

Action Plan for Implementation of Recommendations from “Review of Bitumen Sealing Practices and Pothole Filling Works”

Item	Recommendation	Action needed	Target date	Status
1	Budget and Asset Management Process			
1.1	<p>In the case of Byron Shire Council, a sustainable road infrastructure management plan can be best achieved by developing a 10 year plan and budget based on the following principles:</p> <ol style="list-style-type: none"> 1. Identify, categorise roads by not only condition rating but also by failure mechanism and proposed treatment 2. Reseal roads that are approaching a need for reconstruction i.e. less than 10% pavement failures (by area) as a first priority 3. Rehabilitate roads with heavy patching and reseals where pavement failures by area total between 10% and 30% as a second priority 4. Reconstruct roads where pavement failures are greater than 30% as a last priority unless there are overriding safety or political imperatives 	<p>To be undertaken at the time of project scoping and preparation of programs of work for the 2018/18 budget process. A collaborative effort with Works and Asset Teams</p>	January 2018	<p>Complete Council can currently develop a sound and accurate 10 year capital works program for the road network. This is created via the MyPredictor software which uses the latest condition datasets for various road condition elements (roughness, rutting and surface texture) which are captured using laser profiling techniques. It optimises spending for all the different treatment types (reseals, urban and rural reconstruction, heavy patching, AC overlay) and calculates remaining life via the unique degradation profiles. The model output is checked by staff by onsite inspections to finalise the various programs of work. Maintenance costs and capital expenditure budgets can all be calculated within these models. This 10 year output provides optimised spending for each year and is used by our Works Depot. Additionally, spatial analysis of the 10m laser condition data can be used at a project level analysis.</p>
1.2	Undertake treatments that are appropriate to the failure i.e. don't apply a 'one size fits all' or a 'this is how we've always done it' approach	<p>To be undertaken at the time of project scoping and preparation of programs of work for the 2018/18 budget process. A collaborative effort with Works and Asset Teams</p>	January 2018	<p>Complete Mypredictor software uses multiple treatment options dependant on the measured mode of failure of the road. The treatments are further checked onsite and confirmed through the detailed testing, investigation and design process before implementation. These treatments including costs and timeframes are collated a 10 year Capital Works Plan for the Works Depot.</p>
1.3	Utilise an asset management system with sound deterioration modelling capabilities and treatment options to optimise outcomes	To be considered by Assets Team	Ongoing	<p>Complete MyPredictor is used by council to facilitate the need for deterioration modelling and optimised spending for treatment types. The model is calibrated annually to account for the Work Effects from the previous year and to adjust parameters such as current unit rates.</p>
1.4	Develop an overarching road maintenance strategy that ensures that capital expenditure is optimised and maintenance activities support an overall improvement in road condition	<p>To be undertaken as part of the development of the Transport Asset Management Plan A collaborative effort with Works and Asset Teams</p>	December 2017	<p>Complete Strategic Asset Management Plan (SAMP) has been adopted by Council in January 2017. The Transport Asset Management Plan (TAMP) is currently in draft form and should be adopted in early 2018. Planned and budgeted maintenance for road and stormwater assets needs to be documented and approved.</p>

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2	Specification and Design			
2.1	Bituminous Surfacing			
2.1.1	Include hold and witness points to compliment NRLG Construction Specification C244 and NRLG CQC1 Quality Control Requirements OR utilise RMS specifications used into the future	Utilise RMS specifications in contracts	Completed August 2017	Completed The recently executed NOROC Road Surfacing contracts were set up via a collaborative tender between Byron, Kyogle, Richmond Valley & Lismore Councils, under the Local Government Procurement Contract LGP 213 – Bitumen, Emulsions, Asphalt Materials and Services. This helped ensure competitive rates for a list of comprehensive services pertaining to road surfacing and maintenance activities. The Contracts were to RMS Specifications which means all work on site by the contractors is executed to the specifications. This means Council will no longer use the NRLG (Aus Spec) construction specifications for sprayed sealing and asphalt.
2.1.2	Implement RMS form 395 A and K or a similarly created form for the contractor to clearly submit the basis of his seal design to the client (implement hold point)	To be specified in tender documentation for NOROC bitumen sealing contracts	Completed September 2017	Completed This is clearly specified in the NOROC bitumen sealing contracts which have now been executed. These contracts are to the RMS specifications for sprayed sealing, which reference the RMS design forms 395 A & K.
2.1.3	Clearly specify RMS T271 Ball embedment test for initial seals (implement hold/witness point) to ensure the pavement is properly prepared for seal and that the nominated aggregate size is appropriate for the works	Utilise RMS specification for pavements – Council and Contract works	January 2018	Completed Commencing January 2018 this will be a requirement for all initial seals on construction projects. The RMS T271 Ball Embedment test is stipulated in the Byron Shire Council Inspection and Test Plan for spray sealing that has been developed.
2.2	Asphalt Surfacing			
2.2.1	Consider requesting an establishment rate to various identified sectors within the Byron LGA and a separate price per tonne supplied and laid	To be specified in tender documentation for NOROC asphalt contracts	Completed August 2017	Completed The NOROC contracts have a different establishment rate for mobilising certain plant to each of the Councils included the tender. There are also different rates for cartage of materials depending on distance from the supply source, such that if the project is closer to the supply source, the cost comes down. Using rates for volumes supplied and laid is a move away from hourly rates, which has sometimes been the case in the past with this type of work. This puts more of an onus on the contractor to perform and maintain good production rates, to the benefit of Council.
2.2.3	Request a rate on a small 400-500mm profiler or bobcat mounted (with broom) in addition to the 1.0m wide profiler for larger scale works	To be specified in tender documentation for NOROC asphalt contracts	Completed August 2017	Completed The NOROC contracts includes rates for bobcat mounted profilers and standard 1m and 2m profilers.
2.2.2	If accepting an hourly rate as the payment basis, specify a minimum output per 4 hours or 8 hours	To be specified in tender documentation for NOROC asphalt contracts	Completed August 2017	Completed Hourly rates are specified in the NOROC contracts if required, however Council rarely engages contractors for these services on an hourly rate.

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2.2.4	Request a pothole and minor pavement repair methodology as part of the tender submission requirements along with an inspection and test plan and dedicated safe work method statement specifically for the works	To be specified as a hold point tender documentation for NOROC asphalt contracts	Completed August 2017	Completed The NOROC contracts specify that an approach methodology, including inspection and test plans and safe work method statements must be provided to Council for approval prior to commencement of work.
2.2.5	As part of the submission request the tenderer to nominate personnel for the works	To be specified in tender documentation for NOROC asphalt contracts	Completed August 2017	Completed Personnel are nominated in the contract documents.
2.2.6	For larger work request the tenderer nominate an accomplishment, testing and auditing schedule and reporting regime	To be specified in tender documentation for NOROC asphalt contracts	Completed August 2017	Completed The NOROC contracts have these provisions and Council can specify such requirements prior to commencement of any job.
2.3	Design			
2.3.1	Where practicable, consider a prime and seal in lieu of primerseal as initial seal treatment as a cost saving method and superior treatment	To be considered on a project by project basis by capital works engineers.	Ongoing	Completed It is best practise to prime or primer seal a new road before applying the final bitumen surface. A Prime can only be undertaken if the road can be entirely closed to traffic while the prime cures. If this cannot be achieved then a primer seal is specified which can take traffic straight away, however, the final seal cannot be placed over the primer seal for 3 to 6 months depending on weather, and during this time defects are likely to appear on the primer seal.
3	Communication			
3.1	Create construction / maintenance activity method statements – implementing consultative processes and involving relevant staff in their creation	Quotations have been requested from the consultant to develop these checklists.	In progress	In Progress Activity method statements are being developed in line with the ITP and based on the Aus Spec Specifications and will be workshoped with relevant staff in March.
3.2	Create inspection and test plan to communicate the contract specification requirements and work steps required (end to end) to contract management staff providing easy access to alert staff to testing frequencies and required results	Quotations have been requested from the consultant to develop these checklists.	In progress	Completed ITP/Checklist currently is complete (TRIM Ref. E2018/4079 & 4078). Road and Bridge Engineer and Morrison Low to communicate to relevant staff in future planned workshop.
3.3	Provide the Council reseal program to the works section with a minimum of six months notice. This will allow maintenance works to be planned and effectively undertaken, with sufficient notice given to the sealing contractor to arrange reseals at an appropriate time during the warmer months	To be done in conjunction with development of 2018/19 Budget process and start from 1 July 2019.	January 2019	In Progress Program is set and is currently being verified against My Predictor Modelling by Road and Bridge Engineer with Assets Engineer. Verification complete in January 2018 at which time it is provided to operation staff and contractors.

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3.4	Inform the community by way of newsletter and website of any new maintenance strategies or work practices that may impact them and inform them of what they can expect	Develop ‘Fixing Byron’s Roads’ brochure. Update website information.	November 2017	In Progress <ul style="list-style-type: none"> • ‘Fixing Byron’s Roads’ brochure is nearing completion. • Website information updated regularly. • TRIM document DM816938 <i>Procedure: Notification of Council Works</i>, is under review and will be updated with new protocols for resurfacing works, particularly for Regional Roads. Updated policy to be reported to ET in February 2018.
4	Technical Knowledge and Industry Work Practices			
4.1	Implement mentoring scheme for field and engineering personnel with neighbouring council or external resource	Discuss with other NOROC Councils	Ongoing	Complete This was achieved through development of NOROC Road Surfacing Contracts which was a collaborative effort.
5	Work Practices			
5.1	Consider undertaking edge repair by the asphalt patching team, whilst utilising the jet patcher for seal repair in areas such as Ocean Shores	Trail done on patching streets in Ocean Shores in July 2017, which needs to be evaluated with performance of the trail over time. Trail still to be undertaken for AC crew for edge break in rural areas	March 2018	In Progress <p>In March 2018 Council will trial using the Jetmaster truck to do reseals and seal repairs in Ocean shores. Quality and performance will be monitored in the months following the trial.</p> <p>A possible problem with using the jetmaster to do reseals and seal repairs is that it will be diverted from pothole patching, however the performance of resealing using this method should be trialed and measured for potential benefits.</p> <p>The Jetmaster is currently used for both pothole patching and edge breaks, and the technique has been refined over time by the operators.</p> <p>The Contract Flow-con focuses on pothole patching in high stress areas such as around Byron Bay, other towns and urban areas and our Regional Roads, the technique has also been refined over time by the operator yielding great results.</p> <p>Heavy patching will be done on selected edge breaks from time to time as required.</p>
5.2	Implement asphalt repair work (profile and reinstate) in drier months for more sustainable results	To be undertaken when budget allows in 2017/18. Note a heavy patching budget has been included as part of the draft 2018/19	July 2018	In Progress Heavy patching works (profile and reinstate) are already targeted for drier months, however the need to do some of the work in the wet season is unavoidable. For example heavy patching for the reseal program needs to be started 6 months prior to resealing, meaning it needs to start in July.

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		Budget		
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5.3	Undertake a cost benefit analysis of the capital purchase of a second jet patching unit which incorporates a bitumen spray bar and spreader to assist in holding lower condition rated roads during the ten year road improvement program	Existing jetmaster unit has a bitumen spray bar. Business case to be undertaken.	June 2018	Complete Council's Jetmaster truck already has a spray bar. Purchase of a second jet patcher would not be economical as council already spends too much on patching. Money should be spent on reseals and heavy patching as confirmed by My Predictor Modelling. Cost benefit could be undertaken on purchase of a Flow Con (heated truck), as Council is hiring one these truck (and a crew) for the majority of the year. An alternative option is to undertake more works though an increased heavy patching program, which repairs the defects causing the pothole.
5.4	Consider undertaking heavy patching as in-situ stabilisation of granular pavements and spray sealing issued in cost effective work packages	This method is already undertaken on the reseal program. Start trialling sections with this treatment in next years maintenance program	July 2018	Complete This has been undertaken as part of the 15/16 & 17/18 reseal programs As part of the road maintenance program, packages of heavy patching are also issued to contractors. This will continue to be the case in coming years and maintenance programs for coming years are currently in development. The 18/19 Reseal program has already been developed and the 18/19 heavy patching is already in advanced development.
5.5	Implement contract crack sealing program with contemporary materials	To be specified in tender documentation for NOROC asphalt contracts	Completed August 2017	Complete A crack sealing program for 18/19 is currently under development using My Predictor and REFLECT.
5.6	Workshop and review service and intervention levels with stakeholders and relevant staff for maintenance response to ensure they are appropriate and contemporary	Joint process with Assets Team and Works. To be considered after the development of the Transport Asset Management Plan.	June 2018.	Not Yet Started Awaiting finalisation of the Transport Asset Management Plan.
6	Contract Management and Administration			
6.1	Council contract management and supervision staff familiarise themselves with contract specifications and contract documents (training and mentoring may be a requirement).	Quotations have been requested to develop a training package and undertake this training.	In Progress	In Progress Road and Bridge Engineer will be holding a workshop with Morrison Low in March to explain the NOROC contracts, RMS specifications, BSC Inspection & Test Plans, work method statements etc. A further workshop later in the year will be held if required.

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6.2	Council contract management and supervision staff take a greater stance in quality control or insist on the contractor providing appropriate quality assurance documentation to ensure contract specification compliance and mitigation of Council's risk	Implementation of the specification by being on site for hold and witness points and checking the quality documentation.	In progress	In Progress Council staff are taking a stance in quality control as part of this financial years reseal program by implementing hold points and witness points as per the specifications. Ongoing training and workshops will help relevant staff take further control.
6.3	Create and implement internal / specification checklist of submitted documents requirements to assist Council contract supervision staff in verification and administration of specifications	Quotations have been requested from the consultant to develop these checklists.	In progress	Complete An Inspection and Test Plan, has been developed. This is for Byron Shire Council Staff who undertake sprayed sealing works and serves as a checklist highlighting the relevant hold and witness points in the specifications. There is a separate ITP for sealing with cutback bitumen and sealing polymer modified bitumen.