

There are
2,288km of road
in the Wagga
Wagga Local
Government
Area



ROAD WORKS: Road rehabilitation

Rehabilitation works is the most comprehensive type of road project that Council undertakes.

It involves ripping up the bitumen seal, removing the top layer (pavement) of the road base and then stabilising the subgrade below that. The pavement is then filled with new material and sealed with bitumen and stone.

Depending on how long the stretch of road, its location, daily traffic volumes local access requirements such as shops, and weather conditions this type of work can take weeks or even months to complete, with access restricted to local residents only.

How it plays out

- ▶ Analysis of the condition of the road, its priority in the overall network and the primary cause of the road failure
- ▶ Investigation of underground services, which can result in the need to lower watermains, electricity, stormwater pipes, sewer pipes and communication conduits or wires before road work begins
- ▶ Profiling: removal of the seal and road base to 300mm deep
- ▶ Stabilisation/protection of underground services that can't be lowered such as gas mains and Telstra lines
- ▶ Stabilisation of the subgrade to a depth of 300mm by mixing in a lime based product, this makes the foundation stronger and more water resistant
- ▶ Replacement of the pavement to a depth of 300mm with new material
- ▶ Pavement tested to ensure it meets compaction and moisture guidelines
- ▶ Two-coat spray seal (a 14mm stone and a 7mm stone) to complete

What makes up a road?

Beneath the bitumen the road base is made up of two layers:

- ▶ The top layer is known as the **pavement** and is around 300mm thick. It is made up of crushed rock that complies with RMS standards for strength, size and durability. It ranges in size from 40mm stones all the way down to 1mm and smaller sized stones. The stones all interlock together and provide a strong supporting layer for the traffic and provided we can keep the moisture out of the layer should maintain its structural integrity for 30 years.
- ▶ The foundation layer, known as the **subgrade**, makes up the next 300mm. Most road subgrades in the Wagga Wagga Local Government Area are made of clay.



Multitasking

The closure of a road for this kind of project also provides the opportunity for staff to complete other works such as kerb and gutter replacement, footpath repair, stormwater maintenance and sewer maintenance. Where possible these works are combined to maximise efficiency and minimise the inconvenience to road users and residents.

wagga.nsw.gov.au/roads 1300 292 442

Why does it take so long?

While it takes little time to dig the up old road, the stabilisation of the subgrade can take time to complete. The mixing process involves a specialist machine that can mix to a depth of 450mm and complete 4000m² in a single pass in one day. The subgrade then needs to be compacted to design specifications, shaped to match road crossfalls and tested to ensure compaction and moisture specifications have been met.

For a section of road 500m long more than 1,500 cubic metres of road pavement is replaced, that's a lot of truck movements! Each truck carries 10m³ or 20m³ if it has a trailer.

Care also needs to be taken when stabilising around services such as gas mains and Telstra lines to protect them. Unfortunately, due to the nature of the old plans it's not uncommon to stumble across an underground service that is either in the wrong place or no-one actually knows is in existence. Staff also spend a couple of hours each day reinstating driveways to ensure residents can safely access their properties without supervision each night.

How long will the new road last?

Providing the road is resealed every decade or so, the road should not need the same level of attention for 30 to 50 years.

Why don't you finish the road with asphalt/hotmix?

While asphalt is a quality product and relatively quicker to replace it is very expensive. For this reason it is only used in areas that receive very high volumes of traffic. When a road is rehabilitated



Project snapshot: Plumpton Road, February-March 2016

- ▶ 300mm of pavement replaced with new material
- ▶ 300mm of subgrade stabilised with lime
- ▶ 13 water mains relocated
- ▶ Gas mains stabilised
- ▶ 20m of new kerb and gutter installed
- ▶ About 10 driveways reinstated each day
- ▶ 2 coat seal to finish
- ▶ 4.5 weeks to complete
- ▶ New road life of 30 years

as described in this fact sheet, a two coat seal provides the same level of longevity. While a two coat seal can result in loose stones to start, it only takes a few days to settle into a smooth surface.

Why can't you do the work at night?

Where possible rehabilitation works is completed at night to minimise disruption to shops businesses and motorists. However it is considerably more expensive to complete night works, is disruptive for residents in high density areas and allowing traffic movements through the day can increase the amount of time it will take to complete a project. All of these factors are taken into account when deciding whether to complete day or night works.



Receive updates direct to your mobile phone!

The City of Wagga Wagga offers an SMS service to keep impacted residents and road users up to date on the progress of some road projects. Go to the website to sign up for updates on current projects wagga.nsw.gov.au/roads