East Lothian Council

REPORT TO: Policy and Performance Review Committee

MEETING DATE: 14 December 2023

BY: Executive Director for Place

SUBJECT: Roads Asset Management – Annual Status and Options Report 2023

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1 PURPOSE

1.1 This purpose of the report is to present a summary of the Council's road assets status as of financial year 2022-23. 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 into 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, Electric Vehicle (EV) Charging Points and Road Structures, that are referenced in Appendix A - Status and Options Report 2023.

2 RECOMMENDATIONS

2.1 To note the content of the report

2.2 To note officers' recommendation of investment for each of the assets covered within the report.

3 BACKGROUND

3.1 In 2015 East Lothian Council, in conjunction with the Society of Chief Officers for Transportation Scotland (SCOTS), 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 government's 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;
- An investment for condition improvement (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-year 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.

3.7 Carriageways

3.7.1 Although the recent condition shows an improvement on the previous year, the carriageway long-term condition trend suggests a 'steady state' picture (Fig 1.2).

3.7.2 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.

3.7.3 This is borne out by the fact that current investment in the asset is decreasing. With inflationary material and labour costs, increased health and safety and design costs, material investment on the

ground has reduced and this will only become more exacerbated with budgets diminishing, adding pressure to keep roads in a safe condition. However, through careful management of resources and the adoption of a preventative maintenance strategy, a slower deterioration of the asset can be achieved, provided we have sufficient investment.

3.7.4 In monetary terms, this is described as the annualised depreciation (ADC) of the asset currently calculated to be £10,102,436 for carriageways (2019 estimate).

3.7.5 The COVID-19 pandemic required the postponement of critical planned maintenance works. In addition, the severe winter weather conditions had an effect on the road condition. Additionally, prices for bituminous materials have increased by 20-30% within the last year alone. If significant investment is not made within the following years, then we are to expect an accelerated decline in the carriageway asset condition.

3.7.6 An analytical assessment of carriageway options provides a review of potential treatment strategies, and considering the evidence, it is recommended that East Lothian Council adopt **Option 4: improvement**.

3.7.7 This option recommends that the Council increases its investment while maintaining the preventative maintenance strategy in order to best utilise the monies available. Current level of investment is £4.10m and we recommend £7.35m.

3.8 **Footways**

3.8.1 The overall footway condition assessment data is not fully up to date, with only partial information currently available. To address this, a full footway condition assessment is currently ongoing with completion expected late in 2024. Going forward, a full condition assessment is to be undertaken over a two-year period in line with the current safety inspection schedule. In doing so, a greater understanding of the longer-term deterioration will be developed.

3.8.2 Only 2% of footways are regarded to be Condition 4 – Major Deterioration.

3.8.3 Investment in 2022/23 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 (2019 estimate).

3.8.4 An analytical assessment of footway options (Section 2.1) provides a review of potential treatment strategies. It is recommended that East Lothian Council adopt **Option 4: minimising deterioration**.

3.8.5 This option will remove major deterioration (condition four) in year one, reduce minor deteriorated footways (condition three) and potentially aid in data collection. Current level of investment is £800k and we recommend £1.3m.

3.9 **Street Lighting**

3.9.1 East Lothian Council as the Roads Authority currently maintains 18,623 street lighting columns. There is currently a high growth in the street lighting asset base due to the upturn in housing land development. Approximately 2,000 assets are currently in the adoption pipeline, with more to follow every year.

3.9.2 The number of street lighting columns that have exceeded their expected service life (ESL) is currently 5,987 (some 32% of the network). These columns are painted mild steel construction and the majority are suffering from signs of advanced corrosion. It is likely that structural failures may increase if there is a lack of investment in column replacement.

3.9.3 There are no street lighting luminaires which have exceeded their ESL; 98% of units have been converted to LED. However, 3% of existing assets still utilise high-energy consumption technology. These will be converted to LED over the next two years subject to sufficient funding being made available.

3.9.4 Investment in the street lighting stock has decreased over recent years and is well below the annualised depreciation value (ADC), leaving an annual maintenance backlog of column replacement. East Lothian's investment in replacing deteriorated equipment is amongst the lowest within Scottish local authorities.

3.9.5 Energy costs are expected to increase despite mitigation by Road Services and procurement arrangements as well as the installation of LED luminaires. Wholesale 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 used to forecast costs.

3.9.6 The cables supplying the lighting network are a mixture of older Scottish Power owned cables and the more modern ELC maintained "looped network". Scottish Power cables make up 32% of the network, but faults on these cables black out large areas at a time and generate high numbers of customer complaints. Scottish Power's response to multi-unit faults can take up to four weeks before a repair is carried out, longer for single units. There is no cost to the Council in repairing these faults, but public perception of our performance is usually critical.

3.9.7 Consideration should be given to replacing Scottish Power's supply cables with our own to improve our service to the public.

3.9.8 An assessment of growth in the electric vehicle charging point assets in the financial year 2024/25 and beyond will be detailed in a detailed Public Electric Vehicle Infrastructure Strategy & Expansion Plan Cabinet report, expected Q4, 2023/24.

3.9.9 The majority of assets are covered by warranty and maintenance packages and are in a very good condition.

3.9.10 Most chargers will be managed to remain in a safe, operable condition for a minimum of 10 years from date of installation, to be compliant with the 100% Grant Funding conditions.

Street lighting column renewal options provides an overview of potential treatments and strategies. It is recommended that East Lothian Council adopt **Option 3 for column renewal of £1m p.a. over seven years.**

3.10 **Traffic Management Systems**

3.10.1. The Traffic Management System assets have increased by more than 16% in the last 5 years, with further increases expected given the level of housing and commercial development within the county.

3.10.2. The majority of traffic signal equipment is within their expected service life. The ones that have exceeded their expected service life have been inspected and there working condition is considered satisfactory.

3.10.3 The annualised depreciation of the Traffic Management System asset is calculated to be £108,800 (2019 estimate).

3.10.4 An assessment of Traffic Management Systems options provides an overview of potential strategies. It is recommended that East Lothian Council adopt **Option 1: current level of investment of £70,000.**

3.10.5 A programme of replacing existing older incandescent lighting within traffic signals with energy-efficient LED units is underway. Based on the current level of investment, five sites per year will be upgraded until all are swapped out, which will take approximately seven years. The replacement programme is going to provide significant benefits:

- Over 75% savings in energy and carbon;
- Reduced maintenance – no need for regular bulb cleaning or replacement;
- LED units provide improved visibility in all conditions;
- Extends the life of your existing infrastructure by 10-15 years.

3.11 **Electric vehicle (EV) charging points (street furniture)**

3.11.1 Growth in the EV charging point assets in the financial year 2024/25 and beyond will be detailed in a detailed Public Electric Vehicle Infrastructure Strategy & Expansion Plan Cabinet report, expected Q4, 2023/24.

3.11.2 The majority of assets are covered by warranty and maintenance packages and are in a very good condition.

3.11.3 Most chargers will be managed to remain in a safe, operable condition for a minimum of 10 years from date of installation, to be compliant with the 100% Grant Funding conditions.

3.12 **Structures**

3.12.1 There has been no significant growth in road structures assets in the last five years. There are a small number of additional structures coming online, mostly minor culvert structures as part of housing developments with roads submitted for adoption. A new structure supporting the A1 is now complete and in operation as part of the QMU/A1 junction improvement scheme. A new build underpass on the B6368 at Howden has been given planning permission and is due to be built this autumn. Although under an adopted road, this asset will remain privately owned and maintained by the landowner. This structure designed and built to DMRB (adoptable) standards and for imposed loading as specified by ELC and will be added to ELC's general inspection programme.

3.12.2 The service life of structures asset is generally significantly longer than other road assets and may only require cyclic, damage corrections or localised interventions. Complete asset replacement is rare, typically one bridge a year.

3.12.3 The annualised depreciation of the structures assets is calculated to be £737,791 (2019 estimate).

3.12.4 An assessment of Structures Options provides an overview of potential strategies. It is recommended that East Lothian Council adopt **Option 1: current level of investment £250,000 per annum.**

4 POLICY IMPLICATIONS

4.1 The report supports East Lothian Council Climate Change Strategy, to reduce emissions and create an increasingly sustainable East Lothian.

5 EQUALITIES IMPACT ASSESSMENT

5.1 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 – The construction materials market is currently volatile due to several factors. Construction material prices continue to rise with bituminous materials prices 20-30% within the past year. The ramifications of Brexit, the fall-out from COVID-19 and the ongoing war in Ukraine has all contributed to a substantial increase construction material prices. The substantial cost increases experienced mean that we are unable to carry out as much work for the same money. Most of the material spend is on bituminous materials for carriageway and footway resurfacing/repair works, this alone has seen an increase of between 20% and 30% during this period.

6.2 Personnel – None

6.3 Other – None

7 BACKGROUND PAPERS

7.1 None

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DATE	December 2023

East Lothian Council

ROADS INFRASTRUCTURE

Appendix A

Status and Options Report 2023

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1.0 CARRIAGEWAY STATUS

Road Length

A Class Roads	118.4 km
B Class Roads	170.2 km
C Class Roads	223.8 km
Unclassified Roads	629.3 km

(as of April 2020)

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 (Figure 1.2) shows the trend over the last years.

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 (2019 estimate). 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

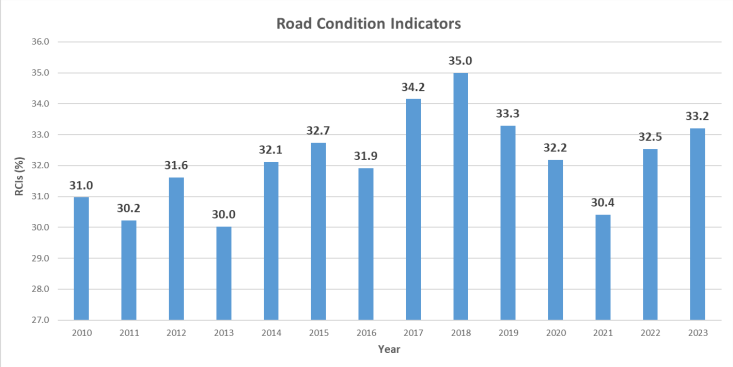


Figure 1.2

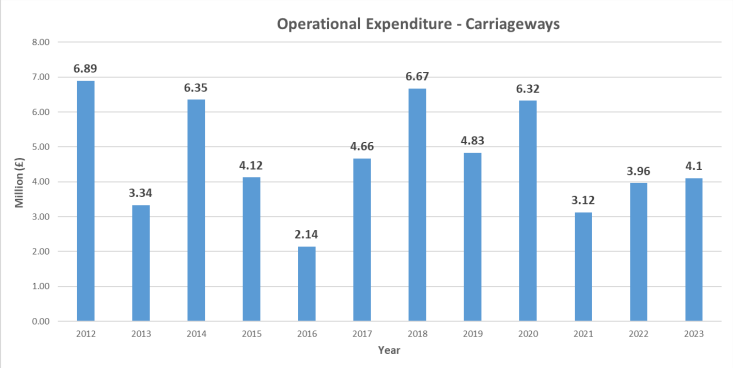


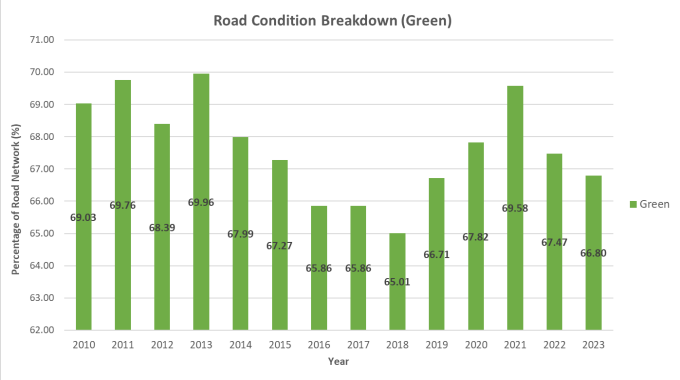
Figure 1.3

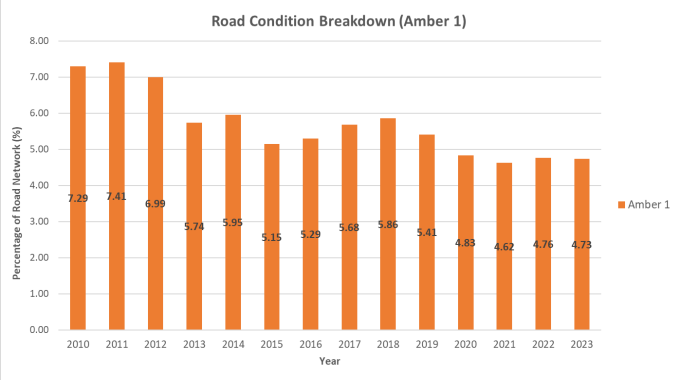
Table 1.1

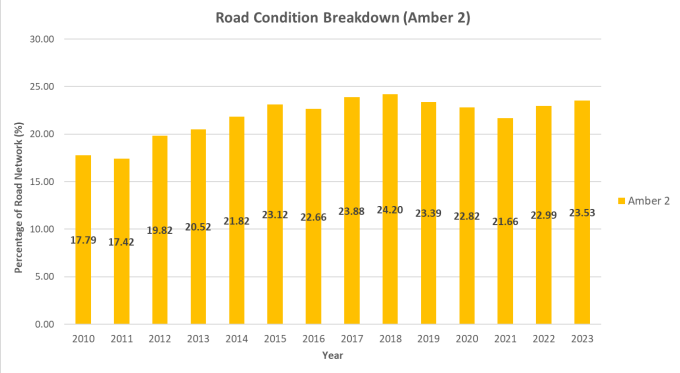
Carriageway Valuation			
Road Classification	**Gross Replacement Cost**	**Depreciated Replacement Cost**	**Annualised Depreciation Cost**
Principal (A) Roads (Urban)	£47,582,711	£43,667,737	£385,978
Principal (A) Roads (Rural)	£85,028,613	£75,009,945	£1,000,167
Classified (B) Roads (Urban)	£43,337,801	£40,012,034	£351,933
Classified (B) Roads (Rural)	£126,400,657	£107,739,750	£1,752,692
Classified (C) Roads (Urban)	£16,570,510	£14,953,041	£163,529
Classified (C) Roads (Rural)	£124,702,810	£104,343,120	£1,893,572
Unclassified Roads (Urban)	£204,654,245	£176,106,891	£3,348,270
Unclassified Roads (Rural)	£88,458,751	£75,362,012	£1,206,294
Total	**£736,736,098**	**£637,194,530**	**£10,102,436**

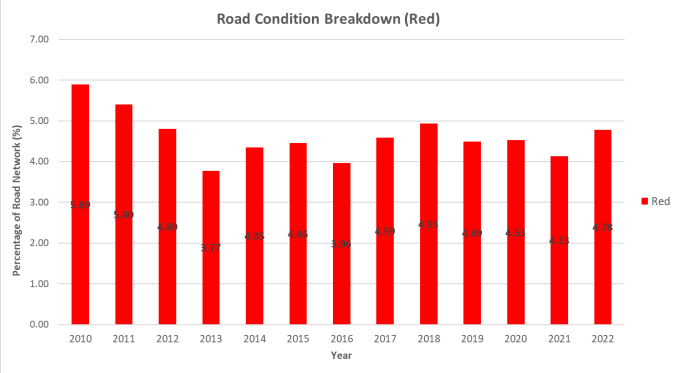
1.1 CARRIAGEWAY CONDITION BREAKDOWN

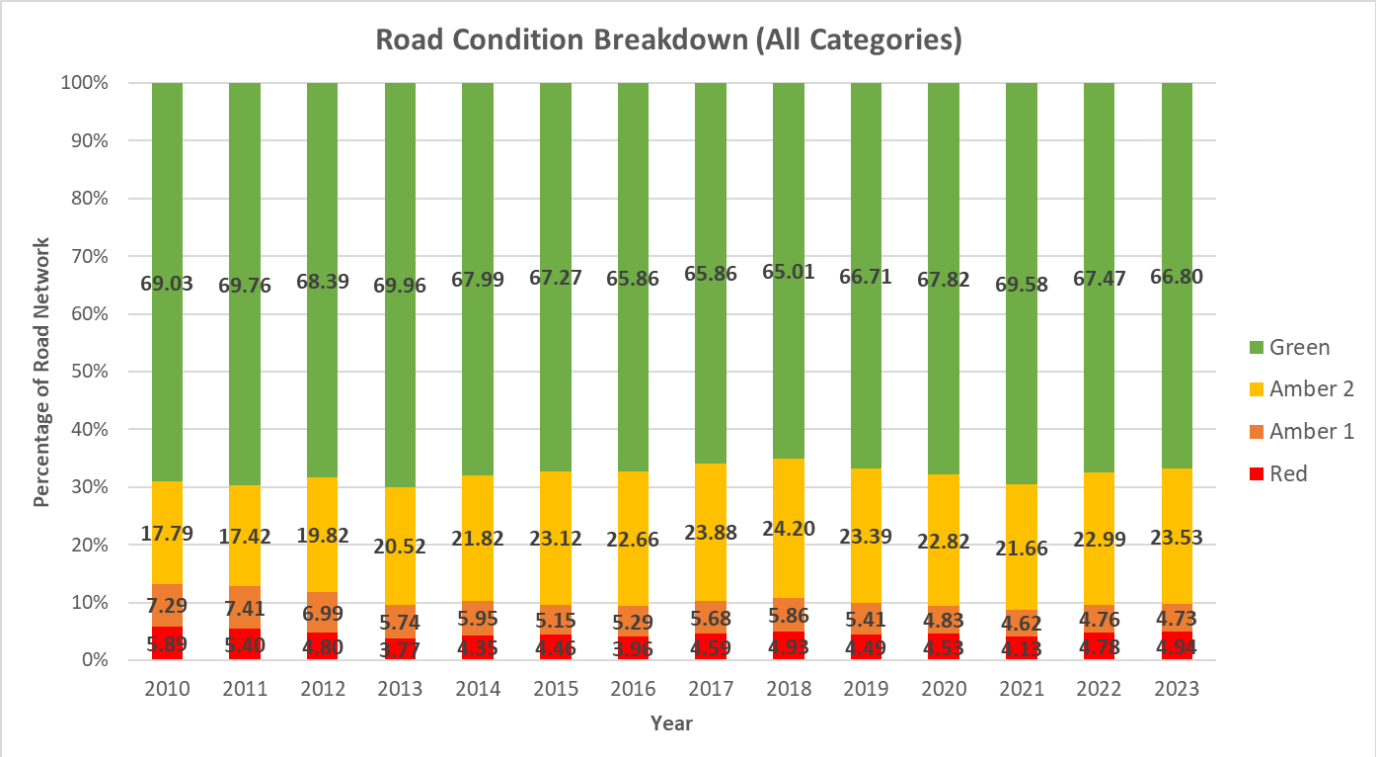
The graphs below show the carriageway condition for the last years on all different categories as described previously.











1.2 CARRIAGEWAY INVESTMENT OPTIONS

1 – NO INVESTMENT

Zero investment would lead to severe deterioration, with 57.26% 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. Customer satisfaction levels can be expected to decrease significantly.

2 – CURRENT LEVEL OF INVESTMENT

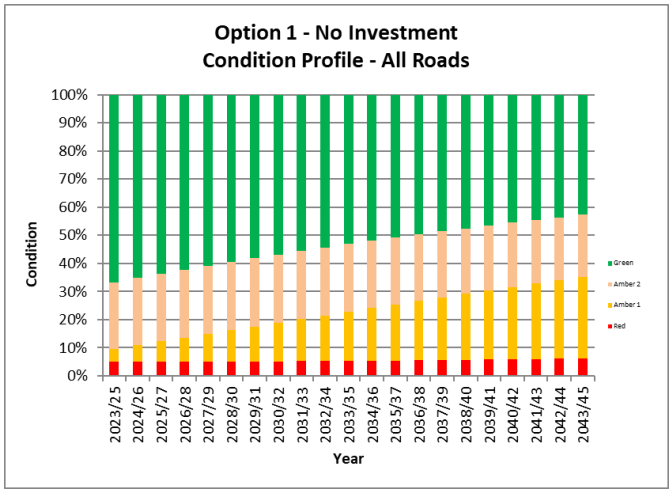
An annual capital investment of £4.1m would lead to sustained deterioration, with 42.30% of the carriageway requiring attention after 20-years. The volume of reactive temporary repairs would steadily rise, year on year, as would public liability claims. Customer satisfaction levels can be expected to steadily decrease.

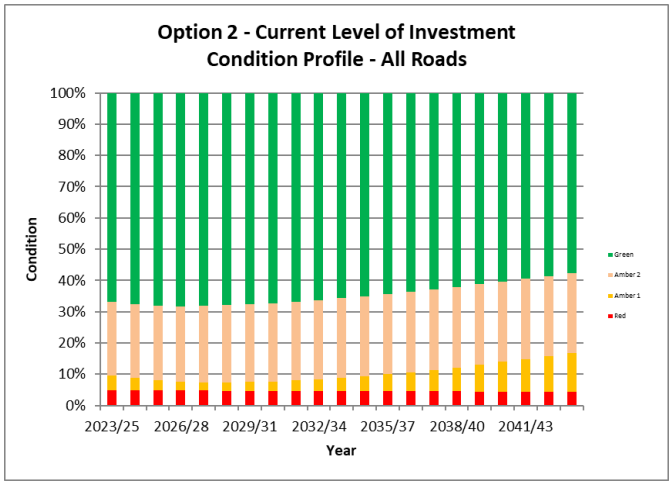
3 – STEADY STATE

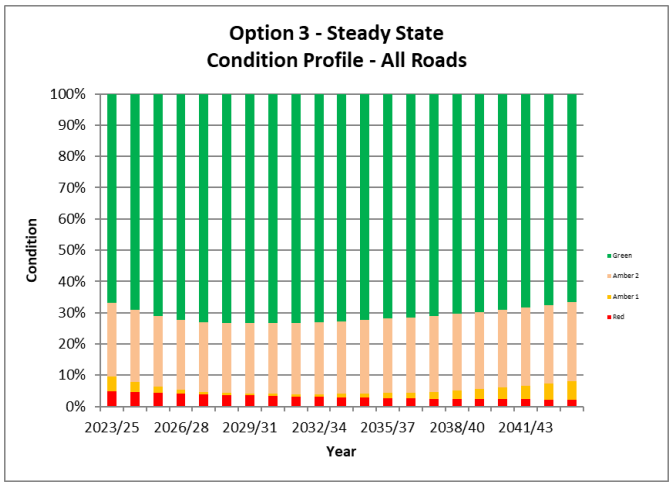
An annual capital investment of £5.98m would maintain existing Road Condition of 33.20%. The volume of reactive temporary repairs, public liability claims and levels of customer satisfaction can also be expected to be maintained. The road will still be vulnerable to significant deterioration in the event of a severe winter.

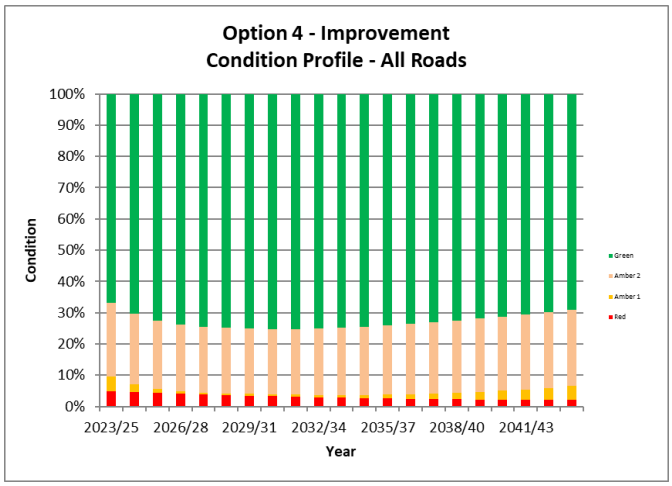
4 – IMPROVEMENT

An annual capital investment of £5.57m would lead to an improvement, with only 25.10% of the carriageway requiring attention after 10 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 10 years if the initial level of investment was adopted, with 30.95% of the roads requiring attention after 20-years.









1.3 CARRIAGEWAY KEY ASSET ISSUES

Structural Vulnerability

The survey indicates that 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. No significant improvement of its condition has been accomplished since 2007. Appropriate investment can achieve a well-managed road network.

COVID-19 Effect

During the pandemic and following Government Guidelines for social distancing the focus and priority was to carry out emergency repairs and other essential urgent work, which meant the majority of our planned works for maintenance was put on hold. This, along with the severe weather conditions throughout the winter, will have a critical effect on the road condition. If a significant investment is not made the following years then we are to expect an extreme decline in the asset condition.

2.0 FOOTWAY STATUS

Total Footway Length = 674 km

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 2022-23 partial assessment (Figure 2.2).

The level of condition is considered good with only 2% of footways with major deterioration (C4 – Figure 2.3).

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 Table 2.1 (2019 estimate).

Figure 2.1

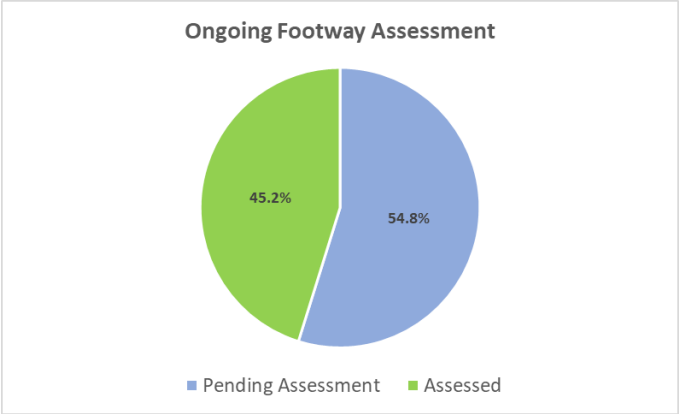


Figure 2.2

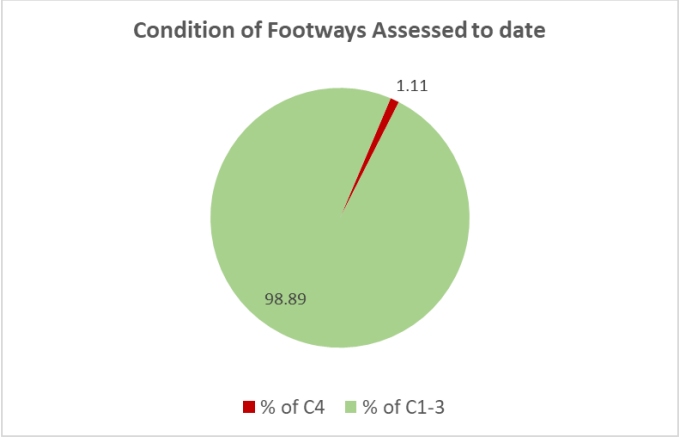


Figure 2.3

Table 1.1

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 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 and other active travel routes.

Data Reliability & Priorities

A full footway condition assessment is currently ongoing with completion expected late in 2024. Going forward, a full condition assessment is to be undertaken over a two-year period in-line with the current safety inspection schedule. In doing so, a greater understanding of the longer-term deterioration will be developed.

Active Travel Network

An ‘Active Travel Network’ is currently being developed through the construction of new paths, using mostly external funding such as Sustrans and Transport Scotland grants. This network will have to be monitored and maintained along with the footways.

3.0 STREET LIGHTING STATUS

Lighting Assets

Lighting Columns	18,523
Cable Length	429 km

Condition

32% of our lighting columns have exceeded their service life. Non galvanised steel columns make up the majority of this category and maintenance budgets are concentrated on replacing these units. Columns of this type on mains roads are typically 8 to 10m in height and are considered a higher risk. They are inspected annually for signs of corrosion and replaced accordingly.

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.

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

98% of the network has been converted to LED. A programme to replace or upgrade the remaining 2% of non-LED lanterns is ongoing.

The cable network split between Scottish Power and ELC is shown in figure 3.3. Scottish Power faults generate a high number of customer complaints due to the length of time that is taken for repair.

Figure 3.1

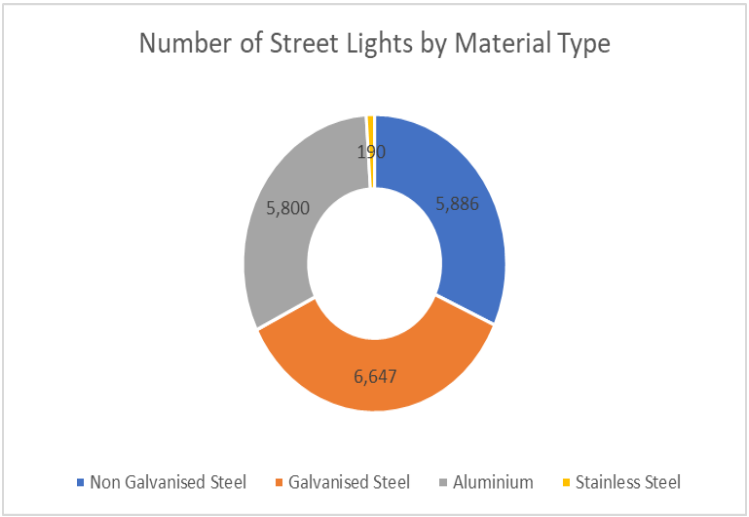


Figure 3.2

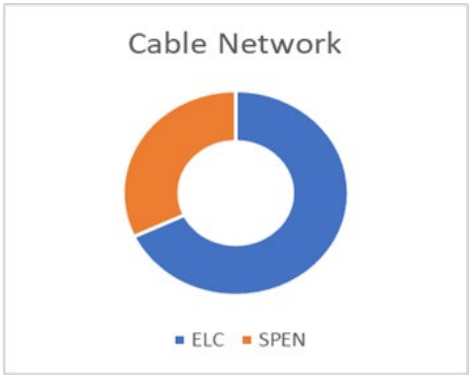


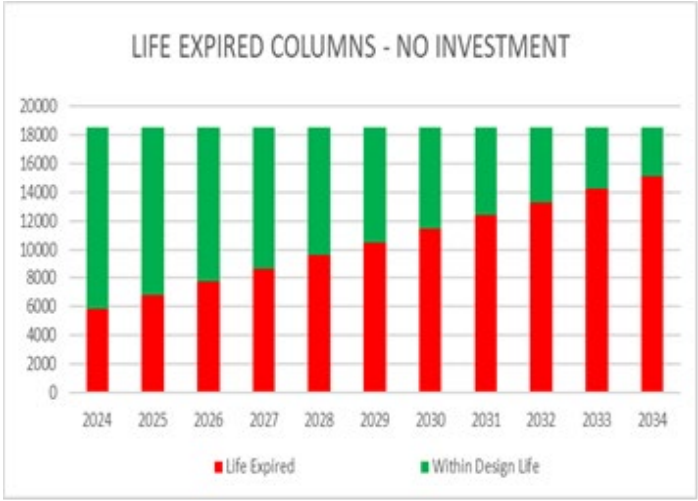
Figure 3.3

3.1 COLUMN OPTIONS

COLUMN OPTION 1 –

NO INVESTMENT

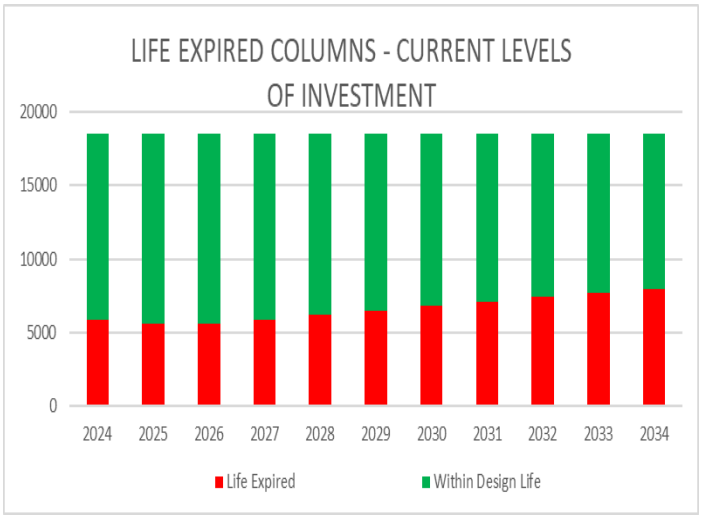
Zero investment would lead to further deterioration of the network, 32% of our columns have exceeded their design life, many by over ten years. The volume of reactive temporary repairs would rise rapidly, year on year, as would public liability claims. The risk of column collapses will rise and customer satisfaction levels can be expected to increase significantly.



COLUMN OPTION 2 –

CURRENT LEVEL OF INVESTMENT - £500K P.A.

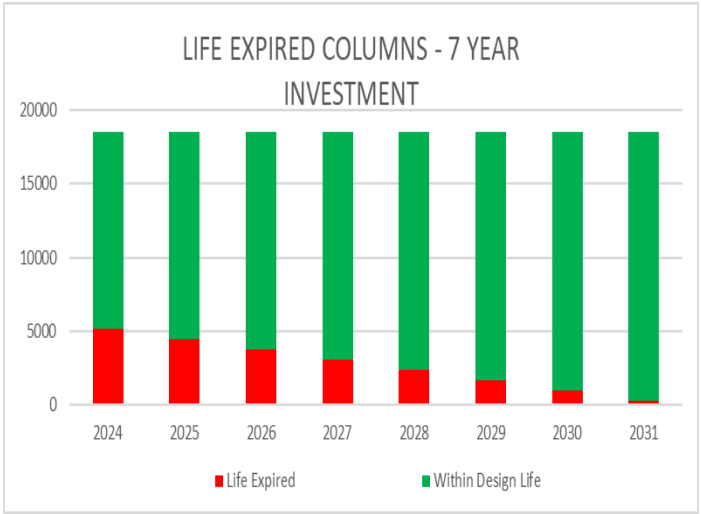
Continuing current investment means that the backlog of columns which are now beyond their design lives can only be addressed at a rate of 3% per annum. This will lead to a situation where steel columns may still be in place at an age of 60/70 years. In 2025 galvanised steel columns will start reaching the end of their design life which will increase the number of columns “at risk”. The risk of structural failure at these age profiles is significant. An increase in reactive repairs is expected and structural tests are now conducted on an annual basis to identify units at risk of collapse.



COLUMN OPTION 3 –

REPLACEMENT OF BACKLOG - £1M P.A. 7 YEAR PROGRAMME

A seven year programme to replace all obsolete un-galvanised steel columns. This will significantly reduce the risk of structural column failure and bring the column age profile up to acceptable levels for the next 10 years.



3.2 STREET LIGHTING KEY ASSET ISSUES

Investment

The lighting network is ageing and current investment is not commensurate with the rate of deterioration. Consequences of not keeping pace with this dilapidation is an increased level of faults leading to higher maintenance costs and a larger number of customer complaints. In some cases columns will structurally fail and can strike vehicles and pedestrians. We experience a limited number of such events each year but that will increase with further deterioration of non galvanised units.

The Scottish Power cable network that supplies 30% of our network is also ageing and susceptible to failure. We report around 100 faults to SPEN each year, each fault can take between four to five weeks to repair which leads to high degrees of customer dis-satisfaction. Increased investment would enable us to install our own cable network, replacing the ageing SPEN cables, and reduce customer complaints

4.0 TRAFFIC MANAGEMENT STATUS

Traffic Signals

Junctions – 43

Pedestrian Crossings – 53

Traffic Signals Condition

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

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".
A number of our units are exceeding their expected service life however, they have all passed their annual inspection and their operation is deemed satisfactory without any issues.

Traffic Signals Valuation

The Gross Replacement Cost and Depreciation Values for the signals can be seen on the table on the right (2019 estimate).

The annualised depreciation of £108,800 represents the average amount by which the asset will depreciate in one year if there is no investment in renewal of the asset. The current level of investment is £70,000 per year.

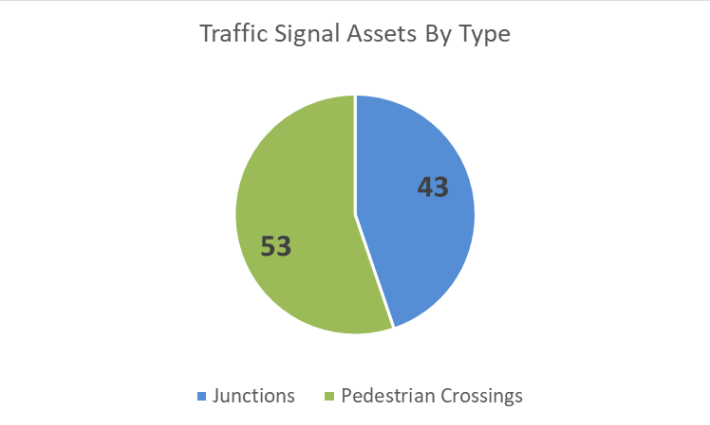


Figure 4.1

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

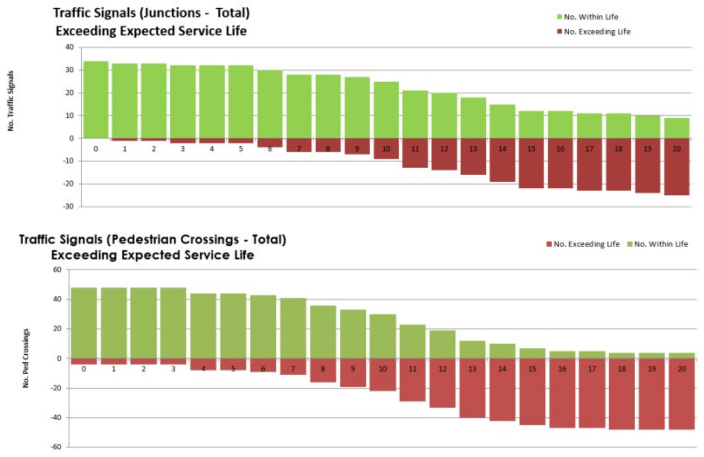


Figure 4.3

4.1 TRAFFIC MANAGEMENT STATUS KEY ASSET ISSUES

Investment

The assets installed continue to increase to support new infrastructure and increase of demands in newly developed areas. The adopted assets increased by more than 16% in the last 5 years. Further increase is expected given the level of housing development within the County.

Maintenance

As part of our maintenance programme regular inspections are undertaken and an annual report providing the condition of all components of the asset is rated and the outcome of which determines the programme of replacement/ upgrade works.

Reactive repairs ensure all assets are in full working condition and customer satisfaction levels can be expected to be maintained.

5.0 PUBLIC EV CHARGER STATUS

Quantity & Type

50-200kW Journey Chargers:	23
7-22kW Destination Chargers:	89
7-22kW On-Street Chargers:	84
Total chargers	196

Condition

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

Age (years)	4	3	2	1	0	Total
Journey	10	8	4	1	0	23
Destination	31	35	6	7	10	89
On-Street	0	0	7	32	45	84
Total	41	43	17	40	56	196

All chargers are constructed to remain in a safe, operable condition for a minimum of 10 years.

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

No RAMP methodology exists for calculating EVCP Gross Replacement Cost or Depreciation Values. However, it is expected that our simple, reliable Destination & On-Street chargers (the bulk of our assets) will remain attractive and economical to maintain after the initial 10 year period.

It is expected there will be a low demand for ELC to maintain the existing Journey chargers at the end of their expected useful service lives as a significant volume of Journey Chargers from commercial Charge Point Operators are visible in the Planning Pipeline. No additional ELC owned 50kW DC chargers are therefore planned as need for them will rapidly decline.

ELC's public EVCP strategy and expansion plan is being drafted and should be available as an appendix for the next ASOR.

Figure 5.1 - 50kW Journey Charger

Figure 5.2 – 7-22kW Destination Charger

Figure 5.3 – 7-22kW On-Street Chargers

6.0 STRUCTURES STATUS

Asset Group: Road Structures

The Asset

Statistics

East Lothian Council Road Structures Inventory by Road Type					
Structure Type	Total No.	Road Type			
		A	B	C	Uncl
Bridge	163	43	41	48	31
Culvert	229	31	39	80	79
Subway	0	0	0	0	0
Footbridges	13	1	0	2	10
Retaining Walls	0	0	0	0	0
Total	**405**	**75**	**80**	**130**	**120**

Commentary

- Bridge inventory is stored in the WDM Structures Asset Management System. An audit of the information is ongoing in comparison with the original database. The information in the original database had a high level of confidence so if the transfer of data has gone correctly this level of confidence will remain.
- The level of growth in structures assets has been minimal in the last five years: a small number of culverts are included in RCC applications for a limited number of housing developments and one new service station on the A1. These structures will be added to the asset database as and when roads are adopted.
- A new build underpass on the B6368 at Howden has been given planning permission and is due to be built this autumn. This asset will remain privately owned and maintained by the landowner, but will be included in ELC's Inspection Programme.
- This growth rate is predicted to remain the same in the next five years.

Customer Expectations

Road Users expect to be able to travel the road network safely and efficiently. The maintenance and renewal of road structures is essential to ensure this expectation is met

Inspections

Inspection Statistics	No.
Number of bridges where principal inspections are untaken	0
Number of principal inspections scheduled to be undertaken	0
Number of principal inspections undertaken on time	0
The frequency of principal inspections where undertaken (in years)	0
Number of general inspections scheduled to be undertaken	189
Number of general inspections undertaken on time	189
The frequency of general inspections (in years)	2

- Structures are fully inspected through General Inspections in compliance with Section C.5. clauses of Well-managed Road Infrastructure – A Code of Practice.
- General Inspections are carried out by ELC's full time Structures Inspector.
- Principal Inspections are undertaken when the need has been identified by a General Inspection.

Structural Condition

Assessment Statistics	No.
Number of council owned / maintained bridges that failed European standard assessment (prior to restriction?	9
Number of privately owned bridges within council's road network that failed European standard assessment	2
Number of council owned / maintained bridges subject to monitoring / special inspection regimes	8

- Bridges that failed the Assessment were assessed as Low-Risk Provisionally Sub-standard Structures in accordance with DMRB CS 470 and therefore are subject to a Monitoring Regime.
- Strengthening measures are undertaken subject to Capital Budget allocation.

Weight Restrictions

Weight Restrictions	No.
Number of council owned / maintained weight restricted bridges (excluding acceptance weight restriction)	0
Number of council owned / maintained height / width restricted bridges	1

Performance Indicators

Ref	Description	2019/20 Result	Comments
PI300 / (31.1.01)	% of Principal Inspections carried out on time	0.00%	See above
PI301 / (31.1.02)	% of General Inspections carried out on time	100%	
PI302 / (32.1.01)	Bridge Stock Condition Indicator – average $BSCI_{av}$	85.73	
PI303 / (32.1.02)	Bridge Stock Condition Indicator – critical $BSCI_{crit}$	86.13	
PI306 / (36.1.01)	Annual budget allocated as a % of cost of identified work (from AMP)		
PI307 / (36.2.01)	% of allocated budget spent per annum		

Gross Replacement Cost	£133,927,846
Depreciated Replacement Cost	£128, 344, 787
Annualised Depreciation Charge	£737,791

Key Issues

The WDM Structures Asset Management System (SMS) has been purchased to enable the structures asset to be managed in accordance with the East Lothian Council strategy. The SMS provides an audit trail to support all decisions. The Structures Team are still building the skills to enable them to get the most out of the system.

Current Strategies

The aim of the maintenance strategy is to ensure that all road structures are maintained in a safe condition and are available for use. The majority of the budget is spent on repairing the worst defects as identified by the completion of the two yearly General Inspection.

The annualised depreciation (AD) was £738K which represents the average amount by which the asset will depreciate in one year if there is no investment in renewal of the asset.

Prioritisation of Overall Funding Needs

Using the SCOTS / CSS Wales Structures Funding Need Assessment Spreadsheet the following overall needs have been identified:

Strengthening

A number of Structures have been identified for Strengthening / Replacement.

This work will be undertaken subject to the provision of Capital Budget.

Maintenance Needs

For the purposes of evaluating an overall prioritised funding need the SCOTS/CSS Wales funding need assessment spreadsheet for structures combines the BCi_{crit} values with network criticality. This method is designed to ensure that the priority for funding takes into account the condition of the structure and its relative importance in terms of the network. Network criticality is used to ensure that roads of particular importance locally can be ascribed a suitable level of criticality regardless of their classification. Prioritised overall needs are:

MAINTENANCE NEEDS		Timescale not specified since this will depend on availability of funding			
	Reactive Repairs	**Priority 1**	**Priority 2**	**Priority 3**	**Priority 4**
Road Bridges	£0	£109,340	£152,978	£258,184	£162,646
Footbridges	£0	£0	£2,845	£8,555	£17,061
Unusual Structures	£0	£0	£0	£0	£0
Retaining Walls	£0	£0	£0	£0	£0
Height, Sign and Signal gantries	£0	£0	£0	£0	£0
Culverts and Subways	£0	£9,350	£9,495	£11,895	£5,815
TOTALS	**£0**	**£118,690**	**£165,318**	**£278,634**	**£185,522**

6.1 STRUCTURES OPTIONS

OPTION 1 – CURRENT LEVEL OF INVESTMENT

The bridge stock has displayed little change in terms of the Condition Performance Indicators. It is considered that as a consequence of the planned maintenance works to be undertaken on these structures as part of the Road Structure capital programme, together with sustaining the current level of revenue funding, the overall condition performance indicators will increase. The structure stock would then be classed as in 'Very Good Condition'. If funding is then continued at its current level it is estimated that the bridge stock will be maintained in a 'Very Good' condition at “Steady State” as measured by the Condition Performance Indicators.

OPTION 2: DECREASED LEVELS OF INVESTMENT

If a steady state maintenance regime is not adopted, or the current level of funding was reduced, the overall condition of the structure stock will deteriorate, resulting in decreasing Condition Performance Indicator scores and a decrease in DRC. The rate of deterioration will depend on the reduction in funding. The implications of this is the deterioration of the bridge stock from 'Good' to 'Fair' condition, and the issues as highlighted in the following table:

Score	Average Stock Condition	Critical Stock Condition	Additional Comments
Very Good 90 ≤ 100	The structure stock is in a very good condition. Very few structures may be in a moderate to severe condition.	A few critical load bearing elements may be in a moderate to severe condition. Represents very low risk to public safety.	As Example ELC has a mature stock continuing with the same level of funding is likely to sustain a high condition score and an effective preventative maintenance regime.
Good 80 < 90	Structure stock is in a good condition. Some structures are in a poor condition but are being managed appropriately.	Some critical load bearing elements are in a severe condition. Some structures would represent a moderate risk to public safety if mitigation measures were not in place.	There is the potential for rapid decrease in condition if sufficient maintenance funding is not provided. Minor to Moderate backlog of maintenance work.
Fair 65 < 80	Structure stock is in a fair condition. A number of structures may be in a severe condition.	A number of critical load bearing elements may be in a severe condition. Some structures may represent a significant risk to public safety unless mitigation measures are in place.	Historical maintenance work under funded and structures not managed in accordance with Asset Management. Moderate to large backlog of maintenance work, essential work dominates spending.