East Lothian Council

REPORT TO: Policy Performance and Review Committee

MEETING DATE: 9 October 2019

BY: Depute Chief Executive (Partnerships and Community Services)

SUBJECT: Roads Asset Management - Annual Status and Options Report

---

1. PURPOSE

1.1 This report presents a summary of the council's road assets. It:

- Describes the status of the asset, its current condition, and performance;
- Defines the value of the assets;
- Details the service that the asset and current budgets are able to provide;
- Presents the options available for the future.

1.2 In accordance with the Chartered Institute of Public Finance and Accountancy (CIPFA) Code of Practice on Transport Infrastructure Assets, road assets are split in to 6 distinct Asset Groups: Carriageways; Footways and Cycleway; Street Lighting Status; Structures; Traffic Management Status and Street Furniture.

1.3 This report advises on Carriageways, Footways, Street Lighting, Traffic Management Systems and Electric Vehicle (EV) Charging Points that are referenced in Appendix A - Status and Options Report 2019.

2. RECOMMENDATIONS

2.1 It is recommended that the Policy and Performance Review Committee notes the content of the report and operational recommendations.

3. BACKGROUND

3.1 East Lothian Council in conjunction with the Society of Chief Officers for Transportation Scotland (SCOTS) have commissioned Atkins to assist in the development of an Asset Management Framework. Atkins will assist with the delivery of a structured approach to Roads Asset Management Planning, in line with Central Governments financial reporting requirements. It will also be compliant with International Financial Reporting Standards (IFRS) and meet the needs of Whole of Government Accounts (WGA).

3.2 This report complements the Road Asset Management Plan (RAMP). It provides information to assist with budget setting for the Roads Infrastructure Asset Groups.

3.3 The status of the Asset Group is provided in terms of current condition, investment options, outputs that are deliverable and the standards being achieved.

3.4 The report considers the following options:

- No investment;
- A continuance of current funding levels;
- The predicted cost of maintaining current condition;
- A 5-year increase in investment (Carriageways Only).

3.5 The report adopts the ethos of Long-Term Forecasts as Road Assets deteriorate slowly. The impact of a level of investment cannot be shown by looking at the next couple of years. The report includes 20 yr. forecasts to enable decisions to be taken with an understanding of their long-term implications.

3.6 To reflect continuing budgetary pressures the report contains an assessment of the impact for each option presented. In some instances, however the level of detail of assessment is currently hindered by an absence of data. Commentary on data accuracy is provided in Appendix A.

Carriageways

3.7 The Carriageway long-term condition trend suggests a ‘steady state’ picture. However, the network condition has marginally deteriorated over the years. (Fig 1.2)

3.8 The costs of Planned Maintenance – Corrective Treatments, in particular Carriageway Reconstruction, are prohibitive. A Preventative Treatment approach should mitigate the need to invest significantly, if interventions are timed appropriately. Short-term under-investment could result in major long-term expenditure necessary to rectify major defects which could have been addressed earlier.

3.9 Whilst additional investment was made in 19/20 the overall level of planned investment will not completely address the cumulative deterioration within the Road Asset. Although through prudent management of resources and an adoption of a Preventative Maintenance Strategy, a slower deterioration of the Asset is achieved, we recommend additional investment to ensure a steady state to maintain existing road conditions.

3.10 The Annualised Depreciation of the Asset is calculated to be £10,102,436 (Table 1.1), and the current level of investment is £3,900,000 on preventative treatments, which leads to a sustained deterioration of the carriageway.

3.11 An analytical assessment of Carriageway Options provides a review of potential treatment strategies, and it is recommended to Adopt **Option 3 Steady State** and maintain the preventative maintenance strategy in order to best utilise the monies available.

3.12 Although this will mean an increase in the use of surface dressing and slurry treatments, negative feedback from residents is likely to be low and short lived due to the advances in materials currently used and the limited seasonal duration of the works.

Footways

3.13 Footway survey data is over 5 years old and needs to be updated. A more regular assessment of the footway network condition is required to understand and monitor deterioration over the longer term. A review of our current procedures is ongoing to address this backlog of data collection.

3.14 Only 3% of footways are regarded to be Condition 4 – Major deterioration (Figure 2.2).

3.15 Investment in 2018/19 is below the steady state figure and this also includes cycle / footpath improvements that have been invested on existing infrastructure. The annualised depreciation of the footway asset is calculated to be £2,302,743. (Table 2.1)

3.16 An analytical assessment of Footway Options (Section 2.1) provides a review of potential treatment strategies. It is recommended to adopt **Option 4 – Minimising Deterioration.**

3.17 This Option will remove major deterioration (condition four) in year one, reduce minor deteriorated footways (condition three) and potentially aid in data collection.

Street Lighting

3.18 There is currently a high growth in the street lighting asset base due to the upturn in housing land development. Approximately 2000 assets are currently in the adoption pipeline, with more to follow every year.

3.19 A significant amount of Street Lighting Columns (33%) has exceeded their expected service life (ESL).

3.20 Only the 15% of the Street Lighting Luminaires have exceeded their ESL.

3.21 Investment in the Street Lighting stock has increased but is well below the annualised depreciation value (ADC), leaving an annual maintenance backlog of column and luminaire renewal.

3.22 Energy costs are expected to increase despite mitigation by procurement arrangements and the installation of LED luminaires. Whole sale energy prices are determined by the marketplace, which is influenced by the mix of power generating options, renewables, energy security, network growth, investment and regulations make the energy landscape difficult to predict. Consequently, a pessimistic bias should be catered for.

3.23 An assessment of Street Lighting Columns and Luminaire renewal options provides an overview of potential treatments and strategies. It is recommended to adopt **Option 4 for Column renewal and Option 2 for Luminaire renewal.**

Traffic Management Systems

3.24 The Traffic Management System Assets have increased by 10% in the last 5 years.

3.25 The majority of Traffic Signal equipment (94%) is within their expected service life. The ones that have exceeded their expected service life have been inspected and its working condition is considered to be satisfactory.

3.26 The annualised depreciation of the Traffic Management System asset is calculated to be £108,800 (Table 4.1).

3.27 An assessment of Traffic Management Systems Options and provides an overview of potential strategies. It is recommended to adopt **Option 1- Current Level of Investment**.

EV Charging Points (Street Furniture)

3.28 There is currently a high growth in the EV Charging Point Assets through funding obtained from different organisations including, Transport Scotland and the Office of Low Emission Vehicles (OLEV).

3.28 All chargers are inspected and serviced annually. All assets are covered by warranty and maintenance packages, they are therefore in a very good condition.

3.29 All chargers will be managed to remain in a safe, operable condition for a minimum of 10 years, in order to be compliant with the 100% Grant Funding conditions.

4 POLICY IMPLICATIONS

4.1 None

5 EQUALITIES IMPACT ASSESSMENT

This report is not applicable to the well-being of equalities groups and an Equalities Impact Assessment is not required.

6 RESOURCE IMPLICATIONS

6.1 Financial – none.

6.2 Personnel – none.

6.3 Other – none.

7 BACKGROUND PAPERS

7.1 None.

AUTHOR'S NAME	Peter Forsyth
DESIGNATION	Asset and Regulatory Manager
CONTACT INFO	Eleni Gigourtaki – Ext. 7540
DATE	September 2019

East Lothian Council

ROADS INFRASTRUCTURE

Appendix A

Status and Options Report 2019

TABLE OF CONTENTS

1.0 CARRIAGEWAY STATUS

Road Length

A Class Roads	95.2 km
B Class Roads	169.4 km
C Class Roads	222.9 km
Unclassified Roads	428.7 km

(as of April 2017)

Road Condition

The condition of the Roads is measured by the Scottish Road Maintenance Condition Survey (SRMCS) that assesses parameters such as, ride quality, rut depth, intensity of cracking, texture depth and edge condition. This provides an indication of the residual life of the road structure.
The Road Condition Index (RCI) is a measure of the percentage of our roads that require attention.
Green - an RCI score <40 - where the carriageway is generally in a good state of repair;
Amber - an RCI score ≥40 and <100 - where some deterioration is apparent which should be investigated to determine the optimum time for planned maintenance treatment;
Red - an RCI score ≥ 100 - where the carriageway is in poor overall condition which is likely to require planned maintenance soon (ie within a year or so).
The RCI graph to the top left shows the trend over the last years, overall condition in Blue and poor RCI in Red.

Historically investments in Roads across the UK has been low, which has an impact on the overall condition of the Road Network.

Road Valuation

The Gross Replacement Cost and Depreciation Values for the carriageway can be seen in Table 1.1. The annualised depreciation of £10.102m represents the average amount by which the asset will depreciate in one year if there is no investment in renewal of the asset.

Figure 1.1

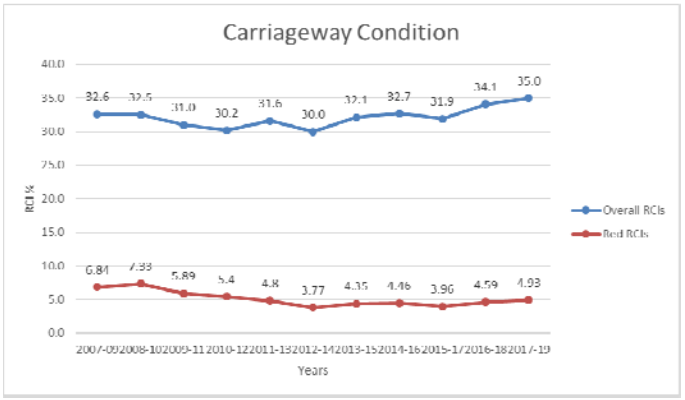


Figure 1.2

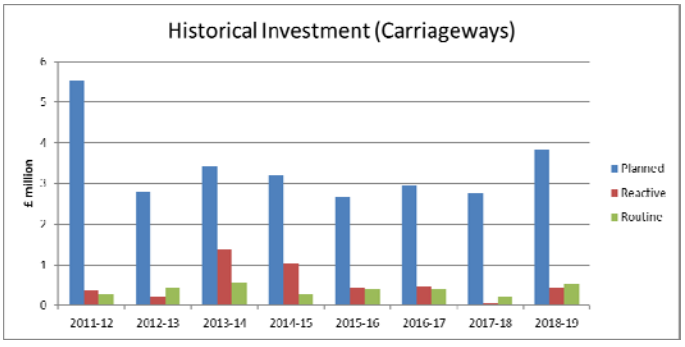


Figure 1.3

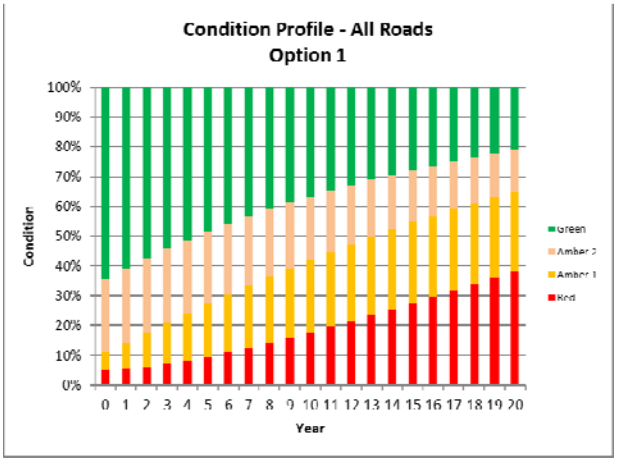
Table 1.1

Carriageway Valuation			
Road Classification	**Gross Replacement Cost**	**Depreciated Replacement Cost**	**Annualised Depreciation Cost**
Principal (A) Roads (Urban)	£51,643,080	£47,533,572	£385,978
Principal (A) Roads (Rural)	£92,284,347	£81,719,588	£1,000,167
Classified (B) Roads (Urban)	£47,035,939	£43,444,111	£351,933
Classified (B) Roads (Rural)	£137,186,785	£116,906,392	£1,752,692
Classified (C) Roads (Urban)	£17,984,518	£16,360,182	£163,529
Classified (C) Roads (Rural)	£135,344,057	£114,348,126	£1,893,572
Unclassified Roads (Urban)	£222,117,976	£193,078,426	£3,348,270
Unclassified Roads (Rural)	£96,007,188	£82,682,460	£1,206,294
Total	**£799,603,890**	**£696,072,856**	**£10,102,436**

1.1 CARRIAGEWAY INVESTMENT OPTIONS

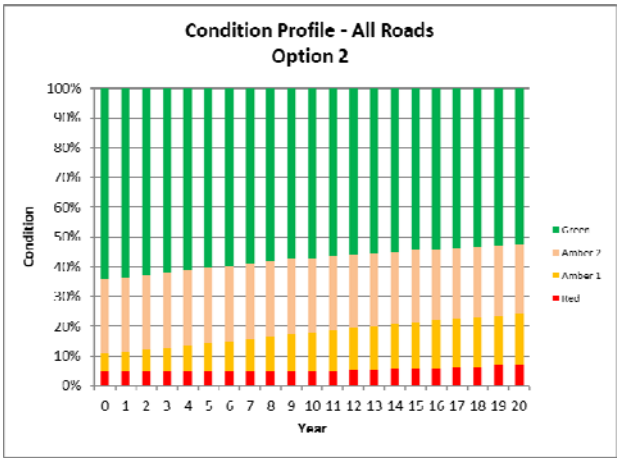
1 – NO INVESTMENT

Zero investment would lead to severe deterioration, with 78.85% of the carriageway requiring attention after 20-years. The volume of reactive temporary repairs would rise rapidly, year on year, as would public liability claims. With this level of investment, customer satisfaction levels will decrease significantly.



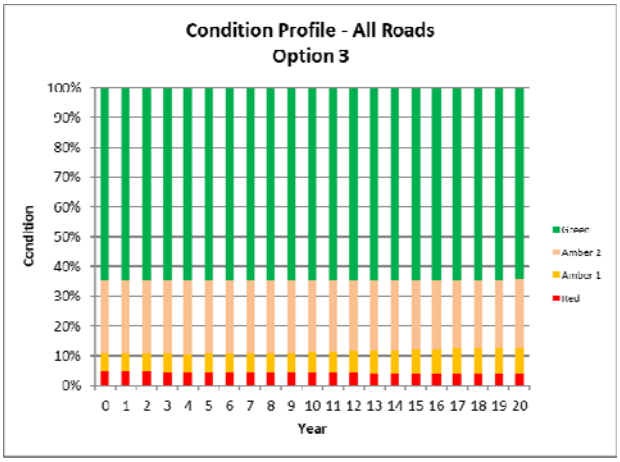
2 – CURRENT LEVEL OF INVESTMENT

An annual capital investment of £3.9m would lead to sustained deterioration, with 47.46% of the carriageway requiring attention after 20-years. The volume of reactive temporary repairs would steadily rise, year on year, as would public liability claims. With this level of investment, customer satisfaction levels will decrease significantly decrease.



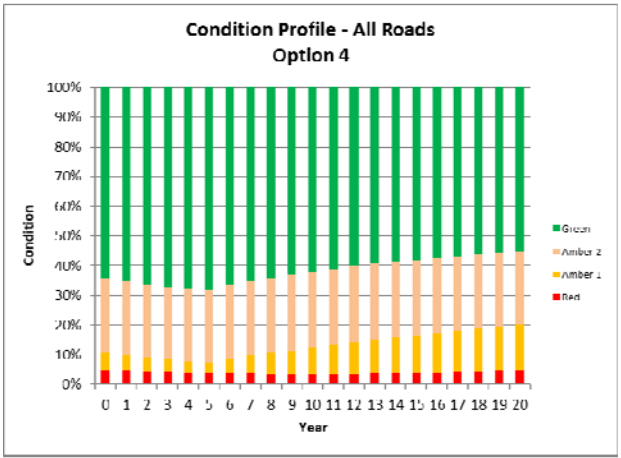
3 – STEADY STATE

An annual capital investment of £4.5m would maintain existing Road Condition of 35.7%. The volume of reactive temporary repairs, public liability claims and levels of customer satisfaction can also be expected to be maintained. The road will still be vulnerable to significant deterioration in the event of a severe winter.



4 – £30m INVESTMENT OVER 5 Yrs

An annual capital investment of £6m would lead to significant improvement, with only 35% of the carriageway requiring attention after 5 years. The volume of reactive temporary repairs would significantly reduce, as would public liability claims. Customer satisfaction levels would improve significantly. However, a slow deterioration would start after 5 years if the initial level of investment was adopted, with 44.81% of the roads requiring attention after 20-years.



1.2 CARRIAGEWAY KEY ASSET ISSUES

Structural Vulnerability

The survey indicates that 23.6 km of the rural public roads in East Lothian are of a poor condition and require immediate investigation and possible treatment.

Additionally, severe winter weather conditions (impairment) would significantly accelerate damage to the carriageway network.

Level of Investment

The level of investment on public roads in East Lothian has not been sufficient to limit the decline in the overall condition of the network. Appropriate investment can achieve a well-managed road network (Figure 1.1).

2.0 FOOTWAY STATUS

Footway Length

Bituminous	438.9 km
Slabs / Flags	15.7 km
Natural Stone	6.8 km
Concrete	20.0 km
Blocks	0 km

Total Footway Length = 481.3 km *
(* as 2013)

The condition of the footway asset is obtained using the East Lothian Footway Condition Assessment Process. This is an aging asset which will have longer-term investment requirement (Figure 2.1).

The condition referred to is the 2013/14 assessment. There has been no change between financial years.

The level of condition is considered good with only 3% of footways with major deterioration (Condition 4).

Condition Band Descriptions

Condition 1 – As New
Condition 2 – Aesthetically Impaired
Condition 3 – Minor Deterioration
Condition 4 – Major Deterioration

Footway Valuation

The Gross Replacement Cost and Depreciation Values for the footway can be seen on the table on the right. The annualised depreciation of £2.3m represents the average amount by which the asset will depreciate in one year if there is no investment in renewal of the asset.

Figure 2.1

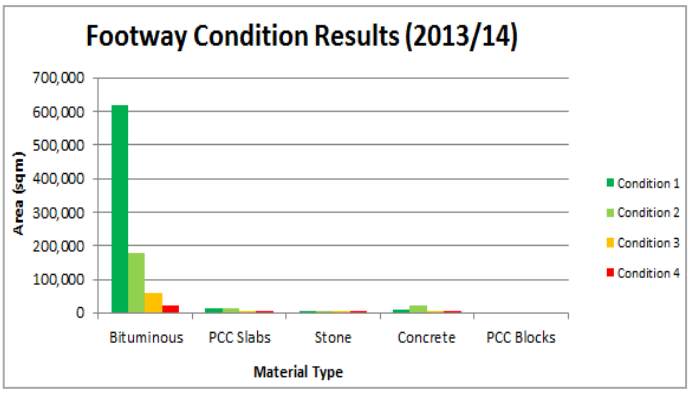


Figure 2.2

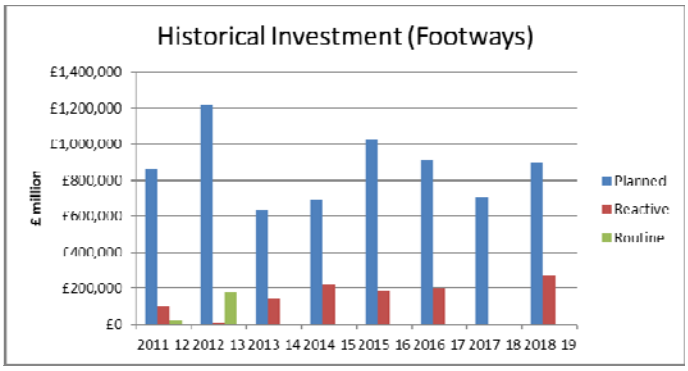


Figure 2.3

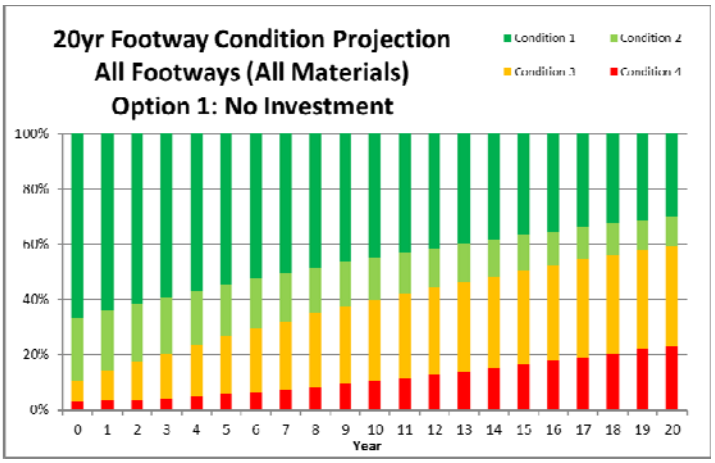
Table 2.1

Footway Valuation			
Material Type	**Gross Replacement Cost**	**Depreciated Replacement Cost**	**Annualised Depreciation Cost**
Bituminous	£122,588,280	£82,098,941	£2,273,443
Slabs	£2,641,893	£1,810,129	£31,161
Stone	£4,976,807	£3,378,158	£47,729
Concrete	£3,465,299	£2,299,442	£19,492
Blocks	£0	£0	£0
Total	£133,672,278	£89,586,671	£2,371,826

2.1 FOOTWAY INVESTMENT OPTIONS

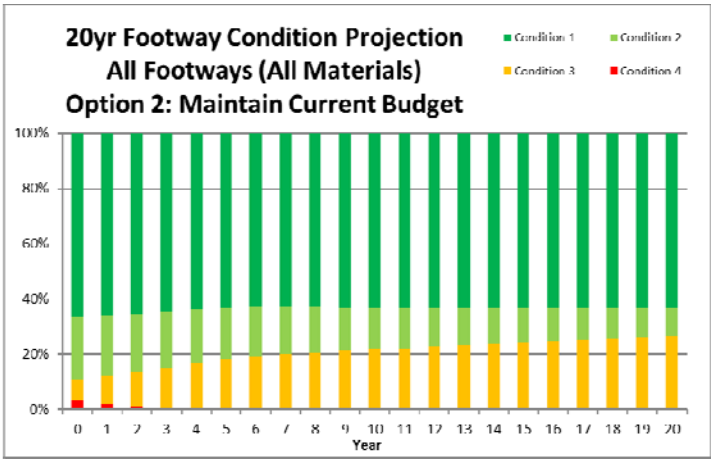
OPTION 1 – NO INVESTMENT

Zero investment would lead to severe deterioration, with 23% of our footways requiring attention after 20-years. The volume of reactive temporary repairs would rise rapidly, year on year, as would public liability claims. With this level of investment, customer satisfaction levels will decrease significantly



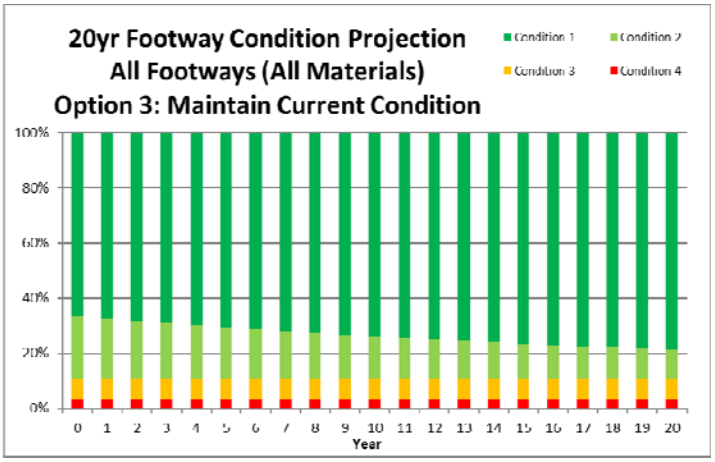
OPTION 2 – CURRENT LEVEL OF INVESTMENT

An annual capital investment of £900k would lead to sustained deterioration, with 27% of our footways requiring attention after 20-years. The overall level of condition four reduces to 0% which is the main target of this option. The volume of reactive temporary repairs would rise rapidly, year on year, as would public liability claims. With this level of investment, customer satisfaction levels will decrease significantly



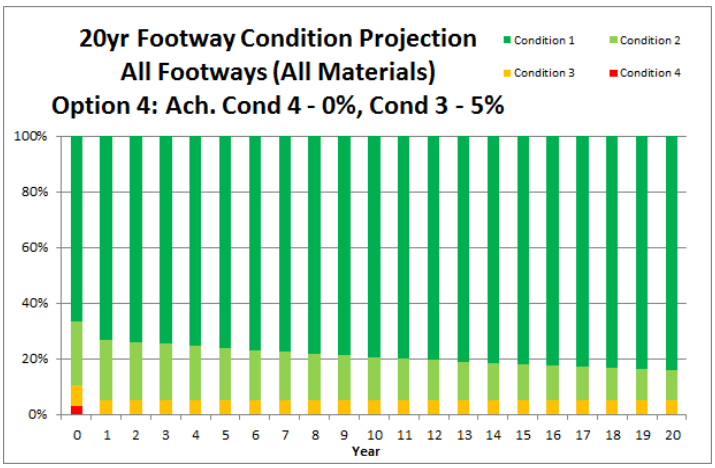
OPTION 3 – STEADY STATE

An annual £1,000k capital investment would maintain existing footway condition of 11%. The level of minor and major deteriorated (condition three and four) footways remaining the same over time. The volume of reactive temporary repairs, public liability claims and levels of customer satisfaction can also be expected to be maintained.



OPTION 4 – MINIMISING DETERIORATION

An annual capital investment of £1.1m would reduce minor deteriorated (condition three) footways to 5% and remove all major deteriorated (condition four) footways in year one and then maintain steady state for year 20.
The volume of reactive temporary repairs would significantly reduce, as would public liability claims. Customer satisfaction levels would improve significantly.



2.2 FOOTWAY KEY ASSET ISSUES

Investment

The need for improvements in footways and cycleways will be necessary to enable the success of Sustainable Transport Strategies. An important aspect is to ensure the condition of the footways is acceptable and in rural areas there is a need to investigate joining up isolated sections of footway which will encourage more use of the footways.

Data Reliability & Priorities

The reliability of the condition information is several years old and needs to be updated. The cycle of data collection needs to be formalised and rigorously followed. Accordingly, long-term condition analysis is difficult and the accurate prediction models is problematic. Resourcing of the inspection regime is challenging due to conflicting service area priorities but will need to be demonstrable to ensure reliability of data.

3.0 LIGHTING STATUS

Lighting Assets

Lighting Columns	18,344
Cable Length	409 km

Condition

A structural testing programme is ongoing to identify columns in poor condition for replacement. An electrical test and inspection programme is also in place, which includes cable and cabinet test details and cable schematic diagrams. Cyclic inspections are carried out over a 6- to 8-year cycle.

Over 33% of our lighting columns have exceeded their service life, compared to the Scottish average of 30%.

Approximately 15% of lanterns exceed their expected service life.

A programme to replace or upgrade all 10,000 non-LED lanterns with LEDs over a three-year period is ongoing.

Figure 3.1 highlights a typical deterioration at the base of a lighting column.

Gross Replacement Cost - £44.9m

Figure 3.1

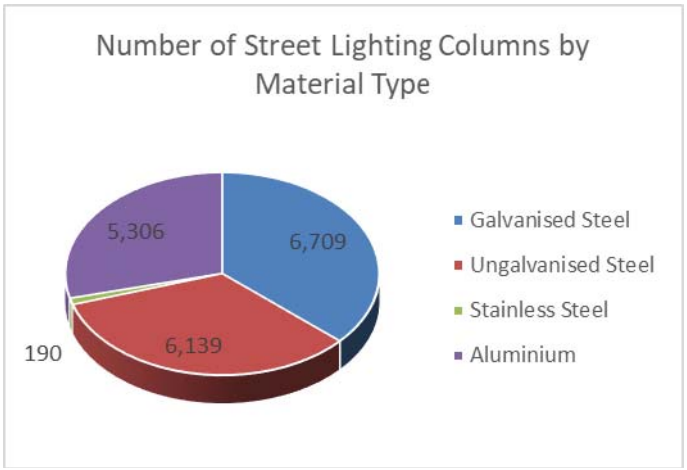


Figure 3.2

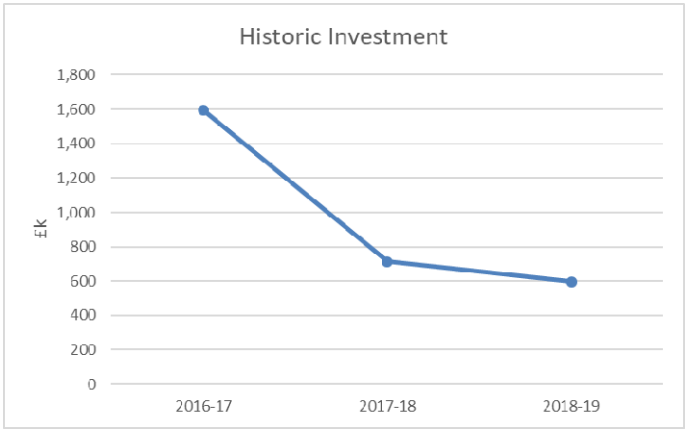
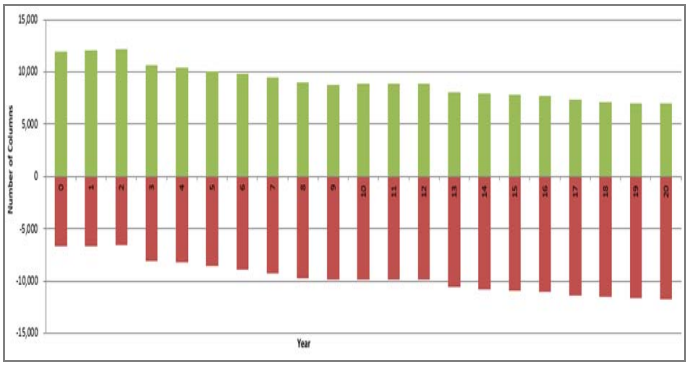


Figure 3.3

3.1 COLUMN OPTIONS

COLUMN OPTION 1 – CURRENT LEVEL OF INVESTMENT - £150k per annum

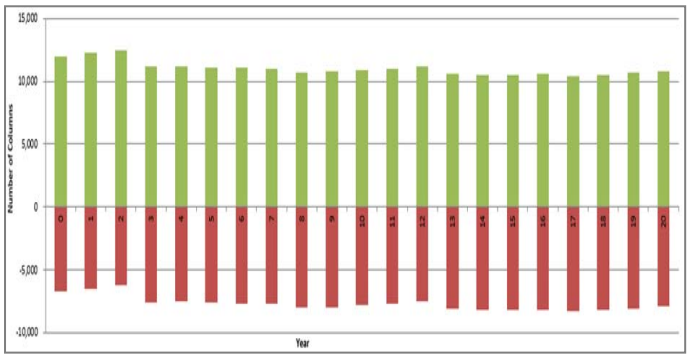
Continuing current investment would mean significant risk of structural failure (column collapse) and a substantial increase in reactive repairs, with 61% of columns exceeding the expected service life after 20 years. With this level of investment, customer satisfaction levels will decrease significantly.



Column Option 1 – Current Level of Investment

COLUMN OPTION 2 – MAINTAINING CURRENT % OF COLUMNS EXCEEDING ESL - £450k per annum

Condition continues to fall until new low of 46% ESL reached in 6-7 years' time. Only gradual return to mid-30% ESL in 30 years. Will significantly reduce the risk of structural column failure in short term.

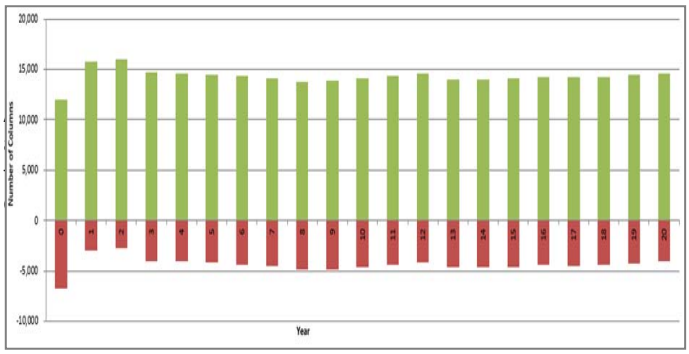


Column Option 2 – Maintain Current % of Columns Exceeding ESL

COLUMN OPTION 3 – REPLACEMENT OF BACKLOG

Replacement of backlog then as galvanised steel as required - £4.1m per annum for 2 years then £240k per annum for the next 30 years.

All un-galvanised steel columns replaced ASAP. Galvanised steel as ESL reached. Will significantly reduce the risk of structural column failure and maintain risk at low level.

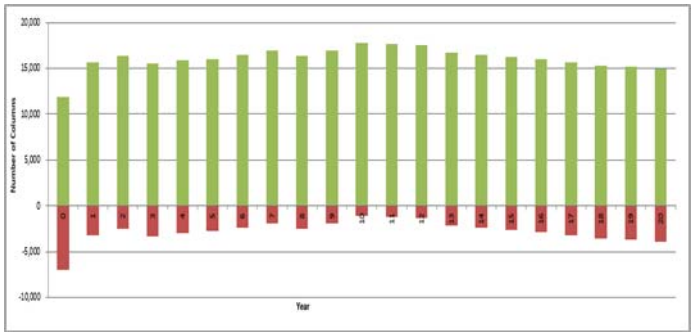


Column Option 3 – Replacement of Backlog

COLUMN OPTION 4 – REPLACEMENT OF ALL STEEL COLUMNS

Replacement of all steel columns - £4.1m per annum for 2 years then £900k per annum for the next 8 years.

All steel columns replaced in 10 years. Will significantly reduce the risk of structural column failure. Replacement Aluminium columns expected service lives of 50 years so condition of columns should remain good until well after scope of RAMP analysis.



Column Option 4 – Replacement of All Steel Columns

3.2 LUMINAIRE OPTIONS

Luminaire Option 1

Continue Current Balanced Strategy - £358k per annum for 4 years

Continue our strategy of LED upgrade using a retrofits and replacement lanterns; a balance between capital and quality. Existing luminaires in unacceptable condition will be replaced with new LED luminaires. Existing luminaires in acceptable condition will be retrofitted. 100% LED achieved. Potential energy savings are not optimised due to the inefficiencies of LED retrofits. Light quality may be an issue.

Luminaire Option 2

Highest Capital Cost, Quality & Energy Efficiency - £558k per annum for 4 years

Improvement over our current programme of LED upgrade by replacing all Non-LED lanterns to achieve the best quality. All non-LED luminaires will be replaced. Potential energy savings are optimised due to the efficiencies of new LED lanterns. Highest light quality.

Luminaire Option 3

Lowest Capital Cost, Quality and Energy Efficiency - £171k per annum for 4 years. £193k cost to replace remaining lamps every 5 years.

This option is a contingency should our current programme of LED upgrades be considered too expensive. Existing luminaires in unacceptable condition will be replaced with new LED luminaires.

Existing SOX and SON lamps replaced with LED (Figure 3.4). Existing White lamps will be left and replaced like for like when they fail, every 5 years on average. 100% White Light at end of programme but only 79% LED. Light quality may be an issue. Potential energy savings are not optimised due to the inefficiencies of majority of existing LED retrofits and non-LED White lamps whose cyclical replacement costs are considerable

Figure 3.4

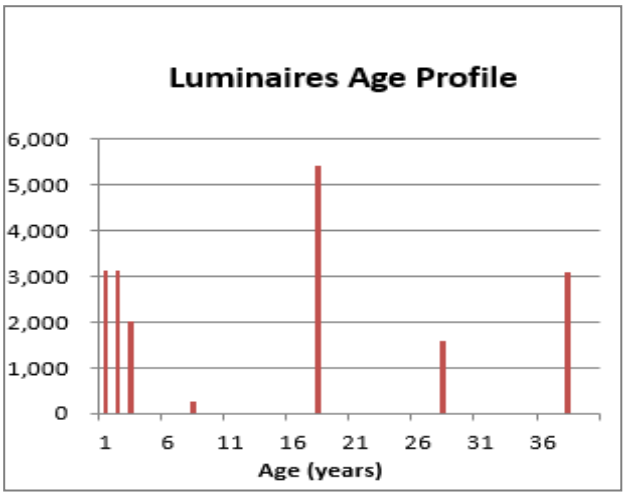


Figure 3.5

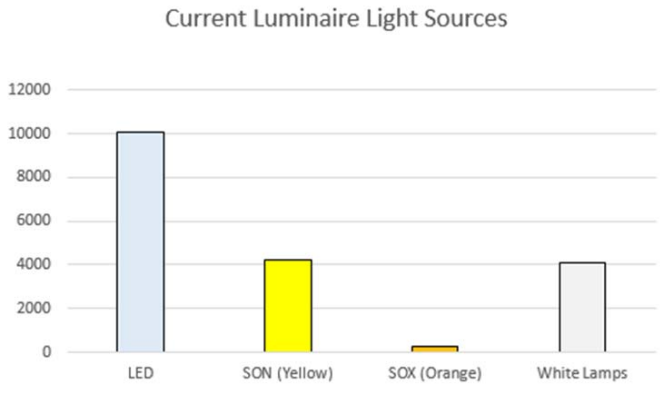


Figure 3.6

If there is an increase in spend on column replacement then luminaires will be renewed at the same time, reducing the cost of the above options. Most significant cost saving will be if column replacement were carried out over a sort period of time as any luminaires fitted to columns that are soon to be replaced can be transferred over. We would endeavour to undertake an approach where strategies of replacing Columns and Luminaires

align.

3.3 LIGHTING - KEY ASSET ISSUES

Energy Prices

The biggest factor influencing street lighting is the price of electricity. Over the last decade the cost of electricity has increased significantly. It is likely that electricity prices will rise significantly in the coming years. If the recent trend is to continue, the additional cost to the street lighting service is significant.

The table opposite shows the pay back periods for luminaire options.

Option	Description	Pay-Back
Luminaire Option A	Continue Current Balanced Strategy	6 Years
Luminaire Option B	Highest Capital Cost, Quality & Energy Efficiency	9 Years
Luminaire Option C	Lowest Capital Cost, Quality and Energy Efficiency	4 Years

Energy Efficiency

The principal manufacturer of (orange) SOX lamps has announced they will cease production in 2020. This will reduce the availability and affordability of SOX lamps and control gear massively, making the maintenance of these luminaires prohibitively expensive. A similar situation will arise in due course with other lamp types as LED comes to increasingly dominate the market.

Manufacturers have developed LED “lamps” and LED “gear trays” (which combine an LED light source and tray in one component) for fitting to suitable high quality shells. The reliability, energy efficiency and quality of light produced (distribution and glare) will however be inferior to that achievable with a totally new LED lantern.

The whole life cost of maintaining luminaires fitted with any kind of traditional lamp are high versus those retrofitting with LEDs. Some luminaires will still require total replacement as their shells are of too poor a quality to retrofit.

44% of all luminaires have been replaced or retrofitted with LEDs already.

4.0 TRAFFIC MANAGEMENT STATUS

Traffic Signals

Junctions

Minor	1
Medium	26
Major	3

Pedestrian Crossings

Single Carriageway	49
Double Carriageway	0

Traffic Signals Condition

The condition of Traffic Signals assets is determined by periodic electrical and structural inspections carried out on an annual basis.

Modelling based on a 20 year Expected Service Life results in 6% of our locations being flagged for replacement.

The decision on whether to replace assets that have exceeded the ESL is only made after annual inspection results are reviewed. Some assets are therefore not replaced at the end of their ESL, resulting in a misleading "maintenance backlog".

The majority of traffic signal equipment (94%) is within their expected service life (Figure 4.2).

Traffic Signals Valuation

The Gross Replacement Cost and Depreciation Values for the footway can be seen on the table on the right.

The annualised depreciation of £347,000 represents the average amount by which the asset will depreciate in one year if there is no investment in renewal of the asset.

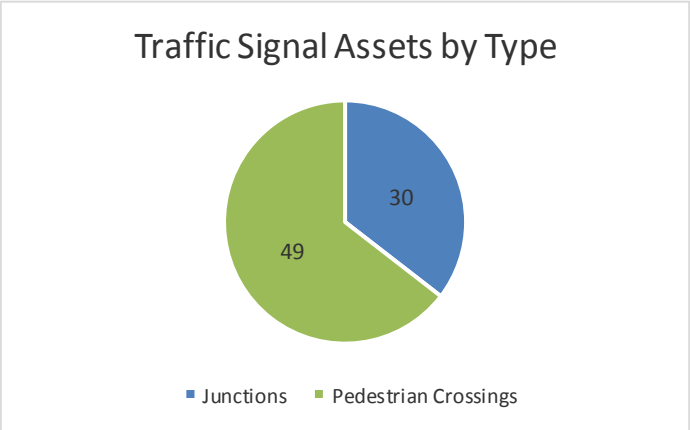


Figure 4.1

Figure 4.2

Table 4.1

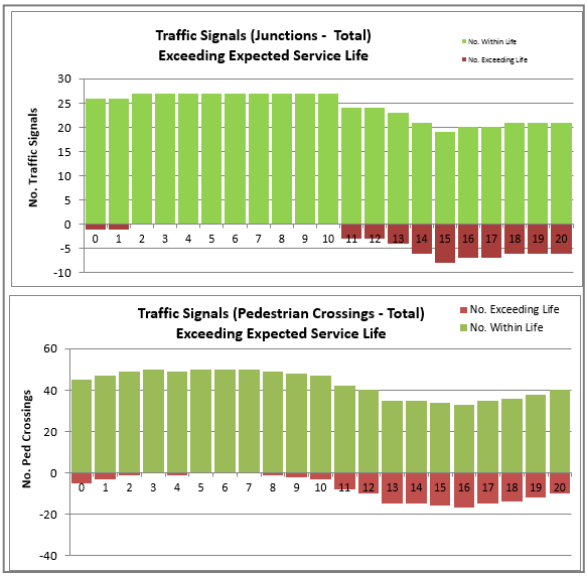
Traffic Management System Assets	Gross Replacement Cost	Depreciated Replacement Cost	Annualised Depreciation Cost
Traffic Signal (Junction) Subtypes			
Minor Junction	£126,000	£93,550	£4,425
Medium Junction	£1,100,000	£683,500	£38,500
Major Junction	£60,000	£47,250	£2,125
Complex Junction	£0	£0	£0
Traffic Signal (Pedestrian Crossing) Subtypes			
Single Carriageway	£1,785,000	£1,095,000	£63,750
Double Carriageway	£0	£0	£0

4.1 TRAFFIC MANAGEMENT OPTIONS

OPTION 1 – CONTINUE CURRENT LEVEL OF INVESTMENT

An annual capital investment of £60,000 would lead to sustained deterioration, with 21% of our assets requiring attention after 20-years.

The volume of reactive temporary repairs would rise rapidly, year on year, as would public liability claims. With this level of investment, customer satisfaction levels will decrease significantly

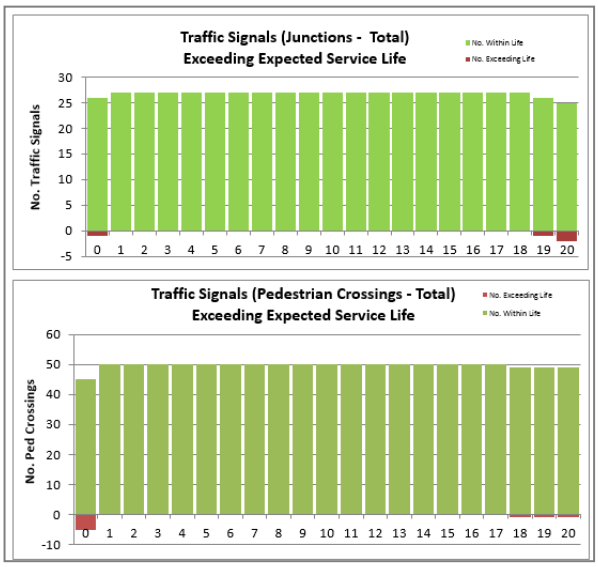


Option 1 – Current Level of Investment

OPTION 2 – STEADY STATE

After an initial investment of £100,000 to address the slight maintenance backlog a stead state would be achieved with an annual £50,000 capital investment.

The volume of reactive temporary repairs, public liability claims and levels of customer satisfaction can also be expected to be maintained.

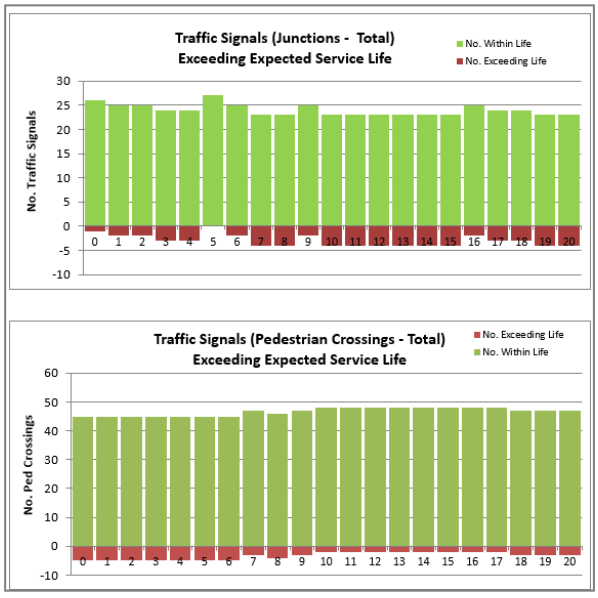


Option 2 – Steady State

OPTION 3 – NO REPLACEMENT UNTIL NECESSARY

An average annual capital investment of £51,000 over 20 years (total cost £1.02m).

The volume of reactive temporary repairs would rise rapidly, year on year, as would public liability claims. Customer satisfaction levels can be expected to decrease significantly.



Option 3 – No Replacement Until Necessary

5.0 EV CHARGING POINT STATUS

Quantity & Type

Standard 7kW AC Destination Chargers: 9
Fast 22kW AC Destination Chargers: 23
Rapid 50kW DC Journey Chargers: 13
Total synchronous sessions possible: 90

8 older chargers were replaced in FY18/19.

Condition

All chargers are annually inspected & serviced (Q1, 2019), covered by warranty and maintenance packages and therefore maintained in a very high condition.

Age (years):	>4	2	1	Total
7kW AC:	0	0	9	9
22kW AC:	0	3	20	23
50kW DC:	3	1	9	13
Total:	3	4	38	45

All chargers are constructed to remain in a safe, operable condition for a minimum of 10 years as a condition of the 100% Grant Funding used.

Condition Band Descriptions

Condition 1 – As New: All
Condition 2 – Aesthetically Impaired: None
Condition 3 – Minor Deterioration: None
Condition 4 – Major Deterioration: None

Valuation & Investment

The Gross Replacement Cost is £816,000.

No RAMP methodology exists for calculating EVCP Depreciation Values. However, It is expected that our simple, reliable 7-22kW AC Destination chargers (the bulk of our assets) will remain attractive and economical to maintain after the initial 10 year period whereas alternative 50-150kW Forecourt Chargers are expected to be available in sufficient quantities to remove the demand for ELC to maintain our existing 50kW DC Journey chargers at the end of their expected useful service life of 10 years. Very few additional 50kW DC chargers are therefore planned.

Figure 5.1 - 7-22kW AC Destination Charger

Figure 5.2 - Rapid 50kW DC Journey Charger

Figure 5.3 - Charging Hub in Conservation Area