Report of the Cabinet Member for Environment and Infrastructure

Scrutiny Improvement and Finance Panel 27th June 2023

Road Repairs

Purpose	To provide a briefing to the Scrutiny Improvement and Finance Panel on Road Repairs.
Content	This report sets out the functions, standards and operational activities of the Highways Maintenance Group in relation to its work on repairing the Highway
Councillors are being asked to	Consider the report, to give their views and make recommendations to Cabinet Member as necessary
Lead Councillor(s)	Councillor Andrew Stephens, Cabinet Member for Environment and Infrastructure
Lead Officer(s)	Stuart Davies Head of Highways and Transportation
Report Author	Bob Fenwick Group Leader Highways Maintenance

1. Introduction

1.1 The Repair of the Highway is managed by the Highways Maintenance Group within Highways and Transportation. This report will focus on the management of carriageway repairs from pot holes to full resurfacing schemes.

2. The Highway Carriageway Asset

2.1 The extent of the highway asset is defined by the adopted roads network, in other words all highways that are maintainable at public expense.

2.2 The highway covers approximately 1100km of carriageway, The Highway Asset is ageing, with many parts exceeding their residual life. There is currently a backlog of over £70m of work on carriageways alone. This figure is recalculated every 5 years.

2.3 The local highway network is Swansea's largest, most visible and most valuable publically owned asset with a replacement value in excess of £2,000,000,000.

2.4 To maintain a steady state condition and avoid further deterioration to the highways, it is estimated that an annual capital spend on carriageways of between £7m to £8m per year would be required.

2.5 The Authority is continuing to develop programmes of work based on the principles agreed as part of the all Wales Asset Management Project. This will ensure spending is targeted based on a whole life cost approach which will optimise the impact of the investment and minimise financial and service demands.

3. Why We Do This

3.1 There are a number of statutory requirements relating directly to this service however the main one is:-

Highways Act 1980 - to assert and protect the rights of the public for the use and enjoyment of any highway.

The consequences of the Council not fulfilling its statutory duties may lead to:

- Damage to property or injury to people.
- Claims for personal and property injury/loss.
- Negative impact on the health and safety and quality of life for residents
- Detrimental affect on the reputation and prosperity of Swansea

In addition to the statutory responsibility the maintenance of the highways and the functions and activities or the service have an impact on quality of life issues, perceptions of the city centre and the areas people live in. These have both social and economic and reputational consequences.

4. Routine Repairs

4.1 Routine repairs include pot holes, small area resurfacing, surface striping, voids and sink holes.

4.2 Routine Repairs deal with day to day issues, the priority being given to those issues that have a statutory obligation. Any pot holes or other defects picked up on inspection are categorised and added to works programmes. Only problems that meet the Council investigatory levels are recorded. These defects generally have a 28 day window from inspection to liability.

4.3 In addition and over and above statutory duty the Council has the pot hole initiative, this began in 2018 and since its establishment over

30,000 pot holes reported by the public have been filled. The initiative won a national award in 2019 and Swansea Council were asked to speak at the Department of Transport to a national roads group. This initiative replaced a system of inspection and rejection where public reported defects, they were assessed and if they did not meet intervention levels (90%) they would not be repaired. It is important to note this is for single defects not for whole streets.

4.4 In 2021/22 6700 pot holes were repaired, with a 93% 48 hours response being the worst weekly figure for the year. In 2022/23 9200 pot holes were repaired, one week in January had a 77% response as the number of pot holes reported was huge and materials were difficult to purchase, other than this the worst performance of 92% was recorded. To date in this financial year 2500 pot holes have been fixed with a worst performance of 92%. Again, it is important to note that the pot hole pledge does have exemptions agreed at the outset, as a road cannot be resurfaced by two men and a bag of repair material.

4.5 There are three main repair methods for routine defects

- Pot hole repair using a propriety system design to be used without cutting out the edge of the hole, needs no compaction and is very quick to use. Under testing the product has a 95% pass rate on durability checks. It is regarded as a permeant repair. It will work in wet weather and can be used in very shallow defects that would require additional excavation with other methods. Minimal traffic management is required and there is little network interference. Up to 20 bags per day can be used in up to 20-25 locations per team. This method does not give a ‘neat’ finish.
- Hot bitumen repairs of a few square meters. Carried out by a traditional tarmac gang using traffic management. The repairs need to be cut out to a square edge and to a minimum depth. The repair will need compaction in layers. Permanent and neat, this method can be carried out in damp conditions. Typically 5 tonnes of asphalt per day in 1-3 locations.
- Jet Patching – hot jetted bitumen emulsion with added chippings which is spray applied. The process is good for dealing with shallow defects, edge & joint deterioration, and surface stripping. The quality of finish varies dependant on location and it cannot be used in the wet. This method is often used for medium term repairs on failed top surfaces.

4.6 The choice of which repair system to use will depend on the nature of the defect and whilst a traditional repair will give a better finish the pot hole repair material is versatile and allows the pot holes team to cover very large numbers of repairs. This is a balance but with the emphasis on safety and cost rather than aesthetics the use of the quick fix is essential.

4.7 The main issue facing the teams at present is one of expectation, partly due to the success of the pot hole project. The winter period caused major issues in surface deterioration. A prime example would be the Mumbles Road near Blackpill, where the surface layer stripped over the period of a week. These types of defect are very noticeable and give an uncomfortable ride. These types of defects generate hundreds of request for pot holes to be dealt with along whole streets. These defects are not statutory, have been successfully defended in court and have no liability due to the shallow depth. They are too large an area to pot hole so they are added to the work list for the jetpatcher, this is currently under heavy demand and working extra days.

5. Planned Maintenance Repairs

5.1 Planned maintenance or structural repairs, include both reactive and preventative treatments such as plane and resurface, surface dressing, micro asphalt, joint repairs and surface friction repairs.

5.2 The Authority considers a variety of different methods of repair and uses assessment approaches agreed across Wales, both visual and data based. This enables decisions on the most efficient and effective approaches for managing the network based on a mix of preventative, reactive and planned maintenance works.

5.3 The whole network is assessed on a routine basis every 5 years and the condition recoded this is a visual inspection by accredited engineers. There is also an annual survey undertaken by a Welsh Government contractor using data collection equipment to look at issues like ride quality and more importantly surface friction. Where deterioration in a street is noted it will be added to the maintenance pool for scoring, Around 30% of the network, some 2,000 streets are included in the maintenance pool. Any streets referred by safety inspections, staff, councillors and the public are given an adhoc assessment and if needed their status will be updated.

5.4 All streets of concern are scored using a risk based prioritisation method. Carriageway schemes will be selected based on a review of factors such as network importance, condition, network use, accident statistics, main bus route, single point of access and likely deterioration. A score for each assessed road will be calculated and the highest scoring schemes will be programmed. This prioritisation will be balanced by the need to give cost effective packages of work of similar types (for instance, surface dressing requires a minimum quantity of work to be cost effective when considering site set up costs). In normal circumstances there will be a split of approximately 60/40 between corrective work (e.g. resurfacing a road in poor condition) and preventative work (e.g. extending the life of a road in average condition).

5.5 The 5 year programme is based upon the scoring system as are any additional programmes of work from additional funding. Programming

work in this manner is best practice and has been highlighted as such by the all Wales Highway Asset management project. The current programme runs from 2020 to 2025 but is approximately 1 year ahead of schedule due to the additional funding received during the pandemic. The detail of the proposed schemes can be accessed at http://www.swansea.gov.uk/highways.

5.6 Once a road is identified as a priority there are different method of repair available depending on materials in place and condition. This includes

- Plane and resurface, a process used on poor condition roads where the top surface of the road is removed to be recycled and a new layer laid to existing levels.
- Surface dressing, a spray applied emulsion with chippings locked in, used where water penetration has damaged the road but overall the road is structurally sound. Improved surface friction. A much improved process with reduced amounts of loose chipping over historic methods, not used where there are heavy junctions, tight bends or in heavy residential areas. A preventive treatment use don roads starting to show signs of cracking.
- Micro-asphalt, a slurry applied process, thicker than surface dressing, a very resilient process and cost effective however initial aesthetics following application are poor as the materials needs time to be tracked prior to sweeping. A follow up visit need to deal with ironwork due to the slurry nature of the product. Can lead to complaints early on as aesthetically inferior to “proper” resurfacing.

5.7 The materials used can also affect the outcomes and cost for example Ynysforgan roundabout was planed out and resurfaced a few years ago using a superior fibre reinforced asphalt at a cost of around £250k. A preference here due to high traffic intensity would have been to use hot rolled asphalt which typically gives 10 years longer lifespan but at double the cost. Again a balance is needed between individual schemes and network need/budget. The different treatments used can have an expected lifespan from 8 years and up 25 years with costs ranging from £7.50/m2 to £40/m2. Our main product is £25/m2 with a life expectancy before defect of 10-15 years.

5.8 The PATCH programme of minor resurfacing works is complimentary to the main carriageway resurfacing programme and is run on a ward by ward basis. The budget has been increased to allow additional works but is also is under pressure due to material cost rises, with tarmac prices rising by excessively. This programme relies heavily on ward member participation in scheme selection and is designed to tackle roads that failed in part rather than along the whole length.

5.9 The different treatment programmes aim to provide the best solution for each particular road to ensure the most cost effective management of the network. Historically maintenance was carried out on a worst first basis and whilst this deals with the immediate issue, long terms this is not the most efficient approach. The higher the proportion of preventative maintenance that be undertaken the less the overall cost of maintenance in the long term. This is often the explanation given to why we are working on one road (carrying out preventative maintenance) when the neighbouring street is in a visibly worse condition.

6. Asset Management

6.1 As mentioned above Swansea Council is a member of the all Wales Asset Management Project. This project has been running over 10 years and is a collaboration between all Welsh councils. This has provided several standard tools used across Wales. Including the approach used to calculate the backlog figure and steady state maintenance requirements. It has also agreed best practice and given comparisons on systems of work. The Authorities work complies with all the recommendations of best practice.

6.2 The Authority prepares an annual status and options report which gives detailed information on current trends, predictions on spend profile compared to network condition.

6.3 There is a new project as part of the national work stream, which is the CSS(Wales) Carbon Project. The aim is to develop an agreed format for collecting carbon emission data and looking at new practices for carbon reduction. An example is the use of a warm mix tarmac with a lower production temperature which has significant savings and addition benefits to workability. This comes with a cost and again where budgets are tight, a balance needs to be made.

6.4 Highway Maintenance has been reviewed by the Scrutiny programme as follows:

Scrutiny has reviewed this service in:

- 2010 Winter Maintenance
- 2012 Highway Maintenance
- 2015 Street scene (incorporating Highway Maintenance)
- 2018 Roads and Footway Maintenance
- 2021 Highways and Engineering, Infrastructure and Maintenance

7. Future Challenges & Opportunities

7.1 The main challenges for the service in relation to this report are:-

- The need to ensure continuity of service against a backdrop of resource pressures

- Increasing demand and expectations from stakeholders, especially in relation to non-safety defects.
- Climate change with regard to both settlement due to ground water flow and freeze thaw damage during marginal winters.

8. Risks

8.1 No corporate risks are recorded, whilst deterioration of the network and associated effects is a risk it is managed through good asset management procedures and regular reporting.

9. Legal Implications

9.1 There are no legal implications associated with this report.

10. Financial Implications

10.1 There are no financial implications associated with this report.

11. Integrated Assessment Implications

11.1 This is an information only report, with no implications, therefore no IIA required.

Background papers: None

Appendices: None.

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