



REPORT TITLE: Approach to Highways Defects

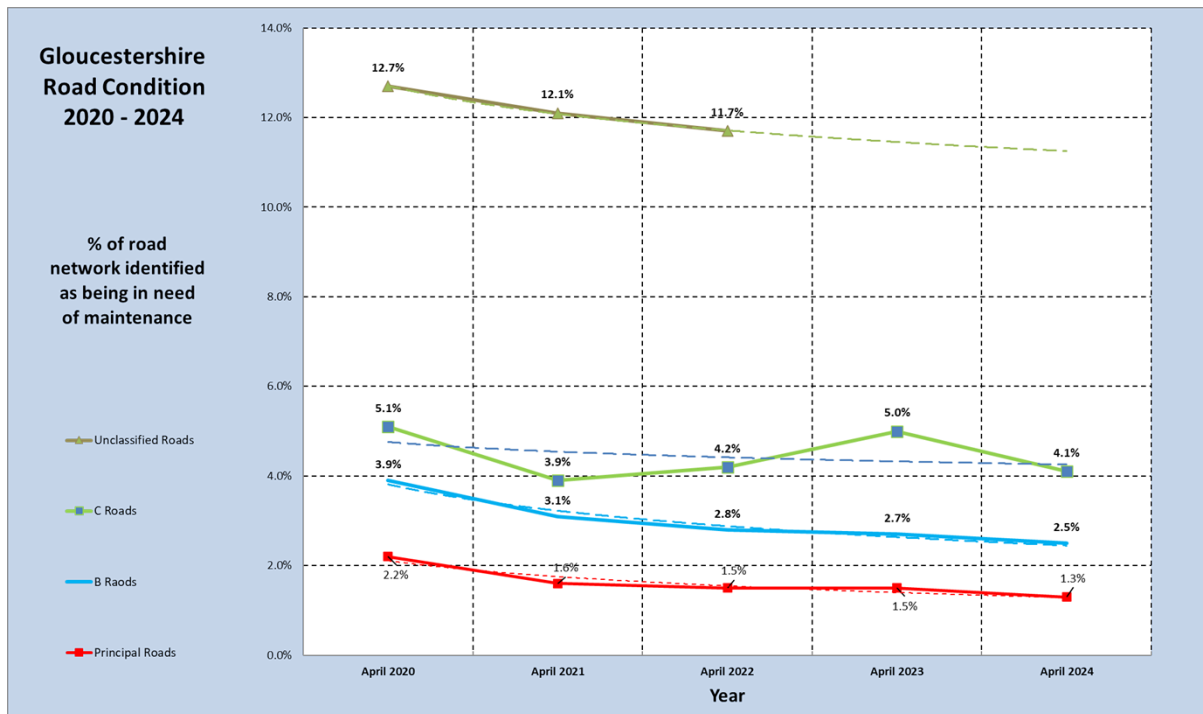
Scrutiny meeting	Environment Scrutiny Committee, Wednesday 17 July 2024
Chair	Councillor Chloe Turner
Presenting Officer	Kath Haworth
Item Type	Information
Purpose of Report	To update Environment Scrutiny Committee on approaches to highway repairs
Recommendations/ Action sought	For information
Forthcoming Decisions	n/a
Background Documents	n/a
Appendices	None
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1. Background

- 1.1. Road condition and repairing defects is one of our most visible Council services. The primary objective is to ensure that we comply with our statutory duty to keep the highway network safe.
- 1.2. This report is intended to update Environment Scrutiny Committee on the latest innovations, trials and approaches being tested as part of the move towards a preventative maintenance model.
- 1.3. Resurfacing and capital repairs are the long-term solution to road condition. Potholes form in roads whose residual life is low. The rate of deterioration is negatively impacted by weather conditions, particularly on fragile parts of the network, and we are experiencing more severe and extreme weather events. Extreme rainfall events and flooding can cause considerable damage to the roads.
- 1.4. The Transformation Board was set up in 2023 and one area of focus has been on the approach to defect repairs. This has included a variety of trials with the objective of improving the speed that defects were being repaired, look at repairing non-safety defects and making repairs more efficient.

2. Resurfacing and Patching

- 2.1. Resurfacing, patching and other capital investment is the only way to repair and maintain roads over the long term – this is known as structural maintenance. Resurfacing and patching programmes are available on our website and are updated regularly.
- 2.2. Since 2018, we have been using data to select all capital Structural Maintenance schemes. This data uses specialised SCANNER surveys, pothole data, and local knowledge and is confirmed through engineer's site visits. By targeting the areas confirmed by data to have deteriorated, we have been able to make significant improvements in the overall condition of our Highway network. Sustained investment at or above standstill levels is the key to longer term better road condition.
- 2.3. Across Gloucestershire we have almost 6000km of road network to maintain. Principal roads are made up of the A roads which we maintain. Non-Principal roads are made up of the B and C roads which we maintain. The rest of the network is made up of unclassified roads – in Gloucestershire this is around half of the whole road length.
- 2.4. All local authorities report their A, B and C road condition to the Department for Transport annually. The latest calculations are:
 - NI 130-01 Condition of Principal Roads 1% (1.3%)
 - NI 130-02 Condition of Classified non-principal Roads 4% (3.8%)



3. Find and Fix

- 3.1. Find and Fix gangs were introduced and funded as part of a trial in June 2023. These gangs operate separately from those who are targeting the safety critical defects. They are programmed to visit locations where we have clusters of smaller potholes, where there is local or customer feedback and similar. When they attend site, their remit is to fix all pothole defects, not only the safety critical ones. The rationale behind this is to move towards a more preventative approach – these defects are fixed earlier, which should help to prevent wider and faster deterioration later.
- 3.2. For the year ending 31 March 2024, there were up to 8 gangs operating across the county throughout. During this period, they fixed a total of 27,921 non-safety defects.
- 3.3. We have analysed a sample of sites where we now have 6 months data before the Find & Fix gang visited, and 6 months after. Overall, we have seen a decrease in the number of reported defects on 73% of sites (a site is the whole road section, rather than just where the gang visited). This is a positive finding and as such the find and fix gangs have been funded for 2024/25 to continue the same approach.
- 3.4. One of the key benefits of this approach is that the efficiency of the gang is far higher – they are dealing with clusters of defects over small numbers of sites, they are usually also targeted at quieter roads which do not have the same requirements for the set-up of traffic management. All this significantly impacts on productivity, efficiency, and cost in a positive way.
- 3.5. We know that these defects, whilst not yet severe or safety critical, would not have repaired themselves. If 50% of the find and fix defects had developed

into actionable safety defects during the year, they would have had to be repaired through the normal process and this comes at a higher cost. We estimate that the investment in find and fix gangs avoided additional costs of circa £0.6m in 23/24.

4. Pothole Plus

- 4.1 Alongside Find and Fix gangs, the other key change we made to our normal processes was to introduce Pothole Plus. This is where non-safety defect potholes are fixed alongside safety critical ones. It is not possible to address a whole road like this, but where those defects are inside the traffic management zone which already must be set up, the gangs are able to repair them as well.
- 4.2 During 23/24 this approach meant that we repaired an additional 5633 non-safety defects, which alongside the 52758 safety defects, represented 10% efficiency. As a result, this has now been embedded in our normal processes.

5. Reactive Repair Trials

- 5.1. We have also spent time trialling some of the new (and rebadged) techniques from the industry. The assessment considers their ability to provide efficiencies in the way we repair potholes:

Type	Pros	Cons
Thermal road repair	No waste, no joints	Slow and expensive
Hot patching alternatives (Bobcat, Pothole Pro)	Permanent repairs, cost effective where right sites are selected	Typically requires road closure, large kit restrictive in some environments
Cold lay material	Reduces waste and reduces return visits to collect more material	Not effective in all conditions
Spray injection patching	Cost effective and fast	Limitations – haunching, heavily trafficked roads
Rhino / Roadmender	Initial trial area performing favourably	Expensive if used in large areas or depths
Mobile batched (new)	Quality materials with limited waste, limited by quantities produced	Limited by quantities produced
Mobile batched (recycled)	Reduced requirement for virgin materials	Variable quality, limited quantities

- 5.2. All Find and Fix gangs are using cold material across the county, and we have found this to be effective in improving efficiency. Whilst the material itself is more expensive, once costs of part loads, hot boxes and waste are included it is very comparable to using hot material. Cold material is not suitable in all situations so going forward we are using it in combination with hot material to get the best results.

6. Fix My Street

- 6.1. Fix My Street was launched in October 2023 and is a far improved customer interface. More than 53% of all enquiries now received this way, even with increased overall number of enquiries. This is having a positive effect on internal efficiency with a more streamlined process for more enquiries. It is also being well received by customers who want to report or follow up on their enquiries.

7. Key Learning

- 7.1. There is no single innovation, technique or product which will solve the dilemma of repairing highway defects. It is a combination of techniques and processes that all have a purpose – as part of a larger picture these can come together to create a more preventative approach to defects. We will not see the difference overnight, but over time it is anticipated that this means more ability to be proactively repairing defects before they become safety critical, less reactivity (and cost) on those safety defects which we need to respond to quickly, and a more resilient network. This must be done alongside sustained investment in long term structural maintenance.

- 7.2. During 2024/25 we are committed to:

- Find & Fix: continuing with up to 8 gangs operating across the county
- Trials: JCB, Roadmender, SIP and more
- Pothole +: Make business as usual
- Fix My Street: Keep developing platform and offer
- Cold Material: Make business as usual where appropriate
- S/Dressing: Part of package of treatments, quality focus
- Surfacing: Keep data led investing for the long term

8. Next opportunities and the future

- 8.1 Continued development of Fix My Street:
- Adding asset layers such as streetlights, so the public can view
 - Development of reports which can be filtered on wards/parishes
 - Photo prompts in Fix My Street – not just the ‘size of a dinner plate’ or ‘depth of a tennis ball’
 - Channel shift away from email/phone via Web Forms under development – still linking directly into system – leading to a challenging target to have even more reports via FMS/Online

- Power BI Dashboard in development which is automated from Fix My Street to share live data with public.
- 8.2 Review of safety inspections programme - 1547km of network is inspected on an annual basis. A high proportion of defects are found on these routes. We are moving annual inspections into the summer window when there is better weather, and we have greater capacity to deal with defects.
- 8.3 Targeted use of Find and Fix gangs - we will direct some find and fix gangs to work on annual routes ahead of inspections. This should mean lower cost repairs carried out, as well as non-safety defects being addressed, and lower overall defect numbers being picked up by inspectors.
- 8.4 Targeted use of cluster data - we will be investigating the use of existing data to generate cluster/hot spot mapping to direct resources to specific purposes. This will help to autogenerate programmes of work for find and fix, patching, haunching or specific repair types e.g. ironwork or edge deterioration. There is always more work than funding so with the combination of the customer data, this enables us to target the areas people are concerned about first.
- 8.5 Trials for patching/wider repairs in 2024/25 are outlined below. These will be analysed for cost effectiveness and efficiency of operation.
- JCB Pothole Pro: planing out small patches and handlay patching repair undertaken - 6-week programme – 1 week in each of the districts – started 10th April
 - Comparison with Bobcat Planer - similar to JCB Pothole but smaller kit with handlay patching repair - 6-week programme – 1 week in each of the districts
 - Spray Injection Programme - 12-week programme – started 15th April
 - Roadmender - 12-week trial – started 7th May
- 8.6 Focus on Quality - 5% of Safety Defects are audited weekly across the county – these are undertaken locally and reviewed at weekly works meetings with GCC and Ringway colleagues. Any defects which raise concerns are then reviewed and further auditing of the gang is undertaken to understand reasons. Other auditing includes monthly site audits, customer complaints review and audit of safety inspections.
- 8.7 Road Condition Data Technology - road condition data is currently collected via SCANNER on an annual cycle for strategic routes, 3-year cycle for others. The DfT is consulting on removing the requirement to use SCANNER which opens up the opportunity to use emerging video technology. This potentially means both more frequent surveys of network giving more 'real time' data but more excitingly the capture of far more than road condition data and ability to use AI (Artificial Intelligence) to analyse and start to generate other programmes of work. There are still some limitations with existing technology, but the market is moving fast in this area.

