schools around New Zealand there were issues with picking up and dropping off children safely at the beginning and end of the school day. The effectiveness of the proposed area would be greater in the morning and limited in the afternoon and would be largely dependent on monitoring and enforcement. Enforcement by Police or Council parking staff was likely to be limited. While the drop-off zone would not totally mitigate the issues, school staff supported it, had agreed to assist with monitoring it and speaking with parents.

S Farrell asked if B Rice believed it would cause more parents to do U turns to get to the drop-off point and suggested it may create confusion for cars getting into the drop-off zone. There was still the ability to park on the west side. B Rice agreed that this could be an outcome but that it was preferential to have parents do U turns than for children to cross the road. It would of course be better if drivers went around the block, but that was driver behaviour and could only be encouraged.

S Farrell asked if it were possible to include a 40km/hr school zone at the same time. B Rice advised that was something that could be considered. K Felstead asked if that had been discussed with the School Board. W Doody asked what K Graham the Road Safety Coordinator thought of the zone. B Rice advised that K Graham had offered to work with the school regarding reducing the number of cars ‘dropping off’ and other measures to assist with the situation.

Moved T Robson seconded M Brown

THAT the Oxford-Ohoka Community Board:

(a) Receives report No 180614066438.
(b) Adopts the attached Amended Second Schedule – Parking Restrictions to the Parking Bylaw 2007 (Trim No 180621069253).
(c) Notes that enforcement of the drop off zone by Police or Council parking staff is likely to be limited.
(d) Notes that the Oxford Area School has indicated a willingness to provide staff to monitor the drop off zone.

CARRIED
7.2 Oxford-Ohoka Community Board’s Discretionary Grant Fund 2018/2019 and General Landscaping Fund 2018/2019 – E Cordwell (Governance Adviser)

E Cordwell spoke briefly to the report noting the Board’s General Landscaping Budget allocated by the Council for 2018/19 was $12,160 and the Board’s Discretionary Grant Funding allocated by the Council for 2018/2019 was $6,520. The noted corrections to the Application and Accountability Forms were in hand.

Moved S Farrell    seconded J Lynn

THAT the Oxford-Ohoka Community Board:

(a) Receives report No. 180619067874.
(b) Notes that the Board’s General Landscaping Budget allocated by the Council for 2018/19 is $12,160.
(c) Notes that the Board’s Discretionary Grant Funding allocated by the Council for 2018/2019 is $6,520.
(d) Approves the Board’s 2018/2019 Discretionary Grant Fund Application Criteria and Application Form (Trim No. 180621068982).
(e) Approves the Board’s 2018/2019 Discretionary Grant Accountability Form (Trim No. 180621068877).
(f) Approves that Discretionary Grant Fund applications will continue to be considered at each meeting for the 2018/2019 financial year (July 2018 to June 2019).

CARRIED

7.3 Application to the Oxford-Ohoka Community Board’s Discretionary Grant Fund 2018/2019 – E Cordwell (Governance Adviser)

E Cordwell spoke briefly to the report noting that the Club had received $3,500 from a Pub Charity Grant toward the full cost of the new uniforms.

Moved K Felstead    seconded S Farrell

THAT the Oxford-Ohoka Community Board:

(a) Receives report No. 180621068915.
(b) Approves a grant of $500 to Ohoka Netball Club towards the cost of new uniforms.

CARRIED

7.4 Approval of the updated Oxford-Ohoka Community Board Plan 2018/19 – E Cordwell (Governance Adviser)

E Cordwell noted a further draft had been circulated, and that there was the provision for the Chair to sign off the Plan on the Board’s behalf subject to minor edits. There was still a placeholder for a photo and E Cordwell suggested the new Oxford Library and Service Centre.

A number of minor edits were noted.

Moved M Brown    seconded S Farrell

THAT the Oxford-Ohoka Community Board:

(a) Receives report No. 180618067171.
(b) Approves the final draft of the Oxford-Ohoka Community Board Plan
8 Correspondence

E Cordwell noted the tabled response to the Draft Stormwater Bylaw (Trim 180619067653).

The memo regarding the CLS operation provided an update on progress including various reports and the Commissioners’ findings for the ECan consent refusal.

S Farrell requested that the Board formally express their concern that residents affected by the CLS did not have a platform to be heard by WDC if the Commissioners determined that the land use consent to WDC be ‘non notified’. K Felstead opposed this proposal given that the decision to notify or otherwise had not been made and so the Board should not yet express views.

J Lynn expressed a number of concerns. He believed that there should have been a formal report to the Community Board seeking recommendations to the Council as to whether the CLS application should or should not be notified. He was disappointed with the inability to engage with the decision process as regards notification.

It was noted that at the previous month’s meeting, in the workshop S Nichols (Governance Manager) had covered a number of matters including the RMA process for notification.

E Cordwell explained that the Community Boards were not part of the RMA planning assessment. Under the Resource Management Act (RMA), whether an application was notified or non-notified followed very specific legislative rules, and that process did not include directly either the Council or the Community Board.

K Felstead reiterated that this was a highly legal process. In addition this specific CLS application was being assessed by independent Commissioners to ensure scrupulous adherence to the RMA and prevent any subsequent challenge from the applicants or any other party.

M Brown acknowledged it was a legal process. He believed the general feeling of the Board members was that they needed to take every opportunity to advocate for change in the RMA legislation and associated processes, including through the District Plan Review. Whilst they could not affect the current application, members of the Board wished to make it clear to residents that they were listening to them and that they did not like the current process and would advocate for change to that process.

T Robson agreed with J Lynn and felt uninformed and frustrated. The confusion it created for residents was the main concern.

J Lynn was disgusted with the RMA process, noting the number of concerned residents who had supported the deputation and were living daily with the issue. There was a strong concern regarding water and the Council needed to be acting faster.

S Farrell expressed her own concerns and disappointment with the RMA process. She also asked if WDC staff and the planning consultant had been to the CLS site. S Farrell stated people were suffering adverse effects including to their mental and physical health.

S Markham noted that the planning consultant’s report regarding notification should not be confused with a report on the detail of the application. The current report, looked at the threshold for notification against strict criteria in
the District Plan and the RMA. Multiple reports and technical assessments would be produced relating to the consent itself and presented in due course to the Commissioners that would take into account a range of issues pertaining to the proposed site and operation. This was a later stage of the process.

However, if the applicant appealed the ECan discharge consent then the situation would alter. S Markham acknowledged it was a convoluted process that was far from clear cut. If there was no appeal by the 18 July then the matter was over, however this may not be the case.

K Felstead believed staff had summed up matters well. The elected members did not get to decide if the application was notified or non-notified. K Felstead also referred to Page 65 of the agenda where it was noted there was a site visit on 25 April 2018.

M Brown reiterated that the Board needed to advocate for change through local and central government so the situation did not happen again. It was of concern that CLS could set up an operation before a resource consent was granted. S Markham advised that there was a test in the RMA around notification. It was possible that changing the provisions of the District Plan from an effects base to an activities based plan could assist. The plan could specify certain activities that needed to be publicly notified. Initiating change to the RMA itself was more challenging, as that was a parliamentary process.

Moved M Brown seconded J Ensor

THAT the Oxford-Ohoka Community Board:

(a) Receives the memo regarding Canterbury Landscape Supplies Operation in Eyreton (Trim 180625070336).

CARRIED

Moved M Brown seconded J Lynn

THAT the Oxford-Ohoka Community Board:

(b) Notes that, if it had been the case that the Oxford-Ohoka Community Board were material to the decision for notification, the Board would have strongly advocated that the Canterbury Landscapes Supplies application be publicly notified.

CARRIED

9 CHAIRPERSON’S REPORT

9.1 Chairperson’s Report for June 2018

Moved T Robson seconded J Ensor

THAT the Oxford-Ohoka Community Board:

(a) Receives report No 180621068953.

CARRIED

10 MATTERS FOR INFORMATION

10.1 Rangi-Ohoka Community Board meeting minutes – 13 June 2018

(Trim No. 180606062470.)

10.2 Kaiapoi Tuahiwi Community Board meeting minutes – 21 May 2018

(Trim No. 180518054887.)
10.3 **Woodend-Sefton Community Board meeting minutes – 14 May 2018** (Trim No. 180510051232).

10.4 **Woodend-Sefton Community Board meeting minutes – 11 June 2018** (Trim No. 180606062391).

10.5 **Youth Council meeting minutes – 29 May 2018**

10.6 **Environment Canterbury Representation Review – report to Council 3 July 2018** (Trim No 180624069683).

10.7 **Draft Business Zones 1 & 2 Public Spaces Policy report to Council 5 June 2018** (Trim No. 180507049501).


Moved M Brown seconded J Lynn

**THAT** the Oxford-Ohoka Community Board receives the information in items 10.1-10.8

**CARRIED**

11 **MEMBERS’ INFORMATION EXCHANGE**

**J Ensor**
- Attended Waimakariri Health Advisory Group meeting. A Terms of Reference for the group was introduced (Trim 180706075244). Noted the helicopter pad funding was proceeding.
- Noted upcoming Civil Defence Welfare Exercise Friday 27 July.
- Attended Mandeville Sports Centre meeting – main item was Health and Safety.
- Mandeville Village and Main Road open – LED lights not as effective as could be due to colour choice. Care needed to be taken with decisions regarding that intersection.

**J Lynn**
- Gatekeepers Lodge – Council agreed to fund to tie down the building foundation.
- Noted mess outside Ohoka Domain carpark.

**T Robson**
- Attended Ashley Gorge Advisory Group meeting where work on removing the Lombardy Poplars was viewed, as well as the heritage building – good progress.
- Oxford Promotions Association (OPAC) – Oxford Lights Festival successful with a good turnout.
- Upcoming Oxford Garage Sale Sunday 5 August.

**S Farrell**
- Assisted with Oxford Lights Festival.

**M Brown**
- Judging at local pony club events – clubs were in good heart.
- Attended Oxford Rural Drainage Committee meeting, discussed joining with Cust Rural Drainage – answer was no. Reasons for ‘no’ included Cust had a zero balance while Oxford had $70,000 available.
- Attended Mandeville Sports Club Board meeting - Canterbury Sports Trust had been engaged to assist with a Strategic Plan.

**K Felstead**

Noted Council reports:  
- Oxford Museum and Jaycee Room strengthening – not strengthen as not high use. Approved new entranceway from carpark $125,000.
• Public consultation of Draft Kaiapoi Town Centre Plan in August.
• Set up project management group for Multi Use Sports Facility.
• CWMS Annual Report.
• Mayor to champion Sustainability Strategy.
• Solid waste transfer station – tender.
• Approved request for additional funding for Kaiapoi well head security.
• Submission to Mainpower Trust.
• Final Greenspace Activity Management Plan.
• Submission on ECan Representation Review.

W Doody
Tabled her Councillor’s Report (Trim No 180706075224). Points noted were:
• Ken Stevenson retirement.
• Kerbside collection – what service and bin size.
• Public consultation for ‘Alcohol in our District’.
• Oxford Rural No2 in operation.
• Oxford Rural No1 – consent decision in favour.
• Progress on Ashley Gorge Heritage building was moving fast.
• Oxford Museum – work starting soon.
• Oxford Festival of Lights – an incredible event.

12 CONSULTATION PROJECTS
Business Zones 1 & 2 Public Spaces Policy
Consultation closes Monday 30 July 2018.

13 BOARD FUNDING UPDATE
13.1 Board Discretionary Grant
Balance as at 5 July 2018: $6,520.

13.2 General Landscaping Fund
Balance as at 5 July 2018 – 12,160.

14 MEDIA ITEMS
Nil.

15 QUESTIONS UNDER STANDING ORDERS
Nil.

16 URGENT GENERAL BUSINESS UNDER STANDING ORDERS
Nil.
NEXT MEETING

The next meeting of the Oxford-Ohoka Community Board is scheduled for Thursday 9 August 2018 commencing at 7.00pm, in the Ohoka Hall.

THERE BEING NO FURTHER BUSINESS, THE MEETING WAS CLOSED AT 9.54pm.

CONFIRMED

__________________  __________________
Chairperson          Date
1. **SUMMARY**

1.1 The purpose of this report is to:

1. Present the following flooding assessment reports to the Oxford-Ohoka Community Board:
   - Siena Place and Sillano Drainage memo
   - Redfern Lane Drainage memo
   - Wetherfield Lane, Roscrea Place and McHughs Road Drainage memo

2. Update the Oxford-Ohoka Community Board on proposed flood works to be undertaken in the Mandeville area.

**Attachments:**

i. Siena Place and Sillano Drainage memo (180413040288)
ii. Redfern Lane Drainage memo (TRIM 180626070699 & 180626070709)
iii. Wetherfield Lane, Roscrea Place and McHughs Road Drainage memo (TRIM 180726083695)

2. **RECOMMENDATION**

**THAT** the Oxford-Ohoka Community Board:

(a) **Receives** report No. 180727084111.

(b) **Notes** that improvement works will be undertaken in the Siena Place / Sillano Place area and Red Fern Lane area in the 2018/19 financial year.

(c) **Notes** that improvement works are proposed for the Wetherfield Lane / Roscrea Place area and Whites Road area in the 2019/20 and 2020/21 financial years.

(d) **Notes** that investigation on a diversion of the resurgent flow path will commence in 2020/21, with design in 2021/22 and construction in 2022/23.

(e) **Circulates** this report to the Utilities and Roading Committee.
3. **BACKGROUND**

3.1 The Mandeville area was significantly affected by heavy rainfall events and high ground water levels in June and July 2014, and again in July and August 2017. Additionally, above average rainfall has raised the groundwater levels and resulted in resurgent groundwater (springs) operating in the Mandeville area since August 2017.

3.2 Significant upgrading works were undertaken flooding the June 2014 flood event, particularly in the Bradleys Road area, and additional works were proposed for future years.

3.3 The July and August 2017 rainfall events highlight the need to progress works in parts of Mandeville, particularly to do with managing high groundwater and resurgent flows.

3.4 The Council commissioned Beca to provide Drainage support following the more recent rainfall event. Part of this work included undertaking flooding assessments in the Siena Place / Sillano Place area, Redfern Lane / Tram Road area and the Wetherfield Lane / Roscrea Place area.

4. **ISSUES AND OPTIONS**

*Siena Place and Sillano Place Drainage*

4.1. The drain along the western side of Siena Place was upgraded following the June 2014 floods. Works were also undertaken to repair the road at the cul-de-sac heads of Siena Place and Sillano Place (refer TRIM 180419042535).

4.2. A number of Siena Place and Sillano Place residents have reported stagnant water and insects through the latter half of 2017 and into 2018. Additionally road seal at the cul-de-sac heads is again at risk of damage from high groundwater.

4.3. The work undertaken by Beca (refer Attachment i, TRIM 180413040288) recommended the following maintenance and short term works.

4.3.1. Maintenance works:

- Clean culvert at Bradleys road confluence
- Remove sediment and vegetation for 20m immediately upstream of the Velino Place culvert
- Update the Council’s GIS of the channel to the north of Siena Place

4.3.2. Short term works (refer Figure 1 below):

- Replace the solid underchannel pipe with a slotted subsoil pipe outside 52 and 60 Siena Place to reduce the risk of stagnant water.
- Regrade the drain through 100 Siena Place, upgrade 3 driveway culverts and install a subsoil pipe in the cul-de-sac head to manage the high groundwater.
- Regrade the drain through 10 Sillano Place, upgrade the outlet culvert and install a subsoil pipe in the cul-de-sac head to manage the high groundwater.

4.4. The above maintenance works have been completed and the short terms works have been designed and are currently being priced. It is anticipated that the works will be undertaken in summer months when the groundwater levels have subsided and the ground is less susceptible to damage from construction vehicles.
4.5. The Redfern Lane properties have a history of surface flooding, including in the 2014 and 2017 storm events. The main resurgence flow channel flows under No. 10 Road just to the north of Redfern Lane and has been flowing since August 2017.

4.6. The work undertaken by Beca (refer Attachment ii, TRIM 180626070699 & 180626070709) recommended the following maintenance, short term and long term works.

4.6.1. Maintenance works:

- Improve channel conveyance through 444 No. 10 Road. Works to be undertaken once channel water levels reduce.
- Regular Council maintenance of the No. 10 Road culvert.
- Discuss with property owners the option of private works to raise the 456, 452 & 448 No. 10 Road driveway and bund the southern bank of the channel.
- Clearance of the channel downstream of Tram Road (through 1160 and 1136 Tram Road).
- Discussion with property owners regarding ongoing maintenance activities. Regular maintenance works undertaken by Council or property owners should include:
  
  i. Overgrown vegetation cut-back along channel length to prevent flow restrictions.
  
  ii. Localised channel restrictions (foot bridges, fencing, over grown vegetation, service supports) to be regularly cleared (monthly, and following any high rainfall events, or any forecasted storm events).
  
  iii. Any pipe/culverts to be regularly cleaned and the inlet cleared. Culverts should have an overflow point (over the pipe length) so that
once the capacity of the culvert is exceeded, flow will spill and re-enter the channel without endangering property or persons.

4.6.2. Short term works (refer Figure 2):

- Construction of a swale and bund to divert the flood overflow at No. 10 Road, north to Tram Road.
- Investigate if low bunding along 1 Redfern Lane and 422 No. 10 Road is practical to prevent spill from No. 10 Road through 422 No. 10 Road, and 2, 3, and 4 Redfern Lane properties.
- Investigate the capacity of the 1136 Tram Road driveway culvert, and discuss with the property owner.

Figure 2 – Redfern Lane Proposed Short Term Options

4.6.3. Future long term upgrade works (refer Figure 3):

- Progression of a long term (investigations, consultation, design and consenting) for Mandeville. Investigation and options to include the diversion to the south of flow up-gradient of No. 10 Road. Long term diversion options include:
  
  i. Upgrade Main Channel: upgrade the capacity along the existing channel through Redfern Lane, Crossing Tram Road, then through Millfield, San Dona, to Bradleys Road.
  
  ii. Diversion: diversion south down No. 10 Road to the old Eyre River
  
  iii. Diversion: diversion north to Tram Road and onto Bradleys Road.

4.7. The above maintenance works will be undertaken when the resurgence flow through the Redfern Lane area has subsided. The short terms works are currently being designed this includes discussion with landowners regarding the potential for low bunding and the need to potentially upgrade some vehicle crossing. It is anticipated that the works will be undertaken in summer months when the groundwater levels have subsided.
4.8. The long term works are currently planned to be investigated in 2020/21, with design in 2021/22 and construction in 2022/23.

Wetherfield Lane, Roscrea Place and McHughs Road Drainage

4.9. The properties in the Wetherfield Lane, Roscrea Place and McHughs Road area have a history of surface flooding, including in the 2014 and 2017 storm events. The stockwater race system in the area is prone to being inundated with flood flows, which causes issues at the cul-sac-sac head of Wetherfield Lane, which has no defined secondary flow path, and in the low lying part of Roscrea Place near McHughs Road.

4.10. The work undertaken by Beca (refer Attachment iii, TRIM 180726083695) recommended the following maintenance and short term works. The long terms works recommended were as per that recommended for the Redfern lane area above.

4.10.1. Maintenance works:

- Clearance and investigation of the 34-42 Wetherfield Lane driveway culvert capacity.
- Investigation of the water race conveyance and secondary flow paths between 35 Wetherfield Lane and 101 McHughs Road.
- Maintenance of sections of the water race with heavy or moderate weed and vegetation growth including 125, 157 and 163 McHughs Road (discuss with property owners)
- Clearance of the Bradleys Road drain at 1 Bradleys Road
4.10.2. Short term works (refer Figure 4):

**Wetherfield Lane**
- Upgrade the water race through 26 and 36 Wetherfield Lane
- Construction of a permanent bund / raised accessway at 37 Wetherfield Lane
- Feasibility assessment of diversion or soakage to ground of overland flows from No 10 Road; at No 10 Road, or Wetherfield Lane.

**Roscrea Place**
- Installation of a DN300 overflow pipe from the soak pit at 10 Roscrea Place to the water race at the McHughs Road intersection
- Construct a defined roadside swale above the proposed pipe
- Construct a small bund adjacent to the proposed swale to protect the property at 10 Roscrea Place.

**McHughs Road**
- Upgrade of the driveway culvert at 137-153 McHughs Road.
- Clearance, and upgrade to the driveway culvert at 163-169 McHughs Road.
- Options assessment of upgrades to water race conveyance through 181 McHughs Road.

![Figure 4 – Wetherfield Lane, Roscrea Place and McHughs Road Short Term Options](image)

4.11. The above maintenance works are currently being progressed. The short terms works are programmed to be undertaken in the 2019/20 and 2020/21 financial years.

**Other Flood Works**

4.12. The only other flood work project proposed following the June 2014 flood event is the White Road Drain Upgrade Stage 2 works (refer TRIM 140805082132 and Figure 5 below). These works are programme to be undertaken in 2019/20.

4.13. The White Road Drain Upgrade Stage 1 works were completed in 2014/15.
4.14. The Management Team have reviewed this report and support the recommendations.

5. COMMUNITY VIEWS

5.1. Groups and Organisations

5.2. Views have been sought from the Mandeville Residents Association, the Ohoka Rural Drainage Advisory Group and local residents. All are supportive of Council undertaking drainage work to reduce the risk of flooding and high ground water.

5.3. A group of local residents including Mr James Ensor, Mr Des Lines and Mr Tom McBrearty have been actively working with Staff and Beca to find solutions to a number a drainage issues in the wider Mandeville area.

5.4. Individual property owners will be consulted with, where the works directly relate to their property, before proceeding.

5.5. Wider Community

5.6. The wider Mandeville Community have been engaged through a number of public meetings. Community sentiment supports Council taking action sooner rather than later.

6. IMPLICATIONS AND RISKS

6.1. Financial Implications

6.2. The works will be funding from existing budgets as approved through the 2018-28 Long Term Plan (refer Table 1 on following page).

6.3. The Drainage portion of the work will be funded from existing approved flood response budgets therefore will have no implications on the Ohoka Rural drainage rate. The Roading portion of the work will be funded from existing approved budgets therefore will have no rate implications.
### Table 1 – Budgets included in the Long Term Plan

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<td>Red Fern Lane Improvements</td>
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<td>$100,000</td>
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6.4. The Siena / Sillano Improvements budget of $150,000 is funded from both the Drainage flood response budget ($94,000) and the Roading budget ($56,000), which will be subsidised by NZTA. All other works are funding from the Drainage flood response budget.

6.5. **Community Implications**

6.6. The community’s expectations will not be met if the work does not go ahead within a reasonable time frame. Drainage staff would be likely to receive more service requests in relation to this issue if the work does not proceed.

6.7. **Risk Management**

6.8. The proposed improvement works will reduce the risk of flooding and associated damage to roading infrastructure and private property in future high rainfall events.

6.9. **Health and Safety**

6.10. Safety in Design will be formally considered and documented as part of the detailed design stage for any construction works.

### 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. The Local Government Act 2002 sets out the power and responsibility of local authorities, including the Council’s role in providing drainage services.

7.5. **Community Outcomes**

7.6. The following community outcomes are relevant in this matter:

- There is a healthy and sustainable environment for all
- Core utility services are provided in a timely and sustainable manner

7.7. **Delegations**

7.8. Not applicable as this report is for information only.
1. **Introduction**

The purpose of this memo is to describe the drainage in the northern extents of Siena and Sillano Place, and the issues, options and recommended works.

The Siena and Sillano Place area is a rural residential area in Mandeville, immediately west of Bradleys Road and north of Tram Road, and within the ‘Bradleys Road’ drainage catchment.

The Siena and Sillano Place properties have a history of drainage issues, and extended ponding of water including following the 2014 and 2017 high groundwater and rain events.

2. **Catchment description**

The Mandeville area was significantly affected by heavy rainfall events and high groundwater levels in June and July 2014, and again in July and August 2017. The preceding wet weather raised the groundwater levels and resulted in resurgent groundwater (springs) operating on a semi-permanent basis. High runoff during 2014, and moderate runoff during 2017 storm events caused significant nuisance flooding of roads and properties. In the case of Siena and Sillano Place, ponded and stagnant water has been observed through the latter half of 2017 and into 2018.

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**Figure 1 - Location of northern Siena and Sillano Place area in catchment**
No 10 Road has a reasonably defined road centreline and is taken to be the western extent of the Bradleys Road catchment for design purposes for calculating drain and culvert flows (i.e., the primary catchment). The upslope catchment extends past Earlys Road, which will contribute to overland flows in large rainfall events. The catchment is very long and narrow when extended to Earlys Road. The ground slopes generally from west to east in the catchment at an approximate grade of 1 in 180.

The historic major drainage path for the catchment is from No 10 Road across farmland northwest of Siena Place and then along the stockwater race which flows down Siena Place to Bradleys Road.

In 2014 it was identified the stockwater race lacked capacity to carry the design flows calculated from the design storm events and there was significant flooding along the route following the June 2014 rainfall events. The water race was breached along the back boundary of No 60 and 67 Velino Place and No 67 Siena Place and flowed overland through properties on the west side of Siena Place and then down Siena Place to Bradleys Road. The high groundwater level following the June 2014 rainfall events caused significant nuisance flooding and standing water along Siena Place during July and August 2014 which resulted in minor damage to the carriageway. Following the 2014 flood events, Council constructed a drainage channel along the western side of Siena Place, to convey drainage flows to Bradleys Road. The Bradleys Road drain was also increased in capacity following the 2014 flood event. (Refer to Figure 3).
The secondary flow paths from Flood Hazard mapping are shown in Figure 4. The northern overland flow path has been cut-off by the San Dona development (particularly evident at Siena Place), and then intercepted by Bradleys Road drain.

3. **July and August 2017**

Resurgent groundwater has been flowing in Mandeville since mid-2017 and continues. Figure 5 shows long term groundwater levels from an Environment Canterbury shallow groundwater monitoring bore (M35/0143) approximately 10km up-gradient of Mandeville. When the groundwater level in well M35/0143 is at 10m below ground level, the water table in Mandeville and Ohoka is generally at or above the ground surface and resurgence flows are likely. It can be seen in Figure 4 that the groundwater level measured in mid-2014 was the highest on record, and the groundwater level at present-day and through 2017 is near that maximum.
The 2017 resurgence groundwater flow was observed to be flowing strongly through the latter part of 2017 and into 2018. It was observed along the Bradleys Road drain (from the Wards Road SMA), the Siena Place drainage channel and stockwater race, and the channel to the north of Siena Place properties.

Swift flow was observed through Bradleys Road, the downstream section of Siena Place drainage channel, and the channel to the north of Siena Place properties. However some sections of channel in the northern Siena Place channel were observed to be stagnant at times (and weed growth establishing), demonstrating these areas do not have the ability to drain.
In addition, the high groundwater levels in Siena and Sillano Place have resulted in the groundwater reaching surface levels, and ponding through private properties. Seepage was also observed at the Siena and Sillano cul-de-sac heads, resulting in visibly wet pavement, and grassed areas being boggy or experiencing grass die-off.

Following the post-2014 Council upgrades to the area, the hazard during flood events has not been raised as a concern by residents. The Bradleys Road and Siena Place drainage channels have had the capacity to convey flood water away from roads and properties during rainfall events. Residents have noted significant concerns related to the nuisance and health risks of the resurgence flows and ponded stagnant water.
4. **Previous Work**

Previous drainage investigations by Council are described below.

Flooding Mitigation Works and Funding DRA-16-02.01 / 141009110892, 2014

- The key issues for the Mandeville area are insufficient drain capacity for rural residential areas and resurgent groundwater (experienced throughout this winter).
- Recommended upgrade works to Bradleys Road, Whites Road, Siena Place and Millfield/San Dona
- Recommended a future long term flow diversion (No 10 Road, or Tram and Bradleys Road) be investigated
Considered four drainage upgrade options:
1. Upgrade the Existing Drainage
2. Divert Resurgence Flow along No 10 Road and Upgrade Existing Drainage
3. Divert Resurgence Flow along Tram Road and Upgrade Existing Drainage
4. New Drain along Wards Road and Upgrade Existing Drainage

The resurgent flow crossing No 10 Road adjacent to Redfern Lane was been gauged at 300 l/s

Following 2014, Council upgrade works have been completed to:
- Bradleys Road drain upgrade (Siena Place to Ohoka South Branch)
- Bradleys Road drain upgrade (Wards Road to Siena Place)
- Siena Place upgrade (new channel from stockwater race at 67 Siena Place, along west side of Siena Place, to Bradleys Road)
- Wards Road drainage upgrades (Dawsons Road to Bradleys Road)
- Millfield resurgent channel culvert upgrades

5. **Investigations**

A site walkover of Siena and Sillano Place was undertaken on 17 October 2017. This included visiting the Bradleys Road and Velino Place intersections, 100 Siena Place, and 1 Sillano Place.

A second site walkover was undertaken on 31 October 2017. This included visits to 10 and 18 Sillano Place.

Topographic survey of the existing drainage channels from
   a) Siena Place cul-de-sac head through 100 Siena Place, and
   b) Sillano Place cul-de-sac head through 10 Sillano Place
to the drainage channel to the north of the Siena Place properties was completed on 16 November 2017. The confluence of this channel and the Bradleys Road drain were also surveyed. Refer to Attachment 1.

6. **Maintenance issues and localised capacity constraints**

The performance and condition of the post-2014 upgrade works is generally good. In addition the channel to the north of Siena Place properties is well maintained. There is little need for any maintenance works (grass and vegetation is trimmed, weed cleared, fences and pipe and culverts clean).
There were some exceptions:

a) The culvert at the southern end of Siena Place (at confluence with Bradleys Road drain) was partially blocked by weed and overgrown grass.

b) The culvert under Vilino Place was not fully utilised due to weed and sediment deposition immediately upstream. The culvert itself was clear and at an appropriate level.

c) Residents observed stagnant water along 52 and 60 Siena Place.

d) Seepage at the Siena and Sillano cul-de-sac heads causing visibly wet pavements.

e) Stagnant water, weed growth, silt deposition, and anaerobic smells in the swales surrounding the Siena and Sillano cul-de-sac heads.

f) Limited flow through the drains from the cul-de-sacs to the channel to the north of Siena Place properties (through 100 Siena and 10 Sillano Place).

g) At 10 Sillano place the culvert’s (0.2m diameter) was perched approx 0.2m
h) Through 10 Sillano Place, the channel to the north of Siena Place had some overgrown vegetation
i) Wet ground and ponded water within private properties in the northern extents of Siena and Sillano Place

The stagnant water and limited flow through the existing drains demonstrate there was insufficient gradient (land too low, or not connected to drainage system) available for those areas to drain via gravity.

Figure 12 - Weed growth and sediment upstream of Velino Place culvert (October 2017)

Figure 13 - Channel through 100 Siena Place (October 2017)
7. **Maintenance**

To address the issues a) and b) related to the existing Siena Place drainage channel the following was undertaken as maintenance works:

- Culvert at Bradleys road confluence: clearance and cleaning
- Velino Place culvert: sediment and vegetation removal immediately upstream (approx 20m)

In addition, the Council’s GIS should be updated to reflect the true position of the drainage channel to the north of Siena Place.

8. **Short term upgrade options**

Three options have been identified to improve the remaining identified issues in the northern Siena Place and Sillano Place area. Due to the scope of these options, all could be conceivably short term works and initiated by Council promptly if funding is available. It is recommended the design is progressed to a detail that will enable pricing and construction by a competent contractor (detail of culvert sizes, drain inverts, and bank slopes).

1. Issue c): Replace the existing solid under channel pipe with a new slotted pipe subsoil drain to ensure sufficient drainage is achieved in this area.
2. Issues d) e) f): Regrade drain through 100 Siena Place
   - Regrade the channel from the channel to the north of Siena Place, through 100 Siena Place to the Siena cul-de-sac head.
   - A grade of 1:200 is achievable with no change to the downstream channel, by lowering the channel to match the downstream channel’s invert of RL 32.32 m. Currently, there is an abrupt drop in level at the confluence, refer to Figure 15.
   - This equates to approximately 0.2-0.35m cut at the invert along the drain. It is proposed the stable channel banks of the drain remain in place, and instead sediment is cleaned from the invert only.
   - The culvert at the 100 Siena Place driveway (current 0.25m diameter) will need to be replaced (and lowered by 0.4m), it should also be upsized to match the additional drain capacity and shape. At this time the culvert can be connected to private subsoils to alleviate Issue i) private drainage issues within 100 Siena Place.
• The regraded drain should be connected to the swales surrounding the cul-de-sac head. This will require the upgrade of two additional culverts at the 93 Siena Place driveway, and the 100 Siena Place drive entrance (currently 0.25m diameter).
• To address issue d), the regraded drain should be connected to the cul-de-sac head soak pit, via a subsoil. This will require road surface restoration works.
• Refer to Figure 16 and Attachment 2 for potential design of the drain re-grade.

Figure 15 - existing dropoff at the downstream end of 100 Siena Place drain

3. Issues d) e) f) g): Re-grade drain through 10 Sillano Place
• Regrade the channel from the channel to the north of Siena Place, through 10 Sillano Place to the Sillano cul-de-sac head.
• The downstream end can be lowered by 0.4m to RL 31.56m, by removal of the perched culvert (diameter 0.2m). This relates to a cut from 0.05m to 0.4m at the invert along the drain.
• Issue g): The perched culvert at 10 Sillano Place (access to 18 Sillano Place) will need to be replaced at a lower level. The culvert is current 0.2m diameter. It should also be upsized to match the additional drain capacity and shape.
• The regraded drain should be extended to the swales surrounding the cul-de-sac head. This will require a minor cut from the swales.
• To address issue d), the regraded drain should be connected to the cul-de-sac head seepage, via a subsoil. This will require road surface restoration works.
• Refer to Figure 16 and Attachment 3 for potential design of the drain re-grade
• Issue i): Vegetation maintenance through 10 Sillano Place should be completed once works in 2. and 3. are complete. Until that time the issue is not causing any restrictions. It is recommended that a discussion with property owners is had regarding ongoing maintenance activities (eg maintenance works undertaken by property owners should include overgrown vegetation cut-back along channel length to prevent flow restrictions).
9. **Long term upgrade options**

No long-term issued have been identified that are not addressed by the proposed short term options. To ensure public expectations are clear, discussion with the property owners should be completed to explain the ongoing groundwater conditions they can expect in the Mandeville area.

10. **Recommendations**

It is recommended short term upgrades and maintenance works are progressed in the northern Siena and Sillano Place area.

10.1. **Maintenance works**

   a) Clean culvert at Bradleys road confluence
   b) Remove sediment and vegetation for 20m immediately upstream of the Velino Place culvert
   c) Update the Council’s GIS of the channel to the north of Siena Place

10.2. **Short term works**

Progress design of the following options to the detail required for pricing and construction by a competent contractor:

   d) Replace the solid underchannel pipe with a slotted subsoil p outside 52 and 60 Siena Place
   e) Regrade drain through 100 Siena Place, upgrade 3 off. driveway culverts and install subsoil to cul-de-sac head
   f) Regrade drain through 10 Sillano Place, upgrade outlet culvert and install subsoil to cul-de-sac head

10.3. **Future long term works**

None identified.
NOTES
1. COORDINATES ARE IN TERMS OF NZDG2000 MOUNT PLEASANT CIRCUIT ORIGIN OF COORDINATES:
   B4AG (LINZ Geodetic Database 15/12/2013)
   520 675 073mW
   385 827 863mE
2. LEVELS ARE IN TERMS OF LDB 1937 ORIGIN OF LEVELS:
   B4AG (geodetic database 15/12/2013)
   RL 1.835m
3. THE ACCURACY OF TOPOGRAPHICAL DATA AND LEVELS FOR THIS SURVEY IS ESTIMATED AT
   +/-30mm RELATIVE TO THE ORIGIN OF COORDINATES AND ORIGIN OF LEVELS
4. BOUNDARIES SHOWN ARE SOURCED FROM LANDONLINE AND ARE APPROXIMATE ONLY
5. THIS PLAN DOES NOT DIRECT INFORMATION
   RELATING TO ANY ENCUMBRANCES ASSOCIATED
   WITH THE PROPERTY. PLEASE REFER TO THE TITLE
   PLAN AND CERTIFICATE OF TITLE
   AN INVESTIGATION OF THE MOST CURRENT RECORDS
   SHOULD BE UNDERTAKEN PRIOR TO DESIGN AND
   CONSTRUCTION COMMENCING.

DATE
No. Appd
Revision
33.86
33.91
34.24
33.91
34.24
34.29
34.15
34.20
33.88
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NOT FOR CONSTRUCTION
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WATER BOX LINE
SURFACE EXISTING CONTOURS MAJOR
TOPO SURVEY SIENA PLACE
DRAINAGE AND CAM RIVER ASSISTANCE
WAIMAKARIRI DISTRICT COUNCIL
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321 873.578mN
ORIGIN OF LEVELS:
BAG (LINZ geodetic) database 15/12/2013
RL 8.605m

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3. THE ACCURACY OF TOPOGRAPHICAL DATA AND LEVELS FOR THIS SURVEY IS ESTIMATED AT ±0.003m RELATIVE TO THE ORIGIN OF COORDINATES AND ORIGIN OF LEVELS.

4. BOUNDARIES SHOWN ARE SOURCED FROM LANDONLINE AND ARE APPROXIMATE ONLY.

5. THIS PLAN DOES NOT DEPICT INFORMATION RELATING TO ANY ENCUMBRANCES ASSOCIATED WITH THE PROPERTY. PLEASE REFER TO THE TITLE PLAN AND CERTIFICATE OF TITLE. AN INVESTIGATION OF THE MOST CURRENT RECORDS SHOULD BE UNDERTAKEN PRIOR TO DESIGN AND CONSTRUCTION COMMENCING.
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DRAFTER: [Name]

ORIGINATOR: [Name]

DATE: 07 Dec 2017 10:10 a.m.

PROJECT NAME: ----

DOCUMENT NO.: DESLS1.DWG

TRIM: 180413040288

DRAWN: [Name]

ORIGINAL DESIGN: [Name]

CONSTRUCTION DATE: [Date]

APPROVED FOR CLIENT: [Name]

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* Refer to Revision 1 for Original Signature

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**Construction**

**Approved For Client:**

**Title:**

**Drawing No.:**

**Discipline:**

**Rev.:**

**Drawing Plotted:** 08 Dec 2017 8:45 a.m.

**Trim:** 180413040288

**FOR INFORMATION**

**NOT FOR CONSTRUCTION**

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**UNDER REVISION**

**FILL THIS IN**

**IF IN DOUBT ASK.**

**NO APPD**

**REV.**

**CHECKER**

**DRAFTER**

**ORIGINATOR**

**SIGNATURE**

**DATE:** 08 Dec 2017 8:45 a.m.
WAIMAKARIRI DISTRICT COUNCIL

MEMO

FILE NO AND TRIM NO: DRA-16-02.06 / 180626070699

DATE: 03 April 2018

MEMO TO: Kalley Simpson, 3 Waters Manager

FROM: Amber Murphy, Consultant Engineer

SUBJECT: Redfern Lane Drainage

1. Introduction

The purpose of this memo is to describe the drainage in the Redfern Lane area and the issues, options and recommended works.

The Redfern Lane area is a rural residential area in Mandeville, immediately east of No. 10 Road, and within the ‘Bradleys Road’ drainage catchment.

The Redfern Lane properties have a history of surface flooding, including in the 2014 and 2017 storm events.

2. Catchment description

The Mandeville area was significantly affected by heavy rainfall events and high ground water levels in June and July 2014, and again in July and August 2017. The preceding wet weather raised the groundwater levels and resulted in resurgent groundwater (springs) flows operating on a semi-permanent basis. High runoff during 2014, and moderate runoff during 2017 storm events caused significant nuisance flooding of roads and properties. Although floor levels were not reached by flood waters, this was only by a marginal vertical and horizontal distance.

An existing drainage channel that crosses No. 10. Road runs through Redfern Lane. This channel conveys resurgence groundwater flows. The channel passes through the Redfern Lane properties, across Tram Road, through the Millfield (Cullen Avenue, Tristam Road and Libby Drive), and San Dona subdivisions (Vicenza Drive), to Bradleys Road, and then along Bradleys Drive to the Ohoka Stream South Branch.
No. 10 Road has a reasonably defined road centreline and is taken to be the western extent of the Bradleys Road catchment for design purposes for calculating drain and culvert flows (ie the primary catchment). The upslope catchment extends past Earlys Road, which will contribute to overland flows in large rainfall events. The catchment is very long and narrow when extended to Earlys Road. The ground slopes generally from west to east in the catchment at an approximate grade of 1 in 180.

The catchment has few formed drains, with most of the catchment drainage being by channelized overland flow, water races and swales in the rural areas. The overland flow paths have in general been interrupted or altered by road construction and other development.

In general the drains and culverts along this drainage path do not have capacity to accommodate design flows calculated from the design storm events and there was significant flooding along this route following the June 2014 rainfall events. The access way culverts and swales along Cullen Avenue and Tristram Road were upgraded in July 2014 to accommodate the resurgent flow through the Millfield development.

The secondary flow paths from Flood Hazard mapping are shown in Figure 3.
3. **July and August 2017**

Resurgent groundwater has been flowing in Mandeville since mid-2017 and is likely to continue through the 2018 winter. Figure 4 shows long term groundwater levels from an Environment Canterbury shallow groundwater monitoring bore (M35/0143) located approximately 10km up-gradient of Mandeville. When the groundwater level in well M35/0143 is at 10m below ground level, the water table in Mandeville and Ohoka is generally at or above the ground surface and resurgence flows are likely. It can be seen in Figure 4 that the groundwater level measured in mid-2014 was the highest on record, and the groundwater level at present-day and through 2017 is near that maximum.

![Figure 4 - Long-term groundwater monitoring data](image1)

The 2017 resurgence flow through the Redfern drainage channel was observed to fill a significant portion of the channel’s capacity (2/3 full in September 2017, lowering to 1/2 full in October 2017). When runoff from rainfall events enters the system, there is a risk the channel will be overwhelmed.

![Figure 5 - No. 10 Road culvert at Redfern Lane (September 2017)](image2)
Figure 6 - No. 10 Road culvert and upstream channel at Redfern Lane (September 2017)

Figure 7 - Drainage channel at 448 No. 10 Road (October 2017)
Upstream on Two Chain Road a resident estimated the flow during the 2017 events as being 2m³/s. This flow would overwhelm the drainage channels downstream, and result in overland flow.

During rainfall events in 2017 residents observed water flowing over No. 10 Road at two points (Figure 8):

- North of the No. 10 Road culvert, at a low point in the road, opposite the driveways of 456, 452 & 448 No. 10 Road. Here water flowed across No. 10 Road, down the driveways through private properties, before re-entering the Redfern Lane drainage channel at the eastern extent of the Redfern Lane area.
- South of the No. 10 culvert, near the water race, opposite 422 No. 10 Road. Here water flowed across No. 10 Road, through private properties, then north once reaching the eastern extent of the Redfern Lane properties, to Tram Road.

In addition, breakout from the channel itself occurred along the Redfern Lane drainage channel. In general the water surrounded properties, flowing east, before re-entering the channel itself, or the flow path towards Tram Road.
Figure 9 – Overland Flow Paths (from resident’s observations and photographs)

Figure 10. Overland flow paths and flooding (Helicopter footage 15/08/2017)
Figure 11 - Overland flow path from 429 No. 10 Road, crossing No. 10 Road at low point north of culvert (Des Lines, 2014)

Figure 12 - Overland flow path across No. 10 Road at 422 No. 10 Road (Des Lines, 2014)
Figure 13 - Driveway flooding 452 No. 10 Road (Annie MacDonald, 2017)

Figure 14 - Ponding at 6 Redfern Lane (Tom McBrearty, 2017)
4. **Previous Work**

Previous drainage investigations by Council are described below.

Flooding Mitigation Works and Funding DRA-16-02.01 / 141009110892, 2014
- The key issues for the Mandeville area are resurgent groundwater resulting in overloaded drainage channels during storm events.
- Recommended upgrade works to Bradleys Road, Whites Road, Siena Place and Millfield/San Dona
- Recommended a future long term flow diversion (No. 10 Road, or Tram and Bradleys Road) be investigated

Mandeville Area Drainage Improvements – Bradleys Drain Catchment DRA-6-02.06/140821089353, 2014
- Considered four drainage upgrade options:
  1. Upgrade the Existing Drainage
  2. Divert Resurgence Flow along No. 10 Road and Upgrade Existing Drainage
  3. Divert Resurgence Flow along Tram Road and Upgrade Existing Drainage
  4. New Drain along Wards Road and Upgrade Existing Drainage
- The resurgent flow crossing No. 10 Road adjacent to Redfern Lane was been gauged at 300 l/s

5. **Investigations**

A site walkover of the No. 10 Road and environs was undertaken on 26 September 2017. This included visiting upstream properties 1253-1199 Tram Road, the Redfern Lane area and No. 10 Road from Tram Road to the old Eyre River Bed.

A second site walkover and visit with Redfern Lane property owners was undertaken on 05 October 2017. This included visits to 4 Redfern Lane, 6 Redfern Lane, 456 No. 10 Road, 452 No. 10 Road and 448 No. 10 Road.
Topographic survey of No. 10 Road (from the No. 10 Road culvert down to Tram Road) was completed on 16 November 2017. Refer to Attachment 1 (Trim: 180626070709).

6. **Maintenance issues and localised capacity constraints**

In general the condition of the Redfern Lane drainage channel is good. Vegetation is maintained, weed is cleared, and culverts, bridges and fences are cleaned.

Previous works undertaken by Council and property owners include:
- Channel clearance and landscaping to improve conveyance at 7 Redfern Lane (pre-2017)
- Channel widening and culvert inlet clearance at 448 No. 10 Road (pre-2017)
- Lengthening to the culvert under Tram Road for road safety reasons (by Council, 2015)
- Earthworks and construction of bunds and swales to attempt retention of flow within the drainage channel in 429 No. 10 Road (during 2017 flood events). These works effectively prevented an overflow path opposite Redfern Lane (as occurred in 2014).
- Temporary bunding/flood walls at the 456, 452 & 448 driveway entrance and 422 No. 10 Road (during 2017 flood events)

The property at 444 No. 10 Road has some channel constrictions. General maintenance should be undertaken to improve conveyance once water levels drop in the channel and make instream works practical.

The rear 50m of 448 No. 10 Road was not observed to have any flow restrictions, however future maintenance will be required. In particular grass/vegetation will need to be trimmed and the fence and weed cloth above the Tram Road boundary kept clear. This is on Sicon’s maintenance list and will be carried out in June.

The No. 10 Road culvert needs to be routinely cleared; sediment deposition in the invert and vegetation/weed growth reduce its capacity. There are no plans to upsize this culvert as the downstream channel capacity is limited, both through Redfern Lane, and the Millfield/San Dona area. At present it is not desirable to convey more flow through the Redfern Lane channel, as spill out of the channel occurred during the 2014 and 2017 storm events.

![Figure 16 - Local maintenance issues and constraints](image.png)
7. **Short term upgrade options**

**Channel capacity and prevention of channel breakout**

In order to maximise the conveyance capacity of the Redfern Lane drainage channel; maintenance should be undertaken the No. 10 Road culvert, 444 No. 10 Road and 448 No. 10 Road.

The shared driveway for 456, 452 & 448 No. 10 Road was damaged during flooding which occurred in 2017. Repair and raising of the driveway is planned by the property owners. Raising of the driveway would result in constraining any spill from the Redfern Lane channel from flowing north towards 456, 452 & 448 No. 10 Road properties.

Likewise, local works to bund the southern bank of the channel would assist retention of flow within the channel. Local bunding would need to be continuous, otherwise spill points would focus flow and increase impacts and hazards to that specific area.

The option to increase the capacity of the existing channel would involve significant works to No. 10 Road, Tram Road, and 3 private properties in Redfern Lane. In addition works downstream in Millfield (Cullen Avenue, Tristam Road and Libby Drive), and San Dona subdivisions and private properties (Vicenza Drive) would need to be investigated, approved, and undertaken.

**Downstream channel and culvert capacity upgrades**

The main drainage channel downstream of Tram Road and Redfern Lane (through 1160 and 1136 Tram Road) was visited by Sicon 07 June 2018. It was identified that channel restrictions (vegetation and logs) may be impacting downstream water levels. In addition it was identified that driveway culverts may be under capacity and restricting flow. Maintenance works on the channel should be undertaken. The capacity of the driveway culverts should be investigated, and discussions with the property owner commenced.

**Diversion of flood overflow at No. 10 Road**

The option of a high level overflow diversion prior to Redfern Lane was investigated. This would involve construction of a swale along the east side of No. 10 Road to Tram Road, and a bund along the shared driveway for 456, 452 & 448 No. 10 Road. From Tram Road, the water would flow through the existing swale along the south berm of Tram Road, to re-join the main flow at the Tram Road culvert.

Survey undertaken November 2017 confirmed there is available space in No. 10 Road to construct a swale and bund, and grade available to divert overflow north to Tram Road, and east to the existing Tram Road culvert. Refer to Attachment 2 (Trim: 180626070709). A swale of 1:500 longitudinal grade can be achieved, with minor earthworks, with a maximum excavation depth of 0.5m. A steeper graded swale (for example 1:200) would exceed the available berm area. Survey and Before U Dig investigations, refer to Attachment 1 and 3 respectively (Trim: 180626070709), have highlighted some services (water supply, wastewater, and telecoms) in the area that would need to be worked around (power cables are overhead). The limited earthworks proposed are not expected to impact significantly on services cover, and with the space available, it should be possible to modify the design to avoid existing services.
The overland spill south of the culvert to 422 No. 10 Road was of lesser magnitude to the northern spill. Low bunding along 1 Redfern Lane and 422 No. 10 Road could prevent spill to the eastern Redfern Lane properties. The existing water race (to the south of the Redfern Lane area) conveys some drainage flow during storm events but long term it is not a desirable pathway for drainage flow. Any Mandeville long term diversion or capacity upgrade should address this southern overland spill path.

**Diversion of flow within 1253-1199 Tram Road**

Mr Lines of 1199 Tram Road facilitated a site visit of the environs up-gradient of No. 10 Road on the 26 September 2017. The channel upstream was diverted in the past (by private property owner, and not believed to be consented), which has resulted in some areas (such as through 1253A and 1253B Tram Road having reduced channel area, and sharp right-angled bends, refer to Figure 16.

Mr Lines proposed that diversion of property runoff up-gradient of No. 10 Road to southern drainage channels and water races (for example water race R3J-1A) could address the overland spill points, and channel capacity concerns. A diversion would also improve drainage for properties to the north of the proposed diversion from 1199 to 1263 Tram Road. Refer to Figure 16 for the location of the channel and water race. The site visit illustrated the potential feasibility of such a diversion, although further investigations in to available land area, landowner consultation and consenting, private property boundaries, ground level survey, and services locations would have to be completed.

However any diversion south would have negative drainage impacts on other properties in areas such Stone Eyre Place, Wetherfield Lane and McHughs Road. Works would be required both up-gradient, and down-gradient, or a long term diversion undertaken to address these impacts prior to any diversion. Thus an up-gradient No. 10 Road diversion will be included in future long term diversion investigations and reporting. Refer to section 8 below for details of the potential long term Mandeville diversions.
8. **Long term upgrade options**

Long term upgrades were investigated in the report Flooding Mitigation Works and Funding DRA-16-02.01 / 141009110892, 2014. Funding was allocated in the 10-year plan to progress an option. High level options were presented to a community meeting in 2014, and further investigation, optioneering and consultation work is required.

The three main options for addressing the capacity issues in the long term are:

1. Upgrade Main Channel: upgrade the capacity along the existing channel through Redfern Lane, Crossing Tram Road, then through Millfield, San Dona, to Bradleys Road.
2. Diversion: diversion south down No. 10 Road to the old Eyre River (refer Figure 17)
3. Diversion: diversion north to Tram Road and then onto Bradleys Road (refer Figure 18)

Refer to Flooding Mitigation Works and Funding DRA-16-02.01 / 141009110892, 2014 for more details on the proposed long term options.
9. **Recommendations**

It is recommended short term and maintenance works are progressed at Redfern Lane, and a long term option is progressed (investigations, consultation, design and consenting) for Mandeville.

9.1. **Maintenance works**

a) Maintenance works in 444 No. 10 Road to improve channel conveyance through this property. Works to be undertaken once channel water levels reduce.
b) Regular Council maintenance of the No. 10 Road culvert.

c) Discuss with property owners the option of private works to raise the 456, 452 & 448 No. 10 Road driveway and bund the southern bank of the channel.

d) Clearance of the channel downstream of Tram Road (through 1160 and 1136 Tram Road)

e) Discussion with property owners regarding ongoing maintenance activities. Regular maintenance works undertaken by Council or property owners should include:
   1. Overgrown vegetation cut-back along channel length to prevent flow restrictions.
   2. Localised channel restrictions (foot bridges, fencing, over grown vegetation, service supports) to be regularly cleared (monthly, and following any high rainfall events, or any forecasted storm events).
   3. Any pipe/culverts to be regularly cleaned and the inlet cleared. Culverts should have an overflow point (over the pipe length) so that once the capacity of the culvert is exceeded, flow will spill and re-enter the channel without endangering property or persons.

9.2. Short term works

f) Construction of a swale and bund to divert the flood overflow at No. 10 Road, north to Tram Road. Refer to Attachment 2 (Trim: 180626070709) for details.

g) Investigate if low bunding along 1 Redfern Lane and 422 No. 10 Road is practical to prevent spill from No. 10 Road through 422 No. 10 Road, and 2, 3, and 4 Redfern Lane properties.

h) Investigate the capacity of the 1136 Tram Road driveway culvert, and discuss with the property owner.

9.3. Future long term upgrade works

i) Progression of a long term (investigations, consultation, design and consenting) for Mandeville. Investigation and options to include the diversion to the south of flow up-gradient of No. 10 Road.

Long term diversion options include:
   1. Upgrade Main Channel: upgrade the capacity along the existing channel through Redfern Lane, Crossing Tram Road, then through Millfield, San Dona, to Bradleys Road.
   2. Diversion: diversion south down No. 10 Road to the old Eyre River
   3. Diversion: diversion north to Tram Road and onto Bradleys Road.
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   ROAD EDGE OF SEAL
   ROAD TOP OF KERB
   STORMWATER CHANNEL
   STORMWATER PIPE INVERT
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   SURFACE EXISTING CONTOURS MINOR
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   EXISTING SURVEY

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OVERVIEW
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TIE IN SWALE TO EXISTING GROUND LEVEL
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CIVIL ENGINEERING
WAIMAKARIRI DISTRICT COUNCIL

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PRELIMINARY
FOR INFORMATION

TRAM ROAD

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Revision
By Chk
Date

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Dwg Check
Dsg Verifier

Title:
Drawing No.
Discipline

Document No.
Rev.

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OVERVIEW

CIVIL ENGINEERING
3362671-SK-001

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**No 10 ROAD BUND**

**Civil Engineering**

WAIMAKARIRI DISTRICT COUNCIL

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**Original Design Date:** SH 29.03.18

**Approved For Client:**

**Discipline:**

**Rev.:**

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**Dsg Verifier:**

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**DO NOT SCALE**

*Refer to Revision 1 for Original Signature*

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**Title:**

**Drawing No.:** 3362671-SK-003

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1. **Introduction**

The purpose of this memo is to describe the drainage in the Wetherfield Lane, Roscrea Place and McHughs Road area and the issues, options and recommended works.

Wetherfield Lane, Roscrea Place and McHughs Road are in a rural residential area in Mandeville, between No. 10 Road and Tram Road, and within the ‘Bradleys Road’ drainage catchment.

The properties in this area have a history of surface flooding, including in the 2014 and 2017 storm events.

![Figure 1. Location of Wetherfield Lane, Roscrea Place and McHughs Road area within Bradleys Road drainage catchment.](image)

2. **Catchment description**

The Mandeville area was significantly affected by heavy rainfall events and high groundwater levels in June and July 2014, and again in July and August 2017. The preceding wet weather raised the groundwater levels and resulted in resurgent groundwater (springs) flows operating on a semi-permanent basis. High runoff during 2014, and moderate runoff during 2017 storm events caused significant nuisance flooding of roads and some properties. Although floor levels were not reached by flood waters, this was only marginal in some instances.
An existing stock water race (R3J-1A) that crosses No. 10 Road (south of Stone Eyre Place) runs through a number of Wetherfield Lane properties to McHugh's Road. The race continues along McHugh's Road onto Bradleys Road, into the drainage channel along Bradleys Road, discharging to the Ohoka Stream, South Branch. In addition to stock water this race conveys resurgence groundwater flows. There are a number of ponds and weirs located along the race through this area.

Overland flow paths from the Waimakariri District Council’s Flood Hazard mapping are shown in Figure 2. A number of significant overland flow paths are present through the Wetherfield Lane area, from No. 10 Road to McHugh's Road.

![Figure 2. Overland flow paths from Flood Hazard mapping (100 year event)](image)

3. **July and August 2017**

Resurgent groundwater has been flowing in Mandeville since mid-2017 and is likely to continue through the 2018 winter. Figure 3 shows long term groundwater levels from an Environment Canterbury shallow groundwater monitoring bore (M35/0143) located approximately 10km up-gradient of Mandeville. When the groundwater level in well M35/0143 is at 10m below ground level, the water table in Mandeville and Ohoka is generally at or above the ground surface and resurgence flows are likely to be occurring. It can be seen in Figure 4 that the groundwater level measured in mid-2014 was the highest on record, and the groundwater level at present-day and through 2017 is near that maximum.
The 2017 resurgence groundwater flow through the Wetherfield Lane, Roscrea Place and McHughs Road area was observed to be flowing strongly through the latter part of 2017 and into 2018.

During rainfall events in 2017 residents observed water flowing down Wetherfield Lane and Roscrea Place. In places water flowed down driveways and through private properties before re-entering the water race at McHughs Road. The driveways at 25-39 Wetherfield Lane had fast flow. The water race runs along the driveway berm, but its bank is at a higher level than the driveway. Flow was able to re-enter the race at 37 Wetherfield Lane through temporary bunding at the property gate. However before re-entering the race, water reached as high as the adjacent 37 Wetherfield Lane power box (near the race top of bank).
Figure 5. Ponding at 26 Wetherfield Lane (Ian Shrimpton, 2014)

Figure 6. Driveway flooding at 26 Wetherfield Lane, looking toward Wetherfield Lane flooding (Ian Shrimpton, 2014)
Figure 7. Flow from 30 and 32 Wetherfield Lane to 26 Wetherfield Driveway (Ian Shrimpton, 2014)

Figure 8. Wetherfield Lane Flooding (Helicopter footage 15/08/2017)
4. Previous Work

Previous drainage investigations by Council are described below.

Flooding Mitigation Works and Funding DRA-16-02.01 / 141009110892, 2014
- The key issues for the Mandeville area are resurgent groundwater resulting in overloaded drainage channels during storm events.
- Recommended upgrade works to Bradleys Road, Whites Road, Siena Place and Millfield/San Dona
- Recommended a future long term flow diversion (No. 10 Road, or Tram and Bradleys Road) be investigated

Following the June 2014 event, Council has completed the following upgrade works:
- Bradleys Road drain upgrade (Siena Place to Ohoka South Branch)
- Bradleys Road drain upgrade (Wards Road to Siena Place)
- Whites Road drain upgrade Stage 1

Mandeville Area Drainage Improvements – Bradleys Drain Catchment DRA-6-02.06/140821089353, 2014
- Considered four drainage upgrade options:
  1. Upgrade the Existing Drainage Systems
  2. Divert Resurgence Flow along No. 10 Road and Upgrade Existing Drainage
  3. Divert Resurgence Flow along Tram Road to Bradleys Road and Upgrade Existing Drainage
  4. New Drain along Wards Road and Upgrade Existing Drainage

Roscrea Place Stormwater Investigations DRA-16 / 150624101223, 2016
- The primary stormwater system on Roscrea Place meets capacity requirements for 20% AEP storm event, assuming the system is in good condition.
- The key issue with the Roscrea Place stormwater system is that the secondary flow path is through 10 Roscrea Place, rather than in the road reserve.
- Recommended upgrades included:
  - Installing DN300 overflow pipe from the soak pit at 10 Roscrea Place to the water race at the McHughs Road intersection.
  - Constructing a defined roadside swale above the proposed pipe
• Construct a small bund adjacent to the proposed swale to protect the property at 10 Roscrea Place.

5. Investigations

Site walkovers of the McHughs Road water race from Roscrea Place to Tram Road were undertaken on 07 and 29 November 2017. Primarily the water race was clear, and the nominal culvert diameter was 375mm. However in places there were restricted culverts, or overgrown drains which reduce the capacity of the water race. Refer to Attachment A.

Figure 10 - Water race through 10 Roscrea Place, 2017

A second walkover of Wetherfield Lane, and the surrounding area was undertaken on 09 May 2018. This included visiting the properties through which the water race runs on Wetherfield Lane, Roscrea Place and McHughs Road (18, 20, 26, and 37 Wetherfield Lane, 89, 113 and 181 McHughs Road and 1 Roscrea Place). Locations where overland sheet flow occurred, and spill from the water race, were identified. Refer to Attachment B. Generally culverts through Wetherfield Lane were 300mm diameter. The culvert upstream across No. 10 Road is 250mm diameter.
6. **Maintenance issues and localised capacity constraints**

In general the condition of the drain and culverts along the water race is good. Vegetation is generally well maintained, weed is cleared, and culverts, bridges and fences are cleaned.

Private maintenance works undertaken by property owners includes:
- 113 McHughs Road. Sediment and weed build up in water race: owner aware of responsibility and regularly clears to improve capacity.
- 26, 37, 35 Wetherfield Lane. Regularly clear vegetation from water race. Other properties likely to also.
- 1 Roscrea Place. Replacement and upgrade of 3 culverts to 500mm diameter
- 37 Wetherfield Lane. Temporary bunding across driveway entrance in rain events to direct flow back to water race.
- Driveway servicing: 25, 27, 37 and 39 Wetherfield Lane, require regular repairs from flooding damage.

During the site visit water was observed to spill out from the water race from 26 Wetherfield Lane onto the road swale.

The driveway culvert under the driveway servicing 34-42 Wetherfield Lane is blocked and requires cleaning. Residents observe water spilling out at this location in storm events.
Figure 12. Water race upstream of 34-42 Wetherfield Lane driveway culvert, stagnant.

Figure 13. Spill from water race at 26 Wetherfield Lane
In general, through Wetherfield Lane and McHugh’s Road, there is little need for maintenance works through private property; most properties owners are keeping the water race and culvert clear through: trimming of vegetation, clearance of weed, cleaning of pipe and culverts. Localised channel restrictions (foot bridges, fencing, service supports) are present, but were generally clear.

There are some sections of the water race that are restricted by heavy vegetation, weed and rushes. Refer to Attachments A and B.

Along McHugh’s Road, there is one culvert at the driveway of 137-157 McHugh’s Road of only 300mm diameter, which has a lower capacity than the other driveway culverts (which are 375mm or twin 300mm diameter).

The driveway culvert at 169 McHugh’s Road is significantly restricted (blocked) and the water race cross-section is also of reduced area upstream and downstream compared the general profile through McHugh’s Road.

133 and 181 McHugh’s have weir structures to control flow into ponds on the property. These have the potential to reduce flow conveyance if not operated appropriately, however the current set crest levels are low. The weir at 181 McHugh’s Road downstream of the pond also includes a short 300mm culvert before the water race returns to open channel.

181 McHugh’s Road has a 100m section where the water race has been piped. The pipe diameter of 250mm is of lesser capacity than the 375mm driveway culverts, or the upstream water race channel. The pipe has short locations where it is daylighted at structures; these structures have twin 100mm overflow pipes which can convey a limited overflow only to the McHugh’s Road berm.

Figure 14. Water race pond and weir (overgrown) at 18 Wetherfield Lane
7. **Short term upgrade options**

**Wetherfield Lane**

Short term upgrade options to address the drainage issues through Wetherfield Lane encompass measures to retain flow within the water race:

- The driveway culvert at 34-42 Wetherfield Lane is overgrown / blocked. There is stagnant water and weed growth upstream. The culvert size could not be determined due to the extent of blockage. It is recommended that the culvert is cleared, including weed and vegetation clearance in the upstream property reach, and the culvert size confirmed. It is recommended that the culvert capacity is checked against water race capacity, and if required, an upgrade should be carried out.

- Spill from the water race at 26 Wetherfield Lane can result in flow down the Wetherfield Lane carriageway, to the 25-39 Wetherfield Lane driveway, impacting those properties. An upgrade to the water race bank/bund through 26 and 36 Wetherfield Lane would reduce the risk of spillage to the road.

- A permanent bund / raised accessway at 37 Wetherfield Lane would assist preventing overland flow through down gradient properties. Bund construction would also require works to the existing access gates.

- The section of race between 35 Wetherfield Lane and 101 McHughs Road has not been inspected because the properties were not accessible at the time of the walkover. There appears to be no formal secondary flow path available for flood flows. It is recommended this section is investigated further.

Where storm runoff flows exceed the capacity of the water race, options to improve drainage could include the below. However each has a potentially high cost, and limits to effectiveness. For discussion on the long terms options, refer to section 8.

1. Upgrade of the water race to convey drainage flows: this would involve significant works through private properties, and driveway culvert. The cost, land requirements, and disruption would be high.

2. Provision of storage or soakage to ground: there is no land identified able to provide for storage. Soakage to ground (soak pits) could be investigated at the Wetherfield Lane cul-de-sac head, which could improve drainage service to downgradient properties only (25-39 Wetherfield Lane and McHughs Road). The effectiveness would depend on the groundwater levels and available space. When groundwater levels are high and resurgent flows are operating (as is currently being observed), storage or soakage systems are unlikely to be practically achievable. Storage or soakage systems would therefore be unfeasible.

3. Diversion, storage or soakage to ground of overland flows from No 10. Road: there is no land identified able to provide for storage. There is limited space available in the road berm in which soak pits could be installed, and additional works to direct flow to any soakage would also be required, such as bunding. This may impact the road safety of No 10. Road. Likewise any diversion of overland flow down No 10. Road away from the Wetherfield overland flow paths could be achieved via bunding. However without development of a permanent diversion channel (refer to section 8. for options) any bunding may impact the road safety of No 10. Road, and downgradient properties

4. Collection and bypass of flow direct from Wetherfield Lane to McHugh Road. Due to the ground contours, any diversion would need to be piped (deep) and thus would have significant cost and disruption.

**Roscrea Place**

The primary stormwater system is sufficient to convey the 20% AEP storm event. The recommendations from the Roscrea Place Stormwater Investigations are suitable to resolve the secondary flow issues across 10 Roscrea Place. The recommended works include:

- Installing DN300 overflow pipe from the soak pit at 10 Roscrea Place to the water race at the McHugh Road intersection
- Constructing a defined roadside swale above the proposed pipe
• Construct a small bund adjacent to the proposed swale to protect the property at 10 Roscrea Place. Detailed design of the overflow pipe, swale and bund is completed. Review of the design with landowners is required to ensure the proposed works meet their operational and maintenance requirements.

It is recommended upgrade works to McHughs Road water race and drainage are carried out prior to/with any Roscrea Place upgrades, so as to not inadvertently cause downstream drainage issues.

McHughs Road
It is recommended maintenance of sections of the water race is carried out to remove weed and growth and heavy vegetation. This is the responsibility of the property owner. Areas to target include 125, 157 and 163 McHughs Road.

It is recommended maintenance of weed and sediment in the downstream channel is regularly undertaken by Council’s maintenance contractor. In the short term, attention to the channel at 1 Bradleys Road should be prioritised.

It is recommended the driveway culvert at 137-153 McHughs Road is upgraded.

It is recommended the driveway culvert at 163-169 McHughs Road is cleared, local water race works, wingwalls and aprons could be considered to aid with ongoing clearance and culvert capacity.

Options to increase capacity through 181 McHughs Road to match the upstream McHughs Road water race include:
• Installation of a second pipeline
• Upgrade of the existing pipeline
• Creation of a swale / drain adjacent to the pipeline to convey flow.

The installation of an upgraded or second pipeline would be complex due to the location through private property, existing structures, and services. Construction of a swale or bund would need to account for services, road safety, and property boundaries. Overhead powerlines exist on the northwest berm of McHughs Road. An options assessment is recommended for this site.

8. Long term upgrade options
Long term upgrades were investigated in the report Flooding Mitigation Works and Funding DRA-16-02.01 / 141009110892, 2014. Funding was allocated in the 10-year plan to progress an option. High level options were presented to a community meeting in 2014, and further investigation, optioneering and consultation work is required.

The three main options for addressing the capacity issues in the long term are:
1. Upgrade Main Channel: Upgrade the capacity along the existing channel through Redfern Lane, Crossing Tram Road, then through Millfield and San Dona, to Bradleys Road.
2. Diversion: Diversion south down No. 10 Road to the old Eyre River (refer Figure 17)
3. Diversion: Diversion north to Tram Road and then onto Bradleys Road (refer Figure 18)

Refer to Flooding Mitigation Works and Funding DRA-16-02.01 / 141009110892, 2014 for more details on the proposed long term options.
Figure 15 - Long term option: No. 10 Road diversion to old Eyre River

Figure 16 - Long term option: diversion to Tram Road and Bradleys Road

9. Recommendations

It is recommended short term and maintenance works are progressed at Wetherfield Lane, Roscrea Place, and McHughs Road, and a long term option is progressed (investigations, consultation, design and consenting) for Mandeville.
9.1. Immediate works
   a) Clearance and investigation of the 34-42 Wetherfield Lane driveway culvert capacity.
   b) Investigation of the water race conveyance and secondary flow paths between 35 Wetherfield Lane and 101 McHughs Road.
   c) Maintenance of sections of the water race with heavy or moderate weed and vegetation growth including 125, 157 and 163 McHughs Road (discuss with property owners)
   d) Clearance of the Bradleys Road drain at 1 Bradleys Road

9.2. Short term works

Wetherfield Lane
   e) Upgrade the water race through 26 and 36 Wetherfield Lane
   f) Construction of a permanent bund / raised accessway at 37 Wetherfield Lane
   g) Feasibility assessment of diversion or soakage to ground of overland flows from No 10 Road; at No 10 Road, or Wetherfield Lane.

Roscrea Place
   Proceed with the recommendations from the Roscrea Place Stormwater Investigations including:
   h) Installation of a DN300 overflow pipe from the soak pit at 10 Roscrea Place to the water race at the McHughs Road intersection
   i) Construct a defined roadside swale above the proposed pipe
   j) Construct a small bund adjacent to the proposed swale to protect the property at 10 Roscrea Place.
   k) Liaison with 10 Roscrea Place property owner.

McHughs Road
   l) Upgrade of the driveway culvert at 137-153 McHughs Road.
   m) Clearance, and upgrade to the driveway culvert at 163-169 McHughs Road.
   n) Options assessment of upgrades to water race conveyance through 181 McHughs Road.

9.3. Future long term upgrade works
   o) Progress long term options (investigations, consultation, design and consenting) for Mandeville. Investigations should also include works upstream of No. 10 Road within private properties.
      Long term diversion options include:
      1. Upgrade Main Channel: Upgrade the capacity along the existing channel through Redfern Lane, Crossing Tram Road, then through Millfield and San Dona, to Bradleys Road.
      2. Diversion: Diversion south down No. 10 Road to the old Eyre River
      3. Diversion: Diversion north to Tram Road and onto Bradleys Road.
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**Key Observations from Residents:**

- 10 Roscrea has a 'soak hole' on boundary where overflow from 113 and 1 has flowed to 300Ø (some silt and weed).
- 19 Roscrea has a 'soak hole' on boundary where overflow from 113 and 1 has flowed to 500Ø.
- Race generally clear. Some weed and silt but maintained. Some foot bridges over race. Race only overflown once in 6 years.
- Resident has identified kokopu and bully. Race been dry approx 10 times 6 years. Resident would like to upgrade (native planting). Weed and silt ongoing issue.
- Race clear, property maintains willow roots routinely.
- Current spill from race to road swale (with soak pit) currently spill from race to cul de sac and down driveway (driveway damaged).
- *"river" down McHughs Road in 2017 rain events*
- *spill at cul de sac and down driveway (driveway damaged)*
- Some soaks holes down driveway.
- Race clear.
- Race clear.
- *sheet flow* on-line pond with weir and heavy vegetation.
- *sheet flow* off-line pond (has been modified).
- Race clear.
- Race clear.
- Race clear,
WAIMAKARIRI DISTRICT COUNCIL

REPORT

FILE NO: GOV-26-10-06 / 180730084838
REPORT TO: Oxford-Ohoka Community Board
DATE OF MEETING: 9 August 2018
FROM: Doug Nicholl, Chairperson Oxford-Ohoka Community Board
SUBJECT: Chair’s Diary for July 2018

1. SUMMARY

Most of the Board members and I attended a public meeting at the Oxford Town Hall on 12 July to hear residents’ and business people’ views on the heavy vehicle use of Harewood Road. The meeting became heated at times but overall went well with Council staff, in particular the Manager Utilities and Roading, working hard to ensure that all views were heard. With the exception of one resident most people were reasonably happy with the outcome.

I attended the Waimakariri Water Zone Committee public meeting held in Kaiapoi on 18 July. Explanations were presented of how farmers and others will need to reduce nitrogen leaching into aquifers. The meeting divided into groups. The group I was in was made up mostly of Eyreton residents concerned about the nitrate levels in their well water. They were able to convey their message to Clair McKay from ECan who was at our table.

On 19 July all four Board chairs met with the Governance Adviser to finalise arrangements for the new Youth Leadership Grant including reviewing a first draft application form together with the overall timetable and process for publicising the grant and decision making process.

I attended the Ohoka Residents’ association AGM held on 26 July. John Lynn and Adrian Bliss stood down for re-election, three new members were elected and the new Chair is to be Nikki Mealings.

RECOMMENDATION

THAT the Oxford-Ohoka Community Board:

Receives report No. 180730084838.

Doug Nicholl
Chairperson