



2023

BLAYNEY SHIRE COUNCIL ROADS STRATEGY



REVISION 2.0



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EXECUTIVE SUMMARY

The *Blayney Shire Council Roads Strategy 2023* (Strategy) sets out a framework for assessing the priority for individual road rehabilitation and upgrade (or expansionary) works. The framework is based on Councils' *Community Strategic Plan* (CSP) and Asset Management objectives and integrates Councils' *Road Safety and Freight Strategies*. The Strategy includes a set of Guiding Principles, including financial sustainability (*Whole of Life Cost*) that underpin the methodology for assessing individual road segments in priority order for rehabilitation and / or upgrading works.

Key objectives driving the strategy include improving road safety; safe and efficient movement of goods and services; maintaining and improving liveability; improving the resilience of the road network, ensuring social equity; maintaining financial sustainability, and ensuring compliance with legal and stakeholder requirements.

The Strategy outlines the main functions of the road network, describes the way roads are funded within Blayney, and describes the Strategy's role within Council's broader strategic and asset management framework. It also describes the links to other key council and external stakeholder documents, from the CSP to the Roads Act 1993.

Critically, the Strategy includes an analysis the Blayney shire crash profile and describes the implications of this for how road rehabilitation and safety upgrades should be prioritised in the shire. It also assesses roads which have the greatest number of crashes, which shows a very high incidence of crashes on Hobbys Yards Road, Newbridge Road, and Belubula Way with 24% of all crashes, and just 10 roads accounting for 52% of crashes on shire roads.

Individual road segments are assessed on up to 10 criteria (e.g., If Traffic Count data is not available that is not included in the assessment), generating a 'score' out of 10. Sorted in descending order the 'scores' highlight the segments with the greatest priority for consideration in rehabilitation and upgrade work. These are then grouped into individual roads, so that a whole of route approach can be used to determine forward works programs. In some instance the recommended action for a road (segment) may be a safety treatment (e.g., wire rope), or a referral to Transport for NSW (TfNSW) for a Speed Zone Review.

The ten highest priority roads within the shire include:

Road Name	Ranking 2023 (2022)	Local or Regional	Length (kms) 2023 (2022)	No. of Segments 2023 (2022)
Hobbys Yards Road	1 (1)	Regional	15.9 (17.9)	14 (16)
Belubula Way	2 (6)	Regional	8.2 (7.1)	6 (5)
Mandurama Road	3 (2)	Local	5.1 (9.1)	6 (11)
Barry Road	4 (10)	Local	3.9 (3.9)	3 (3)
Newbridge Road	5 (7)	Local	6.6 (4.4)	4 (3)
Guyong Road	6 (12)	Local	1.4 (0.0)	1 (0)
Forest Reefs Road	7 (5)	Local	5.8 (5.6)	4 (4)
Long Swamp Road	8 (4)	Local	1.1 (1.1)	1 (1)
Vittoria Road	9 (9)	Local	3.8 (1.1)	2 (1)
Gap Road	10 (89)	Local	6.6 (0.0)	1 (1)

STRATEGIC OBJECTIVE

This *Roads Strategy 2023* has been developed to assist Council to achieve long-term financial sustainability and asset management objectives¹ for the management of the Blayney shire road network. Long-term financial sustainability necessitates consideration of the affordability of maintaining and renewing councils' existing and new or upgraded assets, without unduly increasing financial, or reputational risks to Council.

The objective of this Strategy is to provide a sound risk management approach and process for the prioritisation of road renewal, rehabilitation, upgrade, and expansionary works. Thus, enabling council to:

- *Improve road safety outcomes* to reduce road trauma for the community, our families, and our visitors.
- *Facilitate the safe and efficient movement of goods and services* within the shire by developing prioritised freight routes, with sufficient pavement strength and suitable widths and alignments for the safety of all road users,
- *Maintain and improve the liveability of the shire* by prioritising long-term road renewal and upgrade planning in a financially sustainable manner,
- *Improve the Resilience of the road network*, ensuring 'kids can get to school' by considering any known service level issues (e.g., Drainage improvements) in all road renewal and upgrade projects,
- *Ensure social equity across the shire* in the long-term allocation of road renewal and upgrade expenditure to ensure level of service standards are maintained across the shire,
- Account for the cumulative impact of expansionary capital works on councils' *long-term financial sustainability* by informing Councils Long Term Financial Plan (LTFP), and
- *Ensure compliance with legal and stakeholder requirements and expectations* to minimise councils' exposure to financial and reputational risks.

The Strategy combines key focus areas to ensure the objectives of the Strategy can be met. These focus areas include a Safe Systems Approach to improve safety outcomes, and a Freight Strategy / Strategic Routes analysis, to ensure liveability and social equity objectives are considered.

The Strategy generates a priority listing of road (segments) that are further assessed to determine appropriate treatment options, which may result in non-infrastructure solutions being developed (e.g., a request for a speed zone review by Transport for NSW (TfNSW)). Projects are then included in the forward works program and funded in the Long-Term Financial Plan (LTFP) to ensure they are considered on a whole of life cost basis.

¹ As defined in the NSW Government *Integrated Planning and Reporting* framework and the Blayney Shire Council *Strategic Asset Management Plan 2022*.

The Safe Systems approach

Underpinning this Strategy is the *Safe Systems approach* to road safety², which acknowledges that the human body is vulnerable and needs protecting. It focuses on protecting all road users (pedestrians, cyclists, riders, and drivers) so that if they are involved in a crash, they are less likely to be killed or seriously injured.

Local government has a strategic and operational road safety role as road managers, planning authorities and fleet managers, in addition to councils' community development and leadership roles³. This Strategy supports 2 of the 4 elements of the Safe Systems approach, including the *Safe roads and roadsides*, and *Safe speeds*. The other elements include *Safe Road Use* and *Safe vehicles* which are supported in various ways through other council strategies and policies, including active participation in the *Blayney Local Traffic Committee* (LTC), and advocacy functions (e.g., advocating for improved public (rail) transport).

The crash profile for Blayney (*Blayney Shire Road Safety analysis*) clearly demonstrates a need for Council to prioritise safety improvements on the high speed local and regional rural road network, with just a few roads accounting for a very high percentage of crashes. Hobbys Yards Road, Newbridge Road, and Belubula Way account for almost a quarter of all crashes on the local and regional road network in the shire.

Safety issues are incorporated into this Strategy through:

- Development of guiding principles via an analysis of the Blayney shire road crash profile from the Transport for NSW (TfNSW) Centre for Road Safety,
- Recording individual crashes for each road segment, and
- Consideration of known road design and alignment issues across the network.

Improving safety outcomes for the road network, while also accommodating growing demand, including freight means both identifying and addressing existing safety issues, and ensuring safety is key to the design of any upgrade or renewal works. Critically for this Strategy, that means ensuring road upgrade, renewal and expansionary works are designed for appropriate speeds, alignments, widths, intersection site distances, appropriate clear zones, and crash barriers were necessary.

“People living in country NSW comprise a third of the NSW population, but deaths on country roads account for about two-thirds of the NSW road toll.”⁴

² The NSW Government *Towards Zero – a Safe Systems approach*.

³ Western Australian Local Government Association, *Roadwise; Working together to prevent road trauma, 2022* (<https://www.roadwise.asn.au/safe-system-approach-to-road-safety>).

⁴ Transport for NSW, Submission 69 to the *Joint Standing Committee on Road Safety (Staysafe); Speed limits and road safety in Regional NSW*. December 2022.

Strategic Route / Freight Strategy

The Roads Strategy combines a *Freight Strategy* with an analysis of other key *Strategic Routes* (including specific purpose routes accommodating industries, tourism, through traffic, or potential growth functions), to ensure new and upgrade works are considered within the context of developing both, a safe and an efficient road network that facilitates the efficient movement of goods and services, while also minimising the risk to other road users.

Rail freight is not considered in this Strategy, as while there are large volumes of rail freight originating in and around the shire, this has minimal impact on the local road network, particularly with the intermodal at Blayney Station currently inactive.

In a similar way to the *Safe Systems Approach* to safety, a *Freight Strategy* goes beyond the infrastructure demands on the road network and includes educational elements, for instance, community understanding of the improved safety, performance, and capacity of modern heavy vehicles.

Council does not currently have a *Road Safety Officer* position (shared with Bathurst), whom would normally be responsible for conducting educational programs.

As a predominantly rural area, with large mining and forestry operations, the safe and efficient movement of freight is a critical and growing function of the Blayney road network. This requires considerations of freight related objectives, to manage increases in freight movements, and to encourage the use of higher productivity heavy vehicles, to reduce the number of heavy vehicle trips, and improve road safety outcomes.

The *Freight Strategy* component of the Strategy incorporates the five objectives of the *NSW Freight and Port Strategy 2018 – 2023*, which align with this Strategies key objectives of safety, efficiency, and facilitating economic growth, and are incorporated into the Guiding Principles in the Strategy. The five objectives of the *NSW Freight and Port Strategy 2018 – 2023* are:

- **Economic** – encourage continued investment in the freight industry to support economic growth.
- **Capacity** – maximise infrastructure investment to accommodate growth.
- **Efficiency, Access, and Connectivity** – ensure greater connectivity and access along key freight routes.
- **Safety** – safe networks, safe transport, safe speeds, and safe people.
- **Sustainability** – sustainable supply chains that benefit the environment and continued operations into the future.

A key requirement for developing a Freight Strategy is to consider the future demand requirements on the network, brought about by the rapidly expanding freight task across regional NSW. The map below shows forecast increases in freight movements through

to 2036, clearly identifying expected large increases in the freight task for the Blayney region.

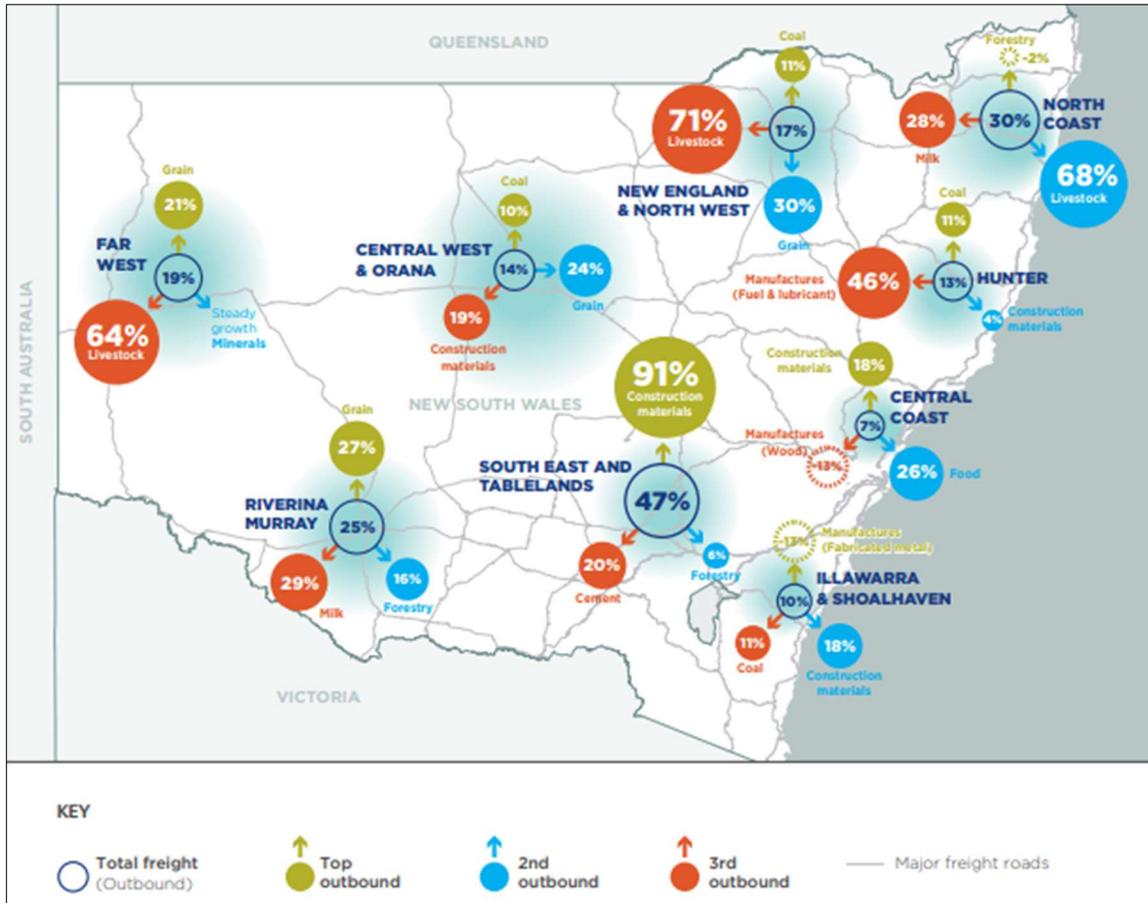


Figure 1: The three highest volume outbound freight commodities in each NSW Region to 2036⁵

The impact of increased freight will directly impact on the Blayney local and regional road network. To accommodate this forecast growth, it is important to understand the current and future freight demands from within and around the shire. Critically for this Strategy, that means ensuring road upgrade, renewal and expansionary works are designed with strengthened pavements, horizontal alignments that facilitate Heavy Vehicle swept paths, and of sufficient width and design to enable safe interaction with other road users.

Road freight volumes across NSW are projected to rise from 4.4M tonnes in 2016 to 10.9M tonnes by 2056.⁶

⁵ NSW Freight and Ports Plan 2018-2023, Transport Performance and Analytics, TfNSW; p38.

⁶ Draft Central West and Orana Regional Transport Plan, Transport for NSW, 2021; p17

A Whole-of-Life Cost approach

Achieving the safety and efficiency objectives in this Strategy requires consideration of the financial implications of expanding the road asset portfolio within the context of Councils long-term financial sustainability. This is critical to ensure that council can afford the whole-of-life costs for the operation, maintenance, renewal, and annual depreciation expenses to continue to provide the desired level-of-service from the assets, over the long-term.

For Council to make sound financial decisions regarding the acquisition of new, or for the upgrading of existing assets, it is critical that the following issues are considered:

- Availability of funding over the long-term to cover the whole-of-life costs for maintaining existing assets.
 - Whole-of-life costs include the costs required to ensure the ongoing operations, maintenance, renewal, upgrade, and the eventual replacement of assets, while also funding the annual depreciation expense,
- The cumulative effect of increasing whole-of-life costs from growth in Councils' asset portfolio through the acquisition of new and upgraded assets (including contributed and grant funded assets),
- Minimising Council's liability exposure, by applying appropriate and affordable risk management processes to the operations and maintenance of assets,
- Compliance with relevant legislative requirements, and
- The long-term financial impact of increasing existing levels of service provided by existing assets (e.g., increasing the slashing frequency on rural roads).
 - This Strategy assumes no increases in the existing levels of service, over the life of this plan.

The purpose of the Strategy is to document a network-wide, risk-based framework for the identification, assessment, and prioritisation of expenditure on the renewal, expansion or upgrading of the existing road network. Council uses a matrix scoring system for assessing each road segment within the network, to provide a prioritised ranking for the rehabilitation and / or upgrade of each road /segment⁷.

The *Transportation Asset Management Plan* (TAMP) clearly identifies that Council has limited funding for the expansion / upgrading of the road network, reinforcing the need for clear, risk-based assessment procedures to assist council to prioritise expenditure on road rehabilitation and upgrade works.

In preparing this Strategy, Council acknowledges the comparative ease of accessing Federal and State Grant funding at present, requiring increased focus on funding the whole-life-costs, particularly in relation to increases in depreciation expenses.

⁷ Roads are divided into segments, to aid in the management of the network. Generally, segments are 1-3kms on rural sealed roads, the full length of unsealed roads, and whole urban streets.

Purpose of the Blayney Shire Road Network

The Blayney shire road network has many competing and often conflicting functions to perform, from providing a smooth surface for a cyclist, to having the width to enable two B-Doubles to pass safely. The primary functions of the Blayney road network are to:

- Connect residents to neighbouring council areas and the broader (State) road network,
- Provide efficient and safe transportation options for residents, visitors, and people traveling through the shire,
- Provide reasonable access to residential dwellings throughout the shire,
- Facilitate and encourage industry through the provision of an efficient, heavy vehicle capable road network,
- Provide a safe road environment that can be shared by all road users, from pedestrians to B-Doubles, and
- Encourage growth in the visitor economy by providing safe and smooth roads.

Blayney Shire Council Road Funding

Council allocates road funding annually through the Operations Pan (OP), which represents Councils' annual budget, derived from the 4-year Delivery Program (DP) and the 10-year LTFP. Funding is allocated across different activities to ensure the ongoing operations and maintenance of the existing road network.

The expenditure categories and the activities they cover, along with the relevant budget areas used to manage the ongoing operations, maintenance, renewal, and upgrading of the road network are listed in Table 1, below. The budget areas informed by this Strategy are highlighted in red within the table.

Table 1 - Council Road Expenditure

Expenditure Type	Description	Budget area
Operational	Day to day operations to provide the required level of service including roadside slashing, street sweeping, etc.	Sealed and unsealed roads operations and maintenance budgets.
Maintenance	Minor maintenance activities including sealed road pothole patching, grading unsealed roads, renewal of line marking, guideposts etc.	Sealed and unsealed roads operations and maintenance budgets.
Depreciation	The annual expense on Council's financial statements for the depreciation of capital expenditure over the life of the asset.	Depreciation budget.
Capital maintenance	More extensive activities designed to extend the life of the road, such as resheeting unsealed roads and heavy patching and/or resealing of sealed roads.	Resealing budget. Heavy patching budget. Resheeting budget.
Renewal	Major rehabilitation of an existing road. Generally, involves a level of upgrade works to improve the service capacity.	Specific project capital budget Assumed grant funding.
Upgrade	Capital expansion component of major road rehabilitation projects and can include widening, or significantly realigning the existing road.	Specific project capital budget Assumed grant funding.

Expenditure Type	Description	Budget area
Expansion	Capital expansion of the road network including initial sealing of unsealed roads, or the construction of new roads.	Assumed grant funding.
Contributed	Capital expansion of the road network through dedication of roads through subdivision developments. These have no initial capital cost but have an ongoing impact on council's budget for funding the operations, maintenance, capital renewal, renewal, and depreciation of these assets.	Contributed.

Council has a limited budget for expansionary works and in this Strategy, it is assumed that any substantial expansionary and some renewal and upgrade expenditure will be funded by NSW and Australian government grants. Within the context of this Strategy, it is assumed that if grant funding is not available, these projects will be deferred or not proceed.

This Strategy provides a road rehabilitation, upgrade, and capital expansion priority list for all roads within the Blayney road network, which is used to develop a works program for the TAMP, funded within the LTFP. The financial impacts on the operations and maintenance, and depreciation budgets are also funded within the LTFP.

The project budget estimates included in the TAMP and LTFP are based on first principals estimates and are subject to refinement as project design and planning are undertaken for development of the DP and OP. The capital maintenance budgets for road reseals and gravel road resheeting are based on condition assessments during the delivery year. This allows some flexibility to address current issues, for example the extended wet weather in recent years.

The roads operations and maintenance budgets are based on indexation of previous years expenditure, while the depreciation expenses for roads are calculated from within the Asset Management System and reconciled with Council's corporate finance system.

Hobbys Yards Road at Mackellars Lane Widening and Rehabilitation Project



THE ROADS STRATEGY

Background

This Strategy provides Council with guidance on how to allocate funding across Councils 730km road network, including 364kms of sealed, 340kms of unsealed and 44kms of Regional roads. It forms part of the Blayney Shire Council strategic and asset management framework and should be read in conjunction with other key council strategies, plans and policies. It also supports Council meeting the requirements of the NSW Government *Integrated Reporting and Reporting* (IP&R) framework and assists council to achieve long-term financial sustainability.

The Strategy should be read in conjunction with Councils' *Strategic Asset Management Plan* (SAMP), which outlines the role of this (and other) strategies in informing priorities within the TAMP. The TAMP includes projects that are 'only possible' with Grant funding, as Council is unable to fund all projects internally. These projects are identified within the long-term (budgeted) funding for roads in the LTFP which is informed from the expenditure projections within the TAMP.

As part of a council-wide integrated strategic and asset management framework, the inputs to, and the outputs from this document are linked to a range of Council and NSW Government strategies, plans, and policies. The key documents and their linkages to this Strategy are detailed in Table 2 below:

Table 2 - Councils' Strategic Planning Elements

Component	Description	Linkage to this Strategy
Individual Strategic Plans	Individual Village and specific Service area plans (e.g., Active Movement Strategy, Roads Strategy).	This Strategy.
Blayney Shire Community Strategic Plan (CSP)	Community vision, values, and strategic objectives. Medium to long-term priorities. Underpinned by the Community Engagement Strategy.	Sets the strategic direction and objectives.
Asset Management Policy	High level statement of Councils principles and approach to asset management.	Establishes the asset management framework.
Strategic Asset Management Plan (SAMP)	Documents how organisational objectives are converted to asset management objectives and the approach to development of asset management plans.	Provides background information and an overview of the broader objectives of transport assets.
Transportation Asset Management Plan (TAMP)	Documented information that specifies the activities, resources and timescales required for an individual asset class to achieve Council's asset management objectives.	This Strategy informs the renewal, upgrade, and expansion capital expenditure plans within the TAMP and LTFP.
Long Term Financial Plan (LTFP)	A 10-year financial forecast for council, updated annually as part of the development of the Delivery Program and Operational Plan.	This Strategy informs the renewal, upgrade, and expansion capital expenditure plans within the TAMP and LTFP.

Component	Description	Linkage to this Strategy
Delivery Program (DP)	Four-year delivery program. It aligns with the four-year term of the council and is reviewed annually.	Capital works programs are developed from this Strategy and included in the DP and LTFP.
Operational Plan (OP)	A one-year plan (annual budget), based on the DP, identifying individual projects.	Capital works projects are delivered, that are identified in this Strategy.
NSW Government Integrated Planning and Reporting framework (IP&R)	Sets the broader strategic planning framework which Council is required to comply with.	This Strategy is a key input to the Blayney Shire strategic planning framework.
TfNSW Centre For Road Safety – Crash Profile – Blayney Shire 2016-20	Blayney shire crash profile 2016-2020 (Appendix A) and official crash statistics for the local and state road network within the shire.	Provides an overview of the crash characteristics for Blayney, identifying areas of concern compared with the region and the state. Provides actual crash data for assessing renewal and upgrade needs on individual road segments.
Enterprise Risk Management Policy and Plan	Sets out Council's risk appetite, risk management framework and integrates risk within Council's IP&R framework.	Provides the risk management framework used to analysis road priority.
Corporate Risk Register	Records high-level organisational risks, including action plans, reviewed by Manex and Managers and oversight by the Audit, Risk, and Improvement Committee (ARIC).	This Strategy has been prepared to address key Infrastructure risks identified in the Corporate Risk Register.
Road Hierarchy, Renewal and Maintenance Policy	Sets the policy and risk framework that Council uses to manage the road network.	Defines the extent of the Blayney Shire road network and road hierarchy. Defines road class renewal / upgrade standards.
Legal & Stakeholder Requirements & Expectations	State and Regional planning initiatives, Legislative requirements, including Governance (e.g., Roads Act 1993).	Determines the current compliance requirements for new works on the existing network.
Austrroads, Infrastructure Risk Rating (IRR) Framework	The IRR is an assessment methodology for evaluating road safety risk. It calculates a risk rating based by coding road and roadside features.	Provides the foundations for the assessment framework used in this Roads Strategy. The methodology has been modified for use on the Blayney network to account for lower traffic volumes, high percentages of heavy vehicles and the extensive unsealed network.
NSW Freight and Ports Plan 2018-2023	Sets out the NSW Governments goals to improve freight efficiency and safety while accommodating forecast growths in the freight task. It is a supporting plan to Transport for NSW's (TfNSW) Future Transport 2056	Establishes guiding principles for prioritising road rehabilitation, upgrade, and new works projects.
NSW government, Transport for NSW, Road Safety Plan 2021 – Towards Zero – A safe systems approach, Road Safety Strategy	Sets out the principles of the safe systems approach, including: <ul style="list-style-type: none"> • Road safety is a shared responsibility, • The human body can only withstand limited forces in a crash, and • Continuous improvements in vehicles, roads and behaviour will reduce fatalities and serious injuries. 	Establishes guiding principles for prioritising road rehabilitation, upgrade, and new works projects.

Component	Description	Linkage to this Strategy
NSW Government, Transport for NSW, DRAFT Central West and Orana Regional Transport Plan 2022	A supporting plan of Future Transport 2056. The Plan presents the strategic framework for how Transport for NSW will proactively respond to anticipated changes in land use, population and travel demand across the region.	Sets regional context and vision for ongoing development and improvement of the transport services within the Central West and Orana Region.

The Blayney Shire Road Network

Shire Profile and Stakeholder Engagement

As part of Council's integrated strategic and asset management framework the community, current, and future demand profiles that underpin the assumptions in this plan can be found in the documents listed in Table 2 above, particularly the SAMP and TAMP.

The stakeholder inputs considered in this Strategy are largely derived from a Community Survey undertaken by Council in 2021. Analysis of the road related aspects of the survey are documented in the TAMP. These and other stakeholder considerations (e.g., school bus routes) have been incorporated into the guiding principles underpinning this Strategy.

Blayney Shire Road Safety analysis

Council analyses the safety of individual roads within the network using several methods. These include assessment of known deficiencies (e.g., severe curves, under width pavements, and speed environs); recording of crash locations; road safety audits; and recording crashes and near misses reported by the public and council staff.

Analysis of the overall crash profile for the Blayney network⁸ within the context of the broader western region and NSW, highlights important characteristics about the nature of crashes within the Blayney Shire, which differ to the western region and NSW. Between 2016 and 2020, there were 121 officially recorded accidents within Blayney shire, of which 74 (61%) were on Councils local and regional road network, 12 (10%) were on local or regional road intersections with the state road network and 35 (30%) occurring on State managed roads (Mid Western Highway / Adelaide Street, Church Street / Orange Road / Millthorpe Road / Park Street).

The TfNSW Centre For Road Safety Crash Profile for the Blayney local government area is shown in Appendix A. The key characteristics and implications for the Blayney road network are summarised in Table 3 below.

The Blayney Shire Crash profile will be periodically updated, as additional data is obtained. Future iterations of this Strategy will also include an analysis of crash 'types'.

⁸ Transport for NSW, Centre For Road Safety; 2016-20 Crash data profile Blayney Shire Council area <https://roadsafety.transport.nsw.gov.au>

Table 3 – Blayney Crash Profile and Strategic response⁶

Crash Characteristic	Safety Inference	Strategy Actions (<i>Other Actions</i> ¹)
High incidence of Fatal, Serious, and Moderate injury crashes	High speed crashes, mostly on sealed roads, resulting in significant injuries.	Prioritise road rehabilitation to improve alignment and width on roads with multiple or major crash history ('black spots').
Speeding related crashes	Speeding identified as a contributing factor in 45% of crashes, compared with 28% and 17% for the western region and NSW, respectively.	Focus on building more 'forgiving' roads, to reduce the incidences of crashes, and the severity of crashes when they do occur. <i>(Develop educational programs around speed and fatigue issues).</i>
Very high incidence of crashes in high-speed zones	Majority of crashes in 100km/h zones. 69% for Blayney compared to 33% for the western region and 11% for NSW	Focus road rehabilitation, upgrades, and new works on high-speed rural network. <i>(Work with TfNSW to implement appropriate speed zoning).</i>
Very high percentage of run off road on curve crashes	Blayney has a very high rate of off road out of control on curve crashes. 50% of crashes in Blayney identified as off road out of control on curve crashes, compared to 26% and 14% for the western region and NSW, respectively.	Focus road rehabilitation and upgrade works on improvement of horizontal alignment in high-speed zones and identified 'black spot / lengths' locations. <i>(Develop a specific Delineation Maintenance (Guideposts, Line marking etc.) budget).</i>
Higher than average crashes involving fatigue	Drivers travelling long distances and for long periods. 22% of crashes in Blayney identified fatigue as a contributing factor, compared to 16% for the western region and 8% for NSW.	Consider installation of crash barriers as part of safety treatments in rehabilitation and upgrade works. <i>(Develop educational programs around speed and fatigue issues).</i>
Local and surrounding local government area residents represent most drivers involved in crashes	Complacency, speed, and fatigue likely contributors to crashes, rather than just poor road alignment and condition.	
Majority of crashes on a small number of roads	Roads experiencing multiple crashes account for a large percentage of total crashes, especially on Regional roads. 30% of crashes occurred on 3 roads: Hobbys Yards Road, Newbridge Road, and Belubula Way. Over 50% of crashes occurred on just 9 roads. (see Appendix B: Crash data by Road).	Develop strategies to address safety issues on specific routes. Consider additional safety actions on the Regional road network.

¹ Some actions identified in this analysis will be considered in other Council programs (budgets) and strategies.

The Strategy objectives informed by this crash analysis underly the focus of making the network safer and more forgiving, as per the *Safe Systems Approach* to road safety and are combined with Councils other guiding principles to form the basis of prioritisation of road rehabilitation, upgrade, and expansionary works.

Blayney Shire Freight Strategy and Strategic Route Analysis

Located in the NSW Central Tablelands region, the shires local and regional road network is required to provide for a wide range of uses; from commuter traffic, to heavy vehicles accessing the state network, to school buses, and recreational cyclists. There are numerous heavy vehicle generating industries in and around Blayney, which are have a growing impact on the network.

These include:

- Primary production
 - Central Tablelands Livestock Exchange – attracting livestock movements from within and outside the shire,
 - Other livestock freight – Hay and silage movements across the network,
 - Dairy Production on Carcoar Road,
 - Forestry – significant movement of forestry produce from areas on the boundaries of the shire in the Gallymont, Neville / Trunkey areas and the Cadia area in the future,
 - Angullong Winery in the Panuara area,
 - Grain production, generally west of Mandurama and Lyndhurst, and
 - Other, including potatoes, and Apiary.
- Mining and Quarries
 - Cadia Valley Operations – generating Over Size / Over Mass (OSOM) movements and large amount of smaller Heavy Vehicles and light vehicle movements of staff. The continuing development of the Regis Mine at Kings Plains, will have a significant impact on some local roads, albeit, most movements will be on the state network,
 - Council and Private Quarries – there are numerous quarries spread throughout the shire, and near the boundaries of the shire. This includes commencement of quarry operations on Marshalls Lane, Blayney.
- Other industrial activities
 - Australian Native Landscapes on Browns Creek Road generates considerable Heavy Vehicle movements,
 - Flyers Creek Windfarm development – in the Flyers Creek / Errowanbang area requiring major heavy vehicle movements in the near term.
 - Blayney Frozen Foods on Newbridge Road, and
 - Numerous businesses within the Blayney industrial area.

To properly accommodate the *Freight Strategy* within the broader Strategy, Council has identified major and minor freight routes through the shire. The analysis of freight routes was expanded to include the identification of other key strategic routes, to ensure the different uses of the road network are reflected in the prioritisation of road upgrade and rehabilitation works. This approach enables Council to proactively plan for the growing freight task, while considering the needs of all road users.

The *Freight Strategy* and the *Strategic Routes Analysis* have been incorporated into the Strategy in several ways, including:

- Consideration of Councils adopted functional Road Hierarchy (2023), which reflects the function of the road network, including freight movements and connections to the Villages,
- The *Strategic Routes Analysis* identified the following types of strategic route:
 - Major and Minor freight routes,
 - Major and Minor ‘through’ routes,
 - Industrial routes,
 - Tourist routes,
 - Developmental routes (potential industrial or urban growth), and
 - Major and Minor School bus routes.
- Analysis of Heavy Vehicle movements on the road network. To account for the low traffic counts on some of the rural network, the analysis involved assessment of both the percentage and numbers of Heavy Vehicles.
- Target Pavement designs, lane widths and Linemarking requirements based on the Road Hierarchy and defined in the *Road Hierarchy, Renewal and Maintenance Policy*. Standards for higher Class roads dictate stronger pavements, commensurate with higher heavy vehicle usage.
- Consideration of known road design and alignment issues across the network.
- Educational programs fall outside the gambit of this Strategy and are addressed through other council programs.

Guiding principles

In addition to the drivers and inputs outlined in Table 2, and those identified by the Blayney Crash Profile, there are other guiding principles used to develop the road rehabilitation and upgrade priority list, including:

- The road hierarchy which reflects the strategic importance of individual roads in terms of their current and expected usage patterns (providing access to a single dwelling versus a major through road),
- The road hierarchy is combined with identified strategic routes to provide to ensure significant usage patterns are considered,
- The road hierarchy prioritises ‘preferred’ routes where duplicate routes are available, recognising that Council does not have sufficient funding to develop and maintain multiple routes,
- Ensuring that road rehabilitation and upgrade works are programmed in a way that does not result in poor interfaces to lower standard segments adjoining proposed works – ‘we do not want to increase the speed of crashes’,

- The assessment process considers individual road segments. For sealed roads no segment is greater than 3km in length, while for unsealed roads, the road is generally a single segment,
- Rehabilitation and upgrade works are generally only applied to Class 1,2, and 3 roads / road segments,
- The annual heavy patching program is used for the rehabilitation of class 1 to class 5 sealed roads / road segments, or parts of segments,
- Class 1,2, and 3 roads are considered the preferred heavy vehicle routes, demanding:
 - Higher strength pavements, and
 - Greater width to improve safety for heavy vehicles and other road users,
- Identified school bus routes are given additional consideration for continuity of service issues on unsealed roads and general safety on sealed roads, and
- Other known / specific safety issues are also considered, based on crash history, and known substandard design and / or constructed road segments.

These guiding principles, the Blayney crash profile and the drivers and inputs referred to in Table 2 provide the basis for the analysis used to determine rehabilitation, upgrade, and expansion priorities for the entire road network across Blayney. The application of a risk management framework focuses the scoring on risk related issues, rather than amenity issues, hence a high-speed sealed road with poor alignment will score more highly than an unsealed urban lane in a low traffic, low speed environment.

This means that initial sealing of low-speed urban (village) roads is unlikely to score highly enough to be included in the priority roads list.

Separation of the urban and rural networks in the Strategy provides an urban road priority list, which would need to be developed as a separate program.

The Road Assessment Methodology

The assessment methodology used to assess the road network is based on the *Austroads Infrastructure Risk Rating* (IRR) methodology. The Austroads IRR was developed for application across all councils in Australia and has subsequently been adapted for use on the Blayney network, based on available data sources, smaller traffic volumes, and having an extensive unsealed network.

Roads included in the Strategy are those defined in the *Blayney Shire Council Road Hierarchy, Renewal and Maintenance Policy (25G)* (the Policy), which includes all roads that Council maintains full financial responsibility for (Class 1 to Class 5b in the Road Hierarchy) and excludes private or State roads and unmaintained road reserves. There are no new roads proposed in this Strategy.

Road Assessment Criteria

The assessment criteria for determining the priority for road rehabilitation, renewal, and / or upgrades is based on a roads' desired standard derived from its Class in the Road Hierarchy and its ability to provide the service level intended. These criteria are divided into three main areas relating to an asset's performance in meeting agreed levels of service, and include:

- **Function** – is the asset suitable to provide the intended service?
- **Capacity** – is the service over or undersupplied by this asset?
- **Condition** – is the asset in a condition that can provide the service?

The measures used to analyse the road network in Blayney are grouped under these broad headings and how they are used is described in Table 3 below. All categories of scores have been converted to a score ranging from 1 to 10, with 10 representing the highest priority roads for each measure. These are then averaged to provide an overall score for each road segment out of 10.

Condition is only measured for sealed road pavements, using ARRB (methodology) laser survey on 2-3 yearly basis, with 'manual overriding for known pavement failures. Seal condition is not measured as this is covered under Councils resealing budget and not considered a structural failure, or driver for road rehabilitation or upgrade.

Unsealed road condition is subject to rapid change and is generally addressed through maintenance grading and not a driver for road rehabilitation or upgrade works, except where maintenance expenditure is excessive. The frequency of maintenance grading is measured through the 3-year average maintenance expenditure per road (rural) and per village (urban).

Table 4 – Priority assessment measures

Category	Measure	Scoring (out of 10)
Function	Road Hierarchy – Class 1 to 6 Classifies roads within the network from Class 1 (main arterial) to Classes 5a (local access) and 5b (Single dwelling access). Class 6 not included as not owned / maintained by council.	<ul style="list-style-type: none"> • Class 1 = 6. • Class 2 = 5. • Class 3 = 4. • Class 4 = 3. • Class 5a = 1. • Class 5b = 0. • Class 6 not included.
	Road Function – Strategic Routes Refines road hierarchy by identifying key strategic routes throughout the network. These are combined with the Hierarchy score to provide an overall Road Function score. Included to refine functional hierarchy and accounts for road function of low volume roads. The combined Road Hierarchy and Function score cannot exceed 10.	<ul style="list-style-type: none"> • Major Freight Route = 4. • Minor Freight Route = 2. • Major Through Route = 3. • Minor Through / Duplicate Route = 1. • Industrial Route = 1. • Developmental Route = 1. • Tourist Route = 0.5. • Non-strategic route = 0.
	Bus Routes	<ul style="list-style-type: none"> • Bus route - multiple = 3. • Bus route - single = 2.

Category	Measure	Scoring (out of 10)
	<p>Additional priority is attached to roads that service a general or school bus route.</p> <p>Scores align with Road Function – Strategic Route scores.</p>	<ul style="list-style-type: none"> • Bus route - <=50% Length = 1. • Not a bus route = 0.
	<p>Traffic Volume</p> <p>Measures Average Annual Daily Traffic (AADT) adjusted to reflect speed environment, based on Posted Speed Limit (PSL).</p> <p>If not available, excluded from road overall score.</p>	<ul style="list-style-type: none"> • Actual AADT (weighted by PSL).
	<p>Heavy Vehicle usage</p> <p>Measures Heavy Vehicles as a percentage of AADT. Score is converted to provide a score out of 10.</p> <p>If not available, excluded from road overall score.</p>	<ul style="list-style-type: none"> • Percentage of Heavy Vehicles score (converted to score out of 10).
	<p>Posted Speed Limit (PSL)</p> <p>Scores road on actual PSL</p>	<ul style="list-style-type: none"> • PSL / 10.
Capacity	<p>Crash History¹</p> <p>Number of crashes per road segment, based on Official crash data² and anecdotal information, including 'near-miss' incident reports from council staff and members of the public.</p> <p>Crash type 'Struck animal' are not included in the road crash score, as these are external to the road's performance.</p> <p>Crashes that pre-date major road rehabilitation / upgrade works are excluded.</p>	<ul style="list-style-type: none"> • Crash Count >5 = 10. • Crash Count of 4 = 8. • Crash Count of 3 =6. • Crash Count of 2 = 4. • Crash Count of 1 = 3 • Crash Count of zero = 0
	<p>Risk Assessment</p> <p>Road segments are assessed based on known or reported safety issues. The risk score is determined separately for Sealed and Unsealed roads, due to differences in Consequence and Likelihood and are based on Councils standard risk assessment tools (See Appendix C).</p> <p>Risks have been assessed for sealed and unsealed roads within the following categories:</p> <ul style="list-style-type: none"> • Blind crests (Sealed = M / Unsealed = H), • Blind crests on curves (Sealed = M / Unsealed = H), • Poor horizontal alignment (Sealed = H / Unsealed = M), • Poor vertical alignment / problematic grades (Sealed = M) / Unsealed = L), • Intersection issues (poor sight distance or alignment) (Sealed = M / Unsealed = L), • Narrowness of road segment (Sealed = H / Unsealed = L), and • Roadside hazards (physical hazards including trees and flood risk) (Individual risk assessed). <p>The highest risk score for a segment is assigned to that segment.</p>	<p>Risk is scored per risk rating:</p> <ul style="list-style-type: none"> • High = 10 • Medium = 7 • Low = 3 • No identified issue = 0
	<p>GPR pavement depth comparison against standard</p> <p>Council will be undertaking GPR analysis of the sealed network to determine existing pavement depths. This will be compared against the Hierarchy standard and identify segments with understrength pavements.</p>	<ul style="list-style-type: none"> • <i>To be incorporated in next revision of this strategy.</i>

Category	Measure	Scoring (out of 10)
	<p>Intersection and Access density (rural roads) <i>(Analysis yet be undertaken)</i></p> <p>The number of conflict points (intersections and driveway accesses) per length of road increases the risk of collisions on high-speed roads. Excludes urban / low-speed roads.</p>	<ul style="list-style-type: none"> • <i>To be developed in future iterations of this Strategy.</i>
Condition	<p>Maintenance Expenditure</p> <p>Excessive, or increasing expenditure on maintenance indicates the road is failing and unable to deliver the required level of service. Maintenance expenditure reflects real time condition changes.</p> <p>Rural Sealed and Unsealed – Average maintenance expenditure (previous 3 years) per road per kilometre. Excludes capital maintenance e.g., Reseals and Heavy Patching.</p> <p>Urban Sealed – Average maintenance expenditure (previous 3 years) for all sealed streets per village per kilometre. Excludes capital maintenance e.g., reseals.</p> <p>Urban Unsealed – Average maintenance expenditure (previous 3 years) for all unsealed streets per village per kilometre. Excludes capital maintenance e.g., major resheeting.</p>	<ul style="list-style-type: none"> • Sealed and Unsealed Rural Roads (3-year) average maintenance cost per metre. • Sealed Urban Streets (3-year) average maintenance cost per village per metre. • Unsealed Urban Streets (3-year) average maintenance cost per village per metre.
	<p>Condition Rating – Sealed Pavements only</p> <p>Sealed road pavement can indicate the need for road rehabilitation, which should also include consideration of any safety or efficiency upgrades.</p> <p>If not available, Condition rating is excluded from the roads overall score.</p> <p>Note: Generally, Class 3 to 5b road pavement issues are addressed through Councils Heavy Patching program.</p>	<ul style="list-style-type: none"> • Condition 5 = 10. • Condition 4 = 8. • Condition 3 = 6. • Condition 1 & 2 = 0.

¹ Crash type is not considered in the initial priority scoring but is considered when assessing treatment options for a road segment which may result in other actions being recommended (e.g., Improved delineation, signage at an intersection, referral to the Blayney LTC, or referral to TfNSW for a speed zone review).

² Transport for NSW, Centre for Road Safety, Crash Statistics – Blayney Shire 2016 – 2020.

Council collects these data on an ongoing basis, continuously improving the currency and completeness of the data modelling used in this Strategy. It is noted that the sealed road condition rating data requires updating, given the impact of the extended wet weather since the 2019 Australian Road Research Board (ARRB) Sealed Road Condition Survey.

Council will be conducting a Ground Penetrating Radar (GPR) survey of sealed rural road pavement depths and an ARRB (methodology) condition assessment of the rural sealed road network in line with Transportation asset class revaluations.

Roads Capital Expenditure Program

To develop a capital expenditure (Forward Works) program for renewal, upgrade and new road projects, Council assesses the priority ranking of road segments derived from the application of the assessment criteria above. The criteria are used to rank the priority of road segments, which are then assessed for appropriate treatment options. Projects are then included in the TAMP and LTFP, based on a priority, budget estimate and within the appropriate expenditure program.

Projects included in the capital expenditure program, are individually assessed prior to inclusion in the LTFP. The assessment considers the objectives and guiding principles of this Strategy before recommending any treatment option. In some instances, the proposed treatment will sit within other council programs or strategies (e.g., the Heavy Patching program, referral to the Blayney LTC, etc.).

Monitoring and Evaluating the Strategy

The Strategy is designed to be easily maintained in terms of currency, with data stored in Councils asset management system, being updated on a continual basis (e.g., Traffic Count and crash data). The structure of the Strategy also enables additional information to be incorporated, as it becomes available, including the emerging use of AI technology for condition assessment and roadside hazard identification.

The key improvements identified for this Strategy are outlined in the table below, including reference to the relevant section of the Strategy.

Table 5 - Roads Strategy Improvement and Data Maintenance Plan

Ref	Task	Area	Target Date	Status
1	Undertake analysis of crash types and severity to identify and refine crash scores and better inform capital works.	Safety	Mar 2024	Yet to commence
2	Crash Data updating, including cleansing crash data following road upgrade works.	Safety	Ongoing	Ongoing
3	AI Roadside Hazard assessment.	Safety	TBD	Yet to commence
3	Traffic Count data updating.	Freight	Ongoing	Ongoing
4	Better integration of Traffic Count and Crash data into AssetFinda	Safety / Freight	Mar 2024	Yet to commence
5	Identification of heavy vehicle 'pinch points', including Bridge load limits, low clearances etc.	Freight	Annual	Bridge assessments ongoing
6	Research and collate data on tannages to refine Freight and Strategic Routes analysis.	Freight	TBD	Req. Road Safety Officer
7	Develop / deliver educational programs around the 'pros and cons' of B-Doubles and other heavy vehicles, meaning fewer heavy vehicles on the road.	Freight	TB	Req. Road Safety Officer

Road Reconstruction Project – Carcoar Street – Blayney.

Before

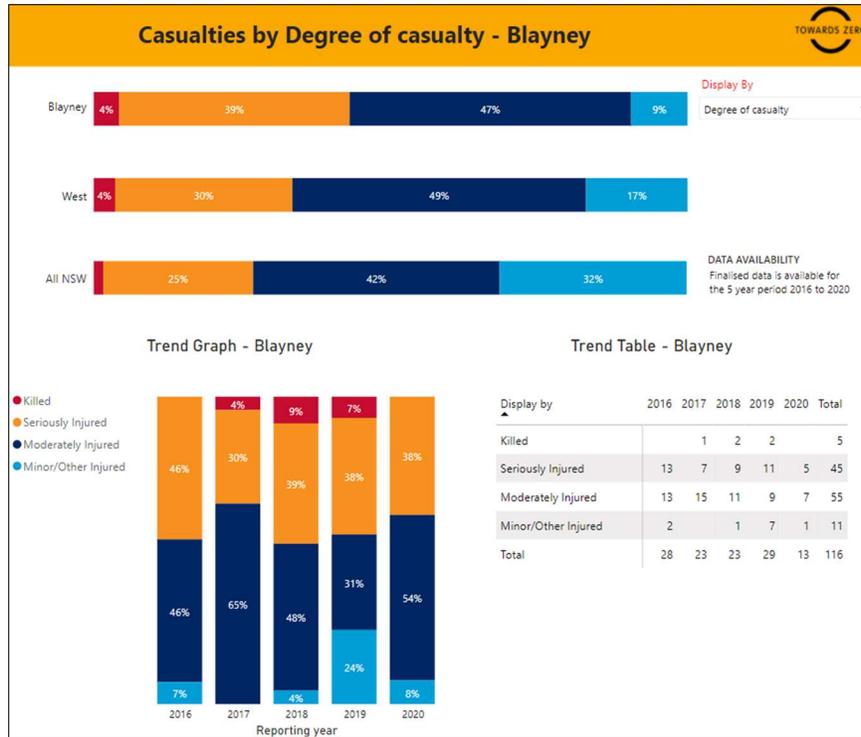


After

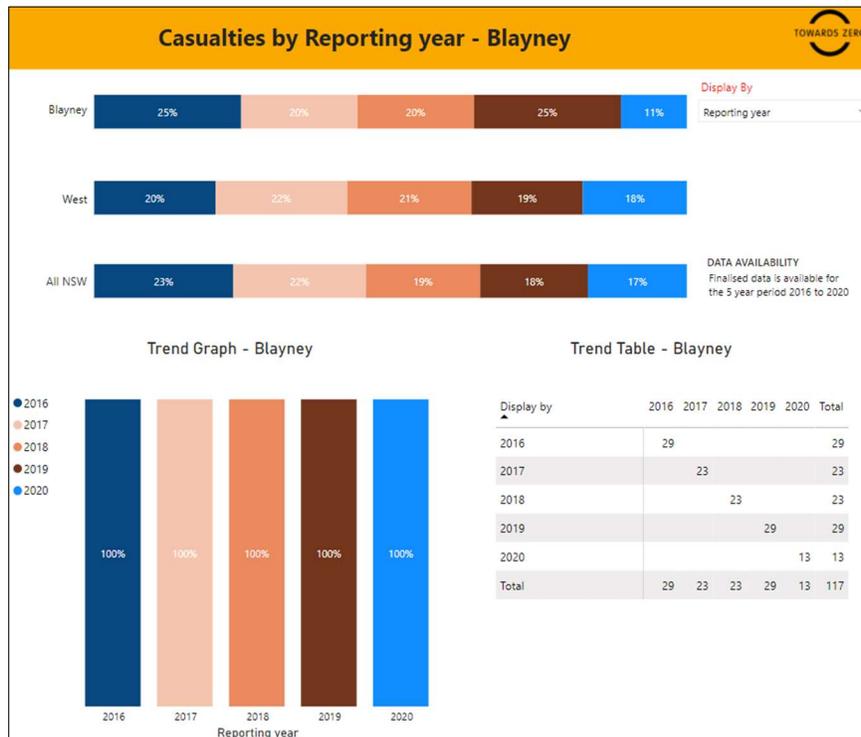


Appendix A: Blayney Shire Crash Profile 2016-20 (Centre for Road Safety)

Casualty Characteristics:

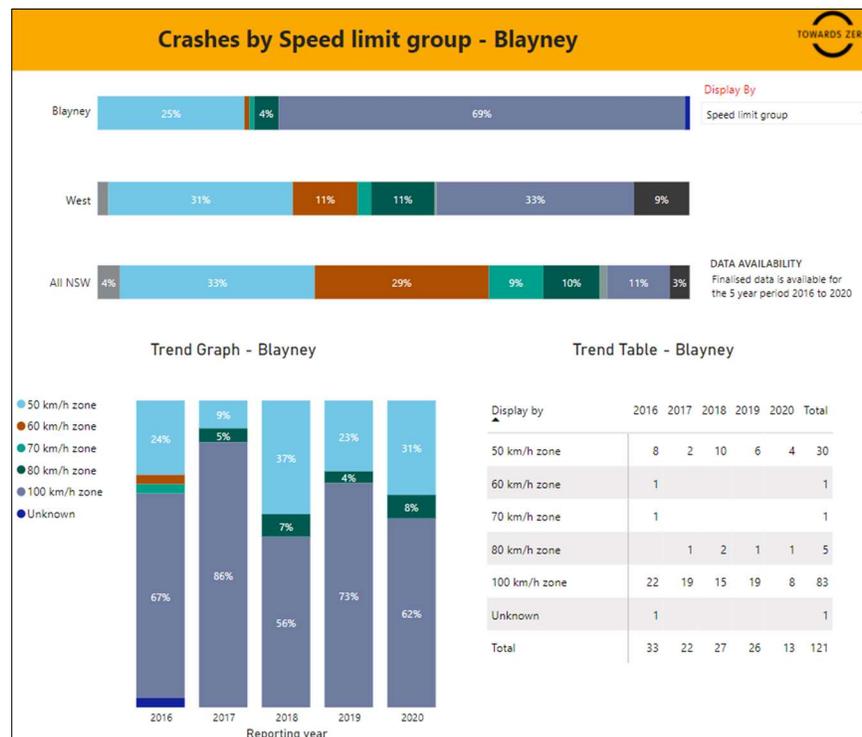


⇒ High level consequence crashes significantly above the region and NSW.

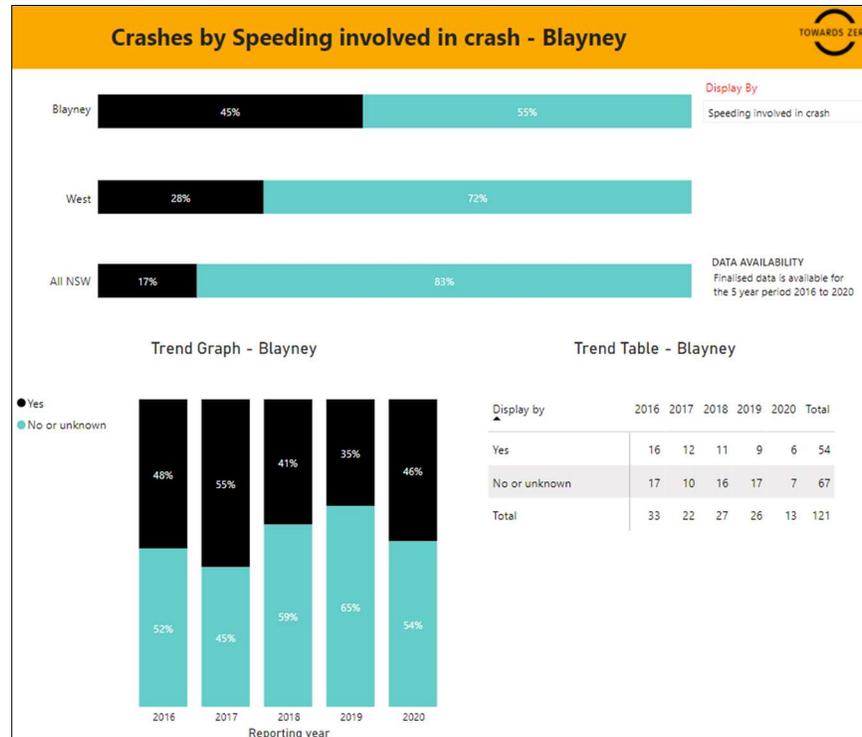


⇒ Reduction in crashes in 2020 likely due to reduced travel related to Covid pandemic.

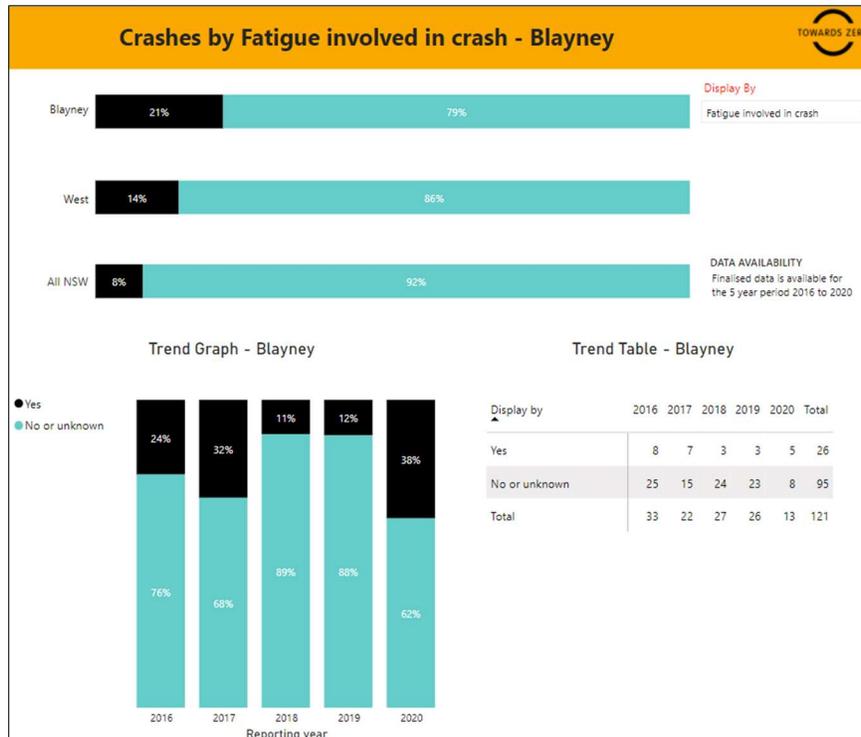
Contributing Factors:



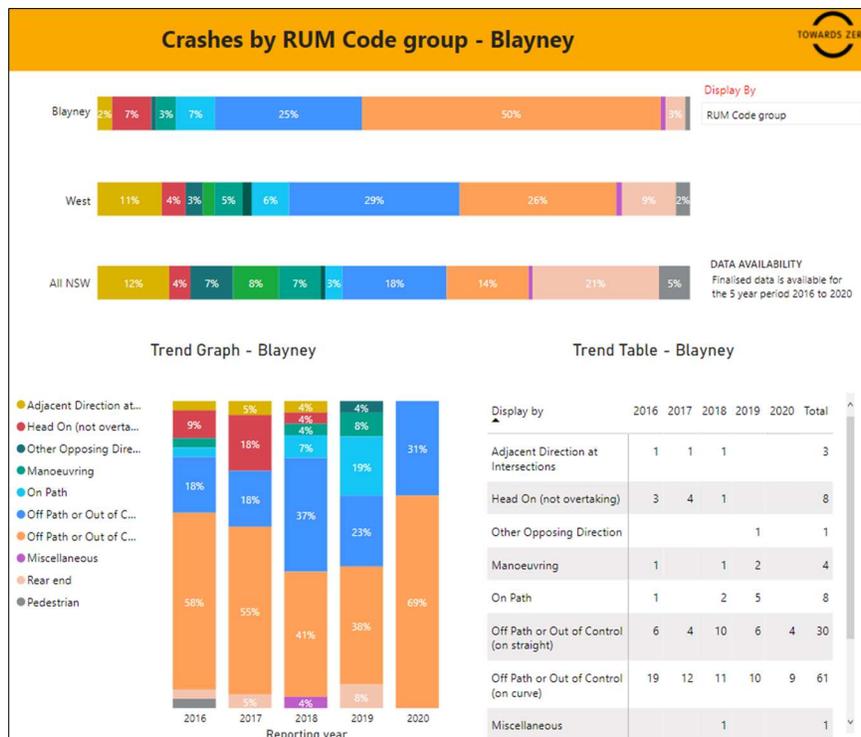
⇒ Blayney has a very high percentage of crashes on high-speed roads.



⇒ Speeding identified as a contributing factor in 45% of crashes, significantly higher than for the region and NSW.



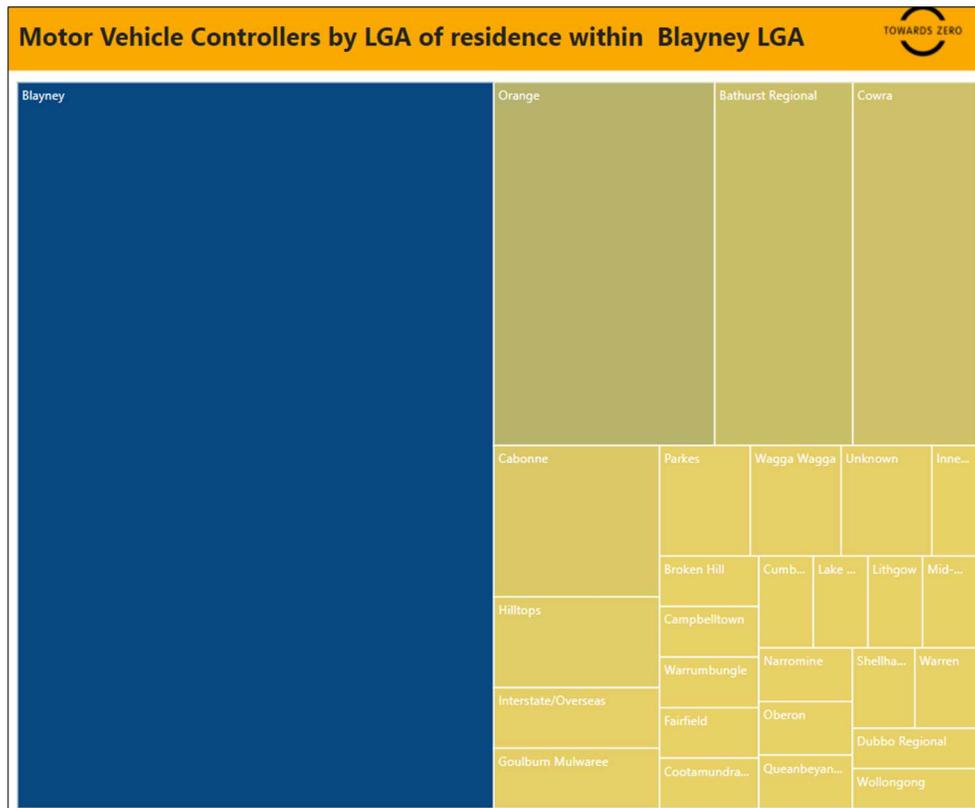
⇒ Fatigue was identified as a contributing factor in 21% of crashes compared to 14% and 8% for the region and NSW, respectively.



⇒ Run off road is the dominant type of accident (almost double the region and more than 3 times that for NSW), reflecting crashes in high-speed road environments.



⇒ Blayney has a high percentage (52%) of crashes on local roads.



⇒ Most drivers involved in crashes are from Blayney and surrounding local government areas – not ‘city drivers’.

Appendix B: Crash data by Road (2007 – 2022)

Road	Regional / Local	Crash Count ¹	Percent of Total Crashes	Progressive Percentage
Hobbys Yards Road	Regional	24	9.9	9.9
Newbridge Road	Local	20	8.2	18.1
Belubula Way	Regional	15	6.2	24.3
Neville Road	Local	12	4.9	29.2
Village Road	Local	10	4.1	33.3
Mandurama Road	Local	10	4.1	37.4
Gap Road	Local	10	4.1	41.6
Forest Reefs Road	Local	9	3.7	45.3
Errowanbang Road	Local	8	3.3	48.6
Wimbledon Road	Local	8	3.3	51.9
Guyong Road	Local	7	2.9	54.7
Moorilda Road	Local	6	2.5	57.2
Ogilvy Street	Local	6	2.5	59.7
Barry Road	Local	5	2.1	61.7
Garland Road	Local	5	2.1	63.8
Selwyn Street	Local	5	2.1	65.8
Greghamstown Road	Local	4	1.6	67.5
Burnt Yards Road	Local	4	1.6	69.1
Tallwood Road	Local	4	1.6	70.8
Three Brothers Road	Local	4	1.6	72.4
Other	Local	48	27.6	100.0
Total Crashes		243		

¹ Official Crash Count includes intersection crashes involving State and Regional / Local roads and excludes 'struck animal' crash types as these do not relate to the road characteristics.

Appendix C: Risk Assessment – Identified / know safety issues

The risk assessment process utilises the Blayney Shire Council Enterprise *Risk Management Policy and Plan*. The Policy employs the following Likelihood and Consequence matrices:

Descriptor	Description	Indicative Frequency
Almost Certain	The event is expected to occur in most circumstances	>80% of the time
Likely	The event will probably occur in most circumstances	50-80% of the time
Unlikely	The event is not expected to occur	20-50% of the time
Very Unlikely	The event could happen but only in exceptional circumstances	<20% of the time

Figure 4: Likelihood Rating Table

		Likelihood			
		Almost Certain	Likely	Unlikely	Very Unlikely
Consequence	Catastrophic	Extreme	Extreme	High	High
	Major	Extreme	High	High	Medium
	Moderate	High	High	Medium	Low
	Minor	High	Medium	Low	Low

Figure 5: Risk Rating Matrix

Appendix D: Priority Road Segments (Highest 50) – 2023

Priority No.	Road Name	Segment No.	Length (m)
1	Hobbys Yards Road	452.22	1520
2	Hobbys Yards Road	452.15	1604
3	Hobbys Yards Road	452.221	1527
4	Hobbys Yards Road	452.09	1196
5	Hobbys Yards Road	452.16	940
6	Hobbys Yards Road	452.18	1069
7	Hobbys Yards Road	452.21	339
8	Hobbys Yards Road	452.2	829
9	Hobbys Yards Road	452.19	2158
10	Belubula Way	453.09	1230
11	Hobbys Yards Road	452.17	369
12	Belubula Way	453.07	1212
13	Belubula Way	453.1	1416
14	Mandurama Road	56.06	1179
15	Belubula Way	453.061	1228
16	Barry Road	52.05	2007
17	Forest Reefs Road	130.12	1106
18	Mandurama Road	56.061	1173
19	Belubula Way	453.03	1974
20	Mandurama Road	56.07	635
21	Newbridge Road	22.09	2882
22	Belubula Way	453.063	1160
23	Mandurama Road	56.063	981
24	Newbridge Road	22.05	1111
25	Barry Road	52.03	968
26	Barry Road	52.01	896
27	Guyong Road	14.051	1440
28	Forest Reefs Road	130.01	1673
29	Long Swamp Road	115.01	1084
30	Vittoria Road	1.03	2615
31	Hobbys Yards Road	452.08	886
32	Forest Reefs Road	130.11	1707
33	Newbridge Road	22.03	1275
34	Vittoria Road	1.01	1148
35	Hobbys Yards Road	452.14	1413
36	Mandurama Road	56.02	620
37	Mandurama Road	56.01	539
38	Newbridge Road	22.12	1336
39	Gap Road	97.02	6595
40	Newbridge Road	22.06	403
41	Hobbys Yards Road	452.07	2212
42	Browns Creek Road	98.06	1429
43	Browns Creek Road	98.051	853

44	Neville Road	41.09	860
45	Vittoria Road	1.02	1148
46	Hobbys Yards Road	452.1	1659
47	Hobbys Yards Road	452.05	1297
48	Hobbys Yards Road - Sawyer Street	304.01	805
49	Barry Road	52.02	939
50	Mandurama Road	56.062	933
	Total Road Length		67,578

Appendix E: 2021 Census - Occupation – Blayney LGA

Occupation, top responses <i>Employed people aged 15 years and over</i>	Blayney	%	New South Wales	%	Australia	%
Managers	612	17.5	536,820	14.6	1,645,769	13.7
Technicians and Trades Workers	517	14.8	436,589	11.9	1,554,313	12.9
Professionals	505	14.4	952,131	25.8	2,886,921	24.0
Labourers	462	13.2	300,966	8.2	1,086,120	9.0
Community and Personal Service Workers	394	11.2	390,779	10.6	1,382,205	11.5
Clerical and Administrative Workers	385	11.0	480,612	13.0	1,525,311	12.7
Machinery Operators and Drivers	333	9.5	222,186	6.0	755,863	6.3
Sales Workers	224	6.4	294,889	8.0	986,433	8.2

*More information on [Occupation \(QCCP\)](#)
Table based on place of usual residence*

Source: ABS, 2021 Census All Persons Quickstats. <https://abs.gov.au/census/find-census-data/quickstats/2021/LGA10850>

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GLOSSARY

- AMP(s) – Asset Management Plan(s).
- ARIC – Audit Risk and Improvement Committee.
- ARRB – Australian Road Research Board.
- AADT – Average Annual Daily Traffic count.
- DP – Councils 4-year Delivery Program.
- IP&R – NSW Government Integrated Planning and Reporting Framework.
- IRR – Austrroads Infrastructure Risk Rating tool.
- LTC – Blayney Shire Council Local Traffic Committee.
- LTFP – Councils Long Term Financial Plan (10 years).
- OP – Councils 1-year Operational Plan / Annual Budget.
- PSL – Posted Speed Limit.
- SAMP – Strategic Asset Management Plan (Asset Management Strategy).
- TAMP – Transportation Asset Management Plan.
- TfNSW – Transport for New South Wales.