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East Lothian Council

REPORT TO: Members' Library Report

MEETING DATE:

BY: Executive Director for Place

SUBJECT: Roads Asset Management - Annual Status and Options Report 2020-21

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1. PURPOSE

1.1 This purpose of the report is to presents a summary of the council's road assets status as of financial year 2020-21. 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, structures, Traffic Management Systems and Electric Vehicle (EV) Charging Points that are referenced in Appendix A - Status and Options Report 2021.

2. RECOMMENDATIONS

2.1 To note 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;
- 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 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.

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 exasperated with budget diminishing adding pressure to keep roads in a safe condition. However, through careful management of resources and an adoption of a Preventative Maintenance Strategy, a slower deterioration of the Asset is achieved.

3.7.4 In monetary terms, this is described as the Annualised Depreciation (ADC) of the Asset currently calculated to be £10,102,436. This should not be confused as a measure of condition or the change in condition, which is calculated to have a 'headline backlog' - £24,100,000 or change in steady state of 12.9% from 2117 to 2019. Considering the recommended steady state value of £3,268,000 is less than current investment of £3,900,000 on preventative treatments, we are content that the current strategy precedes to a sustained deterioration of the carriageway.

3.7.5 Furthermore, the effects of the covid pandemic and the postponement of critical planned maintenance works along with the severe winter weather conditions will have a detrimental effect on the road condition. If a 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 budgets permitting to Adopt **Option 4 Improvement**. Sadly, the financial situation dictates budgetary constraint; therefore, Road Services will maintain **option 2 – Current levels of investment of £3,900,000.**

3.7.7 This Option recommends that the council increase its investment while maintaining the preventative maintenance strategy in order to best utilise the monies available.

3.8 Footways

3.8.1 Footway survey data is over 5 years old and urgently needs to be updated. To address this lack of data, a full footpath DVI assessment will be undertaken in 2021, and going forward a more

regular assessment of the footpath network condition will be required annually to understand and monitor deterioration over the longer term.

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

3.8.3 Investment in 2019/20 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)

3.8.4 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 of £800,000.**

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.

3.9 Street Lighting

3.9.1 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.

3.9.2 A significant amount of Street Lighting Columns (32%), have exceeded their expected service life (ESL).

3.9.3 There are no Street Lighting Luminaires, which have exceeded their ESL, however 20% of these assets utilise high-energy consumption technology and 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 increased but is well below the annualised depreciation value (ADC), leaving an annual maintenance backlog of column and luminaire renewal.

3.9.5 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 used to forecast costs.

3.9.6 An assessment of Street Lighting Columns and Luminaire renewal options provides an overview of potential treatments and strategies. It is recommended to adopt **Option 3 for Column renewal of £500,000 and Option 2 for Luminaire renewal of £500,000**.

3.10 Traffic Management Systems

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

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 its working condition is considered satisfactory.

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

3.10.4 An assessment of Traffic Management Systems Options provides an overview of potential strategies. It is recommended to Adopt **Option 1- Current Level of Investment of £80,000.**

3.10.5 Moreover replacing existing incandescent traffic signals with energy-efficient LED units will be considered for future years. These replacement programmes are 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 to 15 years

3.11 EV Charging Points (Street Furniture)

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

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

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

3.12 Structures

3.12.1 There has been no grow in structures assets in the last 5 years. This is unlikely to change unless the additions are development led.

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 asset is calculated to be £670,719

3.12.4 An assessment of Structures Options provides an overview of potential strategies. It is recommended to Adopt **Option 1- Current Level of Investment £250,000 per annum.**

4 POLICY IMPLICATIONS

4.1 None

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 – None

6.2 Personnel – None

6.3 Other – None

7 BACKGROUND PAPERS

7.1 None

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DATE	January 2021

East Lothian Council

ROADS INFRASTRUCTURE

Appendix A

Status and Options Report 2021

TABLE OF CONTENTS

1.0 CARRIAGEWAY STATUS

Road Length

A Class Roads	99.1 km
B Class Roads	169.4 km
C Class Roads	222.9 km
Unclassified Roads	443.8 km

(as of April 2019)

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, 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 (2019 figures). 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

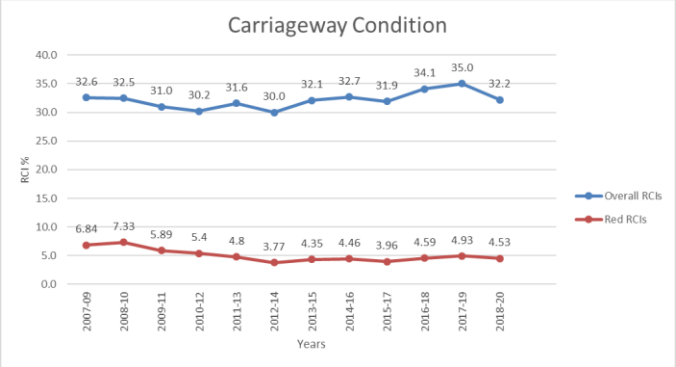


Figure 1.2

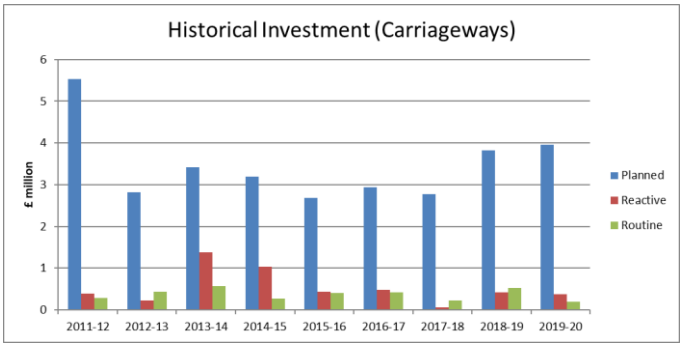


Figure 1.3

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

1.1 CARRIAGEWAY INVESTMENT OPTIONS

1 – NO INVESTMENT

Zero investment would lead to severe deterioration, with 77.98% 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

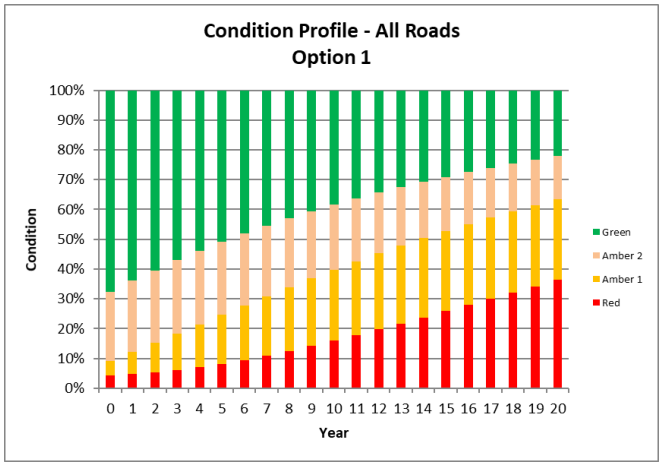
An annual capital investment of £3.9m would lead to sustained deterioration, with 48.03% of the carriageway requiring attention after 20-years. The volume of reactive temporary repairs would steadily rise, year on year, as would public liability claims. Customer satisfaction levels can be expected to steadily decrease.

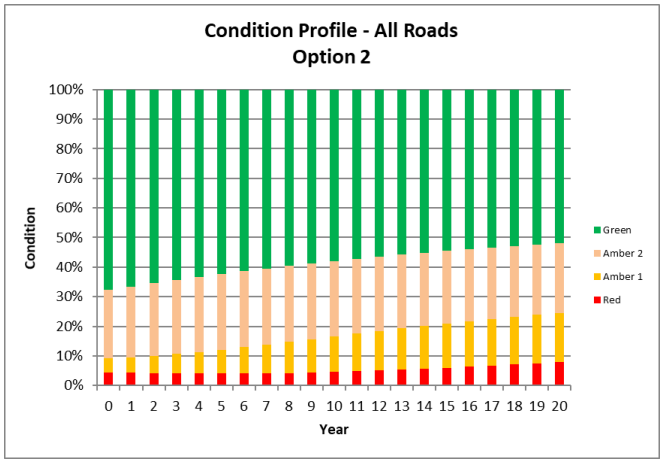
3 – STEADY STATE

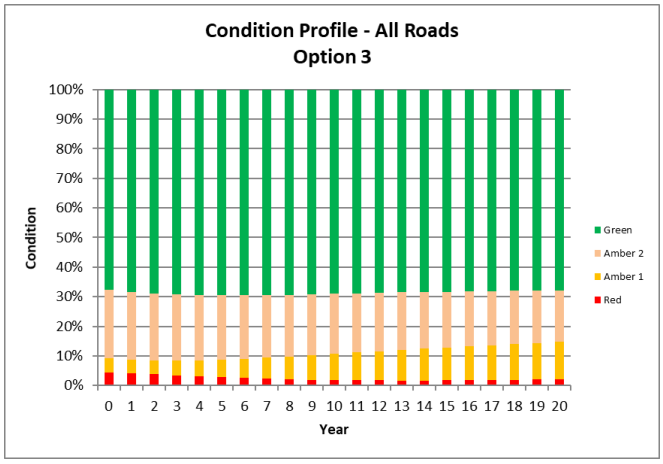
An annual capital investment of £5.2m would maintain existing Road Condition of 32.29%. The volume of reactive temporary repairs, public liability claims and levels of customer satisfaction can also be expected to be maintained. The road will still be vulnerable to significant deterioration in the event of a severe winter.

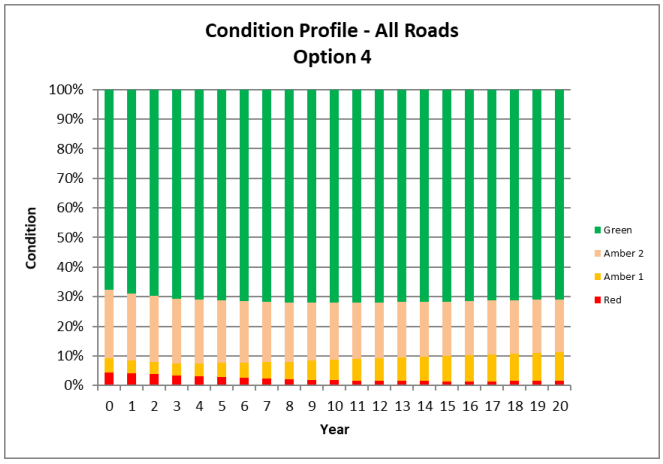
4 – IMPROVEMENT

An annual capital investment of £5.6m would lead to an improvement, with only 27.99% 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 29.11% of the roads requiring attention after 20-years.









1.2 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 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 majority of our planned works for maintenance were abandoned. 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

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

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.

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

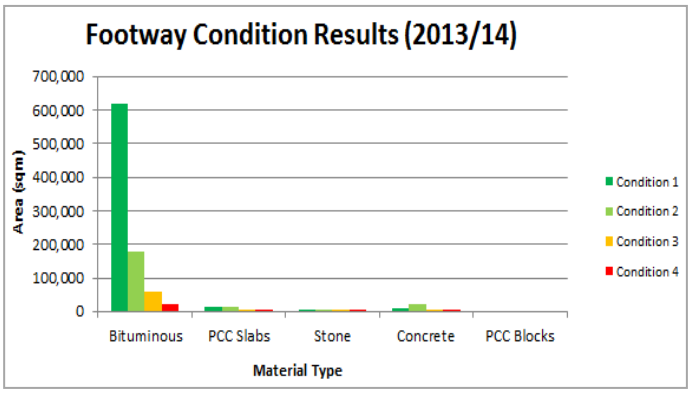


Figure 2.2

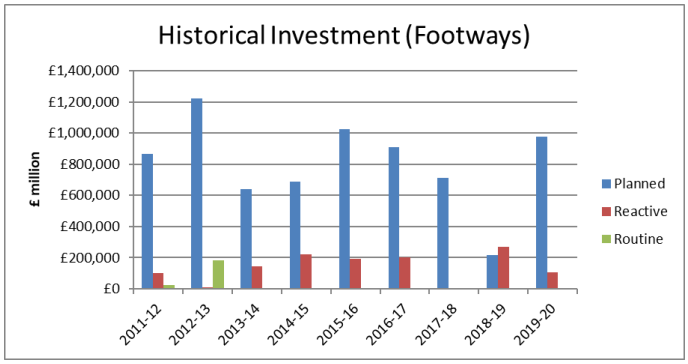


Figure 2.3

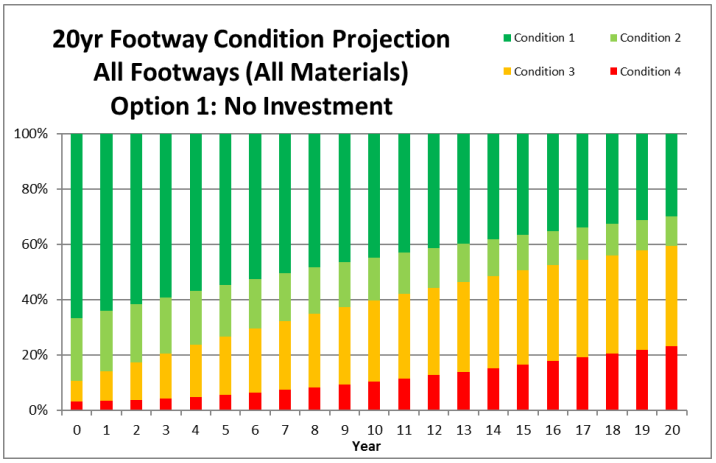
Table 2.1

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

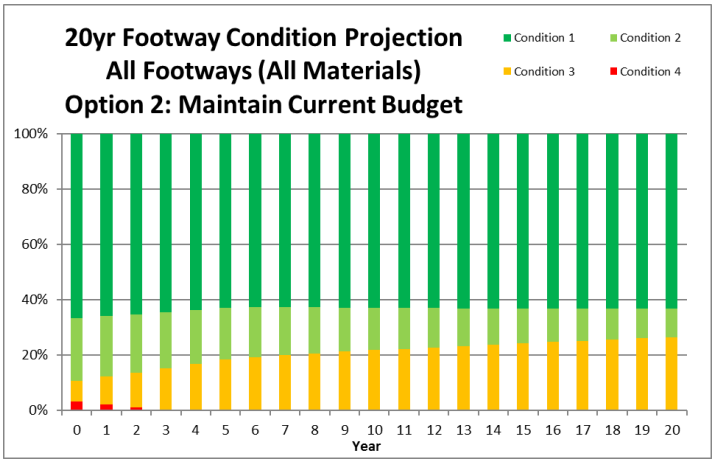
OPTION 1 – NO INVESTMENT

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. Customer satisfaction levels can be expected to decrease significantly.



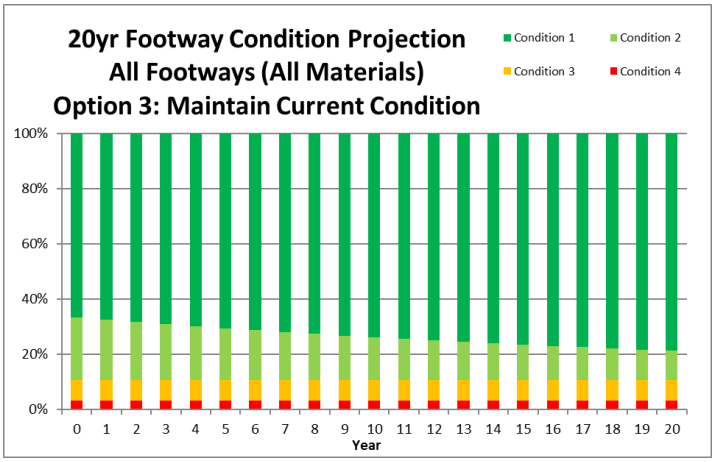
OPTION 2 – CURRENT LEVEL OF INVESTMENT

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. Customer satisfaction levels can be expected to decrease significantly.



OPTION 3 – STEADY STATE

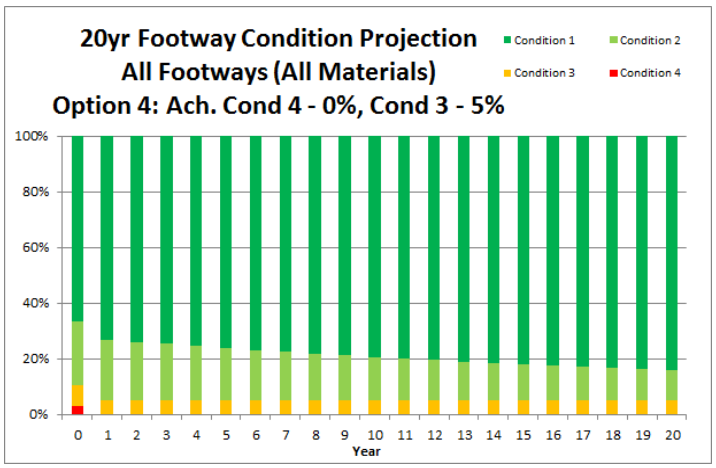
An annual £1,000k capital investment would maintain existing Road Condition of 11%. The level of minor and major deteriorated (condition three and four) footways remaining the same over time. The volume of reactive temporary repairs, public liability claims and levels of customer satisfaction can also 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 questionable as it 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	18,431
Cable Length	425 km

Condition

Over 32% of our lighting columns have exceeded their service life, compared to the Scottish average of 30%. Non galvanised steel columns make up 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.

78% of the network has been converted to LED. A programme to replace or upgrade all remaining 4,000 non-LED lanterns over a two-year period is ongoing.

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

Gross Replacement Cost - £45M

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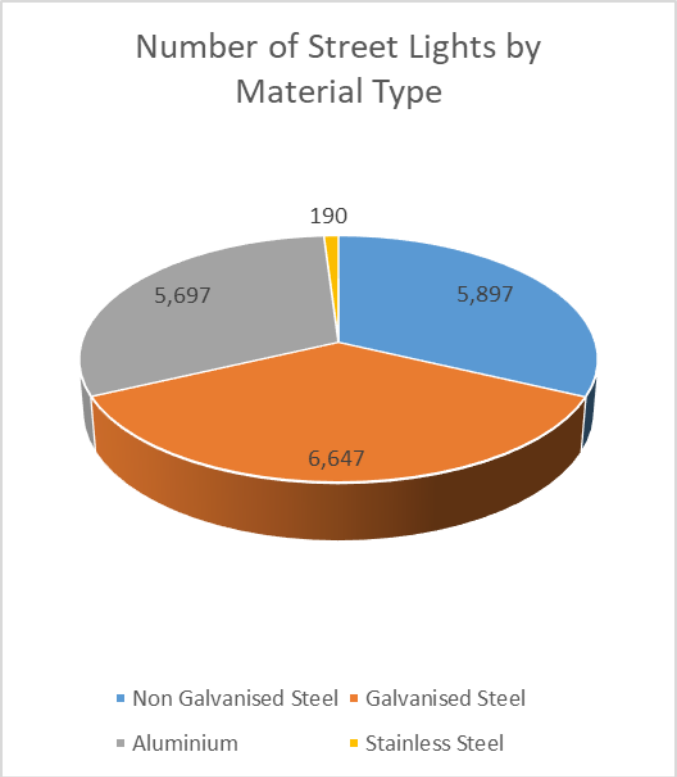
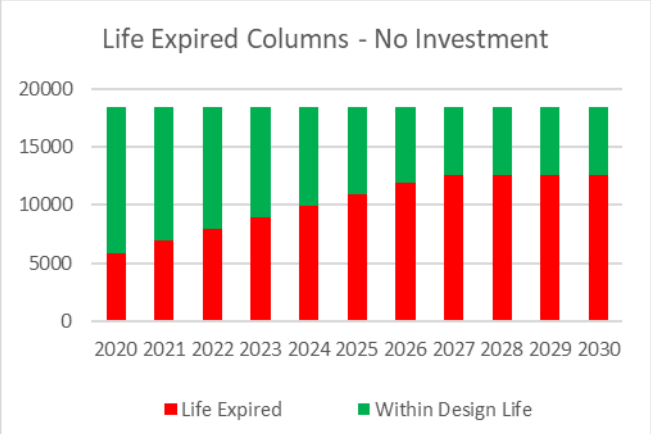


Figure 3.2

3.1 COLUMN OPTIONS

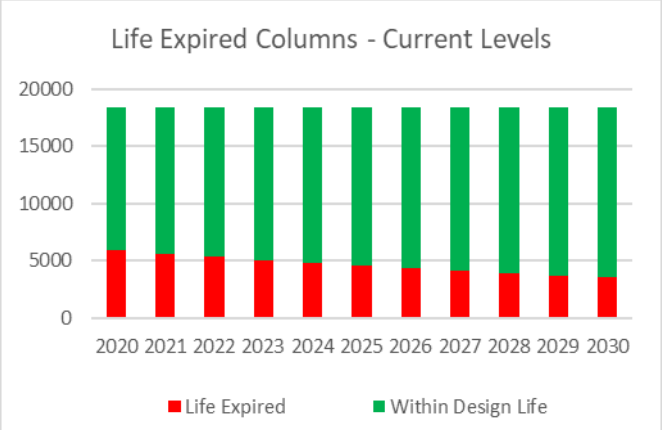
COLUMN OPTION 1 – NO INVESTMENT

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.



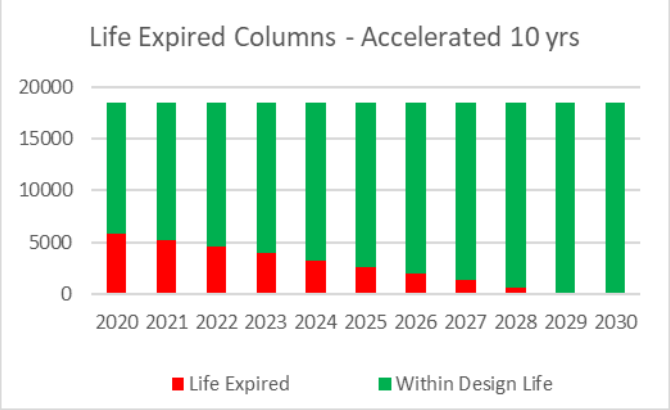
COLUMN OPTION 2 -CURRENT LEVEL OF INVESTMENT - £500K P.A.

Continuing current investment means that the backlog of columns which are now beyond their design lives can only be addressed at a rate of 5% per annum. This will lead to a situation where steel columns may still be in place at an age of 60/70 years. 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.



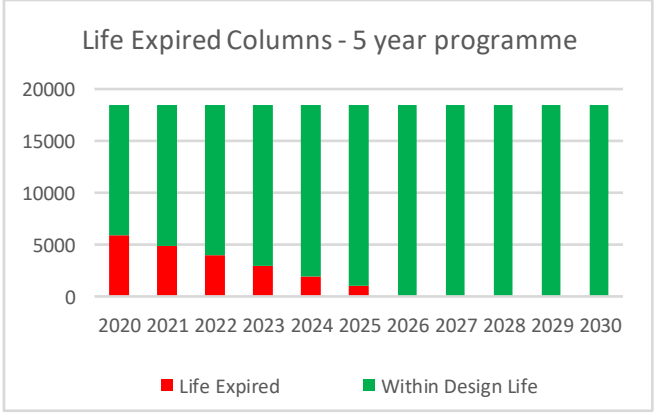
COLUMN OPTION 3 – ACCELERATE REPLACEMENTS £1M P.A.

Over initial two years spend £1m to replace all 8m and 10 m high columns on traffic routes. These units are a higher risk to the public should they collapse. Replace the remaining life expired columns over a subsequent 8 year period at £1m p.a. **N.B. In year three our LED programme will be complete and that £500k funding, if still available, can be utilised on column replacements**



COLUMN OPTION 4 – REPLACEMENT OF BACKLOG - £2M P.A.

A five 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 ten years.



3.2 LUMINAIRE OPTIONS

LUMINAIRE OPTION 1 – ZERO INVESTMENT

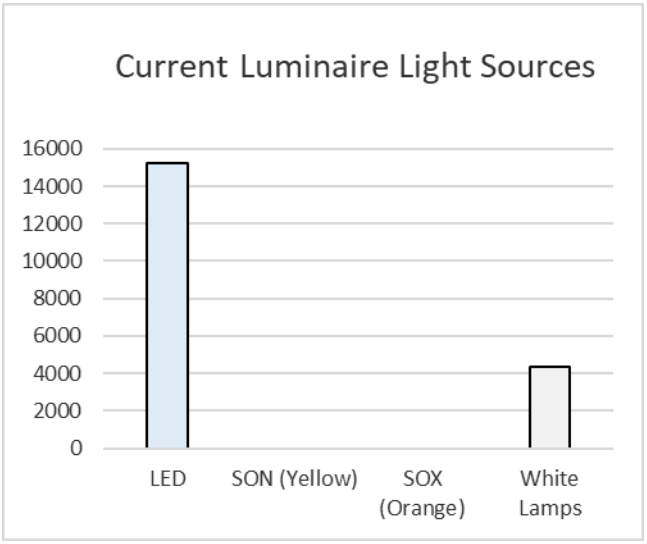
This strategy would make 20% of the network difficult and expensive to maintain as replacement parts are being phased out or prohibitively expensive to purchase. Rising energy costs would not be optimised leading to higher demands on available budgets.

LUMINAIRE OPTION 2 – MAINTAIN CURRENT PROGRESS £500K P.A.

Continue our strategy of LED upgrade replacing obsolete equipment with high efficiency modern units. All lanterns converted by 2022. Energy cost rises are mitigated over the period of installation and maintenance costs are reduced.

LUMINAIRE OPTION 3 – ACCELERATE PROGRAMME £1M P.A.

Complete programme in one year thereby maximising savings on energy and minimising spend on further maintenance on obsolete equipment.



The current luminaire replacement strategy has been a success with energy costs saved in the region of £350,000. Maintenance costs and the need for replacement parts will be significantly reduced over the forthcoming years as our procurement strategy for LED lanterns has obtained 12 year warranties on all products purchased now, and in the future.The lanterns themselves are expected to remain in service for at least 25 years.

4.0 TRAFFIC MANAGEMENT STATUS

Traffic Signals

Junctions

Minor	1
Medium	30
Major	3

Pedestrian Crossings

Single Carriageway	52
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.

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".
Only 10 of our units are exceeding their expected service life however all pass their annual inspection and their operation is deemed satisfactory.

Traffic Signals Valuation

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

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.

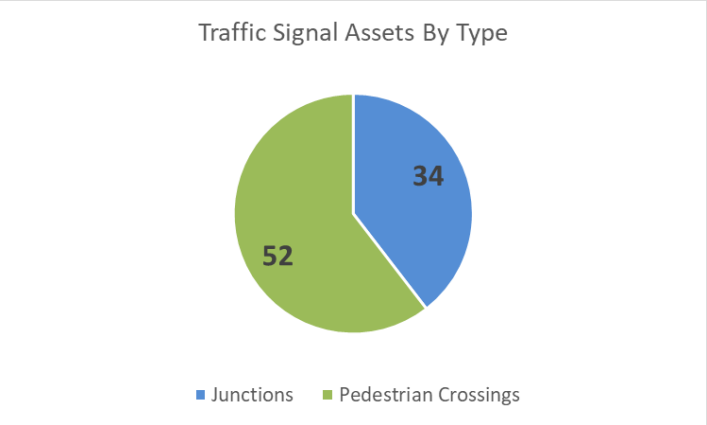


Figure 4.1

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

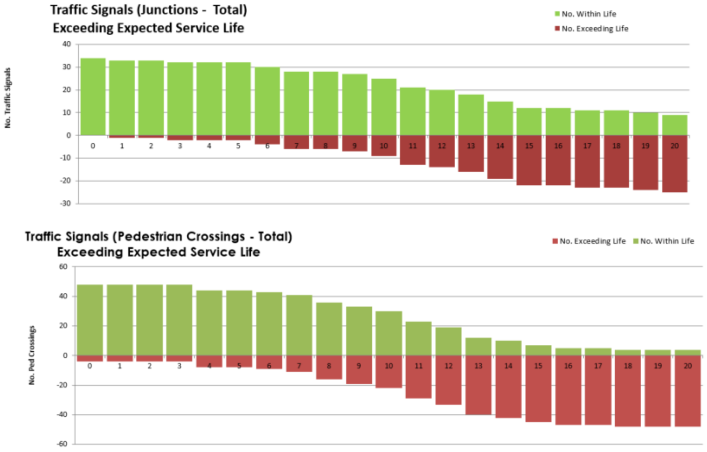


Figure 4.3

4.1 TRAFFIC MANAGEMENT OPTIONS

OPTION 1 – CONTINUE CURRENT LEVEL OF INVESTMENT

An annual capital investment of £80,000 would lead to sustained deterioration.

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 2 – STEADY STATE

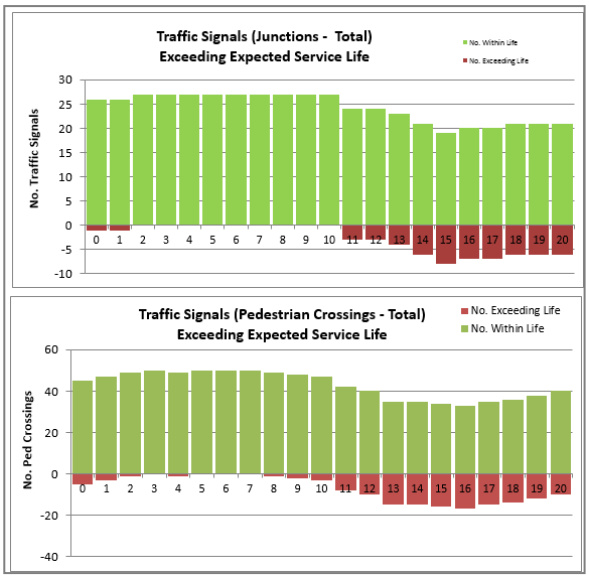
A stead state would be achieved with an annual investment equal to the annual depreciation amount.

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

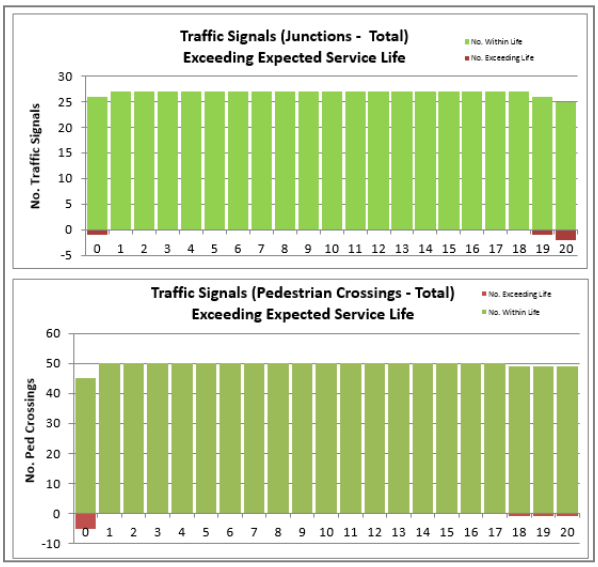
OPTION 3 – NO REPLACEMENT UNTIL NECESSARY

Assets to be monitored through annual electrical and structural inspections. Their condition to be reviewed before a replacement is determined.

The volume of reactive temporary repairs would rise, year on year. Customer satisfaction levels can be expected to decrease.



Option 1 – Current Level of Investment



Option 2 – Steady State

5.0 EV CHARGING POINT STATUS

Quantity & Type

7-22kW Destination Chargers:	69
50-150kW Journey Chargers:	18
Total chargers	87
Total synchronous sessions possible:	168

A further 19 Destination chargers will be delivered through the FY20/21 programme

Condition

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

Age (years):	3	2	1	0	Total
Destination:	5	27	36	1	69
Journey:	0	10	8	0	18
Total:	5	37	44	1	87

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 50-150kW 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

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	228	30	39	80	79
Subway	0	0	0	0	0
Footbridges	13	1	0	2	10
Retaining Walls	0	0	0	0	0
Total	**404**	**74**	**80**	**130**	**120**

Commentary

- Bridge inventory is stored in the WDM Structures Asset Management System
- The inventory data has only recently been inserted into WDM. Currently an audit of the information is underway. 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 the structures asset has been minimal in the last five years.
- This growth rate is predicted to remain the same in the next five years, as there are no known projects on the Capital Programme, which includes structures.

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	167
Number of general inspections undertaken on time	143
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.
- 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	9

- Bridges that failed the Assessment were assessed as Low-Risk Provisionally Sub-standard Structures in accordance with BD79 and therefore are subject to a Monitoring Regime.
- Strengthening measures are undertaken subject to Capital Budget allocation.

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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	85.63%	The Structures Inspector post was not filled for 6 months.
PI302 / (32.1.01)	Bridge Stock Condition Indicator – average $BSCI_{av}$	80.16	
PI303 / (32.1.02)	Bridge Stock Condition Indicator – critical $BSCI_{crit}$	76.69	
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		

Valuation

Gross Replacement Cost	£121,751,846
Depreciated Replacement Cost	£116,677,079
Annualised Depreciation Charge	£670,719

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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 £670K 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	£99,400	£139,071	£234,713	£147,860
Footbridges	£0	£0	£2,585	£7,755	£15,510
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	£8,500	£8,634	£10,815	£5,288
TOTALS	**£0**	**£107,900**	**£150,290**	**£253,283**	**£168,658**

6.1 STRUCTURES OPTIONS

OPTION 1 – CURRENT LEVEL OF INVESTMENT

The bridge stock has displayed a minor slight downward trend in terms of the Condition Performance Indicators. This is has occurred as a result of carrying out detailed inventory surveys.

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.