

Council's approach to tackling potholes

Executive summary

The new term maintenance was awarded to Milestone on 1st April 2023 and has been operating for 17 weeks.

The contract started at a particularly challenging time. Road conditions across the UK suffered badly with the particularly dry and hot summer of 2022 followed by a wet autumn, interspersed with two prolonged periods of cold weather with freezing conditions, causing serious damage to parts of the road network. The usual number of pothole reports in the winter and spring months of around 700 to 900 per month, increased to around 4,000 per month.

To address this, an early decision was taken to substantially increase the resources dealing with potholes by redeploying teams from other works. Consequently, some of the other workstreams took longer than originally planned to become fully operational. A decision was also taken to use only cold lay material (Viafix) as this was considered the quickest way of responding whilst limiting impact on the travelling public.

Pothole numbers have now returned to seasonal norms and the resource levels have been adjusted accordingly.

Since the commencement of the contract, council officers and senior Milestone staff have met on a regular basis to monitor and review progress of the services being provided, including pothole repairs.

Further work on identifying the most effective pothole treatments is ongoing and being undertaken jointly between the Council and Milestone.

The identified improvements to MyWilts are essential to maintain engagement with residents and encourage willingness to report defects.

Proposal

That the committee:

- a) Note the contents of the report and the progress and methodologies being pursued to address pothole repairs.
- b) Request a further update to this Committee at a time to be agreed.

Reason for proposal

The operation of the Milestone contract, of which pothole repairs sit within, has been monitored during its first weeks of operation. Although there have been some issues the contract has the potential to deliver the benefits envisaged, and work to identify the most advantageous pothole treatments is ongoing.

Author: Samantha Howell

Contact details: samantha.howell@wiltshire.gov.uk

Council's approach to tackling potholes

Purpose of report

1. To provide an update on the Council's approach to tackling potholes.

Background

2. Pothole defects are reported via two main channels: Scheduled inspections undertaken by Highways staff and public reports via the "MyWilts" online reporting tool.
3. With regards to the MyWilts system, while it is the council's preferred method for members of the public to report defects, there have been a number of issues with functionality, particularly around the quality of feedback provided to customers on the progression of reports.
4. Work is currently ongoing to address the dissatisfaction there is with the MyWilts platform. With improved integration between MyWilts and the highways asset management software there should be significant improvements for the customer.
5. Reported potholes are subject to officer inspection and categorisation in accordance with the Highways Safety Inspection Manual. Depending on the type of pothole, the officer will allocate a priority from 1 to 5. Not all reported potholes meet the defect criteria, and so not all reported potholes are repaired. Some reported potholes will be repaired at a later date, but not immediately as they are of lower priority. The aim is to fix Priority 1 potholes by the end of the next day, while Priority 2 will be fixed within 14 days, Priority 3 in 28 days, Priority 4 in 60 days, and Priority 5 are referred to a manager for further consideration.
6. With the high public interest in potholes the Council held a webinar on Monday 19th June to explain how potholes are dealt with. This event received positive feedback and the recording has subsequently received 532 views on Youtube. The webinar slides included infographics on how to report a pothole and the action taken and how potholes are filled. A number of slides from the webinar are included at **Appendix A**.

Main considerations for the committee

7. Road conditions across the UK suffered badly with the particularly dry and hot summer of 2022 followed by a wet autumn, interspersed with two prolonged periods of cold weather. The usual winter months pothole reports level would be around 700 to 900 per month. December 2022 saw 924 pothole reports received, while the figure in January 2023 was 4260.
8. The increase in numbers of reports between December and January was a substantive one. To address this an early decision was taken to significantly increase the resources dealing with potholes by redeploying teams from other works. A decision was also taken to use only cold lay material (Viafix). The

rationale behind this being that the scale of the increase meant that this was considered the quickest way of responding whilst limiting impact on the travelling public.

9. Pothole numbers have now returned to seasonal norms and the resource levels have been adjusted accordingly.
10. The preferred pothole repair method is a 'cut and hot fill' and the move to this methodology is underway now that overall pothole numbers have reduced. An infographic showing this method is included at **Appendix B**
11. From early May two spray injection machines have been deployed. These undertake repairs by utilising a bitumen emulsion combined with stone chips. It has a capacity to both fill potholes but also seal and dress areas showing crazing/cracking, so both dealing with the immediate defect but also arresting further deterioration. The nature of this repair method does mean that its use is confined to rural roads.
12. Value for money across the contract is being monitored through Key Performance Indicators (KPI's). Contract wide and service specific KPI's based upon the Milestone quality submission are being developed in year 1 and will be used as a baseline for future performance. In addition, monthly satisfaction scoring of the service areas is already being undertaken.
13. Milestone have already developed a PowerBI dashboard for defects, including potholes, that is shared with officers on a weekly basis. This is helping to monitor performance as well as identifying the priority areas for intervention.

Innovation

14. When considering what option(s) to pursue in repairing potholes, experience has demonstrated that no single repair methodology provides a complete solution and that rather a suite of approaches offers the best outcomes.
15. A number of commercially branded pot hole filling operational methodologies are currently being marketed across the UK. Officers have recently attended a site demonstration in Oxford where one road has been subject to a variety of different treatment types to allow comparisons of the type of repair, equipment, material, and labour used, and the time taken. This visit was facilitated by Milestone through their Oxfordshire contract and a commitment has been given to share the findings with the Council.
13. Milestone have developed their own pothole repairing machine known as the Dragon Patcher. This machine releases compressed air which cleans the area before emitting flames to prepare the road surface and elevate the road temperature above 5 degrees, enabling the material to bond effectively with the existing road surface. The Dragon Patcher then seals the pothole with a stone mix and hot bitumen. These machines are currently used across a number of local authority contracts within the Milestone portfolio. Consideration is being given to using this machine in Wiltshire.

14. JCB Pothole Pro – this was initially investigated in 2021 and 2022 by the previous term Contractor, Ringway, on their Worcestershire and Milton Keynes contracts. Initial conclusions were that the size of the machine lent itself more to the larger patching of areas rather than dealing with individual potholes. Further and again due to machine size it was considered likely that road closures would be required to allow operation to take place. A further trial involving Milestone in the County has been arranged and is due shortly.

Environmental impact of the proposal

15. The effects of climate change are likely to have significant effects on the highways network with increased incidents of flooding and temperature extremes causing more frequent damage to the roads, footways, and drainage systems. Having a suitable highways contractor in place and the ability to move resource from other duties to deal with other priorities, such as potholes, enables robust responses to be made to immediate problems.
16. Under the new contract Milestone are required to reduce their carbon footprint in line with Wiltshire's commitment to become carbon neutral by 2030. The potential award of a five year contract extension allows the contractor the ability to develop a longer term environmental plan showing how they will reduce their carbon usage past 2030. This will allow them opportunities to integrate future carbon reducing technologies in transport and manufacturing currently not available.

Equality and diversity impact of the proposal

17. The contract activities of maintaining and improving the highway network, including the filling of potholes, provide benefits to all people to enable them to be able to use the highway safely, whatever category they may fall into.

Risk assessment

18. Regular risk management meetings are taking place between the Council and Milestone teams and reported to the monthly Contract Management Meetings.
19. The risk register developed for the mobilisation of the contract has evolved to become a risk register for the operational aspects of the contract including pothole performance. The Council will continue to monitor the operation of the contract to manage the significant risks associated with construction and highway works.

Financial implications

20. The anticipated expenditure through the wider term contract is likely to vary from year to year depending on budgets and priorities. The annual expenditure through the contract is expected to be in the region of £15 million with spend on pothole repairs anticipated to be around £1.6 million.
21. The contract is primarily based on the resource levels to be provided by the contractor. In many cases an increase in resources may be desirable but would require higher levels of funding, and the contract needs to remain affordable and sustainable for the Council.

Legal implications

22. The Council has a duty to maintain the highways network and related infrastructure. The highways contract will deliver important aspects of the highways service and will help ensure that the Council meets its obligations under the Highways Act and other legislation. The contract will help ensure that the services are provided to the standard necessary for the Council to fulfil its statutory duties.

Options considered

23. The operation of the Milestone contract, of which pothole repairs sit within, has been monitored during its first weeks of operation. Although there have been some issues the contract has the potential to deliver the benefits envisaged, and work to identify the most advantageous pothole treatments is ongoing.

Conclusion

24. The new term maintenance was awarded to Milestone on 1st April 2023 and has been operating for 17 weeks.
 25. The weather prior to the start of the contract had a serious impact on the condition of the road network, which resulted in a massive increase in the number of potholes which Milestone have had to deal with.
 26. The need to divert resources to treat the increase in potholes had an adverse effect on other service areas.
 27. Since the commencement of the contract, council officers and senior Milestone staff have met on a regular basis to monitor and review progress of the services being provided, including pothole repairs.
 28. Pothole numbers have now returned to seasonal norms and the resource levels have been adjusted accordingly.
 29. Further work on identifying the most effective pothole treatments is ongoing and being undertaken jointly between the Council and Milestone
 30. The identified improvements to MyWilts are essential to maintain engagement with residents and encourage willingness to report defects.
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Background papers

The following unpublished documents have been relied on in the preparation of this report:

None

Appendices

Appendix A – Pothole Webinar slides
Appendix B – Cut and Fill infographic

Pothole Webinar slides

Spotted a pothole?

- 1.** When you see a pothole, make a note of its location.
- 2.** Report the pothole on the MyWilts app, or at www.wiltshire.gov.uk/MyWilts
- 3.** A highways engineer will then assess the pothole and will grade it based on our Highways Safety Inspection Manual.
- 4.** So long as it meets our defect criteria, it will then be filled as soon as possible – either temporarily if it's an immediate risk to road safety, or with more permanent fill.
- 5.** We maintain more than 2,700 miles of highways, and although we regularly inspect them, your reports help us to identify hotspots and fix potholes.

Wiltshire Council

Fixing potholes– Chris Clark

Inspection following pothole report – categorised in line with our Highways Inspection Manual



Wiltshire Highways Safety Inspection Manual

Carriageway (CW)
(including cycleways forming part of the carriageway)

Potholes (POTH)

Road type	Defect description	Priority
2, 3, 4	In carriageway more than 100mm deep and horizontal dimension greater than 300mm x 300mm.	P1
6, 6, 7, 8 and 9	In carriageway more than 100mm deep and horizontal dimension greater than 300mm x 300mm.	P1
2, 3, 4, 6, 7, 8 and 9	In carriageway at a designated pedestrian crossing point (i.e. Pedestrian, Zebra, Puffin or uncontrolled crossing where clearly identified as such) exceeding 20mm and extending in one direction more than 100mm.	P1
2, 3, 4	In carriageway between drains – 70mm deep and horizontal dimension greater than 300mm x 300mm.	P2
6, 6, 7, 8 and 9	In carriageway between drains – 100mm deep and maximum dimension greater than horizontal dimension greater than 300mm x 300mm.	P3
10 and 11	Other defects identified taking into account local condition and usage.	P5

Potholes (POTH)

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Interim repairs

- Undertaken to keep road safe
- Can provide a durable repair
- Enables more extensive repairs to be programmed efficiently



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How do we fill potholes?



1.

Our teams cut a square hole around the pothole, around 40mm deep, and remove any loose material.



2.

Then we brush out any debris and water.



3.

Next we add a bonding coat to the hole – this will enable the filling material to hold fast.



4.

We then fill the hole with an approved material and level it to the existing surface to allow for compaction.



5.

It is then flattened using a plate compactor or hand rammer.



6.

Finally, we tidy up before moving on to the next report.

Note: this is the more permanent repair method; we also temporarily reinstate some potholes using 'cold' materials. The temporary filling method is necessary to take fast action to keep the highways safe before a more permanent repair (which is more labour intensive and uses more equipment) can be scheduled.

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Permanent repairs

- Failed area cut out using a mini planer
- Reinstated using 'hot' material hand laid



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Cut and Hot Fill Infographic

 <p>The edge cut depth must be 40mm minimum.</p> <p>The hole is cut out first.</p>	 <p>The hole must be cut with square corners.</p> <p>The sides of the hole must be cut to solid material.</p>	 <p>Make certain to chip the corners of the hole out.</p>	 <p>Remember to check the Polished Stone Value (PSV) being used is equal to or greater than 50.</p>	 <p>Place layers no thicker than 40mm each.</p>	 <p>The specification requires <u>six</u> passes over the whole area of the repair.</p>												
<p>Has the hole edge been cut to at least 40mm?</p>	<p>Is the hole cut to sound material and a regular shape?</p>	<p>Are all cut edges square (not feathered) and chipped out?</p>	<p>Is the filling material of the correct PSV?</p>	<p>Are layers placed in depths no greater than 40mm?</p>	<p>Has each layer been sufficiently compacted?</p>												
 <p>potholes. Has all loose material been removed from the hole before filling?</p>	 <p>Hole must be free of water and waste material before applying the bond coat and filling with material.</p>	 <p>Preference is to apply Leotak (K3-4) to the base and edges with a</p>	 <p>Have the correct compaction devices been used (hand tamp, compactor plate, small vibratory roller)?</p>	 <p>Minimise spills and clean up the area before leaving.</p>	 <p>Report any damage that's caused.</p>												
<p>Has water been removed from the hole before adding bond coat and material?</p>	<p>Is bond coat applied to the edges and base?</p>	<p>Is the correct compaction devices been used (hand tamp, compactor plate, small vibratory roller)?</p>	<p>Is the local area free of spilled bond coat?</p>	<p>Are kerbs, ironwork and street furniture free from damage?</p>	<p>Are kerbs, ironwork and street furniture free from damage?</p>												
<p>Don't assume that the material you are using is the correct spec.</p> <p>Check the order placed is correct.</p> <p>Check what is loaded on the vehicle, by looking at the</p> <p>For Pothole Patches, only Warm Mix (preferred) or Hot Mix asphalt can be used as a permanent fix on the 3-11 network.</p>	<table border="1"> <tr> <td>Service Owner:</td> <td>Operations Manager:</td> <td>Task: Pothole Repair</td> </tr> <tr> <td></td> <td></td> <td>Effective Date: April 2023</td> </tr> <tr> <td></td> <td></td> <td>Review Date: April 2024</td> </tr> <tr> <td>Service Owner: Wiltshire:</td> <td>Contract Manager:</td> <td>Version: 1.0</td> </tr> </table>		Service Owner:	Operations Manager:	Task: Pothole Repair			Effective Date: April 2023			Review Date: April 2024	Service Owner: Wiltshire:	Contract Manager:	Version: 1.0	 <p>Spend a few minutes to make the area adjacent to the work area clean and tidy.</p>		
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