

Report

Report to:	Community and Enterprise Resources Committee
Date of Meeting:	16 June 2020
Report by:	Executive Director (Community and Enterprise Resources)

Subject:	Roads Asset Management Plan – 2020 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)

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 a number of service areas, in line with 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. Within the Council the Corporate Asset Management Plan (AMP) is reviewed annually and, being the Council's single largest asset group, the RAMP is a key component of the corporate document.
- 3.3. The development of RAMP's 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

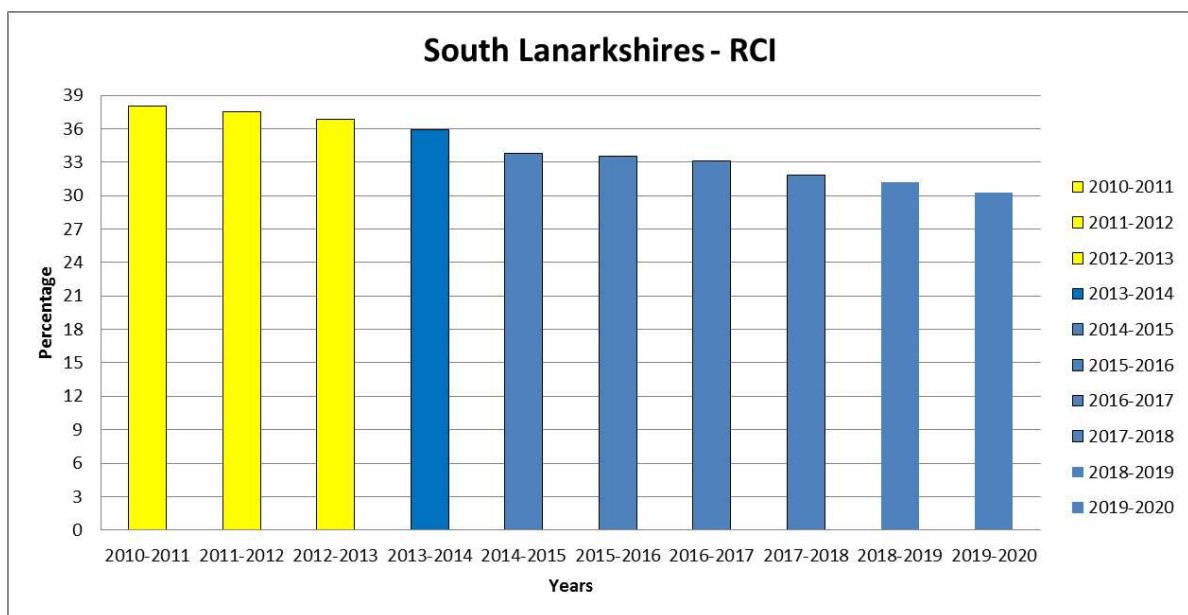
3.5. The road asset consists of the following main asset groups.

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.
Footway, Footpaths and Cycleways	Footway – used by pedestrians adjacent to the carriageway Footpaths – used by pedestrians remote from the carriageway Cycleways – used by both pedestrians and cyclists Pedestrianised Areas
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 2295 kilometres (1426 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 the network management system and will aide with quantification and refinement of the valuation of the carriageway asset.
- 4.3. The carriageway asset Gross Replacement Cost of the recorded asset as derived utilising the Asset Valuation tool developed by the Society of Chief Officers of Transportation in Scotland (SCOTS) is £2.26 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-Maintained Highways Infrastructure Code of Practice. These safety inspections are carried out on a monthly, three monthly or annual basis depending on the carriageways hierarchy.
- 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 are also carried out.

- 4.6. Annually the Scottish Roads Maintenance Condition Survey (SRMCS) is undertaken on the road network by SCOTS nominated contractor WDM Limited. This survey tackles 100% of the A class carriageways in one direction, with the other direction being surveyed the following year. 50% of the 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 the unclassified road network is completed each year. This survey produces the 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, SCOTS requested that the backlog was recalculated by WDM Limited, based on the latest SRMCS survey data at the time. The backlog calculation for carriageway maintenance was £90.42 million in 2018. This is the sum of money required to be invested in a single year to bring the road network back to a serviceable standard. This backlog figure has reduced from £137million in 2013. Clearly this is to be welcomed.
- 4.8. The condition of the carriageways has improved from an RCI of 38.0 in 2010/2011 to 30.3 in 2019/2020 as shown in the table below. The RCI is the combined value of the red and amber categories referenced at 4.6.



- 4.9. The Council's position in Scotland in terms of RCI ranking has improved from 19th in 2013/2014 to 7th in 2019/2020.
- 4.10. An independent assessment was undertaken by WDM Limited to calculate the Steady State cost for our 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 network, is £12.5 million. Last year this figure was £11.0 million with the increase to £12.5 million largely down to increasing inflationary maintenance costs as opposed to a deteriorating network.

It should be borne in mind that this 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.

5. Footway Asset

- 5.1. Inventory records indicate that the Council is responsible for a total of 2425 kilometres (1506 miles) of footway. It should be noted that this figure represents adopted footways/footpaths only and there will be other footpaths that are maintained by other Resources/Services. The majority 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 of the footways have been estimated as having a 2 metre width.
- 5.3. The footway asset Gross Replacement Cost of the recorded asset is estimated at £551.5 million.
- 5.4. 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.
- 5.5. There is not a 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 inspectors, taking into account in particular, the condition of a footway and its level of use.
- 5.6. 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 the footways should be considered for maintenance purposes. The estimated steady state figure for footway maintenance is £0.8 million and Roads and Transportation Services are currently investing at this level. This mirrors current investment levels. In the same way as the carriageway figure above, this is an estimate, rather than an actual figure and it is important to note that the need to improve the condition of the footway network is assessed on an individual basis to support and justify expenditure.

6. Lighting Asset

- 6.1. The Council has 59,094 lighting columns, 65,438 luminaires, 2,157 Control Pillars and an estimated 1,873 kilometres (1164 miles) of cabling.
- 6.2. Inventory records for lighting columns, luminaires and control pillars are accurate. Inventory of the cabling network and knowledge of its condition is limited as most of it is underground.
- 6.3. The percentage of lighting columns exceeding their design life is 37.2% giving the Council the sixth oldest lighting column stock in Scotland. This should be considered relative to existing capital and revenue funding totalling £0.748 million.
- 6.4. The trend in columns beyond their design life has improved from 48% in 2015 to 37.2% at present.

- 6.5. This progress is primarily a consequence of the column renewal programme which was undertaken in parallel with the LED installation programme, commencing in 2015 and being completed over 3 years. This programme saw some 60,000 lighting units converted to energy saving LED's and some 7,250 of the oldest lighting columns replaced.

7. Structures Asset

- 7.1. The Council is responsible for a total of 775 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 the majority 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 £463.1 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 2 years and Principal Inspections every 6 years on all structures with a span in excess of 0.9m. More frequent Special 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, taking into account the severity and extent of the defect which has been observed.
- 7.6. There are 102 steel bridges within 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 the steel bridges would be of significant benefit. Currently, this work is tackled on a needs basis as funding permits.
- 7.7. Investment during 2019/2020 on bridge maintenance and renewal was £0.86 million. Investment programmed for 2020/2021 totals £3.376 million with £2.49 million of that figure being targeted investment in 2 discrete major bridge replacement projects. The cost to maintain the structures asset in its current condition (steady state) is £2.79 million.
- 7.8. In addition to the inspection process discussed above a national assessment programme, carried out to determine the suitability (i.e. strength) of the bridge stock 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.

- 7.9. 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. Compared to 2018/2019 there has been a modest improvement, however, 52 structures remain outstanding as high priority for the implementation of improvement measures. Containment upgrades were completed at 2 high priority structures in 2019/2020. 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.
- 7.10. 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:

Year	BCI_{av}	BCI_{crit}
2013-14	85.68	74.6
2014-15	84.91	75.72
2015-16	84.49	75.14
2016-17	84.09	73.02
2017-18	83.83	72.2
2018-19	83.68	72.11
2019-20	82.51	70.39

- 7.11. 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 6 years. It should be noted, however, that there has been a regression in the value of both indicators over the past 5 years.
- 7.12. The assembly of a register of road related retaining walls within South Lanarkshire was 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 224 sets of traffic signals and controlled pedestrian crossings. The numbers and different types of installations are listed below: -

- ◆ 107 Traffic Signals
- ◆ 73 Puffins
- ◆ 15 Pelicans
- ◆ 29 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 £200k and a pedestrian crossing around £60k. The existing level of funding allows for the renewal of one traffic signal junction per year or 2 pedestrian crossings. 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 the 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).

8.3. Typically, Roads and Transportation Services receive and respond to approximately 1,500 traffic signal faults annually. In 2018/2019, officers dealt with 985 faults and in 2019/2020 this increased to 1568.

8.4. The gross replacement value of all the traffic signal apparatus is currently estimated at a value of £33.4 million. The cost to maintain the traffic signal asset in its current condition (steady state) is £1.6 million.

8.5. In 2020/2021, funding of around £0.845 million will be directed towards investment in traffic signal infrastructure. This comprises some £0.57 million of external funding and £0.275 million of capital funding.

8.6. At present, the Council is developing a 15 year lifecycle plan although the replacement of each asset is still assessed on an individual needs 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 46 pedestrian crossings (representing 35% of its assets) that are 15 years old or older. This is an increase of 3 pedestrian crossings compared to the previous year.

8.7. 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 43.3 Km. 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. 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 are in need of replacement. Repairs are prioritised in line with available funding.

- 9.2. 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 £0.4 million.
- 9.3. The Council's approved Capital Programme for 2020/2021 identifies investment of £2.4 million to cover a range of road related assets, specifically footways, traffic signals, structures and vehicle restraint systems.

10. Summary of Roads Assets

- 10.1. Carriageway asset is in an improving condition as a result of previous investment decisions.
- 10.2. Footway asset inventory is limited both in terms of the asset itself and its condition. From the information, it is observed that 16.2% of the network requires to be considered for maintenance.
- 10.3. The lighting asset was aged in terms of columns with an inefficient energy configuration. However, the lighting investment recently completed reduced energy use by half and replaced 7,253 of the oldest lighting columns representing significant progress.
- 10.4. Bridge condition is generally reasonable but regressing. Good progress has been made in dealing with bridges assessed as being inadequate for current loading standards, however, greater investment is required in repainting major steel bridges and continuing attention is also required to the many bridges in respect to parapets. The specific investment commitment of £6 million to re-open 2 bridges in Clydesdale should be noted and welcomed.
- 10.5. The 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. Significant success has, however, been achieved in securing external funding for this work.
- 10.6. The condition of vehicle restraint systems is such that a significant number are beyond their design life and require to be improved. A prioritised programme of sustained investment will be required with funding prioritised relative to other needs as appropriate.

11. Employee Implications

- 11.1. There are no employee implications associated with this report.

12. Financial Implications

- 12.1. There are no financial implications associated with this report. However, capital funding bids will be made as opportunities arise to seek to maintain or improve condition of key assets.

13. Climate Change, Sustainability and Environmental Implications

- 13.1. There are no direct implications arising from the recommendations in this report.

14. Other Implications

14.1. There are no implications in terms of sustainability or risk in relation to the information contained within this report.

15. Equality Impact Arrangements 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.

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13 May 2020

Link(s) to Council Objectives/Values

- ◆ Improve road network and influence improvements in public transport

Previous References

- ◆ Community and Enterprise Resources Committee – 3 September 2019

List of Background Papers

- ◆ Roads Asset Management Plan – 2020 Update

Contact for Further Information

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

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