

PYRENEES
— S H I R E —



Pyrenees Shire Council

Gravel Roads Strategy

(Adopted by Council 21st February 2017)

Pyrenees Shire Council
5 Lawrence St, Beaufort, Victoria
(03) 5349 1100
pyrenees@pyrenees.vic.gov.au
www.pyrenees.vic.gov.au

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Purpose

The purpose of this strategy is to provide a strategic direction on how to deliver gravel road maintenance and renewal that goes towards meeting community expectations. This strategy is to cover a 4 year period from 2016/17 to 2019/2020 financial years.

Introduction

In September 2016 Council undertook wide ranging consultation with ratepayers in the Pyrenees Shire. The consultation included multiple community meetings, online surveys and direct mail.

The consultation found the following:

- There is a high level of dissatisfaction (77%) with the current level of gravel road maintenance in the Pyrenees Shire.
- Two thirds of respondents did not agree with the current approach that Council has whereby it grades higher use roads more frequently and lower use roads less frequently.
- Many respondents have stated that all roads should be graded at least once per year, some have advocated for gravel roads to become sealed roads.
- Four out of five respondents believe Council is not spending enough money on maintaining and renewing gravel roads.
- 59% of respondents believe that Council should grade roads all year round (including during drier months) in order to improve response times to customer requests.
- 74% of respondents are not willing to pay more in rates to help cover the additional costs.
- That the existing classification of some gravel roads does not reflect the use.
- There were concerns expressed regarding the limited amount of drainage and vegetation maintenance works.

Background

Council's road network consists of sealed and gravel roads as well as drainage infrastructure and roadside vegetation as can be seen on the following table.

Asset	Length/Quantity
Sealed Road - Seal	723 km
Unsealed Roads	1,292 km
Fire Tracks	61 km
Formed Only Roads	21 km
Bridges	159
Major Culverts	136
Minor Culverts	4000+
Roadside Vegetation	4100 km

Council's current financial commitments relating to gravel road infrastructure are listed below:

Asset Task	Maintenance/Capital	Current \$	Quantity	Rate
Road Grade	Maintenance	\$880,000	1,300km	\$670/km
Roadside Drainage	Maintenance	\$168,000		
Roadside Management including tree and vegetation management	Maintenance	\$395,000		
Gravel Resheet	Capital	\$600,000	26km	\$23,000/km

Road Categorisation

Council prioritises its roads based on their purpose which also reflects traffic volumes. This categorisation is referred to as Council's road hierarchy. Within the road hierarchy, gravel roads fall within the following four categories:

- Gravel Collector Roads
- Gravel Local Access 1 Roads
- Gravel Local Access 2 Roads
- Fire Access Tracks and formed only roads

The below table outlines the roads classifications and current maintenance levels:

Class	Gravel KM	Current Maintenance Level	Typical Resheet Frequency
Link	0km	All link roads within Pyrenees Shire are sealed	
Collector	365km	2 grades / year	10-15 years
Local Access 1	373km	1 grade / year	20-25 years
Local Access 2	493km	Less than annually (approx. 1 grade/3 years)	50+ years
Fire Access	61km	Rarely graded	Nil

Some of the features of each gravel road class are listed below:

Gravel Collector Roads

- Carry moderate volumes of traffic.
- Provide access by connecting local areas to link and arterial roads.
- Provide connections between the various collector roads.

Gravel Local Access 1 Roads

- Provide access to properties.
- Cater for relatively short distance travel to higher level roads.
- Typically serve 3 or more dwellings.

Gravel Local Access 2 Roads

- Provide access to private properties.
- Have less traffic than Local Access 1 gravel roads.
- Typically serve three dwellings or fewer.
- Cater for relatively short distance travel to higher level roads.

Fire Access Tracks

- Typically dry weather access only.
- Only maintained by Council where Council has agreed to do so as a community emergency service.

Current Maintenance and Renewal Practices

Grading

Pyrenees Shire Council has utilised natural moisture conditions to undertake grading operations. This means that a water truck is not required to be part of the grading maintenance team, therefore creating a more efficient grading methodology. This methodology is dependent upon regular rainfall at certain periods of the year. If the conditions are too dry, grading creates dust and undue wear on grading equipment. Very dry conditions result in the inability to grade a gravel road. Too much moisture in the pavement can result the inability to create a reasonable road formation.

Typically the grading program in Pyrenees Shire runs for approximately six months from autumn through to spring. There are often periods during this time when grading cannot be undertaken due to very wet conditions.

Resources

Council currently has four grading crews which comprise of a grader and a roller. Two crews are based in Beaufort and two crews are based in Avoca. With all crews operating, Council can grade approximately 20 kilometres of road in a day. However, roadside vegetation, drainage and topography can limit the amount of progress.

When the grading crews are not undertaking maintenance works they are utilised in gravel road renewal programs (road resheeting) and road construction, typically during dryer months.

Drainage

Current drainage maintenance practice is to undertake table drain maintenance as part of the programed grading program. This however only tackles one side of the table drains and often results in an excess of soil and gravel material being windrowed on the inside of the table drain. Full reinstatement of table drains and removal of windrows usually only occurs as part of the capital gravel resheeting program. This currently equates to an average of 26 kilometres per year. At this rate any section of gravel road requiring drainage rehabilitation would occur once every 50 years. As this strategy proposes an increase in the kilometres of resheeting will go some way to increasing the frequency of drainage rehabilitation works. However, additional funds would be beneficial to undertake additional drainage rehabilitation not associated with the resheeting program. Current maintenance level is constrained by limited budgets.

Vegetation

Roadside vegetation management is also currently linked to the gravel resheeting program. However, some of the funds are spent on a needs basis where roadside vegetation is creating issues separate to the pavement issues. The current roadside vegetation management program includes slashing and spraying of grasses and saplings. Part of the program also includes tree trimming. Roadside vegetation works are currently prioritised in accordance with the road hierarchy and where the greatest need is assessed.

The largest issue that is encountered is the response to tree saplings being responded to in a timely manner. Current funding limits our ability to respond to vegetation needs and does not enable all roads to have saplings removed prior to them growing into trees.

Financial Considerations and Strategic Response

The table below details gravel road maintenance tasks and how much council currently budgets for each task. It also provides information about the current capability and cost based on the yearly budget. In order to respond to community expectation and the Moloney Asset Management System, this strategy proposes an aspirational increase of expenditure on gravel road resheeting utilising high quality material.

Task	Current Length/year	Average Cost/km	Current Budget (annual)	Proposed	Additional Funding Required (annually)
Grading	1300km	\$670	\$888,000	1596km	\$198,320
Resheeting	26km	\$23,000	\$600,000	29km @ \$27,250/km	\$190,250
Rural Drainage			\$168,000	Double	\$168,000
Roadside Slashing & Tree Maintenance			\$395,000	50%	\$200,000

Grading

If current **grading maintenance** levels were retained on collector and local access 1 roads and a service level increase to an annual grade was provided to local access 2 roads, there would need to be an additional 296km of grading per year. This equates to a shortfall in the current budget of approximately \$200,000 per year. It is suggested that Council look to extend its expenditure on road graders by this amount to enable additional grading to occur.

It is also proposed that ongoing training be provided to operators to ensure grading techniques used have regard to industry standards, recognising the range of constraints and demands on the network.

Resheeting

Moloney's Asset Management December 2015 report had a predicted renewal demand for gravel roads over the next four years of \$675,000 (average demand over 4 years). This creates a current shortfall in renewal of \$75,000 for the 2016/17 year based on current levels of service. However, this needs to be compared with the Long Term Financial Plan capital allowance and needs to factor projected inflation over the period.

The community have also clearly requested that a **better quality material** should be used more widely across the shire. A better quality material has the benefit of providing a longer lasting quality road surface allowing for improved vehicle ride, better binding qualities, longevity and a reduction in maintenance demand.

Council has been trialling the use of specifically created gravel mixes to respond to previously used poor materials to construct gravel pavements. The quarries where a better quality material is being sourced include Skipton quarry, Carisbrook quarry and Lamplough quarry. These trials have resulted in a better quality material that has properties to create resilient infrastructure. This has been most notable in storm and flood affected areas where the higher quality material has been retained and the poorer quality material has washed away. However, the cost to cart this material is increased

compared to locally sourced poorer quality natural gravels. **In order to deliver a higher quality material to a broader area, the average cost per kilometre of gravel resheet will increase by approximately \$4,250/km to \$27,250/km.**

Moloney's 2015 asset report requires an **increase of 3km to a total 29km of gravel resheeting per year** to meet the renewal demand based on the average life of unsealed road pavements. Unsealed road pavements have an expected life of 42.9 years on average in Pyrenees Shire.

The above factors relating to gravel road resheeting are detailed in the table below:

Year	LTFP Resheet Budget	Average Renewal Demand Indexed for inflation (2.5%) at Current Level of Service	Projected Budget Required to meet community expectations Indexed for Inflation (2.5%)	Shortfall required to meet community expectations compared to LTFP
2016/17	\$600,000	\$675,000	\$790,250	\$190,250
2017/18	\$680,000	\$691,875	\$810,006	\$130,006
2018/19	\$800,000	\$709,172	\$830,256	\$30,256
2019/20	\$797,000	\$726,901	\$851,013	\$54,013
Average annual shortfall in funding for resheeting				\$101,131

All of these factors combined require an increase in resheeting funding of \$190,250 in the first year. This is reduced to an average funding shortfall of \$101,131/year for the 4 year period when compared to LTFP budget allowances.

Sealing Gravel Roads

A number of respondents suggested that Council should consider sealing of some gravel roads in order to assist with gravel road maintenance. Council has been undertaking a methodology of utilising a sealing treatment method known as GATT seals to improve the amenity by sealing high traffic gravel roads in urban areas to reduce dust and reduce pavement maintenance. Although the use of GATT seals has been limited this would be an appropriate program to expand.

Restricting Access to Some Roads

Council has power to restrict access to roads for example to vehicles over 20 tonne. This practice is used by Council on some roads to protect pavements and to reduce maintenance on roads where alternative access is available for heavy vehicles, and to prevent lower classification roads as being used for 'short cuts'. While enforceability of these restrictions is generally outside Council's resources and powers, the practice is considered a useful tool and some expansion of the use of load restriction on gravel roads has merit.

Funding Options

There is a limited range of funding options available to Council to meet the identified needs for improved gravel road maintenance. These include:

Funding option	Community Impact	Extent to which option is sustainable	Ability for Council to implement / achieve
Redistribution of Council expenditure from other service areas	High negative impact	Low	Somewhat difficult
Application for a higher rate cap	Medium negative impact	Low	Achievable
Borrowings	High negative impact	Low	Achievable
Higher level of State and Federal funding (untied)	High positive impact	High	Very difficult
Special charge schemes to levy beneficiaries of specific projects	Medium negative impact	Medium	Somewhat difficult

In the absence of additional State and Federal funding the most achievable funding option for Council, which has the least impact on the community, is a higher rate cap within the community's capacity to pay.

Having regard for the above, it is suggested that Council apply for a higher rate cap rate rise to address the renewal demand shortfall in gravel road re-sheets.

Recommendations

The following recommendations are put forward for Council consideration:

1. a) That Council pursue an application for a higher rate cap for four years to fund the shortfall in gravel road renewal (resheeting).
b) That Council allocate an additional \$101,131 per year for gravel road resheeting for the next four years to allow for an additional 3km's per year of resheeting utilising resilient pavement material.
2. That Council commit to using quality gravel road pavement materials that have properties that will reduce the maintenance demand and create resilience to natural disasters.
3. That Council continue to budget for the use of GATT seals as a response to amenity and maintenance issues related to gravel roads in urban areas.
4. That Council seeks funding for an additional \$198,320 to undertake an additional 296km of road grading per year to grade collector roads twice yearly and all local access roads yearly.
5. That Council seeks \$168,000 of funding to double the current maintenance output for roadside drainage annually.
6. That Council seeks \$200,000 of funding to increase by 50% of the current maintenance output for vegetation control to address roadside vegetation issues.
7. That Council commit to reviewing the gravel road hierarchy as part of Council's road management plan review to reflect how community use the road network and to reflect the changing status of road importance.
8. That Council continue to use its power to restrict access to heavy vehicles on certain roads where alternative access is available so as to protect roads from damage and;
9. That Council continue to provide training to grader operators to ensure grading techniques continue to have regard to industry practices, recognising the range of constraints and demands on the networks.