

Audit and Risk Committee

AGENDA

Notice of Meeting:

A meeting of the Audit and Risk Committee will be held on:

Date: Wednesday 22 September 2021

Time: 1pm

Venue: Council Chamber
137 Havelock Street, Ashburton

Membership

Chairperson	Leen Braam
Deputy Chairperson	John Falloon
Members	Carolyn Cameron
	Liz McMillan
	Stuart Wilson
	Murray Harrington (external appointee)
	Mayor Neil Brown (ex-officio)

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Audit & Risk Committee

Timetable	
1.30pm	Meeting commences

ORDER OF BUSINESS

- 1 Apologies**
- 2 Extraordinary Business**
- 3 Declarations of Interest**

Minutes

- | | | |
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| 4 | Audit & Risk Committee – 11/08/21 | 3 |
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Reports

- | | | |
|----------|--|----------|
| 5 | Waka Kotahi NZTA Technical Audit Report | 5 |
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Business transacted with the public excluded

- | | | |
|----------|--|-------------|
| 6 | Audit & Risk Committee 11/08/21
Section 7(2)(a) Protection of privacy of natural persons | PE 1 |
| 7 | Health & Safety
Section 7(2)(a) Protection of privacy of natural persons | PE 2 |

16 September 2021

Audit & Risk Committee

11 August 2021



4. Audit & Risk Committee Minutes

Minutes of the Audit & Risk Committee meeting held on Wednesday 11 August 2021, commencing at 3pm, in the Council Chamber, 137 Havelock Street, Ashburton.

Present

Mayor Neil Brown; Councillors Leen Braam (Chair), Carolyn Cameron, John Falloon, Liz McMillan and Stuart Wilson. Murray Harrison (via Zoom).

Also present:

Councillors Rodger Letham, Lynette Lovett, Angus McKay, Diane Rawlinson

In attendance

Hamish Riach (Chief Executive), Paul Brake (GM Business Support), Jane Donaldson (GM Strategy and Compliance), Sarah Mosely (Manager People & Capability) and Carol McAtamney (Governance Support).

1 Apologies

Nil.

2 Extraordinary Business

Nil.

3 Declarations of Interest

Nil.

4 Confirmation of Minutes – 23/06/21

That the minutes of the Audit & Risk Committee meeting held on 23 June 2021, be taken as read and confirmed.

Wilson/Falloon

Carried

5 Long-term Plan 2021/31 – Lessons learnt

Paul Brake presented

Thanks and appreciation were extended to the dedication of the team that worked diligently to ensure that the LTP was adopted within the required timeframe.

Recommendation to Council

That Council receives the report.

McMillan/Cameron

Carried

Business transacted with the public excluded – 3.10pm

That the public be excluded from the following parts of the proceedings of this meeting, namely – the general subject of each matter to be considered while the public is excluded, the reason for passing this resolution in relation to each matter, and the specific grounds under Section 48 (1) of the Local Government Official Information and Meetings Act 1987 for the passing of this resolution are as follows:

Item No	General subject of each matter to be considered:	In accordance with Section 48(1) of the Act, the reason for passing this resolution in relation to each matter:
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6	Audit & Risk committee 23/06/21	Section 7(2)(h) Section 7(2)(a)	Commercial activities Protection of privacy of natural persons
7	Health & Safety	Section 7(2)(a)	Protection of privacy of natural persons

Mayor/Wilson

The Committee resumed in open meeting and concluded at 3.58pm.

5. Waka Kotahi NZTA Technical Audit Report

Author	<i>Hernando Marilla, Asset Management Engineer</i>
Activity Manager	<i>Brian Fauth, Roding Manager</i>
GM Responsible	<i>Neil McCann, Group Manager Infrastructure Services</i>

Summary

- This report presents the Technical Investment Audit of Ashburton District Council undertaken in June 2021.
- The objective of the audit is to provide assurance that the Waka Kotahi NZ Transport Agency's (hereafter Waka Kotahi) investment in Ashburton District Council's land transport programme is being well managed and is delivering value for money. The audit also seeks assurance that Council appropriately manages risk associated with Waka Kotahi's investment in ADC's roading network.
- Recommendations for improvements are provided where appropriate.

Recommendation

That Council receives the Waka Kotahi NZTA Technical Audit Report.

Attachment

Appendix 1 Waka Kotahi Investment Audit Report

Background

1. Approximately every three years, Waka Kotahi undertake an 'Investment and technical audit' of Council's land transport programme to seek assurance that it is being well managed and delivering value for money. The audit also considers how Council manages risk associated with Transport Agency's investment.
2. The Audit was undertaken by a team of three auditors, headed by Senior Investment Auditor Matt Busch, from 28 June – 1 July 2021.
3. The audit findings indicate that the Ashburton District Council's road network is being well managed and generally is in good condition, although the standard of roadside drainage in some rural areas is impacting asset lifecycles and levels of service.
4. Other findings were:
 - Network index trends for pavement integrity and surface condition are stable and compare well when benchmarked with other councils in New Zealand. The ADC pavement integrity index has been in decline since 2016/17, although remains above the national average value at the end of 2019/20.
 - In terms of maintenance expenditure, Ashburton DC is in the lower quartile when compared with the approved organisations in the rural districts peer group, for the three years 2018 – 2020. Council's average cost for this period is \$4,125/km within the peer group range of \$3,345 to \$11,503/km.
 - The number of annual deaths and serious injuries (DSIs) on Council roads is trending down over the last seven years. Ashburton DC's crash rate compares well in terms of both personal and collective risk with Council's rural districts peer group, councils in the Canterbury region and nationally. The majority of DSIs have occurred on primary and secondary collector roads (29% and 36% respectively) in the last seven years, representing similar personal risk across road classifications when DSIs are compared with vehicle kilometres travelled. The 2020 Communities at Risk Register ranked Ashburton DC 68 from 72 Councils in terms of personal risk, with rural intersections being the highest road safety risk area.
 - The level of activity management maturity has advanced since the previous (2018) Activity Management Plan (AMP), with improved application of the Business Case Approach (BCA) and One Network Road Classification.
 - The Road Efficiency Group assessed Ashburton DC's data quality as excellent, with a reasonable (10%) improvement from 2018/19 to 2019/20.
 - The application of Net Present Value (NPV) analysis requires further refinement in order to optimise the pavement renewal and related work programmes
 - Council's personnel who assisted with the audit exhibited good network knowledge and awareness of the challenges facing the transport activity.

5. Opportunities for improvement were noted primarily in processes and practices associated with aspects of network management, activity management planning and road safety.
6. The overall rating assessment was “Some Improvement Needed”.
7. Council staff were given the opportunity to comment on the findings and these are shown in the attached Waka Kotahi report as “Ashburton District Council’s comment” following each of the detailed findings. The recommendations and an implementation plan have been agreed with Council’s Roading Manager.

Options analysis

8. The recommendations provided in the report will be actioned.

Legal/policy implications

9. No legal implications are identified.

Financial implications

Requirement	Explanation
What is the cost?	The cost of adopting the recommended actions cannot be quantified at the time of the preparation of this report
Is there budget available in LTP / AP?	Yes.
Where is the funding coming from?	The cost of adopting the recommended actions will be funded within the 2021/2024 LTP budget.
Are there any future budget implications?	No
Finance review required?	No

Significance and engagement assessment

10. The Investment Audit is carried out under section 95(1)e(ii) of the Land Transport Management Act 2003.

95 Functions of Agency

(1) *The Agency has the following functions:*

(e)(ii) *auditing the performance of approved organisations in relation to activities approved by the Agency and the operation of the land transport disbursement accounts of approved organisations:*

Requirement	Explanation
Is the matter considered <i>significant</i> ?	Yes
Level of significance	Medium
Level of <i>engagement</i> selected	1 Inform
Rationale for selecting level of engagement	The purpose of this document is to share the Audit Report to Council for information and guidance. Future engagement will be between Waka Kotahi NZTA and Council Staff.
Reviewed by Strategy & Policy	Toni Durham Strategy and Policy Manager



INVESTMENT AUDIT REPORT

Technical Audit of Ashburton District Council

Monitoring Investment Performance

Report of the investment audit carried out under Section 95(1)(e)(ii) of the Land Transport Management Act 2003.

MATT BUSCH

1 JULY 2021

FINAL

Approved Organisation (AO):	Ashburton District Council
Waka Kotahi NZ Transport Agency Investment (2018 – 2021 NLTP):	\$ 24,748,700 (budgeted programme value)
Date of Investment Audit:	28 June – 1 July 2021
Audit Team:	Matt Busch - Senior Investment Auditor (Lead) Ross Bayer - Roothing Manager, Waikato DC Ben Wong - Principal Investment Advisor
Report No:	RAMBT - 2001

AUTHORITY SIGNATURES

Prepared by:



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Matt Busch, Senior Investment Auditor

Approved by:



.....
Yuliya Gultekin, Practice Manager Audit & Assurance

13/09/2021

.....
Date

DISCLAIMER

WHILE EVERY EFFORT HAS BEEN MADE TO ENSURE THE ACCURACY OF THIS REPORT, THE FINDINGS, OPINIONS, AND RECOMMENDATIONS ARE BASED ON AN EXAMINATION OF A SAMPLE ONLY AND MAY NOT ADDRESS ALL ISSUES EXISTING AT THE TIME OF THE AUDIT. THE REPORT IS MADE AVAILABLE STRICTLY ON THE BASIS THAT ANYONE RELYING ON IT DOES SO AT THEIR OWN RISK, THEREFORE READERS ARE ADVISED TO SEEK ADVICE ON SPECIFIC CONTENT.

EXECUTIVE SUMMARY

Ashburton District Council's (hereafter Ashburton DC) road network is generally in good condition.

We acknowledge that Council may be unable to action all the audit recommendations immediately due to the constrained NLTP 2021-24 allocations and that further optimisation of work programmes will assist level of service delivery within NLTP investment constraints.

Network index trends for pavement integrity and surface condition are stable and generally compare well with national values. The pavement integrity index has been in decline since 2016/17, although remains above the national average value at the end of 2019/20.

In terms of maintenance expenditure, Ashburton DC is in the lower quartile when compared with the approved organisations in the rural districts peer group, for the three years 2018 – 2020. Council's average cost for this period is \$4,125/km within the peer group range of \$3,345 to \$11,503/km.

Effective roadside drainage is imperative in order to maximise road pavement and surfacing lifecycles. Overall, Council is achieving a reasonable standard of drainage across the network. However, an opportunity remains to ensure effective road drainage by continuing the focus of maintenance interventions on cause in areas demonstrating signs of pavement distress, as well as in traffic loading growth areas, such as freight and land development haul routes.

The number of annual deaths and serious injuries (DSIs) on Council roads has been trending down over the last seven years, although a multiple fatality crash in June 2021 (yet to be included in the Crash Analysis System) will likely affect historical trends. Ashburton DC's historical crash rate compares well in terms of both personal and collective risk with Council's rural districts peer group, councils in the Canterbury region and nationally.

The majority of DSIs have occurred on primary and secondary collector roads (29% and 36% respectively) in the last seven years, representing similar personal risk across road classifications when DSIs are compared with vehicle kilometres travelled. The 2020 Communities at Risk Register ranked Ashburton DC 68 from 72 Councils in terms of personal risk, with rural intersections being the highest road safety risk area.

Continued application of rural intersection layout and signage standards, delineation against road classifications, bridge barrier system improvements and timely response to carriageway maintenance and delineation deficiencies will all contribute toward reducing death and serious injury crashes.

The level of activity management maturity has advanced since the previous (2018) Activity Management Plan (AMP), with improved application of the Business Case Approach (BCA) and One Network Road Classification. Like the 2018 AMP, an area of focus needs to be strengthening the line of sight between the strategic context and the development and delivery of an optimised work programme. Strengthening the alignment between the strategic context and delivery of an optimised programme can be refined using tools like investment logic mapping and multi-criteria analysis.

The Road Efficiency Group assessed Ashburton DC's data quality as excellent, with a reasonable (10%) improvement from 2018/19 to 2019/20. Recording data that is complete, timely and accurate improves the evidence to support Council's case for investment. Areas for further improvement include asset inventory data timeliness and completeness.

The application of Net Present Value (NPV) analysis requires further refinement in order to optimise the pavement renewal and related work programmes. NPV analysis is a Waka Kotahi funding requirement for the pavement rehabilitation and bridge renewals work categories. Council's development of improvement and renewal work programmes would benefit from improved application of RAMM maintenance cost data, traffic data and pavement investigation, and further analysis of alternate options.

Council staff advised that the economic impact of COVID-19 on the Ashburton District has been minimal, as the District is not heavily reliant on tourism and continue to experience localised growth. Staff also advised that Council's roading renewal and improvement work programmes were impacted (delayed) due to the COVID-19 lockdown requirements. This is supported by the Council's 2019/20 final claim for NLTF investment. No additional contractor payments were made in relation to the impacts of COVID-19.

Council's personnel who assisted with the audit exhibited good network knowledge and awareness of the challenges facing the transport activity.

AUDIT RATING ASSESSMENT

Subject Areas		Rating Assessment*
1	Previous Audit Issues	N/A
2	Network Condition and Management	Some Improvement Needed
3	Activity Management Planning	Some Improvement Needed
4	Data quality	Effective
5	Road Safety	Some Improvement Needed
Overall Rating		Some Improvement Needed

* Please see Introduction for Rating Assessment Classification Definitions

RECOMMENDATIONS

The table below captures the audit recommendations. Agreed dates are provided for the implementation of recommendations by the approved organisation.

We recommend that Ashburton District Council:		Implementation Date
R2.1	Ensures elements of the pavement renewal programme development process, including investigation, design, optioneering and economic analysis are refined and implemented in advance of the pavement construction season.	30 June 2022
R2.2	Optimises delivery of bridge levels of service across bridge replacement, structural component replacement and bridge maintenance work programmes, in response to faults identified through bridge inspections.	Ongoing, commencing July 2021
R3.1	Further develops the safety deficiency data collection and risk-based prioritisation methodology to enhance effectiveness of the road safety work programme.	30 June 2024
R3.2	Ensures audit recommendations and suggestions are included in the AMP improvement plan and a project plan is developed for each AMP improvement task, enabling progress to be monitored against programme.	30 June 2024

We recommend that Ashburton District Council:		Implementation Date
R3.3	Strengthens the line of sight between the strategic context and delivery of an optimised work programme, including further analysis of structure planning, alternate transport modes and alternate pavement management strategies.	30 June 2024
R5.1	Implements an audit of signs, markings and delineation to identify inconsistent practice and implements a programme of work to ensure compliance with the national guideline (Traffic Control Devices Manual – Part 5).	Audit completed by 30 June 2022 Commence programme implementation by 28 February 2022, then ongoing
R5.2	Implements a programme of work to ensure bridge barrier systems compliance with the national guideline (Waka Kotahi M23 - Specification for Road Safety Hardware Systems).	Commence programme implementation by 30 July 2021, then ongoing
R5.3	Enforces Council's Public Places Bylaw (2018), prohibiting the use of steel posts (including waratah standards) and ensuring that temporary fences do not constitute a traffic hazard.	Ongoing

1.0 INTRODUCTION

1.1. Audit Objective

The objective of this audit is to provide assurance that the Waka Kotahi NZ Transport Agency's (hereafter Waka Kotahi) investment in Council's land transport programme is being well managed and delivering value for money. We also seek assurance that the Council is appropriately managing risk associated with Waka Kotahi investment. We recommend improvements where appropriate.

1.2. Assessment Ratings Definitions

	Effective	Some Improvement Needed	Significant Improvement Needed	Unsatisfactory
Investment management	Effective systems, processes and management practices used.	Acceptable systems, processes and management practices but opportunities for improvement.	Systems, processes and management practices require improvement.	Inadequate systems, processes and management practices.
Compliance	Waka Kotahi and legislative requirements met.	Some omissions with Waka Kotahi requirements. No known breaches of legislative requirements.	Significant breaches of Waka Kotahi and/or legislative requirements.	Multiple and/or serious breaches of Waka Kotahi or legislative requirements.
Findings/ deficiencies	Opportunities for improvement may be identified for consideration.	Error and omission issues identified which need to be addressed.	Issues and/or breaches must be addressed, or on-going Waka Kotahi funding may be at risk.	Systemic and/or serious issues must be urgently addressed, or on-going Waka Kotahi funding will be at risk.

1.3. Council's Comments

Prior to this report being approved, Ashburton District Council was invited to comment on the auditors' findings, recommendations and suggestions. Where appropriate, this report has been amended to reflect this dialogue. Any additional auditee response comments are attached in the Appendices.

2.0 ASSESSMENT FINDINGS

Our findings relating to each subject area are presented in the tables below. Where necessary, we have included recommendations and/or suggestions.

1. Previous Audit Issues

The previous (2011) technical audit of Ashburton DC resulted in the following recommendations.

That Ashburton District Council:

- Reassess the financial forecast of the AMP to take account of actual growth and its likely effects on the network, and

That Waka Kotahi:

- Monitors Council's responses to the changing needs of the network to ensure adequate investment levels are maintained.

A review of Council's response to the 2011 technical audit recommendations, completed as part of the 2021 technical audit, confirmed that further work is required to better understand the impacts of growth on Ashburton DC's transport activity, enabling Waka Kotahi to ensure adequate investment levels are maintained. Understanding the impacts of growth is discussed further within the *Activity Management Planning* subject area of this report.

Ashburton District Council's comment

Council is continually assessing the actual needs of the network based on network fault surveys, roughness surveys, traffic monitoring and sealed road modelling now and into the future. We incorporate Statistics NZ growth data and the information collected to inform the preparation of our Road Maintenance Contract. The LTP budgets are prepared based on the requirements thus identified and presented to NZTA to provide the necessary partnering investment.

The ADC network though supporting increased heavy traffic demand is not at or approaching capacity. We do not require funds for major improvements only those requested so that we can maintain our network at an appropriate level of service.

* * *

2. Network Condition and Management

Some Improvement Needed

Ashburton District's road network is being well managed and is generally in good condition. The road network is diverse in nature. The majority (92%) of the 2614km road network is rural, and approximately 60% of the network length is sealed. Ashburton District is experiencing moderate population growth (projected to increase by 25% by 2050). Most of the growth (residential, commercial and industrial) is occurring in and around Ashburton township, with minor residential growth around Methven.

Increasing use of the alternate inland routes is resulting in higher traffic loading, impacting road asset consumption and performance (particularly on higher classification rural routes), whilst land development in the east is increasing the need for investigation of alternate transport options within (and to a lesser extent) between urban areas. In addition to land development, the sustained agricultural activities across the wider district continue to impact condition and consume road pavement assets. Council is fortunate that the free-draining river gravel sub-grades, on which much of the road network is built, reduces these vehicle loading impacts.

Most of the district roads are constructed on a flat topography, leading to the higher classification rural roads having well-formed shoulders and wider berms, providing good sight distances, which in turn results in higher vehicle speeds and the need for appropriate road safety interventions. The flat topography and arable land use have contributed to the form of many rural road intersections having five or more intersecting roads, meaning road intersection layout guide signage is critical to minimise road safety risk, particularly on routes with a higher density of unfamiliar road users.

Overall, we consider that Council's roading team are responding well to most challenges associated with delivering Ashburton DC's transport activity, within funding constraints. We observed good leadership, network knowledge and technical skills as well as capacity to manage a transport network of Ashburton DC's scale and complexity.

Examples of good network management observed during this audit included:

- Willingness to trial new technology and techniques such as:
 - application of dTIMS refinements (using Geosolve) to better define treatment lengths and pavement / drainage renewal options
 - considering the use of JunoViewer as a FWP development tool
 - unsealed road wearing course materials (e.g. Basalt from Harmers quarry) and treatments (e.g. stabilisation) to reduce maintenance cycles on high wear unsealed roads and unsealed (sealed road) shoulders.
 - use of 'potato harvester' to improve drainage through high-shoulder removal and rural swale reinstatement
- Realising opportunities and sharing innovation through the Aoraki Roding Collaboration.
- Collection of critical asset data (e.g. confirming culvert inventory and condition).
- Improving two-way understanding of the levels of service and the work programme delivery process (therefore Council's reputation/customer satisfaction), through Stakeholder communications (customer and user group meetings) and public access to web-based spatial work programmes.
- Implementing safer speeds at higher-risk locations (urban fringes and schools).
- Town centres kept clean, tidy and welcoming incl. increased active mode focus.

As noted above, Council is employing innovative methods to maintain effective roadside drainage. We commend this practice and reinforce the need for wider application of proactive drainage interventions, particularly in areas with extensive pavement defects, where pavement renewal projects may be deferred due to constrained budgets.

During the audit field inspections, we observed many areas (particularly on high classification rural roads) where pavement and surfacing performance issues were resulting in pavement failures (such as potholing, rutting, shoving, cracking and flushing) having a negative impact on customer (safety and amenity) levels of service and asset lifecycles/cost of service.

We recognise that the recent high rainfall event is likely to have contributed in more extensive pavement and surface defects and that the network condition when inspected may not have represented 'normal' asset performance. An opportunity exists to improve contractor performance monitoring to ensure intervention response times meet contract requirements and deliver agreed levels of service in these locations. This includes good record keeping of both contract management and operational meetings.

Council is using specialist technical expertise to support Council's in-house team. An opportunity exists to reassess where this expertise can further enhance decision-making and service delivery across a range of network management activities. These technical inputs include reseal treatment/design reviews, network safety deficiency assessments and traffic count programme refinements. Various resourcing options are available to Council in order to realise these opportunities, including engaging external subject matter experts (consultants) and collaboration/resource sharing across Councils within the Canterbury region.

We recognise and commend Council for investing in and implementing programme development process improvements, particularly associated with pavement renewals (e.g. investigation, design, optioneering and economic analysis). Continuing this analysis, documenting the process and completing these tasks in time to inform following year's renewal work programme will enable Council to enhance their decision-making process and move toward optimising pavement, drainage and surfacing maintenance and renewal work programmes.

The audit team observed areas where adjoining landowner activities are impacting road network safety and operational efficiency, such as:

- temporary fencing in road berms (including the use of waratah standards and other unsafe fencing practices on or adjacent the road carriageway)
- the use of road berms by farm machinery and for stock movement or grazing resulting in:
 - mud tracking reducing skid resistance and obscuring road marking
 - damage to roadside drainage
- farm irrigators saturating road pavements (thereby reducing asset lifecycles),
- shelter belts encroaching over the road boundary, increasing motorist safety risk (due to reduced sight distances) and reduced skid resistance (due to frost where shelter belts shade the road surface)

We understand the roading team has been focussed on limiting the impacts of adjoining landowner activities through increased bylaw compliance monitoring in recent years. We encourage continuing this compliance focus and suggest an opportunity may exist for Council to review the effectiveness of current bylaws (refining these, where appropriate, through the next bylaw review process).



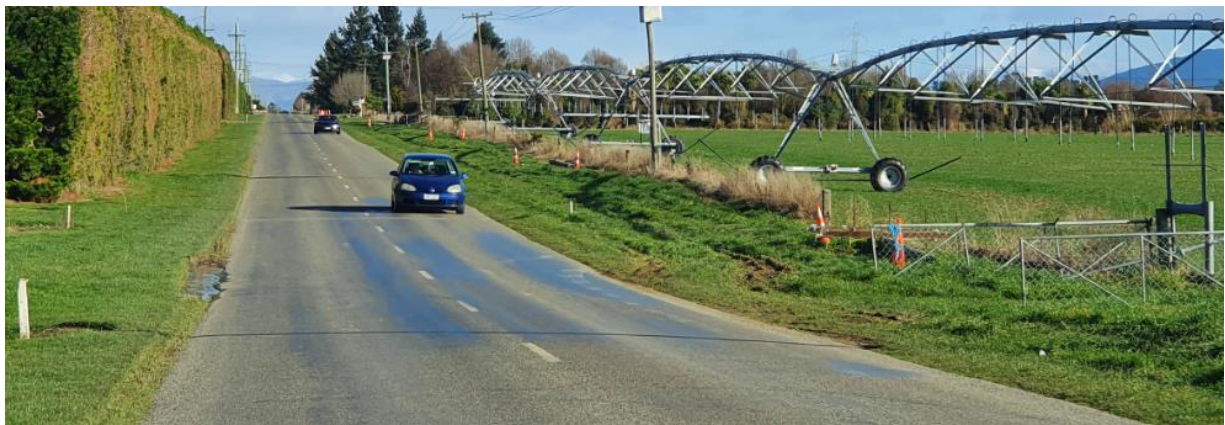


Figure 1: Examples of adjoining landowner activities impacting road network operational efficiency. Top left – roadside drainage damage resulting from farm machinery use and stock movement on road berm (Winslow Road); top right - shelter belt encroaching over the road boundary (Arundel Rakaia Gorge Road); bottom - farm irrigator adjacent road corridor (Pudding Hill Road)

The audit team is encouraged that Council has started developing their maintenance intervention guidelines. A maintenance intervention strategy (MIS) provides an important link between the renewal and maintenance work programmes, to ensure development of shorter-term maintenance programmes are aligned to the longer-term renewal work programme, thereby reducing the risk of over (or under) investment in maintenance treatments.

The aim of an MIS is to ensure the proposed maintenance intervention/treatment (which needs to include addressing the cause of a fault) provides the required level of service, at the lowest cost, until the next planned improvement or renewal treatment.

Some aspects of traffic services maintenance and safety management are areas of network management that would benefit from an increased focus. An opportunity exists for Council to ensure inspection/maintenance cycles respond to incidents of edge maker post damage to minimise road-user safety risk. Safety management is discussed further in the *Road Safety* subject area of this report.

Council undertakes general inspections of significant road structures in the district on a three-yearly cycle, and more frequent inspections of structures identified to have components with variable conditions (such as timber) or other issues that require more regular monitoring. It is pleasing to note that the structural inspections being completed include stock underpasses and retaining walls (in addition to bridges and large culverts). Council's bridge inspection frequency, although outside the bridge inspection and maintenance manual inspection guidelines, appears appropriate for identifying faults and developing work programmes required to achieve levels of service, managing risk and maximising bridge lifecycles.

The most recent (July 2018) structural inspection (documented in WSP's November 2018 bridge inspection report) includes a list of 5 bridges with less than 10 years remaining life, requiring programmed replacement and 11 bridges requiring either urgent or high-priority structural component replacement. Council staff have qualified that all but possibly one (Bridge #148 on Poplar Road) of the programmed bridge replacements are not required due to structure redundancy for reasons, such as alternate access, road closures and relocation as part of an external irrigation project. Staff also advised the primary short-term bridge component replacement and maintenance focus relates to the historic Wills Street Pedestrian Rail Overbridge.

The bridge inspection report also refers to bridge structures with non-compliant 'fish-tail' terminal ends with no flare as well as some with concrete headwalls close to the road carriageway. These references confirm our audit field observations of these road safety hazards, discussed further within the *Road Safety* subject area of this report.

We encourage Council to improve their process for managing delivery of the bridge inspection outputs and recommend this work is given priority. Improved delivery of bridge replacements, structural component replacement and maintenance will ensure the structural integrity of the bridge stock, lifecycles are maximised, and appropriate levels of service are achieved.

RAMM includes an inventory of 3,864 roading activity streetlights, 2,704 of these being the more cost-effective LED-type lights. It is pleasing to note Council has taken advantage of the elevated (85%) financial assistance rate (FAR) being available to approved organisations since 2017. We have concerns regarding ornamental streetlights vested through developments (such as the Lake Hood development), observed during our network inspection. Allowing these less conventional lighting assets to be vested through developments will result in higher on-going energy, maintenance and replacement costs. There remains an opportunity for Council to improve development standards to ensure future costs associated with vested lighting assets are minimised.

Performance Monitoring

Condition indices are shown in terms of the trend for Council between 2010/11 and 2019/20 and a comparison with (rural districts) peer group councils for 2019/20 in the graphs below. Ashburton District's indices are shown by the red bar compared to their peer group, indicating that the condition of the Ashburton DC sealed road network is above the peer group average for surface Condition Index (CI), Pavement Integrity Index (PII) and Smooth Travel Exposure (STE).

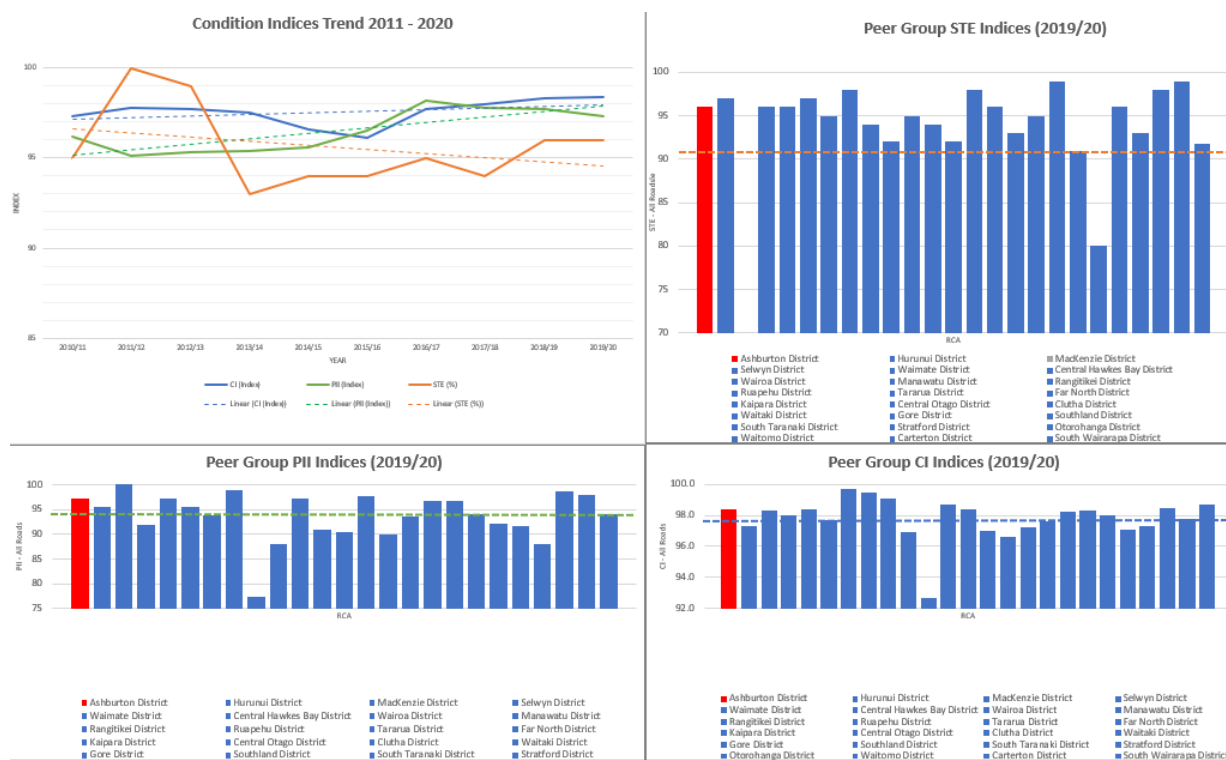


Figure 2: Network Condition Indices - source WK Transport Data

Network condition as measured by the key indices of CI, PII and STE show the sealed network is in good condition. CI and PII indices are showing an improving trend over the last 10 years, and the STE index has been steadily improving over the last 6 years.

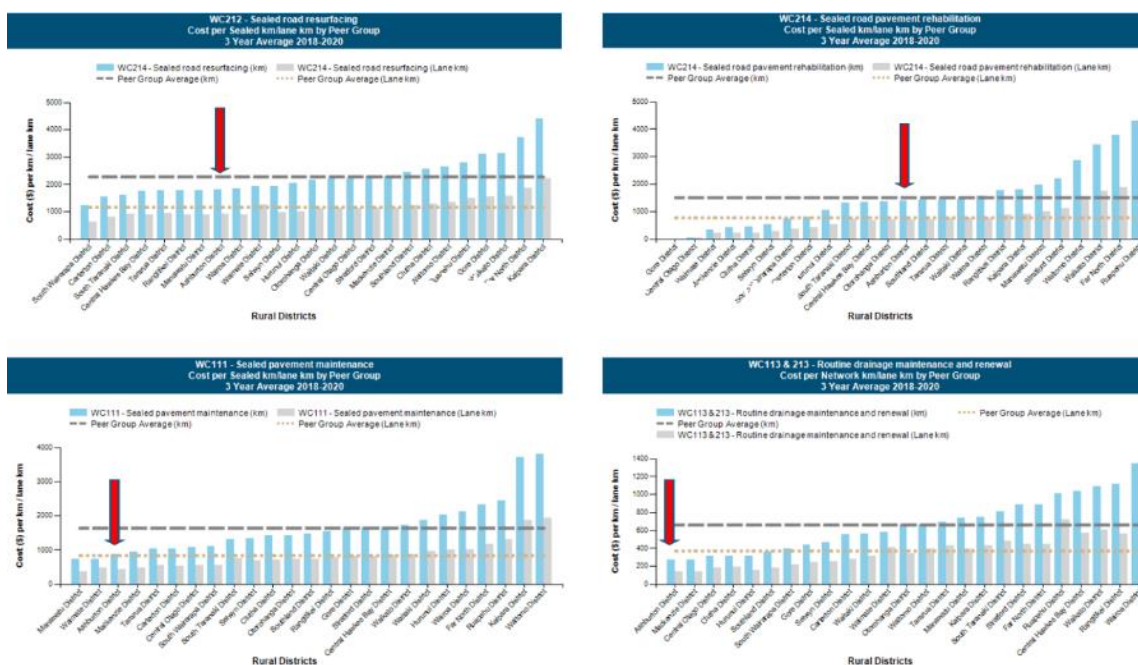
A decline in the rural PII over the last 3 years aligns with the audit team observations of deteriorating rural pavements. This suggests Council's current focus on rural pavement interventions (including drainage, pavement and surfacing maintenance and renewals) is imperative in order to respond to this declining trend, through optimising investment in these assets.

Areas of ‘manufactured’ roughness were observed within the road carriageway in some urban areas inspected, as a result of poor service trench reinstatement by other Council infrastructure suppliers or utility authorities in the past. An opportunity exists for Council to further refine work programme integration (referenced in the ‘*Activity Management Planning*’ subject area of this report) and ensure utility operators’ service trench reinstatement standards are being met as provided for within the ‘National Code of Practice for Utility Operators’ Access to Road Corridors’.



Figure 3: Example of service trench reinstatement impacting road roughness (Harrison Street, Ashburton).

The cost per km for MOR (maintenance, operations and renewals), excluding emergency works, as a three-year average (2018-2020) is \$4,125/km, which is in the lower quartile of costs for the rural districts peer group. This relatively low cost per kilometre is consistent across work categories that make up the maintenance, operations and renewals activity class, with the exception of sealed road pavement rehabilitation and traffic services maintenance and renewals where the cost per km for these activities are closer to the peer group average, as shown in the peer group comparison graphs below.



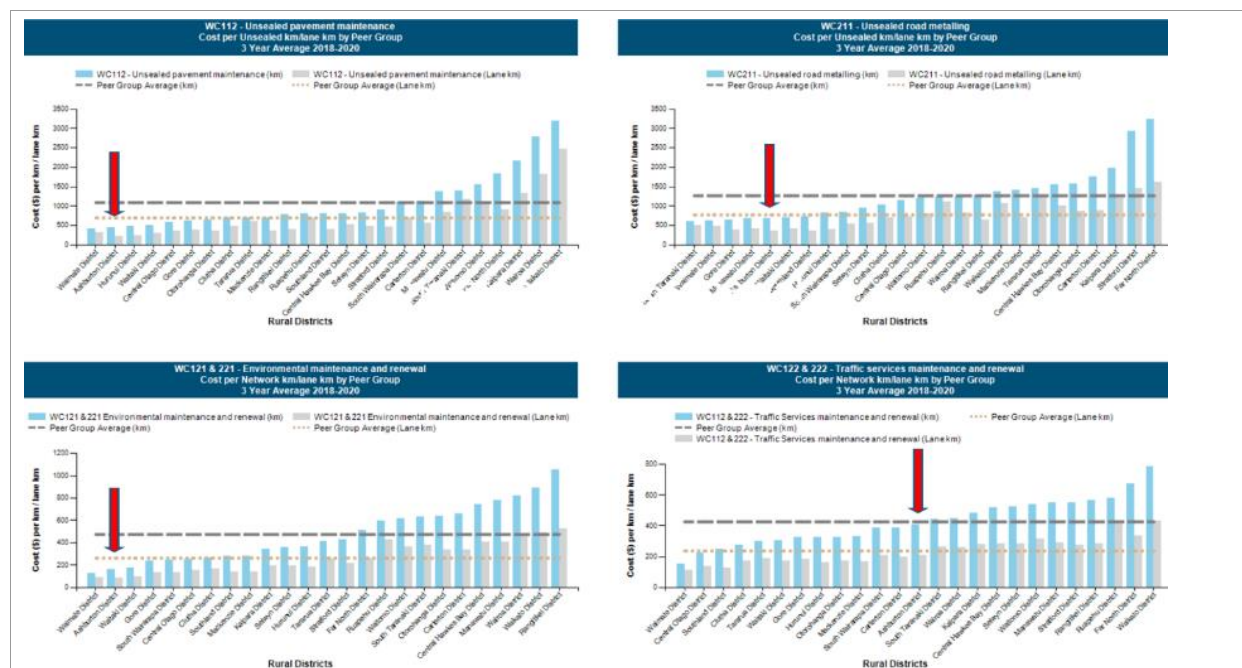
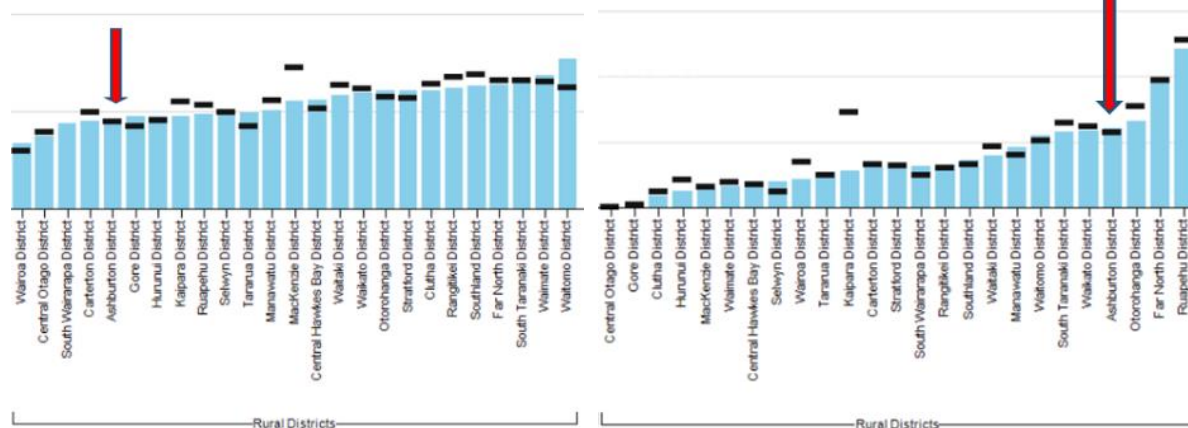


Figure 4: Peer group costs/km cost comparison, source Waka Kotahi MOR Report

Audit field observations (supported by the cost comparisons above) suggest that opportunities may exist to re-balance some MOR activities (and costs) to optimise levels of service achievement. Examples include activities which contribute toward sealed road surface and pavement performance (incl. all drainage, surface and pavement maintenance and renewal activities). Traffic services maintenance and renewal also require more focussed investment to improve signage and delineation in line with industry good practice. A greater focus on signage and delineation will reduce road user safety risk (particularly in rural areas).

The rate of network resurfacing (as a percentage of the sealed network) has increased from a five-year average of 4.02% to a three-year average of 4.6% and pavement rehab has increased from a five-year average of 0.47% to a three-year average of 0.61%.

Council's rate of resurfacing is in line with their peer group and national averages, and the rate of pavement renewals is above peer and national averages. Pavement rehab may be the optimal treatment for many of the sites identified in the work programme, however, as discussed in the opening paragraphs, an opportunity exists to further consider alternate intervention strategies and treatments. Targeted pavement investigation and traffic data collection will allow improved evaluation of drainage improvements, heavy maintenance and resurfacing treatments in the intervention (pavement rehabilitation) option analysis and will likely enable further optimisation of level of service delivery (i.e. at reduced lifecycle costs).



Our review of Council's NPV analysis identified detailed option analysis was current practice. The NPV analysis would also benefit from improved application of historic maintenance costs (incl. estimation of future maintenance costs based more historic costs, rather than the higher 'end-of-life' costs) and traffic data from RAMM. The high sensitivity to the estimation of do-minimum and preferred option costs, mean that when these costs are qualified, the revised analysis results in similar or higher whole of life costs for the preferred option. This suggests employing alternate pavement management strategies (such as drainage renewals/improvements, heavy maintenance and reseal) may need further consideration as a more cost effective (whole of life) approach for some future pavement rehab sites.

As part of the field inspection we travelled through a sample of completed and planned pavement renewal and resurfacing sites. The planned 2021/22 pavement renewal sites we observed included Christys Road (west of Pendarves), Thompsons Track (east of Line Road intersection) and Arundel Rakaia Gorge Road (south of Mayfield). Sites inspected exhibited extensive areas of pavement shear failure (resulting in defects such as potholing, rutting and shoving), as well as areas of surface flushing, high shoulder and ineffective drainage.

The audit team agree the pavement renewal option / timing at these (and possibly other) sites is likely to provide the lowest whole of life cost option). Ensuring effective roadside drainage at all times remains imperative and we encourage Council to continue addressing drainage deficiencies in conjunction with pavement rehabilitation works, where the scope of work will be informed by the pavement renewal design. The approach likely to deliver the lowest (lifecycle) cost, is to proactively address drainage deficiencies as they're identified. We suggest Council review their pavement renewal work programme, using updated investigation data (traffic loading/growth forecasts, drainage impacts and pavement design) and evaluate alternate treatments in their NPV analysis.

Widespread surface flushing was also observed during the network field inspection. Council staff advised the extensive areas of flushing is primarily due to historical resealing practice issues and multiple seal layers causing an unstable top surface. Ensuring the reseal treatment selection and design is focussed on addressing road surface performance issues (such as flushing), by engaging specialist resurfacing expertise to peer-review resurfacing design (focussed on achieving asset owner outcomes), may be one way of improving surface lifecycle performance.

We also suggest that by increasing the maintenance intervention focus on the cause of defects, presents an opportunity to optimise pavement and surface lifecycles (thereby reducing lifecycle costs). Enhancing Councils' rural drainage maintenance programme, using a road hierarchy/risk-based approach to address road drainage deficiencies (one of the primary causes of reduced pavement strength/lifecycles), is one approach to extend pavement and surfacing lifecycles.



Figure 6: Planned 2021/22 pavement rehabilitation sites with ineffective drainage, exhibiting various pavement failure indicators and flushed surfaces. Left – Christys Road; right – Thompsons Track

General Maintenance

Overall, sealed roads had good ride quality, with most maintenance requirements being met. Examples of the primary issues observed were as follows:

- High shoulder and deficient table drains limiting effective road drainage.
- Flushed surfaces and edge break, resulting from heavy traffic use and areas of extensive pavement failures on rural roads. We commend Council for implementing a programme of seal widening, where required and the use of high performing, basalt wearing course, as a lower cost treatment where funding constraints limit conventional seal widening practice.
- Sub-standard road surface reinstatement associated with other infrastructure renewals and improvements within the road corridor, resulting in rough road surfaces, user dissatisfaction and increased maintenance costs.
- Use of non-standard and some missing, damaged or obscured (by vegetation) signage and delineation, such as permanent warning signs, chevrons (particularly headway chevrons), bridge end markers, hazard markers, culvert markers and edge marker posts.



Figure 7: Top left – example of edge break, ineffective drainage, flushing, missing EMPs and hazard markers (Fairfield Road); top right – example of non-complying use of headway chevron sign on curve (Coldstream / Lloyds Road intersection); bottom left – missing bridge end marker and flushing (Ashburton Staveley Road); bottom right – edge break and use of basalt wearing course on high-wear unsealed shoulders (Seafeld Rd).

These types of maintenance defects should be identified and either addressed or programmed for repair by the road maintenance contractor. Council needs to ensure alignment between their requirements and the contractor's performance. We suggest Council considers increasing focus in these areas through various means, including contract management meetings; joint Council staff/contractor inspections, and; refining their Maintenance Intervention Strategy and Guidelines to assist with shared understanding of interventions/response requirements.

The faults observed were generally isolated and having lower consequence, however when these faults are considered across the network, they can have a cumulative impact on safety and network efficiency. Safety and efficiency are high priorities for Waka Kotahi, and therefore it is important that Council's maintenance intervention approach ensures an appropriate and timely response.

Unsealed Roads

Unsealed roads make up 1,102km or 42% of Council's road network length. The sample of unsealed roads driven during our field inspection generally had good ride quality. The exceptions included areas of the unbound wearing course creating more challenging driving conditions (and a loss of control hazard for less experienced motorists). A few other isolated issues included potholes, corrugations, windrowing of the unbound wearing course and areas where poor grading practice results in carriageway width creep causing some roads to be wider than required for their use/function.

Council staff advised that limited customer requests are received in relation to unsealed road surface condition, however the audit team suggests that wider trialling/use of wearing course materials with a higher clay content will extend maintenance cycles, deliver improved levels of service and reduce maintenance costs. Like the sealed network, we also observed areas of high shoulder and ineffective roadside drainage on the unsealed network, which if addressed, would also extend maintenance and renewal intervention frequencies.

We commend Council for identifying and trialling alternate wearing course materials and practices to extend maintenance cycles and reduce dust, with traffic safety, cost and health benefits. For example, the use of the basalt wearing course material on Hakatere Potts Road (sourced from Harmers Quarry) and stabilising wearing course material on Maginness Rd.



Figure 8 – unsealed roads. Top - examples of good practice, left – effective use of Basalt wearing course and achievement of high standard finish (Hakatere Potts Rd); right – trialling stabilised wearing course (Maginness Rd). Bottom – examples of improvement opportunities, left - grading resulting in excessive road carriageway width (Hamptons Road); right - unbound and windrowing of wearing course (Highbank Cairnbrae Road), noting high shoulder and absence of table drains.

Walking and Cycling

Council's 2008 Walking and Cycling Strategy was reviewed and updated in 2020 following consultation in the form of an online survey and a stakeholder workshop. Strategy consultation highlighted the following walking and cycling challenges:

- Walking – rough/uneven surfaces, lack of footpaths and crossing facilities, narrow footpaths, unsuitable transition from road to footpath, footpath gradient, poor street lighting and sharing with cyclists;
- Cycling - a lack of cycle facilities separated from traffic, lack of defined cycle routes and cycle routes to key destinations, lack of crossing facilities/treatments at intersections, poor connections on existing routes, lack of cycle parking, rough/uneven surfaces, and others such as motorcyclists on tracks, sharing with runners, poor signage.

Council's Walking and Cycling strategy recognises these gaps and includes an action plan to address these, including ensuring that walking and cycling reviews become a standard component of activity management planning.

The sample of footpaths inspected by the audit team (in Ashburton and Methven) were generally in good condition, however some minor defects and trip hazards were observed. These are discussed further in the *Road Safety* subject area of this report.

Maintenance and renewal of footpaths is now funded by Waka Kotahi and good asset management practices need to be followed. This includes collecting accurate inventory, condition, and maintenance activity data to support investment decisions. The sample of higher pedestrian use areas inspected, identified areas where the Waka Kotahi Pedestrian Planning and Design Guide design requirements for footpaths, pedestrian cutdowns and vehicle crossings were yet to be implemented.



Figure 9: Examples of urban safety issues and improvement observed. Top left – pedestrian crossing without tactile indicator pavers (Havelock Street); top right - examples of trip hazards (West Street / Burnett Street intersection); bottom left - tactile indicator pavers installed at pedestrian crossing (Burnett Street); bottom right - new pedestrian crossing installed without tactile indicator pavers (East Street).

Recommendations	<p>We recommend that Council:</p> <p>R2.1 Ensures elements of the pavement renewal programme development process, including investigation, design, optioneering and economic analysis are refined and implemented in advance of the pavement construction season.</p> <p>R2.2 Optimises delivery of bridge levels of service across bridge replacement, structural component replacement and bridge maintenance work programmes, in response to faults identified through bridge inspections.</p>
Suggestions	<p>We suggest that Council:</p> <p>S2.1 Continues to identify those areas where subject matter experts can support the in-house transport team.</p> <p>S2.2 Considers increasing the focus of inspections (incl. the frequency of joint staff/contractor inspections) and work programmes to align the contractor's performance with Council's requirements, focussed on implementing a refined MIS and addressing causes of drainage, surface, pavement, footpath, signs and delineation deficiencies.</p> <p>S2.3 Increases the level of bylaw compliance monitoring in rural areas to reduce the negative network safety and efficiency impacts associated with adjoining landowner activities.</p>
Ashburton District Council's comment	<p>Council has used consultants in the past but found that they did not provide the necessary day-to-day management the network required. Council decided to increase its in-house team of three and now has a team of eight managing its network. Assisting this team are bridge experts (WSP manage bridge inspections and produce annual programmes of work; provide expertise as required for HPMV and OWP bridge capacity assessments), seal and pavement design expertise (Councils seal resurfacing and rehabilitation contracts are design and build contracts with review provided by staff or other expertise as required) safety advice (independent audit by traffic engineers when considered desirable). Traffic counting, roughness and pavement strength analysis is undertaken by consultants or firms with expertise in the area required. Council considers this level of assistance with an increased level of in-house personnel is appropriate to manage the network.</p> <p>Council agree that it needs to refine and implement a pavement renewal development programme. Over recent years it has been using dTIMS and GeoSolve but is not entirely convinced of the results so is looking to use JUNO going forward. Work is also progressing on the implementation of a MIS system.</p> <p>Work is underway to ensure the maintenance contractor includes a realistic bridge maintenance programme in line with the WSP bridge report and that joint inspections are undertaken more frequently.</p> <p>Council has and will continue to concentrate on gaining Bylaw compliance</p>

* * *

3. Activity Management Planning

Some Improvement Needed

Review of the Council's 2018 Activity Management Plan (AMP), indicates that at that point in time, AMP improvement was progressing toward the business case approach (BCA). The Road Efficiency Group (REG) marked the AMP 1.43 out of 3, when assessed against the REG 'pillars of success' and Waka Kotahi marked the AMP 1.7 out of 3, when assessed against the BCA. Below is the REG summary assessment of Council's 2018 AMP

'The AMP is generally weak in the use and integration of the ONRC. It suggests that the ONRC favours a 'customer' focused approach at the expense of 'best for asset' strategy and will see a decrease in low volume roads and increase in work on high volume roads (p. 70). It also lacks in terms of adequate linkage between strategic 'why', key issues and the line of sight to delivery. On the positive side, the document shows options assessment, benefits and consequences, and the capital works section provides good use of BCA principles.'

Our high-level review of Council's draft 2021 AMP identified that the level of activity management maturity has advanced since the 2018 AMP, with improved application of the BCA and One Network Road Classification. Like the 2018 AMP, an area of focus needs to be strengthening the line of sight between the strategic context and delivery of an optimised work programme by using tools such as investment logic mapping and multi-criteria analysis.

The 2021-24 AMP references slow but steady population growth within the Ashburton District for the next 30 years, based on growth projections. Identifying the likely transport related growth impacts, identifying options and their analysis, in terms of the transport outcomes being sought, will help inform Council's response to issues and opportunities associated with development.

Examples of response options may include the benefits of structure planning and development/financial contribution policy reviews as well as opportunities for greater transport mode choice (e.g. review of public transport and active mode opportunities). These planning activities will enable Council to have greater control over the transport impacts (including financial) of development within the District and possibly identify the need for an increased strategic planning focus.

Apart from the strategic planning gap, we're confident that Council's transport activity is being well-managed by a very capable and enthusiastic transport team; and through the collaborative working practices adopted within the Canterbury region (including the Aoraki Roding Collaboration) and with external suppliers.

The audit team identified several activity management related improvement opportunities, enabling more effective level of service achievement and cost efficiencies as follows:

- Pavement renewal alternatives – in addition to findings detailed in the 'Network Condition and Management' subject area of this report, strengthening the programme business case through further optioneering and analysis of alternate pavement management strategies (treatment type and timing) is encouraged. The options could include either one or a combination of drainage renewals or improvements, heavy maintenance and resurfacing for some future pavement renewal sites. Enabling effective drainage through early identification and completion of drainage improvement works is considered a critical consideration with this approach.

Determining the preferred option will also benefit from more robust evidence, in the form of pavement investigation, traffic data (specifically loading and growth) and robust maintenance cost data.

- We noted that Council has developed integrated road drainage, pavement and surfacing renewal forward work programmes, that can be viewed spatially. Council's investment decision-making has been further enhanced through improved integration with wider Council infrastructure (e.g. three waters) and external utility companies (e.g. power and telecom) forward work programmes. Further programme integration opportunities exist in this area enabling future programme refinements, taking account of conflicts and opportunities with other works planned within the road corridor.
- Finalising the Maintenance Intervention Strategy (MIS) and Guidelines – further to the treatment selection enhancements discussed above and MIS discussion in the '*Network Condition and Management*' subject area of this report, completion of Council's maintenance intervention strategy will improve the shared understanding between Ashburton DC and the maintenance contractor of the appropriate maintenance treatment (including type, timing and life expectancy) based on future improvement and renewal work programmes.

Having Council's forward work programme in RAMM will also avoid the need for identification of potential programme conflicts (and opportunities) being people dependant. The application of the MIS can be an effective tool in aligning maintenance interventions with renewal and improvement work programmes for both sealed and unsealed road treatment lengths.

- Code of practice standards for land development – consider updating development standards to ensure these reflect industry best practice and new technology, particularly for new streetlighting assets. Where appropriate ensure standards align with other Canterbury local authorities where delivery of consistent levels of service is desired and achievable.
- Safety deficiency database - accelerate safety deficiency data collection and risk-based prioritisation methodology to enhance effectiveness of the road safety work programme. Safety deficiencies observed during the audit inspections were extensive, ranging in frequency and severity across the network. Refining Council's safety deficiency data collection and prioritisation methodology will enable development of a risk-based safety improvement work programme. The types of safety deficiencies are discussed further within the '*Safety Management*' subject area of this report.
- Consistent road delineation standard. An opportunity exists for Council to standardise its rural road delineation using a road hierarchal/function-based approach (e.g. considering routes likely to have a higher proportion of unfamiliar motorists) and developed using the Traffic Control Devices Manual – Part 5 for guidance. This will enable consistency in road delineation, thereby enhancing road user safety.

Council should consider enhancing delineation consistency more widely (focussing first on inter-district routes), working with the Aoraki Roding Collaboration in developing the delineation standard. Current delineation inconsistencies are discussed further within the '*Road Safety*' subject area of this report. Improvements include the consistent use of curve advisory signage and chevrons, EMPs, road marking and RRPMS.

- Freight impacts - particularly in locations where the impact of loading on sections of the network are more intense or prolonged than normal, due to specific activities such as land development, stop bank replenishment works, forest harvest or quarrying activities. The indicative forward work programme could be enhanced where the indicative timeframes for more intensive traffic loading are available from Council's consent planning and Environment Canterbury teams. The start date and duration of these activities may also be a valuable MIS input on specific routes (both sealed and unsealed).

It is important that the above opportunities, together with the recommendations and suggestions from transport activity audits are included in Council's 2021-24 AMP Improvement Plan.

Recommendations	<p>We recommend that Council:</p> <p>R3.1 Further develops the safety deficiency data collection and risk-based prioritisation methodology to enhance effectiveness of the road safety work programme.</p> <p>R3.2 Ensures audit recommendations and suggestions are included in the AMP improvement plan and a project plan is developed for each AMP improvement task, enabling progress to be monitored against programme.</p> <p>R3.3 Strengthens the line of sight between the strategic context and delivery of an optimised work programme, including further analysis of structure planning, alternate transport modes and alternate pavement management strategies.</p>
Suggestions	<p>We suggest that Council:</p> <p>S3.1 Considers development of a rural road delineation standard (in collaboration with neighbouring RCAs) to improve consistency, using the national guideline (Traffic Control Devices Manual – Part 5) for guidance.</p> <p>S3.2 Forward work programmes are further integrated with internal and external utility providers to ensure opportunities for work programme alignment are identified and realised.</p> <p>S3.3 Considers further enhancements prior to finalising Council's maintenance intervention strategy/guidelines.</p> <p>S3.4 Considers updating Council's land development code of practice to ensure this reflects industry best practice, new technology and consistency across the Canterbury region.</p> <p>S3.5 Collects and considers traffic loading data associated with significant planned activities, impacting road pavement lifecycles, to strengthen their strategic, programme and investment responses.</p>
Ashburton District Council's comment	<p>The development of a rural delineation standard is underway with ARC and was started prior to this audit.</p> <p>Council is fostering a strong integrated approach and liaison with internal and external utility providers. Regular meetings where programmes are discussed and aligned have been in place for the last few years and will be continued.</p> <p>Work is also continuing with our maintenance contractor on the development of a MIS.</p> <p>Work is currently proceeding in our planning department to produce a Spatial Plan for the urban areas of the district initially. Roading will endeavour to introduce a Land Development Code of Practice outlining road dimension and pavement requirements together with standardisation (especially streetlighting) as appropriate.</p> <p>Determining traffic loading for specific projects has been done in the past but has been replaced by a pre-determined traffic counting programme across the district based around road classification. Council believes this provides more useful information</p>

* * *

4. Data Quality

Effective

Road Efficiency Group's (REG) 2019/20 data quality report has scored Council with 83/100 (a score of 100 is achieved by having all metric results at the expected standard). This is an excellent score and improvement from the 2018/19 score of 76/100, reflecting the effort made to improve data quality, an important component of evidence-based decision-making.

The ONRC PMRT (as at July 2020) indicates that the data categories and dimensions needing improvement relate to:

- Asset inventory data timeliness (e.g. sign replacement activity and railing asset records maintained)
- Asset inventory data completeness (e.g. railing and retaining wall assets known)

It is important that Council investigates, identifies and prioritises resolving data gaps. Doing so will improve the evidence base to support of Council's business cases and allow Council to accurately compare its ONRC performance with its peers.

The audit team found data accessed via the Mobile Road app during the network drive over to be generally up to date and accurate. This indicates that Council is updating and maintaining the RAMM database.

Queries run in the RAMM database highlighted some duplicate maintenance cost data and inconsistent traffic estimates. Robust maintenance costs enable analysis of network expenditure trends over time and by location, activity and road classification - the measure of the actions taken to maintain the network condition. Maintenance cost history is also part of the evidence required to support the case for renewals through NPV analysis, as referenced in the '*Network Condition and Management*' report subject area.

Queries run through RAMM (database statistics and integrity reports), identified some data gaps, as highlighted on the screenshot below. These queries indicate missing or incorrect pavement renewal, condition rating, traffic count estimate and maintenance cost data. It is important that Council proactively manages their RAMM database to ensure data accuracy, decision-making has a sound evidence base and allowing Council to more accurately compare its ONRC performance with its peers.

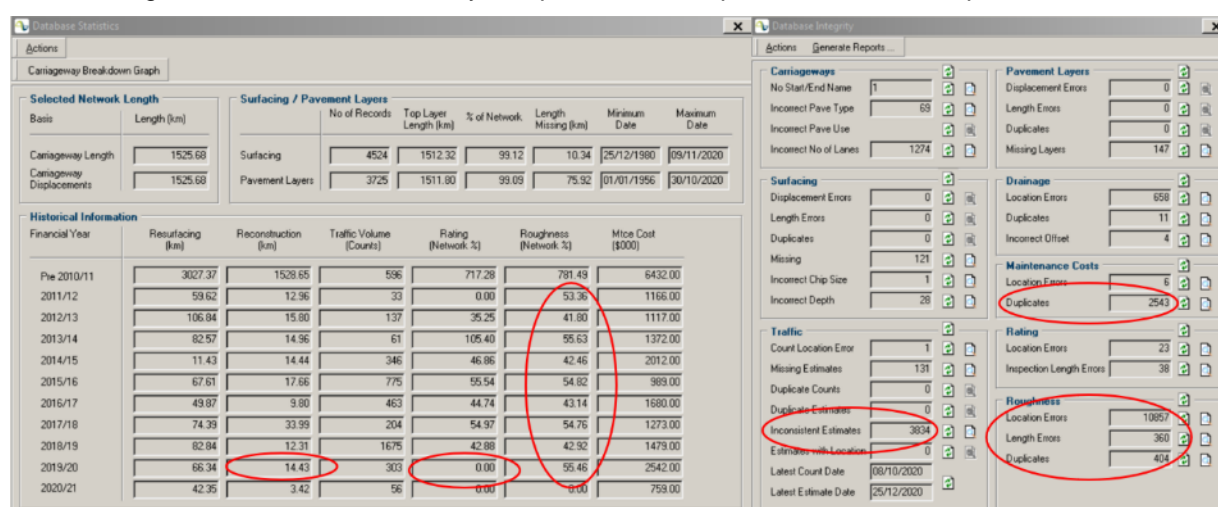


Figure 10: Database statistics and database integrity reports, source RAMM.57

National Land Transport Programme (NLTP) and Annual Achievement Report (AAR) data entry in TIO needs to be quality checked prior to submission. An increased level of focus in this area will provide Waka Kotahi with a greater level of confidence that Council has developed its NLTP application using work programmes designed to deliver the outcomes specified in its Activity Management Plan.

As highlighted in the screenshot below, a comparison of the 2018-21 NLTP forecast quantities and costs with 2019/20 AAR quantities and costs, shows that some data inputs need closer review. Examples include:

- Thin asphalt surfacing – no work planned at a cost of \$200,000, compared with 3,719m² (1.0 lane-km) achieved at no cost.
- Kerb and channel replacement - 3km planned at a cost of \$400,000, compared with no quantity achieved at a cost of \$77,122.
- Other drainage renewals - 150km planned at no cost, compared with 74.5km achieved at a cost of \$164,897.
- Pavement rehabilitation - 7,000 m² (1 lane-km) of structural AC planned at a cost of \$600,000, compared with no quantity achieved at a cost of \$412,708. Also, the AAR granular pavement rehabilitation quantity achieved (11 lane-km) is approximately one third of the RAMM quantity achieved (14.43 km) as shown in figure 8 above, when the unit of measure is considered.

This aspect of data quality should be easily remedied by Council for future NLTPs and AARs. We recommend that 2021-24 NLTP renewal quantities and cost forecasts are reviewed (and amended if required) to ensure alignment with the approved work category allocations.

Work category No.	Works completed	Forecast quantity 2019/20	Actual quantity 2019/20	Variance %	Forecast expenditure (\$) 2019/20	Work category No.	Works completed	Forecast expenditure (\$) 2019/20	Actual expenditure (\$) 2019/20	Variance %
124	Cycleway renewals (km)		0.0		5,000	231	Unsealed road metalling and rehabilitation (\$)	900,000	958,945	6.5
125	Footpath renewals (m)		0.0		1,079,927	232	Chip seals resurfacing (\$)	3,100,000	3,041,420	-1.9
131	Renewed level crossing warning devices (no.)		40		25,000		Thin asphaltic resurfacing (\$)	200,000	0	-100.0
	New level crossing warning devices (no.)		0		0		Other pavement resurfacing (\$)	0	0	
211	Unsealed road metalling and rehabilitation (km)	300.0	316.0	5.3	900,000	233	Culvert renewals (\$)	200,000	12,716	-93.6
	Unsealed road metalling and rehabilitation (m ²)	55000.0	51914.0	-5.6	0		Kerb and channel renewals (\$)	400,000	77,122	-80.7
232	Resurfacing - total (lane-km)	140.0	155.0	10.7	3,300,000		Other drainage renewals (\$)	0	164,897	
	Resurfacing - thin asphalt surfacing (lane-km)	0.0	1.0		200,000	234	Urban sealed road pavement rehabilitation (\$)	600,000	412,708	-31.2
	Resurfacing - total (m ²)	300000.0	527742.0	13.5	3,300,000		Rural sealed road pavement rehabilitation (\$)	1,600,000	1,027,753	-35.8
	Resurfacing - thin asphalt surfacing (m ²)	0.0	2719.0		200,000	235	Other structure component renewals (\$)	1,000	28,446	2744.6
	Resurfacing - chip seals (m ²)	490000.0	554223.0	11.0	3,100,000	236	Effluent disposal facilities renewals (\$)	0	0	
	Resurfacing - other surfacings (m ²)	3000.0	0.0	-100.0	0		Catch fence renewals (\$)	0	0	
233	Drainage renewals - Length culverts (m)	50	55	6.0	200,000		Stormwater road runoff facilities (\$)	0	0	
	Drainage renewals - Length kerb and channel (m)	3,000	0	-100.0	400,000		Other environmental renewals (\$)	0	0	
	Drainage renewals - Length other drainage renewals (m)	170,000	74,462	-56.4	0	222	Traffic signs renewals (\$)	0	58,322	
234	Pavement rehabilitation - total (lane-km)	14.0	11.0	-21.3	2,200,000		Traffic monitoring & lighting renewals (\$)	0	0	
	Pavement rehabilitation - structural AC (lane-km)	1.0	0.0	-100.0	600,000		Weighting facilities renewals (\$)	0	0	
	Pavement rehabilitation - granular (lane-km)	13.0	11.0	-15.7	1,600,000		Other traffic services renewals (\$)	0	16,551	
	Pavement rehabilitation - total (m ²)	65000.0	45964.0	-29.3	2,200,000					
	Pavement rehabilitation - structural AC rehabilitation (m ²)	7000.0	0.0	-100.0	600,000					
	Pavement rehabilitation - granular (m ²)	58000.0	45964.0	-20.8	1,600,000					

Figure 11: Local roading works completed and renewals expenditure, source TIO 2019/20 AAR

Further to our 'Network Condition and Management' subject area suggestion that Council uses updated traffic loading data in their NPV analysis. An opportunity exists to include collection of more site-specific traffic data in Council's traffic counting programme for use in design of programmed pavement renewal and some (more traffic sensitive) resurfacing projects.

The road maintenance data Council collects through its maintenance contract is critical in terms of informing future decision-making. Industry best practice is to ensure that data is collected through suppliers (such as the road maintenance contractor) where this is the most effective and efficient method of collection. We commend Council for refining its maintenance contract data collection requirements including asset validation and condition and expansion of inspection and dispatch requirements when developing their 2020-25 maintenance contract specification.

Recommendations

We recommend that Council:

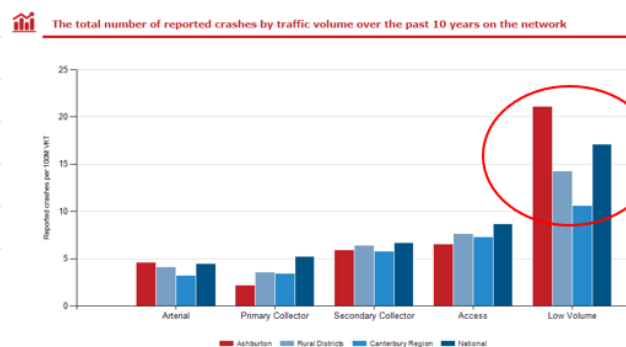
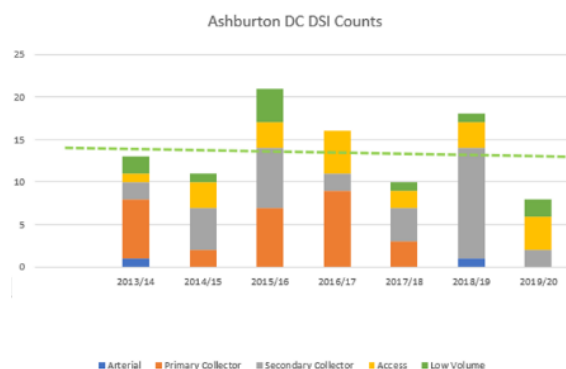
Suggestions	<p>We suggest that Council:</p> <p>S4.1 Continues evaluating the REG data quality and RAMM reports for data improvements, prioritises and ensuring data improvements are added as new items in the AMP improvement plan.</p> <p>S4.2 Completes data quality checks on National Land Transport Programme forecasts and Annual Achievement Reporting.</p> <p>S4.3 Ensures collection of traffic data for design of pavement renewal and more traffic sensitive resurfacing projects is included in Council's traffic counting programme.</p> <p>S4.4 Considers undertaking retaining wall inventory validating and condition assessments.</p>
Ashburton District Council's comment	<p>Council agrees with the above recommendation and will look to include in future AMPs.</p> <p>It will undertake data quality checks of the National Land Transport Programme forecasts and match with Annual Achievement reporting.</p> <p>Council believes its current traffic counting programme is sufficient for the majority of projects undertaken. Where it considers traffic volumes are critical to the design then specific counts will be undertaken.</p> <p>Council currently has two minor retaining walls and considers validation and condition assessments for these structures unwarranted.</p>

* * *

5. Road Safety

Some Improvement Needed

Providing a network that is safe for users is a high priority for Waka Kotahi. The number of annual deaths and serious injuries (DSIs) on Council roads trending down¹ across the network and we commend Council for achieving this result. Ashburton DC's rate of crashes for urban low volume road classifications is significantly higher when compared to Council's peer group, Councils in the Canterbury region and Nationally. We suggest this statistic warrants further investigation to determine whether these crashes are the result of a common cause.



¹ The sample of DSI's is very low meaning there is a low level of confidence in the statistical analysis using this data.

Figure 12: Left - Ashburton DC DSI statistics 2014-2020, source Crash Analysis System; right – 10-year personal crash risk (by traffic volume on urban roads) ONRC comparison, source PMRT.

The percentage of DSIs for the period 2014-2020 by road classification aligns closely with the percentage VKT for each classification, suggesting a similar personal risk for each classification. DSI trend analysis also shows that DSIs are generally moving from higher to lower classification roads over this period, suggesting Council has focussed investing in the higher risk areas. Note that intersection crashes account for 46% of Ashburton DC's crashes, however investment in intersection safety improvements makes up only 14% of the 2018-21 NLTP safety improvement investment programme as shown below.

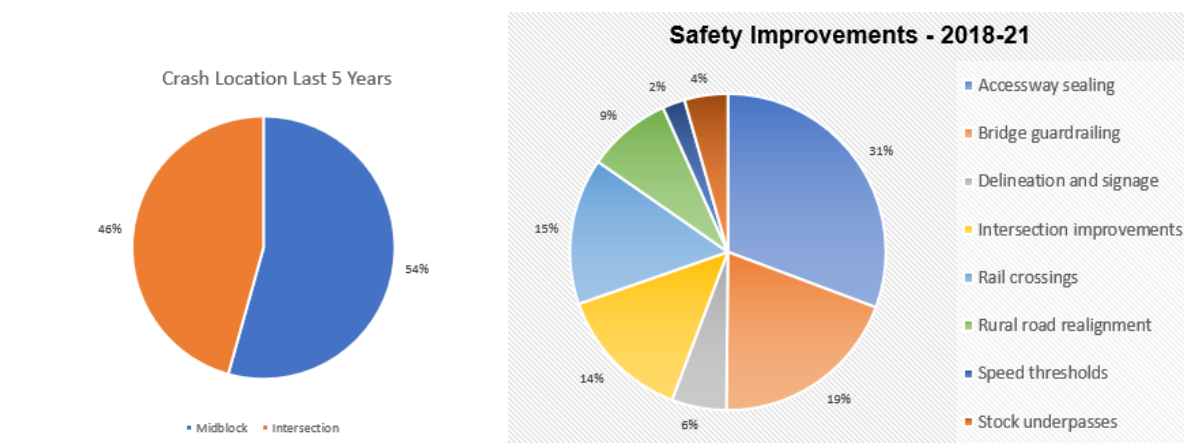


Figure 13: Left – crash location for the last 5 years, source CAS; right - 2018-21 NLTP safety improvement investment by intervention, source TIO.

The purpose of the One Network Road Classification system is to ensure roads of the same classification have the same levels of service, including motorist guide features (i.e. delineation and signage). On our field inspection the audit team noted areas of sub-standard and inconsistent delineation on extensive lengths of the rural road network.

It is important that road safety remains a high priority for Council and their suppliers. Ensuring that consistent application and maintenance of delineation (edge marker posts, road marking, reflective raised pavement markers) and signage, based on road classifications (as detailed in the Traffic Control Devices standard – RTS 5), is the next step to further reduce the risk of death and serious injury crashes.

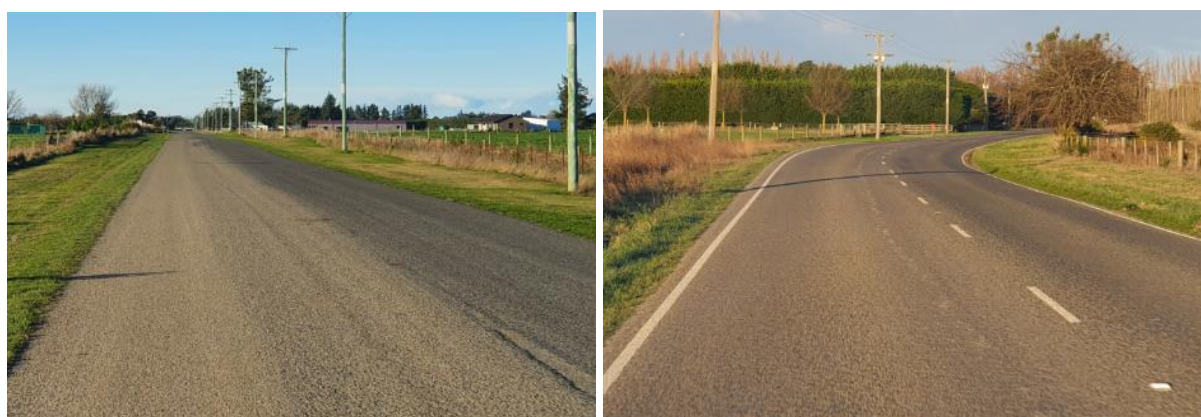




Figure 14: Top – examples of inconsistent delineation. Left – secondary collector road with no delineation (Winslow Road); right – secondary collector road with raised pavement markers, centreline and edge lines (Ashburton Staveley Road). Bottom – example of limited intersection control signage or curve advisory delineation (Winslow/Winslow Chesterfield/Hendersons/Winslow Willowby Road).

The audit team observed many ‘multi-legged’ rural intersections, having non-standard layouts and signage, some intersection control markings obscured by debris tracked from adjoining farming operations and some non-complying use of headway chevrons on curves near intersections (refer figure 5). These deficiencies all contribute to the relatively high communities at risk rating for rural intersection safety.

We encourage Council to reinforce the need for a timely response to safety issues by their maintenance contractor and review best practice guidelines such as Austroads Guide to Road Design Part 4: Intersections and Crossings and Austroads Guide to Road Design Part 3: Geometric Design, when implementing improvements at these locations.



Figure 15: Left – example of multi(seven)-leg rural intersection layout at Pendarves; right – tracked debris/mud obscuring intersection control marking (Poplar Road).

The audit team also observed several bridges with missing or non-compliant bridge barrier systems during our network drive-over, requiring replacement as part of a prioritised work programme. We understand a programme of bridge barrier improvements is being undertaken using a risk-based approach and that these improvements will need to continue for an extended period due to the size of the programme compared with current investment levels. Examples of non-complying barriers observed include fishtail treatments with no vehicle approach flare and Texas twist terminal treatments.



Figure 16: Non-complying bridge guardrail examples (Poplar Road). Top left — ‘fish-tail’ type guardrail end treatment without taper; top right – wooden bridge railing.

It is important that road safety continues to be a high priority for Council and their maintenance suppliers. Ensuring delivery of a refined risk-based safety improvement work programme, as referenced in the *Activity Management Planning* subject area of this report, is the next step to further reduce the risk of death and serious injury crashes. From our audit observations, and as noted above, the areas of safety focus for Council include delineation, intersections and bridge barrier systems.

These areas of safety focus are particularly relevant when considering the District’s projected population (and therefore traffic) growth. Increasing traffic volumes, and the number of less familiar motorists travelling on rural routes (some to visitor attractions such as Mt Hutt ski field), with non-standard road safety guidance features and bridge barrier systems, poses an increased safety risk, suggesting a proactive programme of safety interventions is required.

We observed new pedestrian and cycle facilities as well as pedestrian crossings where Council has installed tactile surface indicator pavers, as part of the Ashburton town centre improvement project as recommended by *RTS 14 – Guidelines for facilities for blind and vision impaired pedestrians*. We also observed several pedestrian crossings missing tactile surface indicator pavers and pedestrian crossing signage and several trip hazards when inspecting urban areas which need addressing through maintenance, renewal and improvement work programmes. Examples of good pedestrian facilities and those requiring improvement are shown in figure 9.

An opportunity exists for Council to better understand the features of its urban network which limit accessibility safety for all transport users. We suggest completion of an accessibility audit of pedestrian facilities in higher pedestrian use areas would be the first step in identifying level of service gaps. Such an audit would enable development of a pedestrian safety improvements programme, that would typically identify improvements associated with pedestrian crossings, pram crossings, mobility parking, and footpath shape, surface condition and dimension deficiencies.

Road safety audits (RSAs) must be undertaken at key stages of the “development of any improvement or renewal activity that involves vehicular traffic, and/or walking and/or cycling, proposed for funding assistance from the NLTP”. If there is justification for not conducting a safety audit for a project stage, then an exemption declaration for that stage must be completed and filed. Guidance on road safety audits is available at <https://www.nzta.govt.nz/resources/road-safety-audit-procedures/>.

A sample of four RSAs was provided by Council as evidence of process compliance. This sample included three post construction RSAs and one detailed design RSA, where road safety interventions identified through the audit process were well documented.

The examples provided of post construction RSAs (for town centre improvements on Cass Street, and the 2018/19 and 2019/20 sealed road rehabilitation projects) as evidence, identified both moderate and minor safety issues present following construction. These issues would likely to have been identified as

part of a detailed design RSA, enabling these issues to be more efficiently actioned during construction, rather than following completion of physical works.

No examples of a concept design RSA or exemption declarations were provided, suggesting an opportunity for improvement may exist in this area of Council's RSA process. We note that one RSA provided for audit purposes (named Seal Road Rehabilitation Rural North 2020/21 - Detailed Design Stage), appeared to be a post construction RSA associated with the 2019/20 rural south seal road rehabilitation contract.

Council is generally following the road safety audit (RSA) requirements and completing RSAs on improvement and renewal projects. We suggest opportunities for improvement benefiting Council's RSA process include:

- completion and approval of exemption declarations where RSAs are not warranted
- completion of RSAs at an earlier project stage where appropriate (and recommendations can inform the next stage of the project)
- development of a RSA register, documenting projects where audits (or an exemption declarations) have been completed, including the audit date, auditor, project name and stage, a summary of agreed RSA actions and Council's document management system reference for each report.

The use of waratah standards (and other more bespoke temporary fencing practices) were observed as a common method of temporary road berm fencing across Ashburton DC's rural network. The use of waratah standards poses a serious safety risk to motorists and cyclists who run off the road and for this reason have been prohibited for use on roadsides by many Councils, including Ashburton DC (refer clause 14.2.3 of ADC Public Places Bylaw, 2018).

Council have a good understanding of its legislated responsibility as the road 'owner' to effectively manage public safety and has improved various areas of bylaw compliance through licencing activities in recent years. We suggest an opportunity remains for Council to increase focus on enforcing their bylaw prohibiting the use of steel posts (including waratah standards) as temporary fencing on road berms, to remove the road user safety risk imposed by this activity.



Figure 17: Examples of road safety deficiencies/hazards. Top – examples of temporary road berm fencing hazards; left – use of waratah standard fences adjacent road carriageway (Pyes Rd); right – use of car wheels with concrete bases for temporary fencing, encroaching on the road carriageway (Cracroft Maronan Rd).

During our field inspection we travelled through several road maintenance, renewal, improvement and emergency worksites. The application of temporary traffic management at these sites was observed to be of a high standard of compliance with the Code of Practice for Temporary Traffic Management (CoPTTM). These observations coupled with the TTM audit examples provide confidence in the strength of health and safety culture and delivery within Council's transport activity.

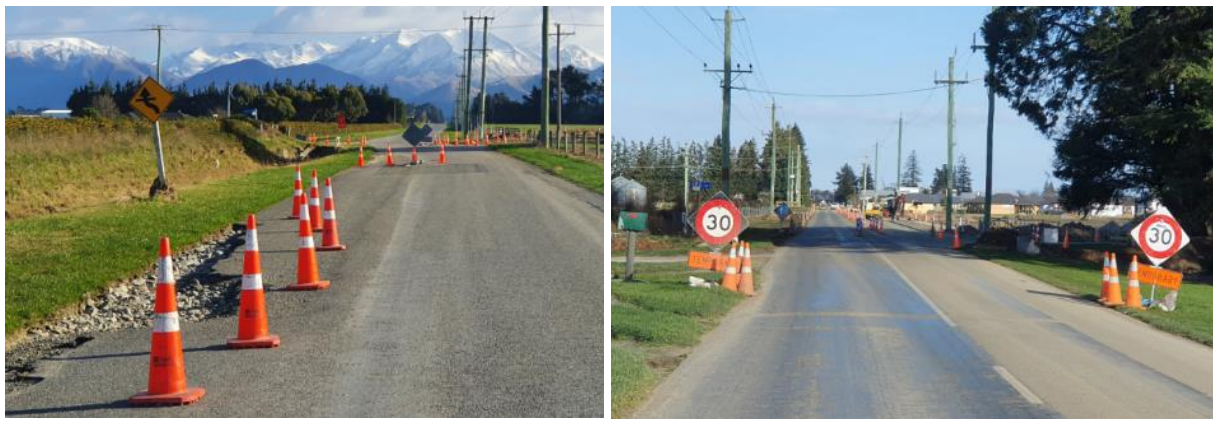


Figure 18: photos showing effective temporary traffic management. Left – shoulder scour/emergency reinstatement site (Methven Chertsey Road); right – residential development site (Barkers Road, Methven).

<p>Recommendations</p>	<p>We recommend that Council:</p> <p>R5.1 Implements an audit of signs, markings and delineation to identify inconsistent practice and advances work required to ensure compliance with the national guideline (Traffic Control Devices Manual – Part 5).</p> <p>R5.2 Continues the programme of work to ensure bridge barrier system compliance with the national guideline (Waka Kotahi M23 - Specification for Road Safety Hardware Systems).</p> <p>R5.3 Enforces Council's Public Places Bylaw (2018), prohibiting the use of steel posts (including waratah standards) and ensuring that temporary fences do not constitute a traffic hazard.</p>
<p>Suggestions</p>	<p>We suggest that Council:</p> <p>S5.1 Prioritises and progresses rural intersection layout, seal-backs and signage improvements within the safety improvement work programme.</p> <p>S5.2 Completes and approves RSA exemption declarations for each improvement and renewal project stage where a RSA is not justified.</p> <p>S5.3 Completes an accessibility audit of pedestrian facilities in higher pedestrian use areas to inform accessibility maintenance and improvement work programming.</p> <p>R5.4 Increases compliance with the LGA regarding removal of debris from adjoining landowner activities impacting road user safety.</p>
<p>Ashburton District Council's comment</p>	<p>Recommendations 1 & 2 will be included in an upcoming Safety Management Strategy. Some areas of delineation inconsistency relate to a previous NZTA road safety audit where it was recommended that as curves were a rarity within the district these should be highlighted by use of edge lines from transition points on each side of the carriageway. This report also suggested that direction arrows be placed on tourist routes in the vicinity of tourist attractions/services to ensure traffic was on the left. Both these recommendations have been actioned.</p> <p>Council in recent years has increased staff to assist in implementing Bylaw compliance. This has commenced with trimming/removal of trees shading sealed roads; infringing landowners directing water onto carriageway through pivot irrigators; removing infrangible structures from road berms; greater control of contractors working within the corridor and ensuring reinstatement of trenches</p>

	<p>etc is to proper standard. Temporary fencing is on the list for compliance when staff can afford the time to include.</p> <p>Work is underway to implement the Walking and Cycling Strategy projects and various intersections with higher use roads are being assessed for possible improvements.</p>
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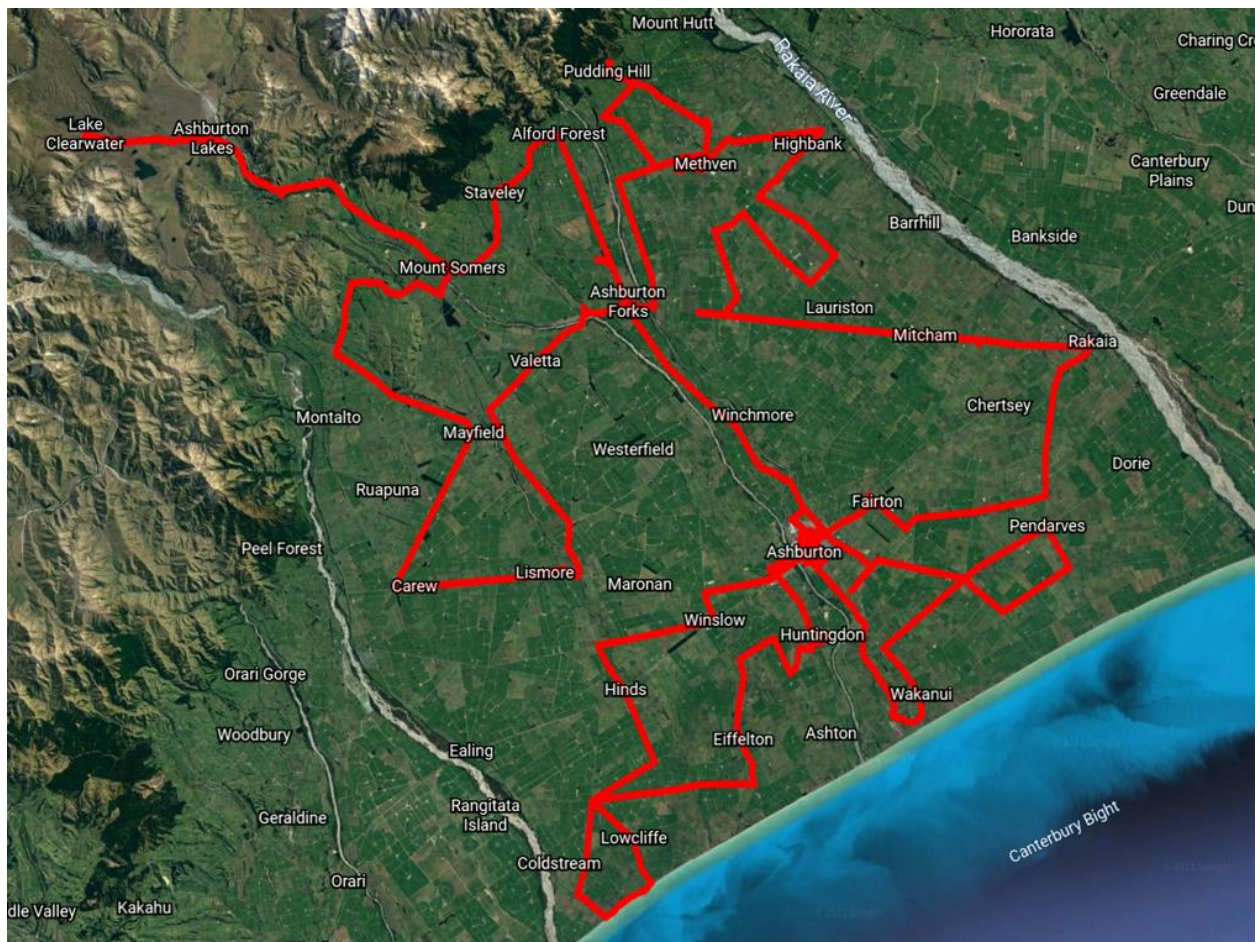
3.0 APPENDICES

APPENDIX A

Council Feedback

APPENDIX B

Network Inspections



Network inspection route (579km on 28 - 29/06/2021)

APPENDIX C

Sample of Audit Photos (audit exit meeting presentation)



Observations of good rural examples. Top left – effective use of Basalt wearing course (Hakatere Potts Rd); bottom left – stabilised wearing course (Magainness Rd); top centre – vehicle activated intersection warning signage (Somerton Road / Thompsons Track intersection); bottom centre – rural school zone sign (Boundary Road); top right – use of basalt wearing course on high-wear unsealed shoulders (Seafield Rd); bottom right – example of high-edge removal with ‘potato harvester’ (Line Rd).



Left – town centre improvements examples of good (Burnett Street), top - pedestrian seating and cycle stand (note speed disk indicating inconsistent (10km/h) urban speed limit), bottom – tactile indicator pavers installed at pedestrian crossing; top centre - speed threshold treatment (Fairfield Rd West); bottom centre – pedestrian platform with priority guidance markings (McMillan St, Methven). Right – examples of improvement opportunities, top – new pedestrian crossing installed without tactile indicator pavers (East Street); bottom – over specified street lighting with high maintenance/replacement cost (Lake Hood residential development).

APPENDIX C



Examples of road safety issues. Top left – non-complying use of headway chevron signage (Coldstream / Lloyds Road intersection); bottom left – example of non-complying 'fish-tail' type guardrail end treatments (Poplar Road); top centre – pedestrian crossing without tactile indicator pavers (Havelock Street); bottom centre – examples of trip hazards (West Street / Burnett Street intersection). Right – examples of temporary stock fences; top - waratah standard fences adjacent road carriageway (Pyes Rd); bottom – temporary fence with concrete tyre bases encroaching onto the road carriageway (Cracroft Maronan Rd).



Examples of rural road maintenance issues. Top left – insufficient road shoulder crossfall resulting in standing water in pull-over bay (Rosehill Rd access to Mt Hutt); bottom left – road surface flushing where subject matter expert could assist with surface treatment (Beach Rd East); top right – need for improved pothole repair response (Arundel Rakaia Gorge Rd); bottom right – example of high edge and shelter belt encroachment (Arundel Rakaia Gorge Rd).

Audit and Risk Committee

Terms of Reference

Purpose

The purpose of the Audit & Risk Committee is to provide oversight of Council's audit processes, statutory compliance and internal risk management in a manner that promotes the current and future interests of the community (Local Government Act 2002).

Membership

Membership of the Committee comprises:

- Cr Leen Braam (Chair)
- Cr John Falloon (Deputy Chair)
- Cr Carolyn Cameron
- Cr Liz McMillan
- Cr Stuart Wilson
- External appointee
- The Mayor, Neil Brown (ex-officio)

The quorum is four members.

Meeting Frequency

The Audit & Risk Committee will meet on a six-seven weekly cycle, or on an as-required basis as determined by the Chair and Group Manager Business Support.

Committee members shall be given not less than 5 working days' notice of meetings.

Delegations

The Audit & Risk Committee has no delegated authority to make decisions. Its role is to consider and review matters of strategy, policy or significance in its sphere of Council business, and (if appropriate) to make recommendations to full Council.

Sphere of business

- To receive and consider the project plan and timetable for the following projects –
 - Long Term Plan (LTP) and any amendments
 - Annual Plan & Budget
 - Annual Report and Audit
- To receive progress reports on the above projects, where appropriate, and review significant issues and risks arising.
- To establish and maintain effective relationships with Council's auditors, including meeting with the audit representatives regarding significant policy and planning processes as appropriate, reviewing the Annual Audit Plan, and considering matters of significance raised by Council's auditors and action required.
- To receive reports on all external party audits of any and all Council activities, and review significant issues and risks arising.

- To be the primary monitoring mechanism for Council's Council Controlled Organisations (CCOs) and Council Controlled Trading Organisations (CCTOs) and shareholdings. Review the CCOs' draft statements of intent and advise CCOs of any comments.
- To provide overview of Council's performance management framework as included in the Council's LTP and Annual Plan documents.
- To provide overview of Council's statutory compliance and legal matters, monitoring any areas of statutory non-compliance.
- To provide overview of risk management and insurance. Review corporate risk assessment and internal risk management practices. Review insurance arrangements annually and monitor insurance claims.
- Monitor and review Health & Safety related matters. Participate in national risk management practices and implementation of risk management processes.
- To consider matters of organisational services in the area of Health & Safety

Reporting

The Audit & Risk Committee will report to the Council.

Adopted

17/12/20