

Report

Report to:	Community and Enterprise Resources Committee
Date of Meeting:	29 August 2023
Report by:	Executive Director (Community and Enterprise Resources)

Subject:	Roads Asset Management Plan - Update
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1. Purpose of Report

1.1. The purpose of the report is to:-

- ♦ provide an update on the Roads Asset Management Plan (RAMP) and outline the condition of roads and related infrastructure assets

2. Recommendation(s)

2.1. The Committee is asked to approve the following recommendation(s):-

- (1) that the contents of the report be noted.

3. Background

- 3.1. The Executive Committee, at its meeting held on 22 September 2010, approved the implementation of an extended model for Corporate Asset Management from 2011. This included developing Asset Plans across several service areas, in line with Chartered Institute of Public Finance and Accountancy (CiPFA) guidance, and summarised, under an overarching Corporate Asset Management Plan, which demonstrates how each area supports corporate objectives. The Service Areas are Property, Housing, ICT, Roads Infrastructure and Fleet.
- 3.2. The Corporate Asset Management Plan (AMP) is reviewed annually and, being the Council's single largest asset group, the Roads Asset Management Plan (RAMP) is a key element of the corporate document.
- 3.3. The development of RAMPs across Scotland provides an excellent example of collaborative working across all 32 councils. A 4-year project, in which all councils participated, was completed in 2016. The good progress achieved is now being developed further via a successor project in which all Scottish councils are again participating.
- 3.4. The main purpose of developing the RAMP is to:-
- ♦ ensure we have a sound knowledge of the extent and condition of our main asset groups
 - ♦ understand where any knowledge gaps exist and consider how these might be addressed
 - ♦ understand the level of current investment on each asset group and the associated condition trend

3.5. The roads asset consists of the following main groups.

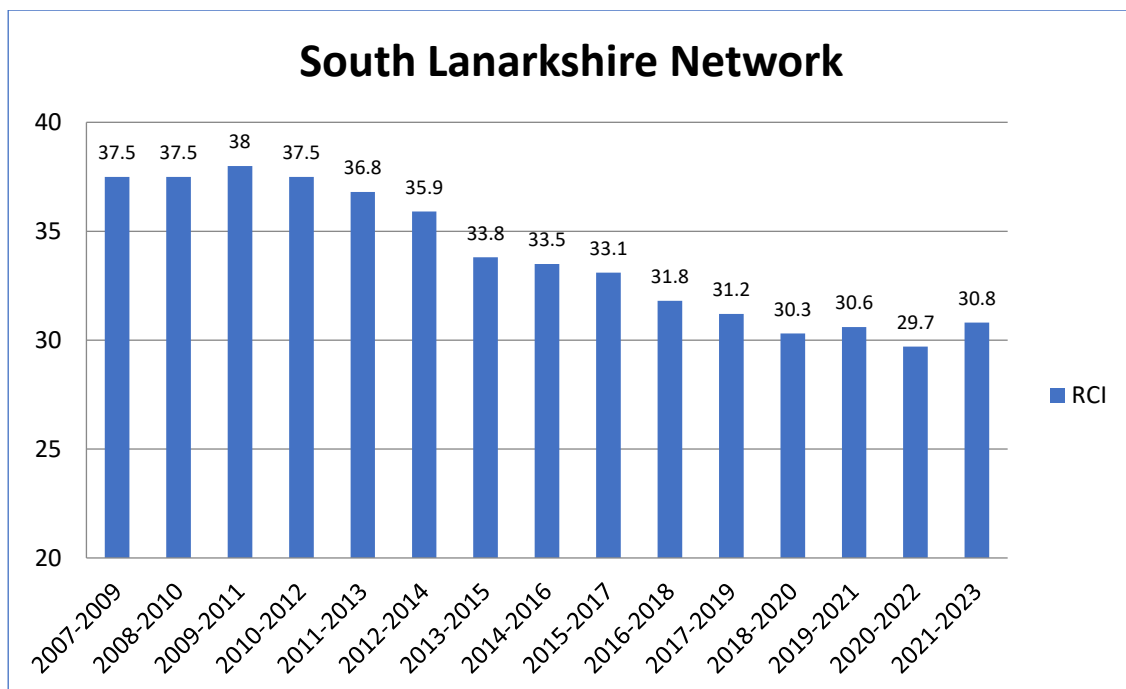
Asset Type	Asset Description and Components
Carriageway	The part of the road used by vehicles. This asset group includes drainage systems, lay-bys, bus lanes, traffic calming and verges.
Footways, Footpaths and Cycleways	Footways – used by pedestrians adjacent to the carriageway. Footpaths – used by pedestrians remote from the carriageway. Cycleways – used by cyclists and in some cases pedestrians. Pedestrianised Areas – generally located in town centres.
Structures	Primarily bridges and culverts with a span greater than 0.9 metres and retaining walls with minimum retained height of 1.35 metres.
Street Lighting	Includes lamps, columns, ducts, cabling, control pillars, illuminated road signs and bollards and festive lighting
Traffic Management Systems	Signalised junctions and pedestrian crossings, detection equipment, ducts, and cabling
Street Furniture	Vehicle restraint systems (safety fence)

4. Carriageway Asset

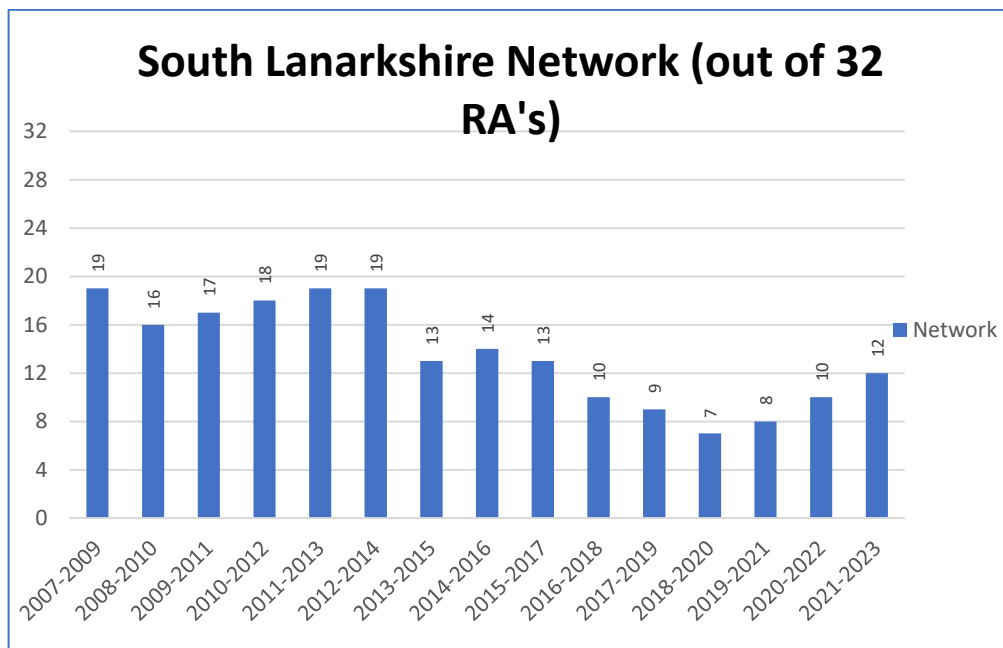
- 4.1. The Council is responsible for a total of 2,295 kilometres (1,426 miles) of carriageway. The Council's carriageway network is divided into 4 classifications A, B, C and Unclassified.
- 4.2. Inventory records are accurate for the lengths of road; however, the widths of the road are estimated based on classification of the road. Over time, these widths will be collected and added into our network management system and will aid with quantification and refinement of the valuation of the carriageway asset.
- 4.3. The Gross Replacement Cost of the recorded carriageway asset for South Lanarkshire Council, as derived in 2018 utilising the Asset Valuation tool developed by Society of Chief Officers of Transportation in Scotland (SCOTS), is £2.263 billion.
- 4.4. Safety inspections are carried out in accordance with the Guidance Document for Road Safety Inspections and Defect Categorisations. This manual takes cognisance of the guidance contained within Well Managed Highway Infrastructure Code of Practice. These safety inspections are carried out on a monthly, three monthly or annual basis depending on the hierarchy of the carriageway.
- 4.5. In addition to these inspections, regulatory inspections to deliver our obligations under the New Roads and Street Works Act 1991 (NRSWA) and the Transport Scotland Act 2005 (2019 legislation currently being implemented) are also carried out.
- 4.6. Annually, the Scottish Roads Maintenance Condition Survey (SRMCS) is undertaken on our road network by SCOTS nominated contractor WDM Ltd. This survey tackles 100% of our A class carriageways in one direction, with the other direction being surveyed the following year. 50% of our B and C class roads are surveyed with the whole of the B and C class network being surveyed over a 4-year period. Only 10% of our unclassified road network is completed each year. This survey produces our Road Condition Index (RCI) based on the percentages above and applied to the whole

of the network. The survey identifies for each 10-metre section of road whether it falls into the red category (requires maintenance) amber (should be considered for maintenance) or green (serviceable). The RCI is published each year as a national performance indicator.

- 4.7. In 2017, the backlog for carriageway maintenance across Scotland was recalculated by WDM Ltd, based on the latest SRMCS survey data at the time. The backlog calculation for the South Lanarkshire Council road network was £90.420 million in 2018. This is the sum of money required to be invested in a single year to bring our road network back to a serviceable standard. This backlog figure had reduced from £137 million in 2013 and was welcomed. However, the backlog figure is expected to be updated in 2023, and it is anticipated that this could increase significantly due to both inflationary pressures and a deteriorating network.
- 4.8. The condition of our carriageways has regressed following the recent survey as outlined in the table below. The latest RCI data indicates that 30.8 % of our network is in need of maintenance treatment which is an increase of 1.1% since the previous year. The RCI is the combined value of the red and amber categories referenced at 4.6 and, overall, a lower figure is better.



- 4.9 Full trend charts showing the Road Condition Index for A, B, C and Unclassified roads are shown in Appendix A. The condition of A Class roads has largely remained static, B has regressed and C and unclassified noticeably regressed.
- 4.10. Our position in Scotland in terms of RCI ranking has declined as shown below from our highest ranking of 7th reported over the period 2018 to 2020 to position 12 over the most recent survey period 2021 to 2023. This notes a drop of 2 places since last year's survey and once again, the lower figure indicates the better performance.



- 4.11. An independent assessment was undertaken by WDM Ltd to calculate the Steady State cost for South Lanarkshire's network in 2018. The steady state is the amount of investment required to maintain the road network in its current condition. Based on the network condition in 2018, the steady state figure, which is based upon the needs/condition of the carriageway network, is £12.500 million.
- 4.12. It should be recognised that 5 years on, and given significant and observed increases in construction costs, that the equivalent steady state figure is likely to have increased significantly. This figure is expected to be updated this financial year as noted at paragraph 4.7.
- 4.13. It should be borne in mind that the steady state figure is an estimate, rather than an actual figure and it is important to note that the need to improve the condition of the road network is assessed on an individual basis to support and justify expenditure. It must also be noted that the current steady state figure does not take account of the significant construction inflation that the industry is presently encountering.
- 4.14. In simple terms, projects are costing much more than before, and the equivalent scale of works are not presently possible with the same level of investment. During financial year 2022/2023 we encountered inflationary increases of 23% but during this current financial year we have seen a further 30% increase in our costs.
- 4.15. During this financial year 2023/2024, approximately £8.145 million capital investment is being directed towards carriageway improvements. Whilst combined with the recent inflationary increases our real term spend falls below that required to maintain the current condition of our network (steady state). It should be noted that the cost to recover the condition of a deteriorated road network is far higher than annual steady state funding.

5. Footway Asset

- 5.1. The Council is responsible for a total of 2,425 kilometres (1,506 miles) of footway. It should be noted that this figure represents adopted footways/footpaths only and there are other footpaths that are maintained by other parts of the Council or third parties. Most of the adopted footway network is contained within the urban area.

- 5.2. The length of footway network is an estimated length based on there being two footways on each length of carriageway within the urban area. All the footways have been estimated as having a 2-metre width. The footway asset Gross Replacement Cost of the recorded asset is presently estimated at £612.7 million and this figure is expected to be updated during 2023.
- 5.3. Inspection arrangements and maintenance categories are similar to those for carriageways in terms of the nature of inspections, but the frequencies can vary depending on the hierarchy.
- 5.4. There is no national condition survey for footways similar to that which is undertaken for carriageways. Instead, priorities for resurfacing are established via the local knowledge of our officers considering the condition of a footway and its level of use.
- 5.5. A sample survey of 59.2% of our estimated footway length was undertaken in calendar years 2014, 2015, 2016 and 2017 which indicated that 16.2% of our footways should be considered for maintenance purposes. This figure is likely to have increased since the sample survey. Updating this figure is very resource intensive and it is not presently considered viable at this time.
- 5.6. The estimated steady state figure for footway maintenance is £0.800 million and we are currently investing above this level as noted below.
- 5.7. Following the participatory budgeting investment in roads and footpaths completed in 2021/2022, a second phase of investment was agreed in 2022/2023 that would deliver further improvements of £2.500 million. This was supplemented by the addition of £1.000 million of the Service's own investment funding. This investment of £3.500 million was focussed on improving footways which formed part of our adopted footway network to make our towns and villages safer for pedestrians, supporting healthy lifestyles through physical activity and improving the look and feel of our environment.
- 5.8. As a result of operational capacity and weather-related events an element of the 2022/2023 funding was carried forward to 2023/2024. During 2023/2024 £1.000 million of the Service's own capital investment funding will be allocated to improving our adopted footway network.

6. Lighting Asset

- 6.1. The Council has 60,349 lighting columns, 66,165 luminaires, 2,272 Control Pillars and an estimated 1,976 kilometres (1228 miles) of cabling. Inventory records for lighting columns, luminaires and control pillars are accurate, however, inventory of the cabling network and knowledge of its condition is limited as most of it is underground.
- 6.2. The percentage of lighting columns exceeding their design life is 36%, giving the Council the sixth oldest lighting column stock in Scotland. The cost to replace all these columns at current rates would be £37.26 million. The cost to maintain the lighting asset in its current condition (steady state) is £1.000 million. This should be considered relative to existing capital and revenue funding totalling £0.640 million.
- 6.3. The trend in columns beyond their design life has increased slightly in the last year, from 35.7% to 36.0% due to the age profile of the lighting asset.

7. Structures Asset

- 7.1. The Council is responsible for a total of 778 structures which includes road bridges, footbridges, culverts, and subways together with a currently unquantified number of road related retaining walls.

- 7.2. Good records are held for most of these assets, however, there are currently limited records held by the Council in respect of road related retaining walls.
- 7.3. The current Gross Replacement Cost of the Structures asset is estimated at £546.5 million. This figure does not include the replacement cost of any road related retaining walls.
- 7.4. Bridge inspections are carried out in accordance with the guidance and recommendations of the “Well Managed Highway Infrastructure: A Code of Practice” published by the UK Roads Liaison Group. This recently published Code encourages the use of a risk-based approach toward identifying bridge inspection intervals. At present, General Inspections are carried out every two years and Principal Inspections every six years on all structures with a span more than 0.9m. More frequent inspections are carried out on structures where more specific monitoring of condition is appropriate (e.g. where assessments have indicated potential capacity issues).
- 7.5. Routine repairs that are identified during the bridge inspection process are prioritised considering the severity and extent of the defect which has been observed.
- 7.6. There are 102 steel bridges across the structures asset. Properly specified and applied protective paint systems are expensive but serve to prolong the life span of steel structures and can substantially extend intervals between maintenance and repair operations. The introduction of a formalised maintenance painting regime for our steel bridges would be of significant benefit, however, this work is tackled on a needs basis as funding permits.
- 7.7. Investment during 2022/2023 on bridge maintenance and renewal was £2.480 million. This figure represents a minor increase upon the 2021/2022 budget allocation, but it should be noted that this includes targeted investment for two major bridge replacement projects (Clyde and Ponfeigh Bridges) which occurred during 2022/2023. Major capital investment of circa £6.600 million is being directed towards Clyde Bridge during 2023/2024.
- 7.8. The cost to maintain the structures asset in its current condition (steady state) is £6.010 million and, excluding major capital projects, investment across capital and revenue during 2023/2024 is expected to be circa £0.747 million.
- 7.9. In addition to the inspection process discussed above, a national assessment programme, carried out to determine the suitability (i.e. strength) of the bridge assets for the introduction of 40/44 tonne vehicles onto the road network, revealed 123 bridges to have a load bearing capacity below current standards. A comprehensive bridge strengthening programme has, in recent years, seen excellent progress in addressing the Council’s weak bridges. Of the 123 bridges which failed the assessment, only 16 remain to be addressed. These are subject to an enhanced monitoring and inspection regime.
- 7.10. The bridge assessment process included a risk analysis of vehicle containment characteristics at each bridge location. The results of the analysis revealed that, in terms of risk and containment, parapets on 8% of the Council’s bridge stock require to be upgraded. A programme to improve vehicle containment capability at these structures has been initiated. Due to competing priorities, there were no further containment upgrades undertaken in 2022/2023 and 52 structures remain outstanding as a priority for the implementation of improvement measures.

- 7.11. If current funding levels continue to be provided and depending on the nature and priority afforded to other commitments arising, the completion of several containment improvement schemes per year is anticipated. Again, in terms of risk and containment, the need for upgrading works at the remaining 92% of bridges is currently considered low. It should be recognised that some of these parapets do have containment issues, but the level of risk is low given the site characteristics.
- 7.12. The condition of all highway structures is determined following a General or Principal Inspection and rated in accordance with the ADEPT Bridge Condition Index (BCI) Guidance. BCI values are generated from ratings apportioned to the severity and extent of defects recorded during a bridge inspection and can be interpreted broadly as the percentage condition score of a bridge or a group of bridges. Separate BCI figures are derived to account for the condition of all structural elements of a bridge (BCI_{av}) and for the condition of those elements defined as being of very high importance (BCI_{crit}). The condition indicators for the entire bridge stock as a single group over the past 6 years are as follows, noting the higher figure indicates better condition.

Year	BCI _{av}	BCI _{crit}
2017/2018	83.83	72.20
2018/2019	83.68	72.11
2019/2020	82.51	70.39
2020/2021	81.87	68.76
2021/2022	81.21	68.48
2022/2023	81.22	68.53

- 7.13. It may be observed from the second and third columns in the above table that BCI_{av} and BCI_{crit} values for the entire asset fluctuate slightly over time but have remained within the range of “good condition” (BCI value 80-90) and “fair condition” (BCI value 65-80) respectively throughout the last six years. A minimal positive increase in the value of both condition indicators was recorded in 2022/2023. While welcome, it should be noted, however, that there has been a reduction in the value of both indicators over the past 6 years which represents an overall and ongoing deterioration in asset condition within that timescale.
- 7.14. The assembly of a register of road related retaining walls within South Lanarkshire commenced in 2014/2015. The retaining wall asset will be of significant magnitude and the formation of the database which will contain several thousand items is a long-term commitment for the Council. The code of practice suggests that all road related retaining walls should be subject to the same type of inspection regime as is currently carried out on bridges and culverts (see section 7.4).

8. Traffic Signals

- 8.1. The Council is responsible for 232 sets of traffic signals and controlled pedestrian crossings. The numbers and different types of installations are listed below:-
- ◆ 111 Traffic Signals
 - ◆ 67 Puffins
 - ◆ 11 Pelicans
 - ◆ 43 Toucans
- 8.2. South Lanarkshire has an ageing traffic signal and pedestrian crossing asset base, with many utilising older and energy inefficient technology. In recent years, the Council

has initiated a programme to replace older traffic signals and pedestrian crossings with modern ones. The replacement of an average traffic signal junction costs in the region of £285,000 and a pedestrian crossing around £85,000. The existing level of funding generally allows for the renewal of one traffic signal junction per year or 3 pedestrian crossings.

- 8.3. External funding does allow other infrastructure to be renewed but this is a changing situation as it is dependent on the availability of funding and our ability for a project to meet grant conditions. These new installations both maximise the safety benefits to all road users and improve the flow of traffic using modern computer control systems such as Microprocessor Optimised Vehicle Actuation (MOVA) and Split Cycle Offset Optimisation Technique (SCOOT).
- 8.4. Typically, the Service receives and respond to approximately 1,200 traffic signal faults annually. In 2021/2022, officers dealt with 1,140 faults and, in 2022/2023, this increased to 1,270.
- 8.5. The gross replacement value of all traffic signal apparatus is currently estimated at a value of £45.1 million. The cost to maintain the traffic signal asset in its current condition (steady state) is £1.82 million.
- 8.6. In 2023/2024, funding of around £0.462 million will be directed towards investment in traffic signal infrastructure. This comprises some £0.312 million of external funding and £0.150 million of capital funding.
- 8.7. At present, the Council is developing a 15-year lifecycle plan, although the replacement of each asset is still assessed on an individual need's basis. Any plan longer than this would result in reliability issues arising and, over recent years, some installations have failed, resulting in emergency replacement works being necessary. The Council currently has 31 sets of traffic signals and 52 pedestrian crossings (representing 35% of our assets) that are 15 years old or older. This is an increase of 5 sets of traffic signals and the status quo for pedestrian crossings compared to the previous year.
- 8.8. It should also be noted that there is no guarantee that, after September 2023, there will be a supply of incandescent lamps due to a change in legislation prohibiting their use and with the reducing demand, lighting manufactures ceasing their manufacture. The Council currently has supply for 15 sets of traffic signals and 22 pedestrian crossings that use these incandescent lamps.
- 8.9. The age of the equipment is increasing quicker than replacement equipment is being installed, therefore, the trend for the overall condition of the asset continues to regress each year. While these older installations continue to operate, the risk of them failing is higher than at other locations with potentially greater impact if they fail during a busy period of the year.

9. Street Furniture – Vehicle Restraint Systems

- 9.1. There are currently 515 vehicle restraint systems, totalling 43.3km. Approximately 20% of the systems have reached the end of their serviceable life (life expired) due to having timber posts suffering from rot as opposed to steel posts. Some systems have also suffered from extensive corrosion.
- 9.2. Approximately 10% of existing systems are damaged, and an estimated 95% of the systems surveyed would not comply with current design standards, although there is no need to retrospectively replace older installations unless they have suffered

significant damage and need replacement. Repairs are prioritised in line with available funding.

- 9.3. The estimated gross replacement cost of the vehicle restraint systems which would bring the systems up to current standards is £12.97 million. The estimated cost to replace older systems is £8.6 million. The estimated annual cost to maintain the asset in its current condition (steady state) is £0.400 million and at present investment is limited in this area and on a reactive basis.

10. Conclusions and Summary

- 10.1. Roads and related infrastructure keep our communities and businesses connected. Businesses use it to deliver goods and services, buses travel along it, people use it to travel to work and communities to access shopping, learning, healthcare, and active travel priorities.

- 10.2. This paper sets out the overall condition of this infrastructure and important matters to note are as follows:-

- ◆ **Carriageways:** The condition of our carriageways has started to regress as shown in the recent survey results. We should expect a further deterioration in the condition of our carriageway asset as a result of the current levels of road maintenance investment combined with high levels of inflation.
- ◆ **Footways/Footpaths:** At least 16.2% of our network requires to be considered for maintenance but it should be noted that investment has been increased significantly in recent years.
- ◆ **Structures:** Bridge condition is generally good to fair although the overall trend has been one of slow deterioration. Good progress has been made in dealing with bridges assessed as being inadequate for current loading standard, however, greater investment is required in the maintenance of the bridge stock to arrest the general deterioration in condition and continuing attention is additionally required to the many bridges with sub-standard parapets. The recent specific investment commitment to replace two bridges in Clydesdale is welcomed.
- ◆ **Street Lighting:** Recent investment has reduced energy use by approximately half and replaced 7,253 of the oldest lighting columns representing significant progress. Current investment is focusing on targeting columns over their critical age, to maintain a 'steady state' position. The percentage of lighting columns exceeding their design life is 36%.
- ◆ **Traffic Management Systems:** The overall condition of traffic signal equipment is deteriorating as the current replacement programme is not sufficient to upgrade the number of installations that are greater than 15 years in age.
- ◆ **Street Furniture:** The condition of vehicle restraint systems is such that a significant number are beyond their design life and require to be improved.

- 10.3. Investment in roads and related infrastructure is necessary to lock in and retain the benefits of previous and significant investment levels to date. Capital and revenue investment opportunities for the asset groups discussed above must also be considered in line with many other competing priorities across the Council.

- 10.4. Substantial and sustained levels of construction inflation have significantly reduced the amount of works we can carry out for the budget we have available. We have already noted a deterioration in the condition of our critical infrastructure, and this is expected to continue in the short term and possibly accelerate.
- 10.5. In addition, our road network remains vulnerable to the impacts of extreme weather, climate change and public utility openings. Severe weather continues to directly impact our roads and assets which further increases the pressure on our finite resources available to maintain the condition of our network.

11. Employee Implications

- 11.1. There are no current employee implications associated with this report.
- 11.2. The current backlog of repairs has the potential to increase demand on our engineering and technical employee resources. Any increase in the backlog is likely to see a further increase in the levels of complaints, road defects and public liability claims, and an appropriate level of employee resources will be required to manage this workload.

12. Financial Implications

- 12.1. Since our Roads Investment Programme was completed in March 2019 the Council has continued to invest a large and significant proportion of available capital funding, largely at that of steady state levels to maintain the condition of our network. However, in recent years significant financial challenges associated with the COVID-19 pandemic and more recently construction inflation have been encountered.
- 12.2. As noted earlier, projects are costing much more than before, and the equivalent scale of works are not presently possible with the same level of investment. This point must be considered should the overall condition of the asset groups be expected, at least, to be maintained to the same level.
- 12.3. Moving forward, pressure across Council budgets is likely to impact on the level of funding that is available and can, in the short term, be directed at these road infrastructure asset groups.
- 12.4. Similarly, opportunities will be taken to secure and lever in new sources of funding including external partner funding where possible. Success has already been achieved in securing external funding for traffic signal and active travel investment.

13. Climate Change, Sustainability and Environmental Implications

- 13.1. Policy and asset management directed at maintaining, improving, or making road and transport infrastructure safe and resilient is essential to support economic and sustainability priorities.
- 13.2. The financial challenges discussed earlier in the report will make it difficult to fund improvements that will make our road network more resilient to the impacts of climate change.

14. Other Implications

- 14.1. There are no other implications or risk in relation to the information contained within this report.

15. Equality Impact Assessment and Consultation Arrangements

15.1. This report does not introduce a new policy, function or strategy or recommend a change to an existing policy, function or strategy and, therefore, no impact assessment is required.

David Booth

Executive Director (Community and Enterprise Resources)

7 August 2023

Link(s) to Council Values/Priorities/Outcomes

Values

- ◆ Focused on people and their needs
- ◆ Working with and respecting others
- ◆ Accountable, effective, efficient and transparent
- ◆ Ambitious, self-aware and improving
- ◆ Fair, open and sustainable

Priorities

- ◆ We will work to put people first and reduce inequality
- ◆ We will work towards a sustainable future in sustainable places
- ◆ We will work to recover, progress and improve

Outcomes

- ◆ Our children and young people thrive
- ◆ Good quality, suitable and sustainable places to live
- ◆ Caring, connected, sustainable communities
- ◆ People live the healthiest lives possible

Previous References

- ◆ Community and Enterprise Resources Committee – 13 December 2022

List of Background Papers

- ◆ Roads Asset Management Plan – 2023 Update

Contact for Further Information

If you would like to inspect the background papers or want further information, please contact:-

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