Agenda Item

Report

Report to:	**Community and Enterprise Resources Committee**
Date of Meeting:	**21 August 2018**
Report by:	**Executive Director (Community and Enterprise Resources)**

Subject:	**Roads Asset Management Plan – 2018 Update**

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 RAMPs across Scotland provides an excellent example of collaborative working across all thirty two councils. A four 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 four 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 carriageway asset Gross Replacement Cost of the recorded asset as derived utilising the Asset Valuation tool developed by Society of Chief Officers of Transportation in Scotland (SCOTS) is £2.3 billion.

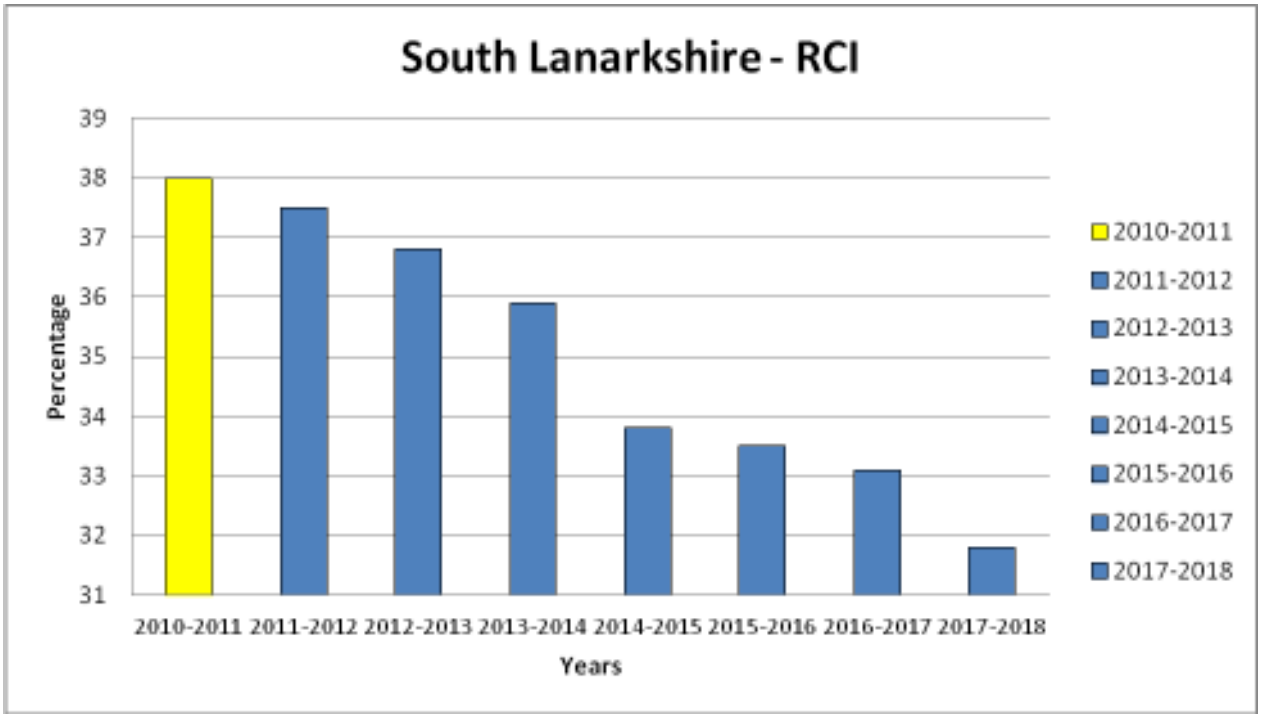
4.4. Safety inspections are carried out in accordance with the Guidance Document for Road Safety Inspections and Defect Categorisations. This manual takes cognisance of the guidance contained within Well-Maintained Highways Infrastructure Code of Practice. These safety inspections are carried out on a monthly, three monthly or annual basis depending on the carriageways hierarchy. Repair needs identified during these inspections are then completed within appropriate timescales.

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 our road network by independant contractor WDM Ltd. This survey assesses 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 four 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 SCOTS requested that the backlog was recalculated by WDM Ltd, based on the latest SRMCS survey data at the time. The backlog calculation for carriageway maintenance was £83.3 million in 2017. This is the sum of money required to be invested in a single year to bring the road network back to a serviceable standard.

4.8. The condition of our carriageways has improved from an RCI of 38.0 in 2010/2011 to 31.81 in 2017/2018 as shown in the table below.



4.9. Our position in Scotland RCI ranking has improved from 19th in 2013/2014 to 10th in 2017/2018, albeit almost a third of our roads still require to be considered for maintenance.

4.10 An independent assessment was undertaken by WDM Ltd to calculate the Steady State cost for our network in 2009 and again in 2017. The steady state is the amount of planned resurfacing required to maintain carriageways in their current condition. In 2017, the steady state figure was £11.048m.

4.11 With the current Roads Investment Plan (which provides funding of £12m per annum) ending in March 2019, there is a requirement to review investment in road resurfacing. In doing so, it is important to bear in mind that the need to improve the condition of the network is assessed on an individual basis to support, justify and prioritise expenditure.

5. Footway Asset

5.1. Inventory records indicate that the Council is responsible for a total of 2425 kilometres (1506 miles) of footway. The majority of the Council's footway network is contained within the urban area.

5.2. Inventory records for footways are limited and 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 two metre width.

5.3. The footway asset Gross Replacement Cost of the recorded asset is estimated at £499.60 million.

5.4. Inspection arrangements and maintenance categories are similar to those for carriageways.

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. We do not currently have a full assessment of the extent of the maintenance backlog on footways so the first steps have been taken to enhance backlog information. A total 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. The estimated steady state figure for footway maintenance is £0.8million.

5.7 While capital investment of £1m was made available for footways in the current year, there is a need to consider future funding needs and these are being reviewed.

6. Lighting Asset

6.1. The Council has 58,564 lighting columns, 64,540 luminaires, 2,160 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, most of it being hidden underground.

6.3. Although no backlog model has been developed as yet, the percentage of lighting columns exceeding their design life (30 years) is 36.8%, giving the Council the sixth oldest lighting column stock in Scotland. The cost to replace all of these columns at current rates would be £43.963 million. The cost to maintain the lighting asset in its current condition (steady state) is £1.18million.

6.4. The trend in columns beyond their design life has improved from 48% in 2015 to 36.5% at present.

6.5. On 11 March 2015, the Executive Committee approved investment of £19.56m for the conversion of our existing street lighting to LED and further investment to replace 7,029 of our oldest lighting columns over a 5 year period. To date, 57,294 lanterns have been converted to LED and 7,054 columns have been installed, representing a position close to completion of the programme.

6.6 While progress has been made in improving the age profile of our lighting columns, we still have among the most aged lighting column stock in Scotland, albeit we have improved from having the second oldest stock to the sixth oldest. Consideration consequently requires to be given to further investment to prevent further regression in the overall condition of our lighting stock.

7. Structures Asset

7.1. The Council is responsible for a total of 744 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 £253.4m. 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 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 prioritized, 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 our steel bridges would be of significant benefit. Currently this work is tackled on an ad-hoc basis as funding permits.

7.7. Current investment for 2017/2018 is £0.77m per annum. This is broadly similar to previous years. 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 be below desirable load bearing 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 14 remain to be addressed.

7.9 There are specific issues at Ponfeigh Bailey Bridge, Douglas Water, which is currently closed, and Clyde Bridge, Thankerton which is in poor condition and weight restricted. In each case, remedial costs are estimated at £3m.

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, but progress has been limited as a consequence of funding availability. As it stands, 59 structures have been identified as high priority for improvement measures. However, 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. In terms of risk and containment, the need for upgrading works at the remaining 92% of bridges is currently considered low.

7.11 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 six years are as follows:

Year	BCI_{av}	BCI_{crit}
2012-13	85.67	74.62
2013-14	85.68	74.60
2014-15	84.91	75.72
2015-16	84.49	75.14
2016-17	84.09	73.02
2017-18	83.83	72.20

7.12 As noted from the above table, the second and third columns show 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. It should be noted, however, that there was a decrease in the value of both indicators in 2017-18 and that the overall trend has been one of condition regressing.

7.13 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 paragraph 7.4).

7.14 Again, there is a need for the Council to consider future funding requirements for work of the type described above relative to other priorities.

8. Traffic Signals

8.1. The Council is responsible for 218 sets of traffic signals and controlled pedestrian crossings. The numbers and different types of installations are listed below: -

- 101 Traffic Signals
- 74 Puffins
- 15 Pelicans
- 28 Toucans

8.2. Many of the traffic signals in South Lanarkshire are old, utilise older computer technology and are energy inefficient. 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 £180k and a pedestrian crossing around £60k. Based upon the existing level of Council funding, we are able to renew one traffic signal junction per year or 2 pedestrian crossings. External funding does allow other infrastructure to be renewed but this is variable. 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. We typically receive and respond to over 1000 traffic signal faults annually.

8.4. The gross replacement value of all traffic signal apparatus is currently estimated at a value of £28.3 million. The cost to maintain the traffic signal asset in its current condition (steady state) is £0.75million.

8.5. In 2017/2018, funding of around £960k will be directed towards investment in traffic signal infrastructure but this is not guaranteed to any extent in future years and relies significantly on external funding.

8.6. At present, the Council is seeking to work to a 15 year lifecycle plan, albeit each installation is assessed in terms of its individual condition to determine the need to replace. Any plan longer than this would result in reliability issues arising and over recent years some installations have simply failed resulting in emergency replacement works being necessary. The Council currently has 29 sets of traffic signals and 28 pedestrian crossings that are 15 years old or older. This is an increase of 17 pedestrian crossings compared to the previous year. 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 decrease annually.

9. Street Furniture - Vehicle Restraint Systems

9.1 Within South Lanarkshire Council, there are currently approximately 380 vehicle restraint systems, totalling approximately 34.6 Km. At present, 320 vehicle restraint systems have been surveyed in detail. Approximately 20% of our systems have

reached the end of their serviceable life (life expired) due to having timber posts suffering from rot. 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.

9.2 The estimated gross replacement cost of the vehicle restraint systems which would bring the systems up to current standards is £8.89 million

9.3 The estimated cost to replace currently life expired and damaged systems is £2.12 million.

9.4 The estimated annual cost to maintain the asset in its current condition (steady state) is £0.4million.

9.5 Again, consideration requires to be given to funding the necessary upgrading.

10. Summary of Roads Assets

10.1. Carriageway asset is in an improving condition as a result of significant additional investment. However, additional investment will be required beyond March 2019 if this progress is to be maintained and recent improvements protected.

10.2. Footway asset inventory is limited both in terms of the asset itself and its condition. From the information we have, 16.2% of our network requires to be considered for maintenance. The most recent Household Survey of 2014 makes it clear that the condition of our footway network is a matter of public concern.

10.3. The lighting asset was aged in terms of columns with an inefficient energy configuration. However, the lighting investment programme which is now nearing completion, will reduce energy use by half and replace 7,253 of the oldest lighting columns representing significant progress. Given, however, we still have the sixth oldest street lighting stock in Scotland, medium term investment requires to be identified.

10.4. Bridge condition is generally reasonable albeit condition assessment indicates slow regression. 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 attention is also required to the many bridges with potentially weak parapets. Significant issues also exist at a number of specific locations.

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.

10.6 The condition of the vehicle restraint systems is such that a significant number are beyond their design life.

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 the condition of key assets.

13. Other Implications

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

14. Equality Impact Arrangements and Consultation Arrangements

14.1. 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.

14.2. At this stage no further consultation is necessary

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Executive Director (Community and Enterprise Resources)

12 July 2018

Link(s) to Council Values/Ambitions/Objectives

- Improve the road network, influence improvements in public transport and encourage active travel

Previous References

- Community and Enterprise Resources Committee – 3 October 2017

List of Background Papers

- Roads Asset Management Plan – 2018 Update

Contact for Further Information

If you would like to inspect the background papers or want further information, please contact: - Gordon Mackay, Head of Roads and Transportation Services
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