

Transport and Environment Committee

10.00am, Thursday, 11 January 2024

Transport Asset Management Plan (TAMP)

Executive/routine
Wards

Routine
All

1. Recommendations

- 1.1 It is recommended that Transport and Environment Committee approves the updated Transport Asset management Plan (TAMP), shown in Appendix 1.

Paul Lawrence

Executive Director of Place

Contact: Sean Gilchrist, Transport Manager

E-mail: sean.gilchrist@edinburgh.gov.uk

Transport Asset Management Plan (TAMP)

2. Executive Summary

- 2.1 This report seeks approval for the latest update of the Council's Transport Asset Management Plan (TAMP).

3. Background

- 3.1 All 32 Local Authorities in Scotland have agreed to support the Society of Chief Officers in Scotland (SCOTS) Roads Asset Management project to produce a common framework for Road Asset Management Plans (RAMP).
- 3.2 The City of Edinburgh Council has developed and extended its RAMP to include additional transport asset groups and created a Transport Asset Management Plan (TAMP). The assets considered within a traditional RAMP comprise carriageways, footways, structures, street lighting and traffic management systems. However, Edinburgh's TAMP also includes cycling infrastructure and park and ride sites.
- 3.3 The purpose of the TAMP is to establish future maintenance and management of the overall road network and to set out options considered to take forward the management of the Council's transport assets. The TAMP records the Council's plans for the maintenance of the road asset. The "road asset" comprises of carriageways, footways, structures, street lighting and traffic management systems. The powers and duties of road authorities are defined by the Roads (Scotland) Act 1984 and additional relevant legislation.
- 3.4 The content of the TAMP has been produced using a framework common across all Scottish Councils (established by the SCOTS) and includes the production of the Code of Practice on Transport Infrastructure Assets published by the Chartered Institute of Public Finance and Accounts (CIPFA).
- 3.5 The transport network is the largest and most visible community asset that the Council is responsible for. It is used on a daily basis by a significant number of people and is fundamental to the economic, social and environmental well-being of communities. It helps to shape the character and quality of the local areas that it serves and makes an important contribution towards the delivery of the Council's vision and commitments.

- 3.6 In order to meet the demands placed on it, it is crucial that the transport network is adequately funded and maintained. Continuing growth in traffic has brought an increasingly widespread recognition of the importance of road maintenance, and the high value placed on it both by users and the wider community.
- 3.7 Edinburgh's first [TAMP](#) was approved by the Transport and Environment Committee on 6 December 2018.
- 3.8 The latest TAMP includes the updated asset inventory. This includes an increase in the carriageway and footway network as a result of new developments being adopted for maintenance.
- 3.9 The TAMP also details new future funding plans. It is possible that these could change on an annual basis, depending on agreed Council budgets.
- 3.10 Edinburgh's TAMP will support and contribute to achieving the measures set out within the Council's 2030 City Plan, City Mobility Plan and the Council Business Plan 2023/2027 and is consistent with the Council's corporate approach to asset management. The purpose of the TAMP is to formalise strategies for investment in transport asset groups and to define service standards.

4. **Main report**

- 4.1 The TAMP sets out the City of Edinburgh's Council's plans for its transport assets and details the extent of the asset inventory and future funding. Transport assets deteriorate slowly so the impact of a level of investment cannot be shown by looking at the next couple of years. Therefore, this report includes 20-year forecasts to enable decisions to be taken with an understanding of their long-term implications.
- 4.2 Whilst the capital investment strategy forecasts, over a 20-year period, continuous revenue repairs will continue to be carried out on small scale defects on the network.
- 4.3 The condition of Edinburgh's roads is assessed annually as part of the Scottish Roads Maintenance Condition Survey (SRMCS), an independent survey of road conditions in all 32 Scottish local authorities. The survey provides each local authority with a Road Condition Index (RCI) which identifies the percentage of roads in need of maintenance.
- 4.4 Edinburgh's RCI has improved from 35.0% in 2022/23 to 34.3% in 2023/24. The TAMP looks at options that aim to achieve the best possible return in the RCI over a 20-year period, based on the available funding.
- 4.5 It is widely recognised that the application of modern asset management practices can enable improved value for money. In these challenging times it is essential that the Council embraces these methods and strives to ensure that funding is invested as wisely as possible. This plan forms an important part of the Council's commitment to apply good asset management to roads.

- 4.6 The plan will also take account of the infrastructure renewal programmes procured through historic, current and future Revenue and Capital budgets and assesses to what extent these investments have arrested depreciation of the asset as a whole. On this basis, future plans will be able to indicate if funding is sufficient to arrest depreciation or what funding is required to enable this to happen or what funding is necessary to improve the asset year on year. The TAMP will also help prioritise infrastructure renewal projects to make the most efficient use of the funding available.
- 4.7 A [report](#) for Transport and Environment Committee on 14 September 2023 detailed investment options for roads and infrastructure. Within the existing Capital Investment Strategy there will be insufficient funding available to achieve an improvement in road condition within the TAMP 20-year forecast.

5. Next Steps

- 5.1 The annual Road and Infrastructure Investment report will continue to be presented to this Committee for approval on an annual basis.
- 5.2 If additional funding is received for roads and infrastructure investment, then the 20-year condition forecast will be adjusted to reflect this.
- 5.3 A report detailing updated prioritisation procedures for footway investment will be presented to this Committee in March 2023.

6. Financial impact

- 6.1 There are no financial implications associated with this report. The capital requirements for the road network are detailed annually in a separate report.

7. Equality and Poverty Impact

- 7.1 No equality or poverty impacts have been identified in preparing this report.

8. Climate and Nature Emergency Implications

- 8.1 As a public body, the Council has statutory duties relating to climate emissions and biodiversity. The Council

“must, in exercising its functions, act in the way best calculated to contribute to the delivery of emissions reduction targets”

(Climate Change (Emissions Reductions Targets) (Scotland) Act 2019), and

“in exercising any functions, to further the conservation of biodiversity so far as it is consistent with the proper exercise of those functions”

(Nature Conservation (Scotland) Act 2004)

- 8.2 The City of Edinburgh Council declared a Climate Emergency in 2019 and committed to work towards a target of net zero emissions by 2030 for both city and corporate emissions and embedded this as a core priority of the Council Business Plan 2023-27. The Council also declared a Nature Emergency in 2023.

9. Risk, policy, compliance, governance and community impact

- 9.1 There are no significant compliance, governance or regulatory implications expected as a result of approving the recommendations in this report.

10. Background reading/external references

- 10.1 None.

11. Appendices

Appendix 1 – Transport Asset Management Plan (TAMP)



Transport Asset Management Plan

(TAMP)

January 2024

Foreword

This plan sets out the Council's plans for the management of the Council's Transport Asset. It has been produced in accordance with national guidance and recommended good practice developed through the SCOTS Road Asset Management Project.

It is widely recognised that the application of modern asset management practices can enable improved value for money. In these challenging times it is essential that the Council embraces these methods and strives to ensure that every penny spent is invested as wisely as possible. This plan forms an important part of the Council's commitment to apply good asset management to roads.

The plan recognises the views of road users and residents and, in particular, the importance that is placed upon our Transport Assets. Recent harsh winters have shown that roads are susceptible to damage when bad weather occurs. It is essential that an appropriate level of investment is put into the road network to maintain and ultimately improve one of the main principles of the council, that of the economic wellbeing of the locality.

This plan supports the Council's Business Plan Priorities:

- 1. Create good places to live and work in Edinburgh.**
- 2. Take all the locations needed to end poverty in Edinburgh.**
- 3. Work to deliver a net zero city by 2030.**

In addition this plan supports the following actions within the Council's Business plan:

- | | |
|-------------------|--|
| Action 3: | Edinburgh is a cleaner, better maintained city that we can all be proud of |
| Action 7: | People use decarbonised public transport and active travel as the first choice way to get round the city |
| Action 10: | We have the capacity, skills, and resources to deliver our priorities efficiently, effectively and at lower cost. |

Document Control

Version Number	Amendments Made	Date
v1	Nil - Original	December 2018
v2	Updated Asset and Financial Information	January 2024
Next Review Due		

Council Approval

Version Number	Council Committee	Date
v1	Transport and Environment Committee	6 December 2018
v2	Transport and Environment Committee	

Responsibility for the Plan

The responsibility for the delivery of and updating of this plan are shown below

Council Officer	Responsible for
Sean Gilchrist	Updating TAMP

1. Introduction

Overview

This plan sets out the plans for the Council's Transport Assets for the period 2023-2026. The Transport Asset Management Plan (TAMP) records the Council's plans for the maintenance of the Transport Asset. The "Road Asset" comprises of carriageways, footways, structures, street lighting, traffic management systems and street furniture. The "Transport Asset" also includes cycling infrastructure and park and ride sites.

This Plan is consistent with the Council's corporate approach to asset management, as set out in the Corporate Asset Management Strategy.

The purpose of the TAMP is to:

- Formalise strategies for investment in Transport Asset groups; and
- Define service standards.

The Plan aims to improve how the Transport Asset is managed and to enable a better value for money roads service to be delivered.

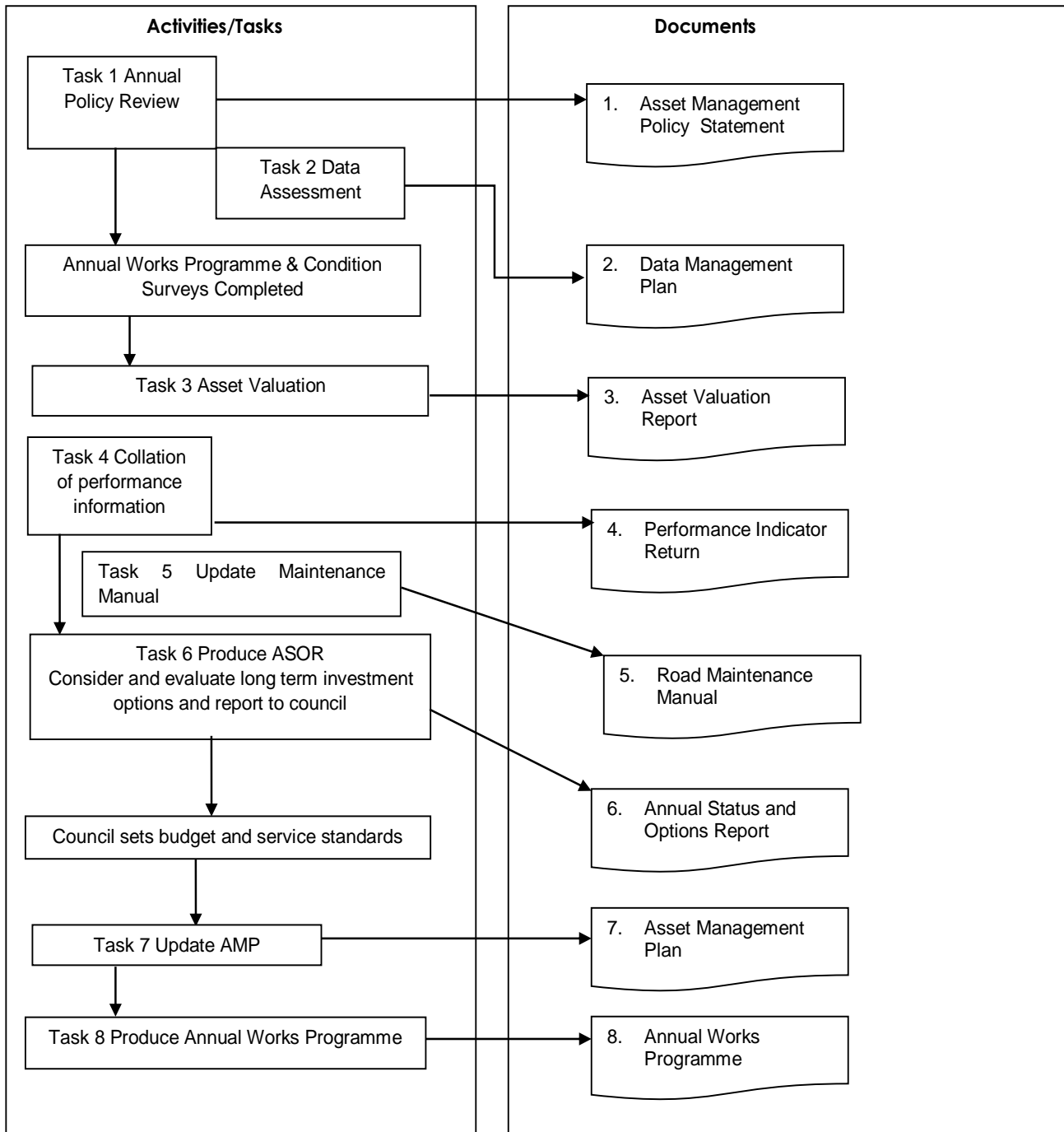
Corporate Asset Management

The Corporate Asset Management Strategy incorporates the following six assets managed by the Council:

- Buildings and Property
- Roads Infrastructure
- Council Housing
- Open Space
- Vehicle Fleet
- Information and Communications Technology (ICT)

Society of Chief Officers for Transportation in Scotland (SCOTS)

This plan has been developed in accordance with the SCOTS/CSSW recommended asset management planning practices and is informed by the tasks and documents illustrated.



2. Transport Assets

Transport Assets

The Council's Road Assets covered by this plan are:

- Carriageways 1,563 km
- Footways, footpaths & cycleways 2,249 km
- Structures 350 bridges /structures
- Street Lighting 59,462 street lighting columns
- Traffic Management Systems 23,821 traffic signal/equipment units
- Cycle Network 312 km of cycle routes
- Park and Ride Sites 3 sites.

There are a further 16 bridges which are maintained by the Tram Operating Company.

Assets Not Covered

Assets not included in this plan but which will be included in a future revision to the plan:

- Road Drainage Infrastructure
- Weather Stations
- Other Traffic Management Systems – Information Systems, Safety Cameras, Variable Message Signs, Vehicle Activated Signs, Real Time Passenger Information

Some related assets that are maintained by Road Operations are the responsibility of other council departments. The Council owned Road Assets not covered in this TAMP are:

- Pay and display car parks
- Footpaths managed by Housing Association
- Bus Shelters
- Public Rights of Way

Assets that have been specifically excluded from this plan are:

- Private Roads
- Private Bridges
- Council owned bridges, not on or crossing the road network
- Decorative, seasonal lighting
- Water related infrastructure that does not form part of the road network
- Assets relating to the other five key areas of Council asset ownership (e.g. Buildings and Property, Council Housing, Open Space, Vehicle Fleet and Information and Communications Technology)

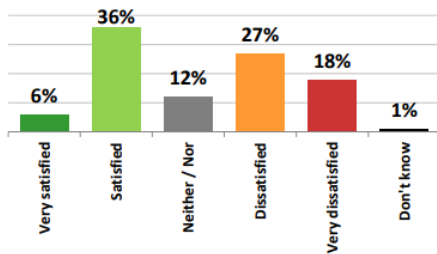
Inventory Data

This plan is based upon currently available inventory data for Road Assets, i.e. carriageway, footway, structures, street lighting and traffic signals. For some minor Road Assets inventory data is not currently held, however, an attempt has been made to incorporate these assets within this Plan using local estimates and sample surveys. A plan to improve asset data forms part of the Council's Transport Asset data management plan⁽⁴⁾.

3. Customer Satisfaction

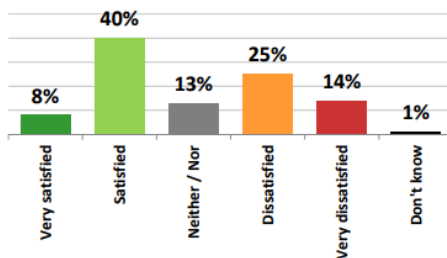
City of Edinburgh Council undertook a Citizens Survey to understand the level of public satisfaction in regard to council services. The last survey that relates to TAMP actions was the Edinburgh People Survey 2018.

42% satisfied with maintenance of roads



We would hope that as the Road Condition Index (RCI) of the network decreases this number begins to rise, and hopefully the public perception of surface treatment work improves also.

47% satisfied with maintenance of pavements and footpaths



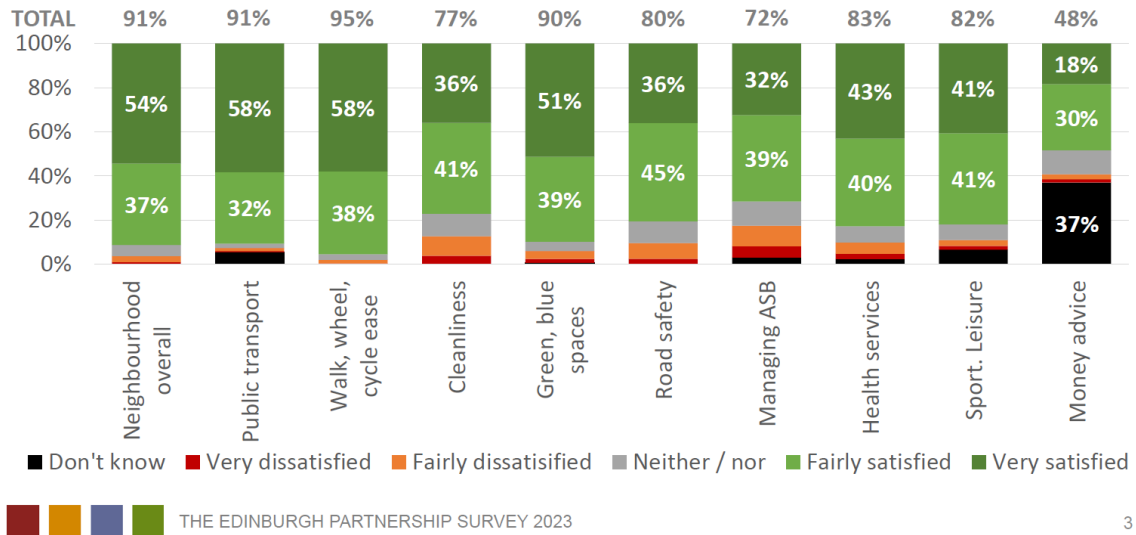
As with the roads maintenance, the approach given in the TAMP should hopefully see this score improve annually.

1. The results of the survey show that a lot of work is still required to improve public satisfaction with how the road network is maintained.
2. The continuation of the TAMP should also lead to an increase in how the public perceive the Council with regards to sound financial management.
3. Satisfaction with how the Council manage the city as a whole should again improve if the measures suggested in the TAMP are implemented as the road assets are maintained.

The Edinburgh Partnership Survey

The latest survey of customer satisfaction was conducted in 2023. Some of the responses from The Edinburgh Partnership survey are shown below:

Aspects of neighbourhood satisfaction, various questions (3,736 responses)



4. Demands

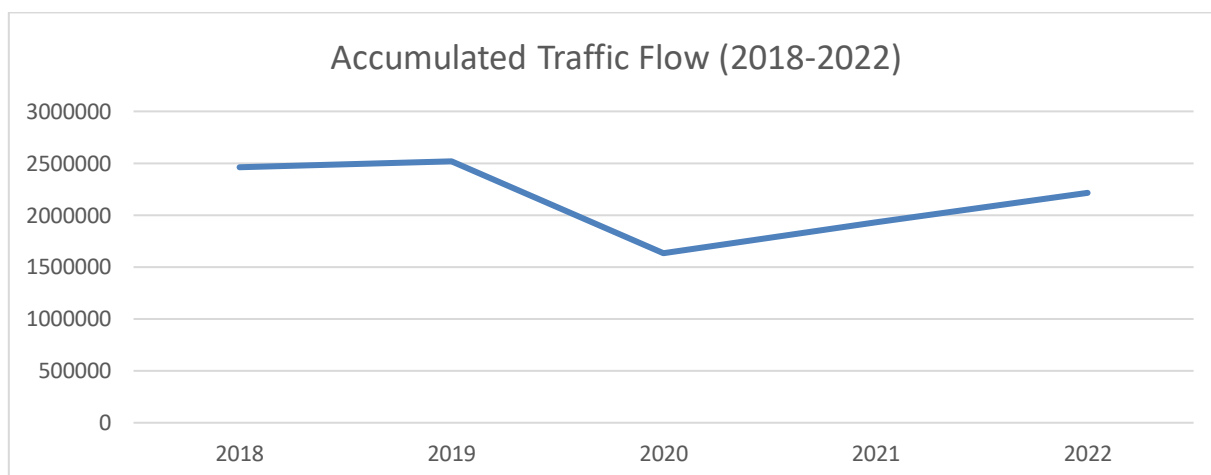
Asset Growth

The asset grows each year due to the adoption of new roads and construction of new road links. New assets create the need for maintenance, management and associated funding in future years as these additional assets age. This is particularly relevant to street lighting as energy costs increase immediately exacerbating the effect of rising energy prices.

Traffic Growth

Traffic growth places increasing pressure on the road network due to the significant increase in the general volume of traffic and in particular, large commercial vehicles. Many of the Council's roads were not designed to accommodate this level of traffic. This creates a growing need for investment in maintenance.

The City of Edinburgh Council faces a significant challenge in balancing the requirement to enhance the quality of life for its residents and visitors against ensuring that growth takes place in a sustainable manner. The key transportation issue associated with this is increased congestion and its subsequent effect on the environment, the economy, integration, accessibility and safety that are contributing factors to perceived quality of life.



Data collected by the Department for Transport shows that the Annual Average Daily Flow (AADF) for all motor vehicles in 2022 is at 89.9% of the 2018 level. This is a cumulative total from counts taken at 84 separate count locations throughout Edinburgh. The traffic figures are still recovering from the 2020 dip caused by the COVID-19 pandemic. The data shows that the number of vehicles on the city's network continues to increase so it is essential that the maintenance of the road network is properly planned in order for the city's economic growth to continue.

Environmental Conditions

Pressure is also being placed upon the asset as a result of environmental conditions including:

- Harsh winters: recent unseasonably harsh winters have caused significant damage to road surfaces resulting from freeze/thaw action.
- Climate change: current projections indicate, on average, warmer, wetter winters and warmer, drier, summers with what are currently considered to be exceptional heat and precipitation events becoming more common and severe events becoming more extreme. This has the potential to cause more rapid deterioration in the road network than currently forecast.

5. Service Standards

This plan is based upon delivering the service standards below. The standards reflect the funding levels in section 6. They are the standards that users (customers) can expect from the Council's Transport Assets during the plan period. Details of how the specific measures shown below are calculated are included in the road maintenance manual.

Service	Measured By	Target Standard	
		Standard	Compliance
Carriageways			
Safety	Undertake routine safety inspections on Category 2 Strategic Routes at intervals of	12 Months	100%
	Undertake routine safety inspections on Category 3(a) Main Distributors at intervals of	12 Months	100%
	Undertake routine safety inspections on Category 3(b) Secondary Distributors at intervals of	12 Months	100%
	Undertake routine safety inspections on Category 4(a) Link Road at intervals of	12 Months	100%
	Undertake routine safety inspections on Category 4(b) Local Access roads at intervals of	12 Months	100%
	Category 1 defects shall be rectified or made safe within	24 Hours	100%
	Category 2 defects shall be rectified or made safe within	5 Working Days	100%
Condition	Maintain the condition of all 'A' roads such that the percentage in a RED condition remains below	4%	90%
	Maintain the condition of all 'A' roads such that the percentage in a RED and AMBER condition remains below	27%	90%
	Maintain the condition of all 'B' roads such that the percentage in a RED condition remains below	2.5%	90%
	Maintain the condition of all 'B' roads such that the percentage in a RED and AMBER condition remains below	20%	90%
	Maintain the condition of all 'C' roads such that the percentage in a RED condition remains below	5%	90%
	Maintain the condition of all 'C' roads such that the percentage in a RED and AMBER condition remains below	30%	90%
	Maintain the condition of all 'U' roads such that the percentage in a RED condition remains below	7%	90%
	Maintain the condition of all 'U' roads such that the percentage in a RED and AMBER condition remains below	40%	90%

Service	Measured By	Target Standard	
		Target	Compliance
Footways			
Safety	Undertake routine safety inspections on Prestige Area footways at intervals as described	2 Weeks	100%
	Undertake routine safety inspections on Primary Walking Routes at intervals as described	1 Month	100%
	Undertake routine safety inspections on Secondary Walking Routes at intervals as described	12-18 Months	100%
	Undertake routine safety inspections on Linking Footways at intervals as described	12-18 Months	100%
	Undertake routine safety inspections on Local Area Footways at intervals as described	12-18 Months	100%
	Category 1 defects shall be rectified or made safe within	24 Hours	100%
	Category 2 defects shall be rectified or made safe within	5 Working Days	100%

Service	Measured By	Target Standard	
		Standard	Compliance
Street Lighting			
Safety	Electrical testing of all equipment shall be undertaken at a frequency of	6 Years	100%
	Emergency faults shall be made safe or repaired within 4 hours of notification	4 Hours	95%
Condition	Street Lighting Priority Repairs shall be completed within 24 hours of notification	24 Hours	75%
	Street Lighting 5-day Repairs shall be completed in time	5 Working Days	70%
	Street Lighting 28-day Repairs shall be completed in time	28 Days	95%

Service	Measured By	Target Standard	
		Standard	Compliance
Structures			
Safety	Carry out General Inspections on all bridges at a maximum frequency of 2 years.	2 Years	100%
	Carry out Principal Bridge Inspections at a maximum frequency of 6 years. There are currently 136 bridges on the Risk Based Principal Bridge Inspection Programme.	6 Years	100%
	Carry out General Inspections on all retaining with a retained height of over 1.5m at a maximum frequency of 2 years	2 Years	100%
	To undertake programmed safety inspections on 4 bridges	4	100%
Condition	Maintain all Structures such that the BSC_{ave} for the Bridge Stock is above 80	80	100%
	Maintain all Structures such that there are no structures with a critical element with a BCI_{crit} indicating a poor condition (currently 62 bridges). It is intended to address 7 structures per year	0	11%
	The total number of Council owned weight restricted bridges (excluding environmental weight restrictions and acceptable permanent weight restriction) within the authority shall remain at or below One (off Dundee Street)	1	100%

Service	Measured By	Target Standard	
		Standard	Compliance
Traffic Signals			
Safety	Attendance at Major faults shall be within 'X' contract hours	2 Hours	100%
	Attendance at Minor faults shall be within 'X' contract hours	4 Hours	100%
	Undertake electrical inspections for electrical assets at each installation every "X" years	1 Year	100%
Condition	Initial repair of major faults shall be within 'X' further contract hours	2 Hours	100%
	Initial repair of minor faults shall be within 'X' further contract hours	4 Hours	100%
	Complete repair all faults within 'X' contract hours	20 Hours	100%
	Bulk lamp change, (tungsten halogen and standard fluorescent tube regulatory box sign), all vehicle and pedestrian aspects (including wait lamps) every "X" months	6 Months	100%
	Bulk lamp change, (2D fluorescent tubes) regulatory box signs every "X" months	24 Months	100%
	The percentage of traffic signal installations exceeding their ESL (20 years) should be no more than	20%	
	Damage repair of major faults shall be within "X" days	5 Working Days	100%
	Damage repair of less urgent faults shall be within "X" days	5 Working Days	100%
	Failed lamps shall be replaced within "X" contract hours	20 Contract Hours	100%

6. Financial Summary

6.1 Planned Funding

The service standard targets shown in section 5 are based upon the following predicted funding levels. In future years Council will decide upon the level of funding for the road taking into account the information and options supplied in the complimentary Asset Strategy and Options Reports (ASORs). Any updates required to the TAMP will then be made.

Section 5 of this TAMP is based upon the assumption that the funding levels will be of the level shown in the table below.

Asset	Year 1 2022/23 £M	Year 2 2023/24 £M	Year 3 2024/25 £M
Carriageways, Footways & Cycle Network	9.598	14.936	5.000
Structures & Flood Prevention	0.840	0.845	0.600
Street Lighting & Traffic Signals	1.200	1.220	1.220
Footways Street Lighting	0.300	0.300	0.100
Dropped Crossings	0.080	0.080	0.080
Drainage	0.300	0.300	0.300
NEPs	0.000	0.500	0.500
Bus Stop Maintenance	0.500	0.500	0.250
In-Year Priorities	0.500	0.500	0.500
Surface Enhancements	1.450	0.800	0.500
Staff and delivery Costs	1.800	1.800	1.800

6.2 Asset Valuation

As at July 2023 the Road Asset is valued as follows:

Asset Type	Gross Replacement Cost (GRC)	Annualised Depreciation Cost (ADC)
Carriageways & On-Road Cycle Network	£1,923m	£204m
Footways & Off-Road Cycle Network	£500m	£185m
Structures	£1,340m	£1.2m
Street Lighting	£135m	£7m
Traffic Management	£11m	£1.9m
Total	£3,769m	£399.1m

Gross Replacement Cost (GRC): The amount that the Council would have to pay to replace the asset at the present time, according to its current worth.

Annualised Depreciation Cost (ADC): The value that the asset depreciates in one year.

7. Asset Investment Strategies

The strategies in this section have been determined using predictions of future condition over a 20-year period. The predictions enable strategies to be created to look at the whole life cost of maintaining the asset. Using long term predictions means that decisions about funding levels can be taken with due consideration of the future maintenance funding liabilities that are being created. Investment strategies for the major asset types are summarised below. These strategies are designed to enable the service standards in section 5 to be delivered.

Investment between Asset Types

In comparison to historical investment, future investment is planned to be:

- Carriageways: level of investment increased.
- Footways: level of investment increased
- Structures: level of investment maintained at similar levels
- Street lighting; level of investment maintained at similar levels, plus additional investment in “spend to save” energy efficiency initiatives
- Traffic signals; level of investment maintained at similar levels
- Cycling Infrastructure; level of investment increased.

Carriageways and On-Road Cycle Network.

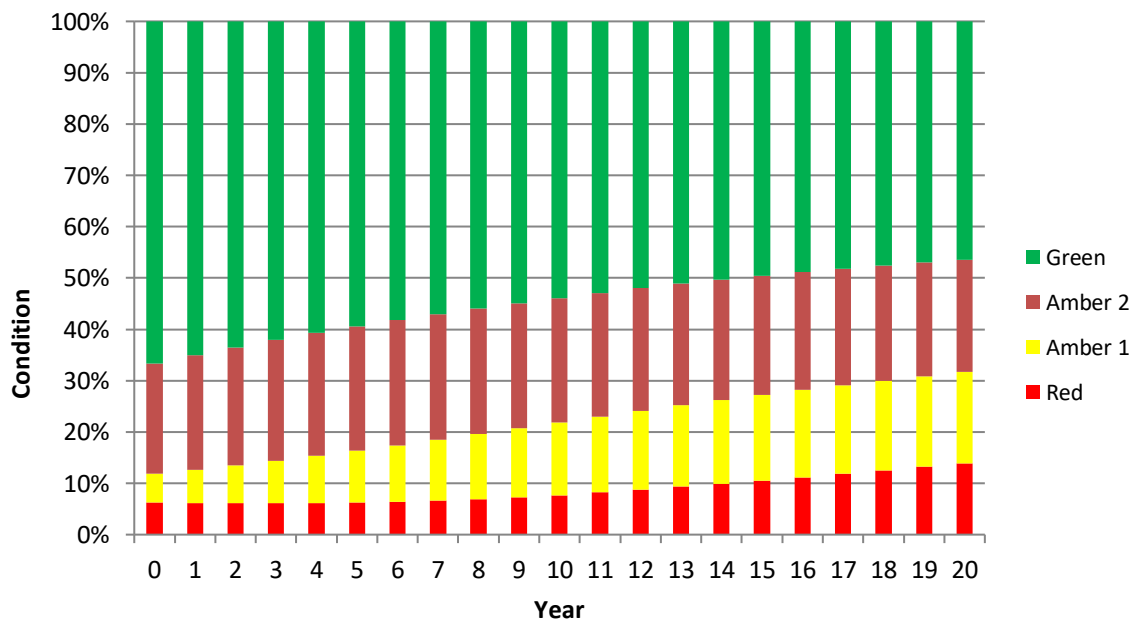
The overarching strategy for carriageways is to invest where possible in preventative maintenance in order to reduce the rate of deterioration of the asset.

The condition information indicates that the A, B, and C roads are generally in a good condition with little strengthening or resurfacing maintenance required. The Council will however continue to invest in carrying out these repairs in order to improve public perception of the condition of the road network given that these classes of road include the busier routes.

The unclassified roads will require larger investment across all level of works (over 61% of the budget in year 1) in order to bring them up to the target standards prior to focussing on the preventative maintenance strategy. It is anticipated that after 10 years however there will be no roads requiring resurfacing allowing the budget to be split between preventative measures and repairing the sections of the network which require strengthening.

Routine and reactive repairs are expected to continue at current levels and will require continued investment.

This graph shows the predicted deterioration of the Road Condition Index (RCI) for entire road network across the next 20 years if the investments levels remain as currently forecast.



Category	Strategy	Comments																									
Routine and Reactive Repair	Repair of defects to current intervention standards and response times.	The strategy requires the deployment of works gangs on emergency and non-emergency repairs such as patching.																									
Planned Maintenance Preventative	To catch roads in the initial stages of deterioration and prevent further deterioration.	The strategy is predicted to require the following annual approximate lengths of surface treatment:																									
		<table border="1"> <thead> <tr> <th>Road Class</th> <th>2023/24</th> <th>2024/25</th> <th>2025/26</th> <th>2026/27</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>£740k</td> <td>£0k</td> <td>£0k</td> <td>£0k</td> </tr> <tr> <td>B</td> <td>£187k</td> <td>£100k</td> <td>£100k</td> <td>£100k</td> </tr> <tr> <td>C</td> <td>£374k</td> <td>£100k</td> <td>£100k</td> <td>£100k</td> </tr> <tr> <td>U</td> <td>£1,075k</td> <td>£1,000k</td> <td>£1,000k</td> <td>£1,000k</td> </tr> </tbody> </table>	Road Class	2023/24	2024/25	2025/26	2026/27	A	£740k	£0k	£0k	£0k	B	£187k	£100k	£100k	£100k	C	£374k	£100k	£100k	£100k	U	£1,075k	£1,000k	£1,000k	£1,000k
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C	£374k	£100k	£100k	£100k																							
U	£1,075k	£1,000k	£1,000k	£1,000k																							
Planned Maintenance Corrective	Programme of resurfacing where the carriageway condition means a preventative treatment cannot be applied	The strategy is predicted to require the following annual approximate lengths of resurfacing:																									
		<table border="1"> <thead> <tr> <th>Road Type</th> <th>2023/24</th> <th>2024/25</th> <th>2025/26</th> <th>2026/27</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>£394k</td> <td>£294</td> <td>£294</td> <td>£294</td> </tr> <tr> <td>B</td> <td>£32k</td> <td>£100k</td> <td>£100k</td> <td>£100k</td> </tr> <tr> <td>C</td> <td>£56k</td> <td>£100k</td> <td>£100k</td> <td>£100k</td> </tr> <tr> <td>U</td> <td>£421k</td> <td>£300k</td> <td>£300k</td> <td>£300k</td> </tr> </tbody> </table>	Road Type	2023/24	2024/25	2025/26	2026/27	A	£394k	£294	£294	£294	B	£32k	£100k	£100k	£100k	C	£56k	£100k	£100k	£100k	U	£421k	£300k	£300k	£300k
		Road Type	2023/24	2024/25	2025/26	2026/27																					
		A	£394k	£294	£294	£294																					
		B	£32k	£100k	£100k	£100k																					
	C	£56k	£100k	£100k	£100k																						
	U	£421k	£300k	£300k	£300k																						
Programme of strengthening where the carriageway condition requires a more substantial repair	The strategy is predicted to require the following annual approximate lengths of strengthening:	<table border="1"> <thead> <tr> <th>Road Type</th> <th>2023/24</th> <th>2024/25</th> <th>2025/26</th> <th>2026/27</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>£2,000k</td> <td>£1,000k</td> <td>£1,000k</td> <td>£1,000k</td> </tr> <tr> <td>B</td> <td>£500k</td> <td>£400k</td> <td>£400k</td> <td>£400k</td> </tr> <tr> <td>C</td> <td>£300k</td> <td>£100k</td> <td>£100k</td> <td>£100k</td> </tr> <tr> <td>U</td> <td>£100</td> <td>£100k</td> <td>£100k</td> <td>£100k</td> </tr> </tbody> </table>	Road Type	2023/24	2024/25	2025/26	2026/27	A	£2,000k	£1,000k	£1,000k	£1,000k	B	£500k	£400k	£400k	£400k	C	£300k	£100k	£100k	£100k	U	£100	£100k	£100k	£100k
		Road Type	2023/24	2024/25	2025/26	2026/27																					
		A	£2,000k	£1,000k	£1,000k	£1,000k																					
		B	£500k	£400k	£400k	£400k																					
		C	£300k	£100k	£100k	£100k																					
U	£100	£100k	£100k	£100k																							

Footways and Off-Road Cycle Network

The overarching strategy for footways is to invest where possible in preventative maintenance of bituminous footways in order to reduce the rate of deterioration of the asset.

The condition information indicates that the Flagged footways are generally in a good condition with only a small amount of resurfacing maintenance required in order to remain within the target standards. The bituminous footways will require an initial investment in resurfacing works in order to bring them up to the target standards prior to focussing on the preventative maintenance strategy. A small amount of strengthening works is required where constant overriding of the footway is causing severe damage and a higher standard of construction will reduce this.

Routine and reactive repairs are expected to continue at current levels and will require continued investment.

Category	Strategy	Comments				
Routine and Reactive Repair	Repair of defects to current intervention standards and response times.	The strategy requires the deployment of 4 work gangs on emergency and non-emergency repairs such as small areas of broken slab replacement and patching etc.				
Planned Maintenance Preventative	A programme of preventative treatment of bituminous footways in the initial stages of deterioration.	The strategy is predicted to require the following annual approximate lengths of footway surface treatments:				
		Footway Type	2023/24	2024/25	2025/26	2026/27
		All	£500k	£200k	£300k	£300k
Planned Maintenance Corrective	Programme of resurfacing/renewal of footways.	The strategy is predicted to require the following annual approximate areas of footway renewals:				
		Footway Material	2023/24	2024/25	2025/26	2026/27
		All	£3,000k	£1,000k	£2,000k	£2,000k

Street Lighting

The aim of the maintenance strategy is to ensure that all street lights are operating 99% of the time and all columns are in a safe condition. The night time inspection process enables 'dark lamps' to be identified and repaired within a seven day response time.

The structural testing programme enables columns in poor condition to be identified and replaced before an incident occurs.

The Council has developed a Carbon Management / Energy Reduction Plan which has highlighted major CO₂ emission savings available through improved street lighting management. All street lights which meet the appropriate criteria are turned off between midnight and 5am and a programme of lantern replacement with new energy efficient (LED) lanterns has been agreed where existing lanterns have become life expired.

Category	Strategy	Comments								
Routine and Reactive Repair	Repair of defects to current intervention standards and response times.	The strategy requires the deployment of 3 number works gangs on emergency and other non-emergency repairs.								
Planned Maintenance Corrective	Programme of structural renewal	The strategy is predicted to require the following approximate annual quantities of columns to be renewed:								
		<table border="1"> <thead> <tr> <th></th> <th>2023/24</th> <th>2024/25</th> <th>2025/26</th> <th>2026/27</th> </tr> </thead> <tbody> <tr> <td>Columns Renewals</td> <td>£1.2m</td> <td>£1.2m</td> <td>£1.2m</td> <td>£1.2m</td> </tr> </tbody> </table>		2023/24	2024/25	2025/26	2026/27	Columns Renewals	£1.2m	£1.2m
	2023/24	2024/25	2025/26	2026/27						
Columns Renewals	£1.2m	£1.2m	£1.2m	£1.2m						
Carbon / Energy Reduction	Programme of lantern replacement	Complete								

Structures

The Council has identified 62 structures that are in poor or very poor condition which require remedial works. The strategy developed is to undertake these works over a 10-year period focussing initially on those structures that are of high priority. The scale and cost of each project will vary. The nature of the schemes means that funding requirements will change each year, and this has been allowed for in the funding allocation above.

There are 1,703 retaining walls (approximately 68km) with a retained height of over 1.5m associated with the road. Ownership of a wall is only established when repair work is required, and notice is served on the owner to affect a repair if necessary.

It is intended to undertake the following capital works in 2023/24

Bridge	Summary of Works
Bow Bridge	Replacement/refurbishment of culvert structure.
Allan Park Footbridge	Refurbishment including steelwork strengthening and repainting.
Lindsay Road Bridge	A decision on the project scope is pending a funding application to Sustrans. £500k has been allocated for removal of the bridge deck but this may be used as matched funding for a new bridge.
Westerhailes Road Over Murrayburn Drive	Initial investigations to inform scoping of strengthening works in subsequent years.
Half-joint and post-tensioned investigations and strengthening	Initial investigations of various bridges to inform scoping of repair works in subsequent years.
West Approach Road bridges*	Design and initial investigations for refurbishment work in subsequent years.

Routine maintenance needs are different for each structure type which will be funded for the Bridge Revenue Budget. It should be noted that structures in poor and very poor condition may also be addressed through the Revenue Budget.

Traffic Signals

The aim of the traffic signals maintenance strategy is to ensure that all traffic signals are operating 99% of the time and all equipment remains in a safe condition. Installations are replaced only following obsolescence due to life expiry or external damage.

Where possible installations are replaced as a whole rather than replacing individual items of equipment.

Category	Strategy	Comments				
Routine and Reactive Repair	Repair of defect to current intervention standards and response times.	The strategy requires the deployment of 2 work gangs/other agencies on emergency repairs and other non-emergency repairs.				
Refurbishment of signalised junctions	Refurbishment of junction that have deteriorated or the equipment has become obsolete/unreliable	The strategy is predicted to require the approximate annual quantities of junctions to be renewed:				
			2023/24	2024/25	2025/26	2026/27
		Junction Renewals	£450k	£100k	£100k	£100k
Refurbishment of signalised crossings	Refurbishment of junction that have deteriorated or the equipment has become obsolete/unreliable	The strategy is predicted to require the approximate annual quantities of pedestrian crossings to be renewed:				
			2023/24	2024/25	2025/26	2026/27
		Pedestrian Crossing Renewals	£150k	£150k	£150k	£150k

Cycling Infrastructure

Edinburgh has 312 km of cycle routes including 203 km of routes physically separated from vehicles. 52% of people on Edinburgh are familiar with the traffic-free routes in Edinburgh.

As part of the Edinburgh Street Design Guidance, new cycling infrastructure will be considered when any carriageway and footway renewal scheme is being carried out. This may result in existing infrastructure being upgraded or additional infrastructure being installed.

Once cycling infrastructure is in place the ongoing maintenance is the responsibility of Roads and Infrastructure. On-Road cycle lanes are prioritised for capital investment with carriageways. Off-Road cycleways are prioritised for capital investment with footways.

As part of the prioritisation procedures for capital carriageway investment, roads that are on the Council's Family Cycle Network or roads that have an existing cycle lane will have an additional 5% weighting applied. This results in accelerated renewal of these roads and, therefore, accelerated, improvements for cyclists.

Park and Ride Sites

There are 3 park and ride sites that are maintained by the Council: Hermiston Gate, Straiton and Ingliston.

Although the Council carries out the ongoing maintenance of the Park and Ride car park facilities, they are not officially adopted. The rationale behind this is that once a car park is adopted, it is effectively subject to the same conditions as Council owned and maintained carriageways. Although, at this stage, no plans to charge for the facilities are in place, this does remain a possibility at some point in future. The most effective method for operating and administering car parks which are subject to a cost is through inclusion of retractable barriers at the access/egress points. If the car park was adopted it would not be legally possible deny public access, i.e. by installing retractable barriers. As such the decision has been taken not to adopt these areas at this stage.

External roads and footways are to be adopted by the Council (apart from Straiton where the external areas have been adopted by Midlothian Council); and car parks, internal roads and footways are to be maintained but not adopted (for the reasons set out previously). The lighting facilities in all three Park and Ride sites are adopted and maintained, by the Council. The Council's Traffic Signals section currently maintains the signals at Hermiston and Ingliston. Straiton's signals are maintained by Midlothian Council.

Ongoing maintenance for park and ride sites is the responsibility of Roads and Infrastructure. Carriageways within the park and ride sites are prioritised for capital investment with all carriageways. Footways within the park and ride sites are prioritised for capital investment with all footways.

Climate Emergency

It is important the Edinburgh considers the climate emergency and climate change when planning investment strategies for future investment. Roads Infrastructure are looking at the approach to road maintenance in working towards reducing carbon emissions and achieve sustainability goals.

Current measures that are currently being investigated and trialled are:

- **Warm Mix Asphalts (WMAs)** - These can reduce the CO2 associated with asphalt production by up to 15% whilst improving efficiencies on roads projects.
- **Expanding the in-situ road recycling programme** – Recycles the existing road material eliminating the need to dispose of material at tip.
- **Enhanced Material Durability** – Reduces waste, uses less raw material and leads to fewer interventions. This includes using Polymer Modified Bitumens (PMBs), alternative binders and asphalt products which improve flexibility strength and resistance to fatigue and deformation.
- **Longer Term Approach to funding** – This would allow Roads Infrastructure to better plan proactive maintenance, allowing for better efficiencies, cutting waste and delivering improved road surface.
- **Ethical Sourcing of Material** – Using, where possible, UK or European stone rather than importing material from countries that incur significant transportation, therefore, reducing carbon emissions. This will also include the recycling of existing stone material rather than purchasing new material.

8. Risks to the Plan

The risks that could prevent achievement of the standards specified in this plan (section 6) are:

Plan Assumption	Risk	Action If Risk Occurs
The plan is based upon historical weather patterns	Adverse weather will create higher levels of defects and deterioration than have been allowed for	Budgets and predictions will be revised, and this plan updated if abnormally harsh winters occur
Available budgets have been assumed as shown in section 7	External pressures mean that government reduce the funding available for roads	Target service standards will be revised to affordable levels
Construction inflation will remain at level similar to the last 5 years	Construction inflation will increase the cost of works (particularly oil costs as they affect the cost of road surfacing materials)	Target service standards will be revised to affordable levels
Levels of defect and deterioration are based on current data which is limited for some assets (e.g. footways)	Assets deteriorate more rapidly than predicted and the investment required to meet targets is insufficient	Split between planned and reactive maintenance budgets will be revised
Resources are available to deliver the improvement actions	Pressures on resources mean that staff are not allocated to service improvement tasks such that the predicted benefits cannot be fully achieved	Target dates will be revised and reported

The risk has been evaluated in accordance with the council's corporate risk management strategy ⁽⁴⁾. In addition to the risks above a Road/Highway Asset risk register is maintained recording the risks associated with each asset type. A review of this register is used annually when programmes of works are developed.

References

- 1) City Mobility plan
- 2) Local Transport Strategy