

EAST RENFREWSHIRE COUNCIL

CABINET

27 March 2014

Report by Director of Environment

ROADS REVENUE WORKS PROGRAMME 2014-2015

ROAD CONDITION INDICATOR and UPDATE ON ROAD ASSET MANAGEMENT PLAN

**PURPOSE OF REPORT**

1. To seek approval from the Cabinet for the Roads Revenue Works Programme 2014/15, to advise the Cabinet of the 2014 Road Condition Indicator and to update the Cabinet on the Road Asset Management Plan.

**RECOMMENDATIONS**

2. It is recommended that the Cabinet:-
- (a) approves the Roads Revenue Works Programme for 2014/15;
  - (b) notes the report in relation to the 2014 Road Condition Indicator; and
  - (c) notes the report in relation to the Roads Asset Management Plan update.

**BACKGROUND**

Revenue Programme

3. In addition to the Roads Revenue core budget allocation of £3,522,400 the following additional resources have been made available for 2014/15

- Repairs and Renewal funding                      £ 500,000

4. The total Revenue budget available for the Revenue Works Programme is therefore £4,022,400.

5. When prioritising this year's resurfacing schemes the following factors were considered:

- The structural condition of the road or footway.
- Usage of the road or footway.
- Cost of maintenance for the previous three years
- Number of complaints received regarding the road/footway
- Geographical spread

6. The Winter Maintenance budget has been increased to £850,000. This expenditure relates directly to the severity of the winter which can vary significantly from year to year.

### Road Condition Indicator

7. The Roads Condition Indicators (RCI) for 2014, which is a Statutory Performance Indicator (SPI), has been calculated as part of the Scottish Road Maintenance Condition Survey (SRMCS). The figures are based on the surveys undertaken in 2012 and 2013 for A, B and C Class roads and for the four year average for 2009 to 2013 for Unclassified roads.

8. The survey categorises the road into three bands:

- Green – A section score less than 40 – While minor defects may still be present, the road is considered to be in an acceptable condition.
- Amber – A section score greater than 40 but less than 100 – further investigation required.
- Red – A section score of 100 or greater – The road has deteriorated to the point where repairs are likely to preserve the serviceability and prolong its future life.

9. The Scottish RCI figure includes both the 'red' and 'amber' categories unlike England where the RCI figure includes only the 'red'. The figures are defined as 'the percentage length of road network which should be considered for maintenance treatment'. They are presented in the table below:

Year	A Class (Position in Scotland in brackets)	B Class (Position In Scotland in brackets)	C Class (Position In Scotland in brackets)	Uncl (Position In Scotland in brackets)	All	Overall Position in Scotland
2006	27.6	66.2	38.1	61.8	54.6	32
2007	30.7	54.6	64.4	65.6	61.7	32
2008	24.4(13)	47.5(30)	36.7(22)	54.2(29)	48.1	30
2009	23.7(12)	49.6(31)	36.7(20)	47.3(26)	44.0	28
2010	24.2(10)	42.1(29)	37.2(24)	48.3(29)	43.9	26
2011	30.7(22)	41.6(27)	38.9(21)	57 (31)	50.1	30
2012	23.7(8)	41.5(24)	37.0(17)	50.1(29)	45.1	27
2013	18.2(2)	28.2(20)	34.5(16)	51.6(27)	43.3	26
2014	21.6(8)	28.0(11)	36.7(16)	50.3(27)	43.5	27

### Road Asset Management Plan Update

10. The Cabinet report of 16<sup>th</sup> February 2012 presented the initial Roads Asset Management Plan (RAMP) which had been prepared in line with the recommendations of Audit Scotland as highlighted in their reports "Maintaining Scotland's Roads – Audit Scotland 2004" and the 2011 follow up report "Maintaining Scotland's Roads".

11. This first plan made the best use of available asset and financial data to provide an indication of the value of the road asset, the level of service, backlogs and additional funding need. As such it was regarded as an 'initial plan'. Although some of the information was initially based more from officer judgement than robust data, the plan has served to improve the understanding of the road asset management issues facing the council and to identify actions to be put in place to address them. The financial and performance data which provided a 'snapshot' in time and other elements of the plan require to be updated so that it remains a 'live' document.

12. To facilitate this the Council participate in the Society of Chief Officers of Transportation in Scotland (SCOTS) led Scotland wide project which has prepared a standard RAMP format involving Transport Scotland and all other Scottish Councils.

13. A programme of workshops involving other Scottish Local Authorities are being held relating to aspects of detail and content within the RAMP to ensure that these are updated and all aspects of the necessary input and output is progressed.

## **REPORT**

### Revenue Works Programme

14. It is proposed that expenditure will be incurred as follows

Routine Maintenance (reactive repairs, minor patching, lighting, flooding etc.)	£1,612,500
Winter Maintenance (Gritting and snow clearing)	£ 850,000
Structural Maintenance (carriageway/footway resurfacing/major patching)	<u>£1,559,900</u>
Total Revenue	£4,022,400

15. The full Revenue Works Programme is attached in Appendix A to this report.

16. The resurfacing schemes relating to the Structural Maintenance element of the core programme have been prioritised on the basis of the criteria noted in paragraph 5 above.

17. Appendix A1 sets out specific proposals in relation to the £500,000 Repairs and Renewals funding to be used for resurfacing carriageways in addition to the core budget allocation.

### Road Condition Indicator

18. The overall RCI for 2014 has shown a very slight increase from 43.3 to 43.5 from the 2013 value in all class of roads.

19. Whilst the A class value has shown a drop in position from 2<sup>nd</sup> to 8<sup>th</sup>, when the indicator is analysed it is seen that the red percentage has actually reduced. The increase in value is as a result of the increase in the 'amber' length. This would be expected as it is the red categories which we are targeting with our Capital resurfacing programme. It should be pointed out that the A Class roads are only surveyed in one direction per year. There has therefore been a 2 year gap since there was a similar survey of this half of the road with associated deterioration and wear. The result for the survey carried out in 2013 (used to calculate the 2014 indicator) can only be directly compared with the 2011 survey (Used to calculate the 2012 indicator).

20. The B Class value has improved slightly and has seen our position improve from 20<sup>th</sup> to 11<sup>th</sup>. Whilst the Unclassified value also improved slightly it still remains very high at 50.3%. It should be noted that whilst only 10% of the Unclassified road length is surveyed per year the indicator is based on the average result for a four year period.

21. Whilst the increased level of funding over the past four years has led to more road resurfacing than ever being undertaken and the RCI generally improving the reality is that the asset is deteriorating at an increasing rate. The annual visual surveys undertaken to determine the works programme have identified over 100 streets which are in such a condition that they should be considered for immediate resurfacing. From this list it is possible to treat approximately 18 locations (12 revenue and 6 capital) with the resources available leaving more than 82 streets unattended for another year.

### Roads Asset Management Plan Update

22. As noted above, workshops have been held by the SCOTS group to progress tasks to maintain the currency of the RAMP and to meet its objectives. In addition reports are prepared on the Improvement Action Milestones every three months as noted in the Improvement Action Plan of 16<sup>th</sup> February 2012.

23. Key tasks which have been undertaken and completed are noted below.

- i) Gathering of data utilised to compile the Council's returns for the roads element of the Whole Government Accounts (WGA).
- ii) Utilising the data and associated spreadsheets to calculate the WGA returns which valued the Roads Asset as follows.

Asset Type	Gross Replacement Cost £'000	Depreciated Replacement Cost £'000
Carriageway	583,612	515,968
Footways and Cycle Tracks	110,963	78,453
Structures	68,843	68,223
Lighting	30,068	12,835
Traffic Management	2,227	1,402
Street Furniture	1,930	820
Total	797,643	677,701

- iii) Preparation of the Roads Asset Valuation Report.  
(See Appendix B).
- iv) Compilation and submission of data for SCOTS Roads Asset Management Report 2012-13 Performance Data.
- v) Carriageway Cost Projection to be utilised in the Annual Status and Options Report.
- vi) All Asset Service Standards spreadsheet to record specific service standards for each asset and to note any actions required.
- vii) Data assessment spreadsheet to record and assess origin and quality of data held relating to asset inventory and assess areas which require improvement/upgrading.

24. Whilst participating in the SCOTS project is essential with regard to the expectations of bodies such as Audit Scotland and to ensure robust management of the roads asset it has proved to be a resource intensive undertaking. Larger Councils have dedicated officers who are able to concentrate on the project, developing significant expertise. It is possibly an area that would fit well with the shared service agenda.

25. The preparation of the RAMP follows clear guidance from the Scottish Government in relation to its content and its importance in facilitating an efficient and effective Road Maintenance Service. It is important therefore to continue with the SCOTS project which has proved extremely valuable in ensuring continuous progress.

## **FINANCE AND EFFICIENCY**

26. The revenue implications relating to the works programme have been set out in Appendix A of this report. All proposed expenditure will be contained within existing available resources.

27. The extent of the resurfacing works proposed will require the supplementing of in house contracting resources by external contractors. Benchmarking with private contractors for schemes in the 2013/14 programme was undertaken and it is proposed to continue this for the 2014/5 programme.

## **CONSULTATION**

28. The Revenue Works programme will be circulated to Area Forums and Members.

## **PARTNERSHIP WORKING**

29. The Roads Service is involved in a number of partnership initiatives associated directly with road maintenance including the Society of Chief Officers for Transportation in Scotland through which all Scottish Councils are involved in –

- Scottish Road Maintenance Condition Survey
- Roads Asset Management Plan
- Roads Financial Model.
- Performance Management Group
- Shared services initiative
- Winter maintenance
- Procurement

## **IMPLICATIONS OF THE PROPOSAL**

30. The 2014/15 Revenue Works Programme details the planned expenditure for Routine Maintenance, Winter Maintenance and Structural Maintenance of the roads network. There are no implications in terms of staffing, property, legal, IT, equalities and sustainability.

## **CONCLUSIONS**

31. The Revenue Works Programme is designed to provide the best available spend within budgeted resources.

32. Although significant additional sums have in the past been made available for the Revenue Works Programme, there is no guarantee of an immediate improvement to the Roads Condition Indicator due to the complex nature of the index and the way it is measured.

33. The additional funding made available through the Repairs and Renewal allocation will continue to address the concerns of Audit Scotland relating to the local road network being categorised at one time as being a significant risk.

34. Whilst there has been a considerable amount of work undertaken with steady progress in maintaining and updating the RAMP, there have been some difficulties in keeping pace with the project workshops from a resource and skills perspective.

## **RECOMMENDATIONS**

35. It is recommended that the Cabinet:-

- (a) approves the Roads Revenue Works Programme for 2014/15;
- (b) notes the report in relation to the 2014 Road Condition Indicator; and
- (c) notes the report in relation to the Roads Asset Management Plan update.

Director of Environment

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March 2014

## **BACKGROUND PAPERS**

Cabinet 28<sup>th</sup> March 2013 Report by Director of Environment Roads Revenue Works Programme 2013-2014 and Road Condition Indicator 2013

## **KEY WORDS**

Roads, Revenue Programme, Funding, Routine Maintenance, Roads Condition Indicator, Winter Maintenance, Structural Maintenance

**East Renfrewshire Council**

**Roads and Transportation**

**Roads Revenue Works Programme**

**2014/2015**

**Based on Total Allocation of £4,022,400**

**Appendix A1 –Repairs and Renewals**

## **EAST RENFREWSHIRE ROADS and TRANSPORTATION SERVICE REVENUE PROGRAMME 2014/2015**

### **I) Routine Maintenance (Main Elements)**

<b><u>Activity</u></b>	<b><u>2014/2015 Allocation (£)</u></b>
Reactive Repairs	590,000
Verge Maintenance (Trees & Ditches)	110,000
Weed Control	25,000
Gully Emptying	100,000
Bridge Maintenance	27,500
Drainage	80,000
Flood Prevention	25,000
Road Markings Maintenance	30,000
Traffic Signals Maintenance	75,000
Traffic Signs Maintenance	35,000
Vehicle Safety Fence Maintenance	10,000
Pedestrian Guardrail Maintenance	15,000
Street Lighting Maintenance	450,000
Car Park Maintenance	15,000
Miscellaneous	25,000
<b>Routine Maintenance Sub-Total</b>	<b>1,612,500</b>



## EAST RENFREWSHIRE ROADS and TRANSPORTATION SERVICE REVENUE PROGRAMME 2014/2015

### II) WINTER MAINTENANCE

<u>Activity</u>	<u>2014/2015 Allocation (£)</u>
Gritting and Presalt	675,000
Snow Clearing	50,000
Winter Patrol and Standby	125,000
<b>Winter Maintenance Sub Total</b>	<b>850,000</b>

### III) Structural Maintenance of the Network

	<u>2014/2015 Allocation (£)</u>
a) Footway Resurfacing and Patching	500,000
b) Carriageway Resurfacing and Patching (including Repairs and Renewals)	1,059,900
<b>Structural Maintenance Sub-total</b>	<b>£1,559,900</b>
<b>Works Programme Total</b>	<b>£4,022,400</b>

## **EAST RENFREWSHIRE ROADS and TRANSPORTATION SERVICE REVENUE PROGRAMME 2014/2015**

### **(a) Footway Resurfacing**

<b><u>2014/15 SCHEME</u></b>	<b><u>COST (£)</u></b>	<b><u>WARD</u></b>
A736 Levern Road, Barrhead (part only)	40,000	2 – New Scheme, 1 <sup>st</sup> Phase
Kirkvale Drive, Newton Mearns (part only)	35,000	5 – Final Phase of Scheme
Woodfarm Road, Thornliebank (part only) (Glenpark Avenue to Rouken Glen Road)	20,000	3 – Final Phase of Scheme
Station Road/ Kingston Road, Neilston (part only)	50,000	1 – New Scheme
Beechlands Drive, Clarkston (part only) (even side)	50,000	6 – Phase 2 of 4 Phase Scheme
Monteith Drive, Stamperland (part only)	50,000	4 – New Scheme, 1 <sup>st</sup> phase
Gloucester Avenue, Clarkston (part only) (odd side)	30,000	6 – New Scheme, 1 <sup>st</sup> phase
Struma Avenue, Clarkston (part only) (Cathkin Drive to Vardar Avenue)	25,000	4 – Final Phase of Scheme
Park Road, Giffnock (part only)	20,000	3 – New Scheme, 1 <sup>st</sup> phase
Blackburn Square, Barrhead (part only) (odd Side)	20,000	2 – New Scheme
Cheviot Drive, Newton Mearns (part only)	40,000	5 – New Scheme, 1 <sup>st</sup> phase
Pollock Road, Newton Mearns (part only)	20,000	1 – New Scheme, 1 <sup>st</sup> phase
<b>VALUE OF PROPOSED SCHEMES</b>	<b>£400,000</b>	

In addition to the above there will be footway patching of **£100,000**

## **EAST RENFREWSHIRE ROADS and TRANSPORTATION SERVICE REVENUE PROGRAMME 2014/2015**

### **Structural Maintenance (continued)**

#### **(b) Carriageway Resurfacing**

**2014/2015**

<b><u>SCHEME</u></b>	<b><u>COST (£)</u></b>	<b><u>WARD</u></b>
C28 Orchard Park Avenue, Giffnock (Part Only) (Robslee Road to Sherwood Drive)	84,900	3 – Phase 2 of 3 Phase Scheme
C44 Gateside Road, Barrhead (Part Only)	55,000	2 – Final Phase of Scheme
Cartsbridge Road, Busby (Part Only) (Birch Avenue to A727 Busby Road)	70,000	6 – Final Phase of Scheme
<b>VALUE OF PROPOSED SCHEMES</b>	<b>£ 209,900</b>	

A further **£200,000** is allocated to proprietary patching.

In addition to the above there will be carriageway patching of **£150,000**.

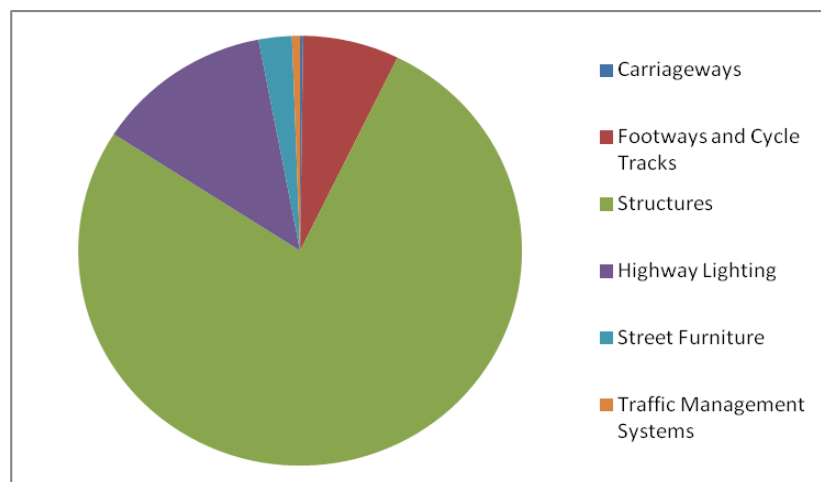
## EAST RENFREWSHIRE ROADS and TRANSPORTATION SERVICE REVENUE PROGRAMME 2014/2015

### APPENDIX A1 – Additional £500,000 for Repairs & Renewal in Year 2014/2015

<u>Carriageways 2014/2015</u>	<u>COST (£)</u>	<u>WARD</u>
C13 Springhill Road, Barrhead (Part Only) (Grampian Way to Sunnyside Place)	80,100	2 – Phase 2 of 3 Phase Scheme
Robslee Road, Giffnock (Part Only) (Rockmount Avenue to Crum Avenue)	84,900	3 – Phase 2 of 3 Phase Scheme
C1 Mearns Road, (Rural), Newton Mearns (part only) (at GSO junction)	42,500	5 – Final Phase of Scheme
Woodfarm Road, Thornliebank (Final phase) (Glenpark Avenue to Rouken Glen Road)	15,000	3 – Final Phase of Scheme
Netherplace Road, Newton Mearns (part only) (Castle Road to St. Vigeans )	55,000	1 – Final Phase of Scheme
Rural Road (C13 Springhill Road, Kirkton Road, Glanderston Road, Neilston) (part only)	70,000	1 – New Scheme
Glen Shee Avenue, Neilston (part only) (Glen Falloch to Glen Creran Crescent)	50,000	1 – Final Phase of Scheme
Kirkvale Drive, Newton Mearns	52,500	5 – New Scheme
Woodlands Road, Thornliebank (part only) (Rowallen Road to Hutchieson Road)	50,000	3 – New Scheme
<b>VALUE OF PROPOSED SCHEMES</b>	<b>£500,000</b>	

## Appendix B

# Road Asset Valuation Report East Renfrewshire Council September 2013



Prepared By	Charles Armstrong - Roads and Transportation Manager
Date	September 2013
Submitted To	

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## Summary

This report presents a depreciated replacement cost valuation of East Renfrewshire's road assets for 2012/13. It complies with the CIPFA Transport Infrastructure Asset Code<sup>(1)</sup>.

### 1.1 Road Assets at July 2013

The assets included in this valuation are

<b>Table 1.1 Road Assets (copy and paste from Worksheet 1. Valuation Summary Output)</b>			
<b>Asset Type</b>	<b>Quantity</b>	<b>Quantity Added During Year</b>	<b>Comment</b>
Carriageways	485 km	km	Reassessed (2x for dual)
Footways	706.7 km	km	Reassessed
Cycle Tracks	5.2 km	km	Reassessed
Structures: Bridges	189 no.	no.	Reassessed
Structures: Retaining Walls	56 no.	no.	Reassessed
Highway Lighting	14158 no.	no.	Reassessed
Street Furniture (approx)	17936 no.	no.	Reassessed
Traffic Signals (junctions)	21 no.	no.	Reassessed
Pedestrian Crossings	47 no.	no.	Reassessed
Other Traffic Management Systems	194 no.	no.	Reassessed
Land	525 ha.	ha.	Reassessed

Since the last valuation in 2012 elements of the inventory have been reassessed.

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## 1.2 Road Asset Valuation at July 2013

<b>Table 1.2 Road Asset Valuation Summary</b>			
<b>Asset Type</b>	<b>Gross Replacement Cost</b>	<b>Depreciated Replacement Cost</b>	<b>Annualised Depreciation Cost</b>
Carriageway	£583,612,186	£515,967,995	£5,167,865
Footway	£110,962,600	£78,452,597	£1,647,065
Structures	£68,842,650	£68,222,716	£352,371
Street Lighting	£30,067,682	£12,835,008	£662,585
Street Furniture	£1,930,440	£820,048	£108,218
Traffic Signals	£2,227,000	£1,402,301	£99,884
<b>Total</b>	<b>£797,642,558</b>	<b>£677,700,665</b>	<b>£8,037,988</b>

## 1.2 Change in Road Asset Valuation Since Last Year

The value of the road asset has changes since the last years valuation as shown below:

<b>Table 1.3 Change in Road Asset Value</b>			
<b>Year</b>	<b>Gross Replacement Cost</b>	<b>Depreciated Replacement Cost</b>	<b>Annual Depreciation</b>
2011 - 2012	£721,488,940	£613,543,939	£8,262,660
2012 - 2013	£797,642,558	£677,700,665	£8,037,988
Change	£76,153,618	£64,156,726	<b>-£188,278</b>

Comment here on why the valuation has changed since last year: e.g.

- The GRC has increased as a result of additions to the asset and a reassessment of the inventory.
  - The major changes to the DRC is a deterioration in the assessed condition of the footways this is in part attributable to ongoing deterioration and the fact that current investment levels are insufficient to prevent deterioration. This is also a direct result of the recent harsh winters that has created specific additional structural damage to footways.
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## 1.2 Depreciation vs Investment Levels

<b>Asset</b>	<b>Annualised Depreciation Cost</b>	<b>Investment (Planned Maintenance)</b>	<b>Investment/Annual Depreciation</b>
Carriageway	£5,167,865	£2,667,838	52%
Footway	£1,670,153	£452,257	27%
Structures	£352,371	£292,775	83%
Street Lighting	£662,585	£202,888	31%
Street Furniture	£108,218	£63,000	58%
Traffic Signals	£99,884	£22,434	22%
<b>Total</b>	<b>£8,061,075.55</b>	<b>£3,701,192.00</b>	<b>46%</b>

## 1.2 Investment in Roads

During the last financial year (2010/11) the following investment was made in roads:

<b>Current Roads Budget</b>	<b>Total (£)</b>	<b>Revenue (£)</b>	<b>Capital (£)</b>	<b>Notes</b>
Carriageways	£3,995,657	£3,205,684	£789,973	
Footways and Cycle Tracks	£521,317	£493,519	£27,798	
Structures	£292,775	£9,374	£283,401	
Highway Lighting	£590,476	£412,592	£177,884	
Street Furniture	£72,824	£35,287	£37,537	
Traffic Management System	£105,046	£92,612	£12,434	
Land	na	na	na	
Employee Costs	£1,299,763	£1,299,763	£0	
Overheads	£4,096,224	£4,096,224	£0	
<b>Total</b>	<b>£10,974,082</b>	<b>£9,645,055</b>	<b>£1,329,027</b>	

**Comment**

**Investment levels for carriageways falls short of annualised depreciation by some margin. (54%),**

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# 1 Introduction

## Purpose

This report summarises the result of a valuation of East Renfrewshire road assets as at July 2013. The valuation will be reported in accordance with HM Treasury requirements for whole of government accounts as updated in March 2011<sup>(1)</sup>.

### 1.1 Use

The valuation provides the council with an initial replacement cost valuation of the asset. It provides an understanding of the process, the assumptions and limitations of the data used and will enable the council to plan data and systems improvements that will make future valuations more accurate.

### 1.2 Date

The council's road assets have been valued as at July 2013.

### 1.3 Valuers

This valuation has been carried out by the council personnel listed in Appendix A using information created as part of the SCOTS Road Asset Management Planning and Road Maintenance Condition Survey Project<sup>(3)</sup>.

### 1.4 Standard

The valuation has been undertaken in accordance with the methods set out in the CIPFA Transport Asset Infrastructure Code<sup>(2)</sup>. The valuation is based upon the calculation of a depreciated replacement cost (DRC) i.e. *"the current cost of replacing an asset with its modern equivalent asset, less deductions for all physical deterioration and impairment"*.

### 1.5 Results

This report includes the following, summarised by asset type:

- The quantity of council owned road assets
  - The estimated cost of replacing the existing asset (gross replacement cost, GRC)
  - The estimated current value of the asset (depreciated replacement cost, DRC)
  - The estimated average sum that needs to be spent year on year to maintain the assets in a steady state (the annual depreciation, AD).
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## 2 Method

The method used to create the figures included in this report is summarised as follows

### 2.1 Depreciation

Depreciation has been calculated using straight-line depreciation over the useful life of the assets. The depreciated replacement cost has been calculated using the equation:

$$\text{DRC} = \text{RV} + [(\text{GRC} - \text{RV}) \times (\text{RL} / \text{UL})]$$

For assets or components with no residual value the equation is simplified to:

$$\text{DRC} = \text{GRC} \times (\text{RL} / \text{UL})$$

The annual depreciation (of depreciable components) is computed as:

$$\text{AD} = \text{GRC} / \text{UL}$$

In general terms the following method has been used to determine the GRC, DRC and AD:

#### 1. Create Valuation Schedule

Quantities of asset have been compiled from database and hard copy sources by the officers responsible for their management. A list of data sources is provided for each asset type in sections 4 to 9. Where appropriate the assets have been broken down to identify, and value, assets and components that would be replaced discretely from one another and have differing lives.

#### 2. Consider Modern Equivalent

The asset types and components have been reviewed to identify where the replacement asset would differ from existing due to present day standards and construction techniques. Modern equivalent assets have been used as the basis for determining replacement rates.

#### 3. Compute Unit Rates

A unit rates for carriageway and footways gross replacement cost have been provided on a national basis by CIPFA. The GRC unit rates are deemed to include for removal and disposal of the existing asset, supply and installation of the modern equivalent asset and associated traffic management requirements, staff costs and overheads. Maintenance treatment rates have been determined by council's officers using available cost records. Details of how these rates have been derived are included in section 4 to 9.

#### 4. Consider Residual Values

It has been assumed that none of the assets or components has any residual value.

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## **5. Determine Ages**

The ages used have been taken from data where it exists. In the main asset ages are estimates made by council staff. In the case of carriageways a specific methods has been used to create an estimate of age and useful life based upon condition data. Details of this method are set out in Technical Note 46 (4).

## **6. Estimate Useful Lives**

For each item an estimate has been made of its useful life. These estimates have been made by council staff based upon their knowledge and experience. For some asset types national default figures have been agreed under the SCOT RAMP project. SCOTs has recommended that authorities use these figures unless they have data to support alternative figures.

## **7. Calculate Values**

A calculation of GRC, DRC and AC has been computed using the equations shown given above.

### **2.2 Valuation Spreadsheets**

The figures included in this report have been computed using the following:

- GRC carriageways and footways have been computed using a spreadsheet provided by CIPFA (<http://www.cipfa.org.uk/pt/infrastructure/support.cfm>)
- The DRC figures for carriageways have been computed using a UKPMS and the data collected under the SRMCS project
- All other figures use SCOTS Road Asset Management Project Financial Reporting Tool spreadsheets.

### **2.3 Current Investment Levels**

The level of investment currently being made in the road asset has been identified from the council's budgets. Under the SCOTs RAMP these have been categorised and these figures are reported to show the comparison between AC and current investment levels. The current total revenue and capital budgets are also reported.

### **2.4 SCOTS Financial Reporting Tool**

As part of the SCOTS RAMP project SCOTS commissioned the development of a financial reporting tool. The tool assists councils to comply with financial reporting requirements.

In addition to the figures in this report, predictions of performance/condition based upon future funding scenarios can be provided. The predictions will assist council to make decisions about funding levels. This report includes the information that the reporting tool will provide where it is currently possible to do so. The reporting tool will be available for use for the latter part of 2012.

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### 3 Carriageways

#### 3.1 Assets Included

The assets included in the valuation are as listed below:

<b>Level 1 : Asset Type</b>	<b>Level 2: Asset Group</b>	<b>Components</b>
Carriageways	A Urban	Pavement layers
	A Rural	Other surface types, eg paved
	B Urban	Central reservation, roundabout, lay-by, traffic island, etc
	B Rural	Earthworks (embankments and cuttings, retaining walls height <1.35m)
	B Urban	Earthworks (embankments and cuttings, retaining walls height <1.35m)
	C Urban	Earthworks (embankments and cuttings, retaining walls height <1.35m)
	C Rural	Earthworks (embankments and cuttings, retaining walls height <1.35m)
	U Urban	Traffic calming
	U Rural	Fords and causeways
		Kerbs Line markings Road studs Road drainage elements (gullies, drains, etc, but not large structures) Boundary fences and hedges Hard strip/shoulder verges/vegetation

### 3.2 Quantities

The quantity of carriageways assets included in the valuation are as shown in Table 3.2.

<b>Table 3.2 Carriageways Quantities (copy and paste this table from worksheet 2 Cway Output)</b>			
<b>Road Classification</b>	<b>Length (m)</b>	<b>Width (m)</b>	<b>Area (sqm)</b>
Principal (A) Roads (Urban)	23800	7.9	188020
Principal (A) Roads (Rural)	25900	7.5	194250
Classified (B) Roads (Urban)	9610	7.4	71114
Classified (B) Roads (Rural)	33850	7.4	250490
Classified (C) Roads (Urban)	49800	8.2	408360
Classified (C) Roads (Rural)	33100	5.6	185360
Unclassified Roads (Urban)	275900	6.7	1848530
Unclassified Roads (Rural)	33300	5.0	166500
<b>Total</b>	<b>485260</b>	<b>56</b>	<b>3312624</b>

### 3.3 Sources of Information

The basis and source of the information used to compile this valuation is as shown below:

#### Inventory

<b>Table 3.3 Basis and Source of Inventory Data</b>				
<b>Road Classification</b>	<b>Length (Basis)</b>	<b>Length (Source)</b>	<b>Width (Basis)</b>	<b>Width (Source)</b>
Principal (A) Roads (Urban)	Actual Inventory	NSG	Sample Inventory	Mastermap
Principal (A) Roads (Rural)	Actual Inventory	NSG	Sample Inventory	Mastermap
Classified (B) Roads (Urban)	Actual Inventory	NSG	Sample Inventory	Mastermap
Classified (B) Roads (Rural)	Actual Inventory	NSG	Sample Inventory	Mastermap
Classified (C) Roads (Urban)	Actual Inventory	NSG	Sample Inventory	Mastermap
Classified (C) Roads (Rural)	Actual Inventory	NSG	Sample Inventory	Mastermap
Unclassified Roads (Urban)	Actual Inventory	NSG	Sample Inventory	Mastermap
Unclassified Roads (Rural)	Actual Inventory	NSG	Sample Inventory	Mastermap

### 3.4 Expected Service Lives

#### Condition

The condition data has been used as the basis for this valuation. It is collected under the SRMCS project and is stored and processes in a UKPMS (a national standards software application used for the storage and analysis of carriageway pavement condition data). The methodology set out in the Transport Asset Code has been used to compute % depreciation figures. In order to carry out this calculation figures for initial deterioration and total useful life are required. Default figures for Tini and Ttul have been established by SCOTS and used in this valuation. The values used are shown on in 3.4 below.

<b>Table 3.4 Useful Life Values</b>		
<b>Road Classification</b>	<b>Deterioration initiation - Tini (years)</b>	<b>Total Useful Life Ttul (years)</b>
Principal (A) Roads (Urban)	7.00	21.00
Principal (A) Roads (Rural)	7.00	21.00
Classified (B) Roads (Urban)	6.00	21.00
Classified (B) Roads (Rural)	6.00	21.00
Classified (C) Roads (Urban)	6.00	21.00
Classified (C) Roads (Rural)	6.00	21.00
Unclassified Roads (Urban)	6.00	21.00
Unclassified Roads (Rural)	6.00	21.00

### 3.5 Data Quality

The quality of the input data used in the valuation is assessed using a method developed under the SCOTS RAMP project. The quality of the data used for the valuation has been assessed as shown in table 3.5.

<b>Table 3.5 Data Quality</b>		
<b>Inventory Data:</b>	<b>Confidence</b>	<b>Comment</b>
Length	Medium	Some historical data
Width or area	Medium	Sample survey
<b>Condition Data</b>		
Condition survey data	High	SRMCS
<b>Cost Data</b>		
Gross replacement cost (GRC) rates	Supplied by CIPFA (ref.)	HAMFIG
Maintenance treatment cost rates	High	Actual contracts
<b>Expected Service Lives</b>		
Total useful life	Low	Lack of detailed/reliable historical information.



### 3.6 Cost Data

The rates used to compute the carriageway gross replacement cost were supplied by CIPFA. The rates used for maintenance treatments are summarised below. The source of the rates is noted in the table below.

Road Classification	"100mm Inlay" Rate (£/sqm)	"Reconstruction" Rate (£/sqm)	DRC Cost (Unit Rate)
Principal (A) Roads (Urban)	£34.96	136.04	£38.38
Principal (A) Roads (Rural)	£30.42	107.73	£33.51
Classified (B) Roads (Urban)	£30.52	126.86	£33.73
Classified (B) Roads (Rural)	£28.46	100.16	£31.75
Classified (C) Roads (Urban)	£28.62	104.70	£31.39
Classified (C) Roads (Rural)	£26.94	79.92	£29.69
Unclassified Roads (Urban)	£35.46	96.69	£37.61
Unclassified Roads (Rural)	£27.11	74.87	£29.68

Road Classification	"100mm Inlay" Rate (£/sqm)		"Reconstruction" Rate (£/sqm)	
	Basis	Source	Basis	Source
Principal (A) Roads (Urban)	A.Gow SCOTS	Hamfig	A.Gow SCOTS	Hamfig
Principal (A) Roads (Rural)	A.Gow SCOTS	Hamfig	A.Gow SCOTS	Hamfig
Classified (B) Roads (Urban)	A.Gow SCOTS	Hamfig	A.Gow SCOTS	Hamfig
Classified (B) Roads (Rural)	A.Gow SCOTS	Hamfig	A.Gow SCOTS	Hamfig
Classified (C) Roads (Urban)	A.Gow SCOTS	Hamfig	A.Gow SCOTS	Hamfig
Classified (C) Roads (Rural)	A.Gow SCOTS	Hamfig	A.Gow SCOTS	Hamfig
Unclassified Roads (Urban)	A.Gow SCOTS	Hamfig	A.Gow SCOTS	Hamfig
Unclassified Roads (Rural)	A.Gow SCOTS	Hamfig.	A.Gow SCOTS	Hamfig.

### 3.7 Valuation

<b>Table 3.7 Carriageways Valuation</b>			
<b>Road Classification</b>	<b>Gross Replacement Cost</b>	<b>Depreciated Replacement Cost</b>	<b>Annualised Depreciation Cost</b>
Principal (A) Roads (Urban)	£46,317,709	£42,493,467	£313,009
Principal (A) Roads (Rural)	£37,997,400	£35,133,471	£281,385
Classified (B) Roads (Urban)	£16,629,803	£15,358,430	£103,352
Classified (B) Roads (Rural)	£39,084,042	£35,186,982	£339,474
Classified (C) Roads (Urban)	£77,398,550	£70,732,016	£556,536
Classified (C) Roads (Rural)	£25,528,940	£22,226,881	£237,790
Unclassified Roads (Urban)	£319,801,164	£277,391,440	£3,121,375
Unclassified Roads (Rural)	£20,854,578	£17,445,308	£214,944
<b>Total</b>	<b>£583,612,186</b>	<b>£515,967,995</b>	<b>£5,167,865</b>

### 3.8 Interpretation of Results

The gross replacement cost represents the value of the full depth of the road construction. It includes elements that are unlikely to ever need replacement. The surface layers do require replacement. The extent of depreciation of the surface layers (the depreciable component) would provide an indication of the extent to which investment levels have matched depreciation to date. It is not currently possible to report depreciation as a percentage of the GRC of the depreciable component. This would be a more informative figure than the overall carriageway.

Comparing annual depreciation with current levels of investment gives an indication of the extent to which long term replacement needs are currently being met.

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### **3.9 Recommendations**

The following actions would enable more accurate and informative valuation to be reported for carriageways. Improve quality and confidence in:

- Inventory
- Cost rates
- Deterioration rates

## 4 Footways and Cycletracks

### 4.1 Assets Included

The Footways & Cycleways assets included in this report are:

Level 1 : Asset Type	Level 2: Asset Group	Components
Footways & Cycleways	Footways	Wearing course, base course, foundation and edgings.
	Pedestrian areas	
	Footpaths	
	Cycletracks	

The following footway and cycleway assets are not included:

- Footpaths in housing estates
- Cycletracks

### 4.2 Quantities

The quantities of footway asset in this report are as summarised below. The footways are divided up by a functional hierarchy that reflects the use of the footways.

Footway Hierarchy	Length (m)	Area (sqm)
Category 1A: Prestige Footways	1,000	3,000
Category 1 : Primary Walking Route Footways	36,500	73,000
Category 2: Secondary Walking Route Footways	38,800	77,600
Category 3: Link Footways	98,400	196,800
Category 4: Local Access Footways	532,000	1,064,000
<b>Total</b>	<b>706,700</b>	<b>1,414,400</b>

The footways are made up of a range of material types as shown below. These materials deteriorate at different rates.

Material Type	Length (m)	Area (sqm)
Bituminous	705,700	1,411,400
Slabs	0	0
Stone	1,000	3,000
Slabs	0	0
Blocks	0	0
<b>Total</b>	<b>706700</b>	<b>1414400.00</b>

All footpath and cycleway group quantities are summarised below:

<b>Table 4.2c Footpath Quantities</b>		
<b>Quantity</b>	<b>Length (m)</b>	<b>Area (sqm)</b>
All Footpaths	0	0
<b>Total</b>	<b>0</b>	<b>0</b>

<b>Table 4.2d Cycleway Quantities by Hierarchy</b>		
<b>Cycleway Hierarchy</b>	<b>Length (m)</b>	<b>Area (sqm)</b>
Cycle Lanes	5,200	15,600
Cycle Tracks	0	0
Cycle Trails	0	0
<b>Total</b>	<b>5,200</b>	<b>15,600</b>

### 4.3 Sources of Information

The information used to compile this valuation has come from the following sources:

<b>Table 4.3ai Basis and Source of Inventory Data (Footways)</b>				
<b>Footway Hierarchy</b>	<b>Length (Basis)</b>	<b>Length (source)</b>	<b>Width/Area (Basis)</b>	<b>Area (Source)</b>
Category 1A: Prestige Footways	Measured	Mastermap	Sample inventory	Calc
Category 1 : Primary Walking Route Footways	Urban road length	Road register/plans	Local Engineer Estimate	Calc
Category 2: Secondary Walking Route Footways	Urban road length	Road register/plans	Local Engineer Estimate	Calc
Category 3: Link Footways	Urban road length	Road register/plans	Local Engineer Estimate	Calc
Category 4: Local Access Footways	Urban road length	Road register/plans	Local Engineer Estimate	Calc

<b>Table 4.3aii Basis and Source of Inventory Data (Footpaths)</b>				
<b>Footpaths</b>	<b>Length (Basis)</b>	<b>Length (source)</b>	<b>Width/Area (Basis)</b>	<b>Area (Source)</b>
All	Road records	Road register/plans	N/A	Calc

<b>Cycleway Hierarchy</b>	<b>Length (Basis)</b>	<b>Length (source)</b>	<b>Width/Area (Basis)</b>	<b>Area (Source)</b>
Cycle Lanes	Road records	Mastermap	Actual width	Calc
Cycle Tracks	N/A	N/A	N/A	N/A
Cycle Trails	N/A	N/A	N/A	N/A

Where sources such as excel spreadsheets are references the location on the councils system where they are stored should be given to enable ease of audit.

#### 4.4 Data Quality

The quality of the input data used in the valuation is assessed as follows:

	<b>% Held Electronically</b>	<b>Confidence</b>
Footways		
Length	100 (visual on GIS only)	0
Width or area	100 (visual on GIS only)	0
Surface Type	(No details held electronically)	0
Footpaths		
Length	0	0
Width or area	0	0
Surface Type	0	0

#### 4.5 Useful Lives

The useful lives used are shown in table 4.5. The lives have been established as default values by SCOTS based upon the road asset management project steering committees collective knowledge.

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<b>4.5 Useful Life of Maintenance Treatments</b>		
<b>Treatment</b>	<b>Description</b>	<b>Useful Life</b>
Overlay	Scarify existing surface up to 25mm depth. Addition of new surfacing on top of existing bituminous base construction	30
Relay (PC Blocks)	Take up and relay existing block footway surface, including replacement of damaged blocks	20
Relay (PC Slabs)	Take up and relay existing flagged footway surface, including replacement of broken slabs.	20
Relay (Stone)	Take up and relay existing stone footway surface, including replacement of broken slabs.	20
Resurface (Bituminous)	Removal of existing footway surface and binder courses and replacement with new. Also includes replacement of a flagged footway with bituminous construction	30
Resurface (Concrete)	Removal of existing concrete surfacing and replacement with new.	30
Resurface (PC Blocks)	Removal of existing block footway surface and replacement with new PC blocks	20
Resurface (PC Slabs)	Removal of existing flagged footway surface and replacement with new PC Slabs.	20
Resurface (Stone)	Removal of existing stone footway surface and replacement with new.	30
Slurry Seal	Application of a thin screed surfacing to the existing bituminous footway. Includes pre-patching and regulating as required.	5

#### 4.6 Cost Data

The rates used to compute the footways gross replacement cost were supplied by CIPFA.

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Footway Hierarchy	Default GRC Rate (exHAMFIG) (£/sqm.)
1A Urban	£251.69
1 Urban	£82.35
1 Rural	£74.84
2 Urban	£75.65
2 Rural	£68.70
3 Urban	£67.44
3 Rural	£61.24
4 Urban	£64.75
4 Rural	£61.02

The valuation method used for this valuation however is based upon the fact that different material types have different useful lives and therefore depreciate at different rates. Whilst hierarchy is taken into account the material type is a greater determinant of current value than hierarchy. For this reason unit replacement rates have been used for the valuation that are not the default values above. They are however within reasonable bounds of the default values and are based upon local estimates of reconstruction rates for footways in Scotland.

Treatment	Description	Rate (£/sqm)
<b>Reconstruction Rates</b>		
Reconstruction (Bituminous)	Removal of existing footway construction, full depth including sub-base, and replacement with new including strengthening. Also includes replacement of a flagged footway with bituminous construction.	£43.4
Reconstruction of Concrete Footway	Removal of existing footway construction, full depth including sub-base, and replacement with new concrete construction.	£80.0
Reconstruction (PC Blocks)	Removal of existing block footway construction, full depth including sub-base and replacement with new.	£65.0
Reconstruction (PC Slabs)	Removal of existing flagged footway construction, full depth including sub-base, and replacement with new.	£65.0
Reconstruction (Stone)	Removal of existing stone footway construction, full depth including sub-base, and replacement with new.	£147.4



<b>Maintenance Treatment Rates</b>		
Overlay	Scarify existing surface up to 25mm depth. Addition of new surfacing on top of existing bituminous base construction.	£15.0
Relay (PC Blocks)	Take up and relay existing block footway surface, including replacement of damaged blocks.	£37.0
Relay (PC Slabs)	Take up and relay existing flagged footway surface, including replacement of broken slabs.	£37.0
Relay (Stone)	Take up and relay existing stone footway surface, including replacement of broken slabs.	£83.5
Resurface (Bituminous)	Removal of existing footway surface and binder courses and replacement with new. Also includes replacement of a flagged footway with bituminous construction.	£29.0
Resurface (Concrete)	Removal of existing concrete surfacing and replacement with new.	£60.0
Resurface (PC Blocks)	Removal of existing block footway surface and replacement with new PC Blocks.	£45.0
Resurface (PC Slabs)	Removal of existing flagged footway surface and replacement with new PC Slabs.	£45.0
Resurface (Stone)	Removal of existing stone footway surface and replacement with new.	£100.8
Slurry Seal	Application of a thin screed surfacing to the existing bituminous footway. Includes pre-patching and regulating as required.	£7.0

The rates used for maintenance treatments were derived from contract works.

### **Remaining Lives**

The remaining lives of the components that depreciate have been based upon the condition data. Under the SCOTS RAMP project a method of assessment of footway condition has been defined. The method categorises condition into 4. The following rules have been used to assess remaining lives:

1. Assets in condition 4: it is assumed that these assets will require replacement within the next 3 years. An average residual life of 2 years has been ascribed to them
2. Assets in Condition 3: these assets/components will require replacement within the subsequent 5 years. An average residual life of 6 years has been ascribed to them
3. Assets in Condition 2: these assets are only differentiated by their appearance from condition 1. Their residual life has thus been the same as assets in Condition 1
4. Assets in Condition 1: these assets/components have been assumed to be on average half way through the difference between their total expected service life minus 8 yrs (the estimated time they could on average spend in conditions 3 & 4 before replacement)

#### 4.7 Footways Valuation Summary

Based upon the figures shown above and the assumptions stated the current value of the councils footway assets has been estimated as:

<b>Table 4.7a Footway Valuation by Hierarchy</b>			
<b>Footway Hierarchy</b>	<b>Gross Replacement Cost</b>	<b>Depreciated Replacement Cost</b>	<b>Annualised Depreciation Cost</b>
Category 1A: Prestige Footways	£755,068	£652,222	£12,100
Category 1 : Primary Walking Route Footways	£6,011,369	£4,427,501	£84,563
Category 2: Secondary Walking Route Footways	£5,870,646	£4,106,968	£89,892
Category 3: Link Footways	£13,271,370	£9,539,450	£227,973
Category 4: Local Access Footways	£68,890,036	£43,758,594	£1,232,538
<b>Total</b>	<b>£94,798,490</b>	<b>£62,484,735</b>	<b>£1,647,065</b>

<b>Table 4.7b Footways Valuation by Material Type</b>					
<b>Material Type</b>	<b>Length (m)</b>	<b>Area (sqm)</b>	<b>Gross Replacement Cost</b>	<b>Depreciated Replacement Cost</b>	<b>Annualised Depreciation Cost</b>
Bituminous	705700	1411400	£61,226,532	£29,015,624	£1,634,966
Slabs	0	0	£0	£0	£0
Stone	1000	3000	£442,230	£339,383	£12,100
Concrete	0	0	£0	£0	£0
Blocks	0	0	£0	£0	£0
<b>Total</b>	<b>706700</b>	<b>1414400</b>	<b>£61,668,762</b>	<b>£29,355,007</b>	<b>£1,647,065</b>

<b>Table 4.7c Footpath Valuation by Hierarchy</b>			
<b>Footpath Hierarchy</b>	<b>Gross Replacement Cost</b>	<b>Depreciated Replacement Cost</b>	<b>Annualised Depreciation Cost</b>
All Footpaths	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>

<b>Table 4.7c Cycleway Valuation by Hierarchy</b>			
<b>Cycleway Hierarchy</b>	<b>Gross Replacement Cost</b>	<b>Depreciated Replacement Cost</b>	<b>Annualised Depreciation Cost</b>
Cycle Lanes	£951,953	£755,705	£23,088
Cycle Tracks	£0	£0	£0
Cycle Trails	£0	£0	£0
<b>Total</b>	<b>£951,953</b>	<b>£755,705</b>	<b>£23,088</b>

#### 4.8 Interpretation of Results

The gross replacement cost represents the value of the full depth of the footway construction. It includes elements that are unlikely to ever need replacement. The surface layers do require replacement. The extent of depreciation of the surface layers (the depreciable component) would provide an indication of the extent to which investment levels have matched depreciation to date. It is not currently possible to report depreciation as a percentage of the GRC of the depreciable component. This would be a more informative figure than the overall footway figure.

Comparing annual depreciation with current levels of investment gives an indication of the extent to which long term replacement needs are currently being met.

#### 4.9 Recommendations

The following actions would enable more accurate and informative valuation to be reported for footways. Improve quality and confidence in:

- Inventory
  - Cost rates
  - Deterioration rates
-



## 5 Structures

### 5.1 Assets Included

The Structures assets included in this report are:

<b>Level 1 : Asset Type</b>	<b>Level 2: Asset Group</b>	<b>Components</b>
Structures	<ul style="list-style-type: none"> <li>. Bridges (span &gt;1.5m)</li> <li>. Cantilever road sign</li> <li>. Chamber/cellar/vault</li> <li>. Culverts (span &gt;0.9m)</li> <li>. High mast lighting columns (height &gt;20m)</li> <li>. Retaining walls (height &gt;1.35m)</li> <li>. Sign/signal gantries and cantilever road signs</li> <li>. Structural earthworks, eg strengthened/reinforced soils (all structures with an effective retained height of 1.5m or more)</li> <li>. Subway: pipe</li> <li>. Tunnel (enclosed length of 150m or more)</li> <li>. Underpass/subway: pedestrian (span of 1.5m or more)</li> <li>. Underpass: vehicular</li> <li>. Special structure</li> </ul>	<p>All elements identified on the CSS inspection pro forma</p> <p>Smaller water-carrying structures are considered as road drainage</p>

## 5.2 Quantities

The quantities of structure assets in this report are:

Structure Type	Number of Structures
Road Bridges	129
Footbridges	8
Unusual Structures	1
Retaining Walls	56
Height, Sign and Signal Gantries	0
Culverts and Subways	51
Total	245

## 5.3 Sources of Information

The information used to compile this valuation has come from the following sources:

Bridge database.

Principal and General Inspections.

SCOTS rates.

## 5.4 Data Quality

The quality of the input data used in the valuation is assessed as follows:

## 5.5 Useful Lives

The rates useful lives used are shown in table. The useful lives of typical maintenance treatments have been used as per SCOTS information. The figures are used as the basis for the calculation of depreciation.

## 5.6 Cost Data

The rates used to compute the structures gross replacement cost were supplied by CIPFA.

The rates used for maintenance treatments were derived from SCOTS working group.

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### **Remaining Lives**

The remaining lives of the components that depreciate have been based upon the condition data as per the BCI figure.

### **5.7 Structure Valuation Summary**

Based upon the figures shown above and the assumptions stated the current value of the councils structures assets has been estimated at **£68,843,000**.

### **5.8 Interpretation of Results**

The gross replacement cost represents the value of the full structure including earthworks etc. It includes elements that are unlikely to ever need replacement. The extent of depreciation would provide an indication of the extent to which investment levels have matched depreciation to date.

Comparing annual depreciation with current levels of investment gives an indication of the extent to which long term replacement needs are currently being met.

### **5.9 Recommendations**

Ensure Inspections carried out expeditiously and database maintained with updated information.

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## 6 Road Lighting

### 6.1 Assets Included

The Road Lighting assets included in this report are:

<b>Table 6.1 Road Lighting Assets Included</b>		
<b>Level 1 : Asset Type</b>	<b>Level 2: Asset Group</b>	<b>Components</b>
Road Lighting	<ul style="list-style-type: none"> <li>- Lighting columns</li> <li>- Lighting unit attached to wall/wooden pole</li> <li>- Heritage columns</li> <li>- Illuminated Bollards</li> <li>- Illuminated traffics signs</li> </ul>	<ul style="list-style-type: none"> <li>- Column and foundation</li> <li>- Bracket</li> <li>- Luminaires</li> <li>- Control equipment, cables</li> <li>- Control gear, switching, internal wiring cabling (within ownership)</li> </ul>

For the purposes of this valuation the lighting asset have been categorised based open column material type (to reflect the different life expectancies of different material types) and by height (to reflect different unit replacement costs).

### 6.2 Quantities

The quantities of Road Lighting Assets in this report are:

<b>Table 6.2a Street Lighting Column Quantities</b>	
<b>Column Material</b>	<b>Quantity</b>
Non Galvanised Steel	0
Galvanised Steel	14158
Concrete	0
Aluminium (pre 2000)	0
Aluminium (post 2000)	0
Stainless Steel	0
Cast Iron	0
<b>Total</b>	<b>14158</b>



<b>Table 6.2b Street Lighting Cable Quantities</b>	
<b>Cable Assets</b>	<b>Quantity (m)</b>
Carriageway	42474
Footway	422800
Verge	12080
<b>Total</b>	<b>477354</b>

<b>Table 6.3c Other Street Lighting Assets</b>	
<b>Other Street Lighting Assets</b>	<b>Quantity</b>
Wall Brackets	0
Wooden Poles	0
High Mast Columns	0
Control Cabinets	0
<b>Total</b>	<b>0</b>

<b>Table 6.3d Illuminated Sign Assets</b>	
<b>Illuminated Sign Assets</b>	<b>Quantity</b>
All	<b>581</b>
<b>Total</b>	<b>581</b>

### 6.3 Sources of Information

The information used to compile this valuation has come from the following sources:

<b>Table 6.3 Basis and Source of Inventory Data</b>		
<b>Street Lighting Column Assets</b>	<b>Quantity (Basis)</b>	<b>Quantity (Source)</b>
Non Galvanised Steel	0	
Galvanised Steel	Actual Inventory	
Concrete	0	
Aluminium (pre 2000)	0	
Aluminium (post 2000)	0	
Stainless Steel	0	
Cast Iron	0	
<b>Cable Assets</b>		
Cable under Carriageway	Actual Inventory	
Cable under Footway	Actual Inventory	

Cable under Verge	Actual Inventory	
<b>Other Street Lighting Assets</b>		
Wall Brackets	0	
Wooden Poles	0	
High Mast Columns	0	
Control Cabinets	0	

#### 6.4 Data Quality

The quality of the input data used in the valuation is assessed as follows:

<b>Table 6.4 Data Quality</b>		
<b>Inventory Data:</b>	<b>Confidence</b>	<b>Comment</b>
Quantity	98%	Good inventory
<b>Cost Data</b>		
Gross replacement cost (GRC) rates	98%	Actual rates
Maintenance treatment cost rates	98%	Actual rates
<b>Expected Service Lives</b>		
Total useful life	98%	SCOTS

#### 6.5 Useful Lives (UL)

The useful lives used are shown in table. The useful lives have been established by SCOTS Street Lighting Group as standard default figures. The figures are used as the basis for the calculation of depreciation.

<b>Table 6.5 Useful Life (UL) Values</b>	
<b>Street Lighting Column Assets</b>	<b>UL (years)</b>
Non Galvanised Steel	25
Galvanised Steel	30
Concrete	30
Aluminium (pre 2000)	40
Aluminium (post 2000)	50
Stainless Steel	70
Cast Iron	100
<b>Cable Assets</b>	
Cable under Carriageway	60
Cable under Footway	60
Cable under Verge	60

<b>Other Street Lighting Assets</b>	
Wall Brackets	40
Wooden Poles	50
Control Cabinets	50

## 6.6 Cost Data

The rates used for maintenance treatments are shown in Table 6.6 and were derived from actual contract rates.

<b>Table 6.6 Unit Rates Used</b>			
<b>Street Lighting Column Assets</b>	<b>Renewal Rate</b>	<b>Basis</b>	<b>Source</b>
Non Galvanised Steel	N/A		
Galvanised Steel	£594.00	Rates	Contract
Concrete	N/A		
Aluminium (pre 2000)	N/A		
Aluminium (post 2000)	N/A		
Stainless Steel	N/A		
Cast Iron	N/A		
<b>Cable Assets</b>			
Cable under Carriageway	£65.98	Rates	Contract
Cable under Footway	£41.17	Rates	Contract
Cable under Verge	£17.69	Rates	Contract
<b>Other Street Lighting Assets</b>			
Wall Brackets	N/A		
Wooden Poles	N/A		
Control Cabinets	N/A		

## 6.7 Lighting Valuation Summary

Based upon the figures shown above and the assumptions stated the current value of the councils Lighting assets has been estimated as:

<b>Table 6.7 Street Lighting Column Valuation</b>			
<b>Street Lighting Column Assets</b>	<b>Gross Replacement Cost</b>	<b>Depreciated Replacement Cost</b>	<b>Annualised Depreciation Cost</b>
Non Galvanised Steel	£0	£0	£0
Galvanised Steel	£9,478,955	£2,605,418	£315,965
Concrete	£0	£0	£0
Aluminium (pre 2000)	£0	£0	£0
Aluminium (post 2000)	£0	£0	£0
Stainless Steel	£0	£0	£0
Cast Iron	£0	£0	£0
<b>Cable Assets</b>			
Cable under Carriageway	£2,802,435	£1,401,983	£46,707
Cable under Footway	£17,406,676	£8,687,512	£290,111
Cable under Verge	£213,695	£106,653	£3,562
<b>Other Street Lighting Assets</b>			
Wall Brackets	£0	£0	£0
Wooden Poles	£0	£0	£0
High Mast Column	£0	£0	£0
Control Cabinets	£0	£0	£0
<b>Total</b>	<b>£29,901,761</b>	<b>£12,801,565</b>	<b>£656,345</b>

## 6.8 Interpretation of Results

The gross replacement cost represents the value of the complete replacement of the facility. It includes elements that are unlikely to ever need replacement. The extent of depreciation of the asset would provide an indication of the extent to which investment levels have matched depreciation to date. It is not currently possible to report depreciation as a percentage of the GRC of the depreciable component. This would be a more informative figure than the overall figure.

Comparing annual depreciation with current levels of investment gives an indication of the extent to which long term replacement needs are currently being met.

## 6.9 Recommendations

### Inventory Data Quality

Quality of data is good. This should be maintained.

**Condition Data**

Maintain and improve reliability.

**Unit Cost Rates**

Maintain current reliability.

**Useful Lives**

Continue to use best practice/available info.

## 7 Street Furniture

### 7.1 Assets Included

The Street Furniture assets included in this report are:

<b>Table 7.1 Street Furniture Assets</b>		
<b>Level 1: Asset Type</b>	<b>Level 2: Asset Group</b>	<b>Level 3: components that level 2 implicitly includes</b>
Street Furniture	Transport	Traffic Signs (non-illuminated)
	Highway	Safety Fences
	Street scene /amenity	Pedestrian Barriers
		Street Name Plates
		Bins
		Bollards
		Bus Shelters
		Grit Bins
		Cattle Grids
		Gates
		Trees
		Seating
		Verge Marker Posts
	Weather Stations	

### 7.2 Quantities

The quantities of Street Furniture asset include are:

<b>Table 7.2 Street Furniture Quantities</b>		
<b>Street Furniture Assets</b>	<b>Quantity of Assets</b>	<b>Unit</b>
Traffic Signs (non-illuminated)	5000	Number
Safety Fences	5029	Length (m)
Pedestrian Barriers	5000	Length (m)
Street Name Plates	0	Number
Bins	0	Number
Bollards	2000	Number
Bus Shelters	146	Number
Grit Bins	337	Number
Cattle Grids	3	Number
Gates	0	Number
Trees	51	Number
Seating	20	Number
Verge Marker Posts	350	Number
Weather Stations	0	Number

### 7.3 Sources of Information

The information used to compile this valuation has come from the following sources:

<b>Table 7.3 Base and Source of Inventory Data</b>		
<b>Street Furniture Assets</b>	<b>Quantity (Basis)</b>	<b>Quantity (Source)</b>
Traffic Signs (non-illuminated)	Local Engineer Estimate	Sample
Safety Fences	Actual Inventory	GIS
Pedestrian Barriers	Local Engineer Estimate	Road records
Street Name Plates	N/A	
Bins	N/A	
Bollards	Local Engineer Estimate	Records
Bus Shelters	Actual Inventory	GIS
Grit Bins	Actual inventory	Held data
Cattle Grids	Actual inventory	Held data
Gates	N/A	
Trees	Historical list	Records
Seating		
Verge Marker Posts	Local Engineer Estimate	
Weather Stations	N/A	

### Data Quality

The quality of the input data used in the valuation is assessed as follows:

<b>Table 7.4 Data Quality</b>		
<b>Inventory Data:</b>	<b>Confidence</b>	<b>Comment</b>
Quantity	65%	
<b>Cost Data</b>		
Gross replacement cost (GRC) rates	65%	
Maintenance treatment cost rates	65%	
<b>Expected Service Lives</b>		
Total useful life	50%	

### Useful Lives

The rates useful lives used are shown in table 7.5 below.

<b>Table 7.5 Street Furniture Useful Lives</b>		
<b>Street Furniture Assets</b>	<b>Useful Life</b>	<b>Useful Life (Basis)</b>
Traffic Signs (non-illuminated)	10	Local Engineer Estimate
Safety Fences	50	Local Engineer Estimate
Pedestrian Barriers	20	Local Engineer Estimate
Street Name Plates	0	Local Engineer Estimate
Bins	0	Local Engineer Estimate
Bollards	15	Local Engineer Estimate
Bus Shelters	15	Local Engineer Estimate
Grit Bins	7	Local Engineer Estimate
Cattle Grids	25	Local Engineer Estimate
Gates	10	Local Engineer Estimate
Trees	10	Local Engineer Estimate
Seating	25	Local Engineer

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		Estimate
Verge Marker Posts	5	Local Engineer Estimate
Weather Stations	25	Local Engineer Estimate

The useful lives of typical maintenance treatments have been used. The figures used for have been estimated by local technical staff. The figures are used as the basis for the calculation of depreciation.

For the majority of street furniture asset condition information is not recorded. The scale of these assets does not warrant this level of data. The valuation based upon the following assumptions:

- Where no condition data exists it has been assumed that 90% of the asset is in an acceptable condition
- The remaining 10% is in a condition that warrants replacement in the near future
- The remaining life of the assets that have reached a due for replacement state have been assumed to have an average remaining life of 3 years.

#### 7.4 Cost Data

The rates used for maintenance treatments are shown in Table 7.6 and were derived from best available contract/current data.

<b>Street Furniture Assets</b>	<b>Renewal Rate (£/unit)</b>	<b>Basis</b>	<b>Source</b>
Traffic Signs (non-illuminated)	50	<i>Average cost</i>	
Safety Fences	80	<i>Contract</i>	
Pedestrian Barriers	50	<i>Average cost</i>	
Street Name Plates	0		
Bins	0		
Bollards	95	<i>Average cost</i>	
Bus Shelters	4000	<i>Contract</i>	
Grit Bins	260	<i>Contract</i>	
Cattle Grids	4000	<i>Estimate</i>	
Gates	0		



Trees	2500	<i>Contract</i>	
Seating	1000	<i>Estimate</i>	
Verge Marker Posts	20	<i>Average cost</i>	
Weather Stations	0		

## 7.5 Street Furniture Valuation Summary

Based upon the figures shown above and the assumptions stated the current value of the councils Street Furniture assets has been estimated as:

<b>Street Furniture Assets</b>	<b>Gross Replacement Cost</b>	<b>Depreciated Replacement Cost</b>	<b>Annualised Depreciation Cost</b>
Traffic Signs (non-illuminated)	£250,000.00	£87,500.00	£25,000.00
Safety Fences	£402,320.00	£108,646.40	£8,046.40
Pedestrian Barriers	£250,000.00	£106,250.00	£12,500.00
Street Name Plates	£0.00	£0.00	£0.00
Bins	£0.00	£0.00	£0.00
Bollards	£190,000.00	£83,916.67	£12,666.67
Bus Shelters	£584,000.00	£302,933.33	£38,933.33
Grit Bins	£87,620.00	£47,571.33	£5,841.33
Cattle Grids	£12,000.00	£6,480.00	£480.00
Gates	£0.00	£0.00	£0.00
Trees	£127,500.00	£63,800.00	£2,550.00
Seating	£20,000.00	£9,800.00	£800.00
Verge Marker Posts	£7,000.00	£3,150.00	£1,400.00
Weather Stations	£0.00	£0.00	£0.00
<b>Total</b>	<b>£1,930,440.00</b>	<b>£820,047.73</b>	<b>£108,217.73</b>

## 7.6 Interpretation of Results

No comment

## 7.7 Recommendations

Improve inventory

## 8 Traffic Management Systems

### 8.1 Assets Included

The Traffic Management Systems assets included in this report are:

<b>Table 8.1 Traffic Management Systems Assets</b>		
<b>Level 1: Asset Type</b>	<b>Level 2: Asset Group</b>	<b>Level 3: components that level 2 implicitly includes</b>
Traffic Management Systems	Traffic Signals	Junctions
		Pedestrian Crossings
	Other Traffic Management Systems	Information Systems
		Safety Cameras
		Variable Message Signs
		Vehicle Activated Signs
		Real Time Passenger Information

### 8.2 Quantities

The quantities of Traffic Management Systems asset in this report are:

<b>Table 8.2a Traffic Management System Quantities</b>	
<b>Traffic Signal Types</b>	<b>Quantity</b>
<b>Traffic Signal (Junction) Subtypes</b>	
Minor Junction	2
Medium Junction	19
Major Junction	0
Complex Junction	0
<b>Traffic Signal (Pedestrian Crossing) Subtypes</b>	
Single Carriageway	36
Double Carriageway	11
<b>Total</b>	<b>68</b>

<b>Table 8.2b Other Traffic Management System Quantities</b>	
<b>Other Traffic Management System Types</b>	<b>Quantity</b>
Information Systems	0
Safety Cameras	7
Variable Message Signs	0
Vehicle Activated Signs	179
Real Time Passenger Information	8
<b>Total</b>	<b>194</b>

### 8.3 Sources of Information

The information used to compile this valuation has come from the following sources:

<b>Table 8.3 Basis and Source of Inventory Data</b>		
<b>Traffic Signal Types</b>	<b>Quantity (Basis)</b>	<b>Quantity (Source)</b>
<b>Traffic Signal (Junction) Subtypes</b>		
Minor Junction	Local Engineer Estimate	
Medium Junction	Local Engineer Estimate	
Major Junction	Local Engineer Estimate	
Complex Junction	Local Engineer Estimate	
<b>Traffic Signal (Pedestrian Crossing) Subtypes</b>		
Single Carriageway	Local Engineer Estimate	
Double Carriageway	Local Engineer Estimate	
<b>Other Traffic Management System Subtypes</b>		
Information Systems	0	
Safety Cameras	Actual Inventory	
Variable Message Signs	0	
Vehicle Activated Signs	Actual Inventory	
Real Time Passenger Information	Actual Inventory	

## 8.4 Data Quality

The quality of the input data used in the valuation is assessed as follows:

<b>Table 8.4 Data Quality</b>		
<b>Inventory Data:</b>	<b>Confidence</b>	<b>Comment</b>
Quantity	90%	
<b>Cost Data</b>		
Gross replacement cost (GRC) rates	90%	
Maintenance treatment cost rates	90%	
<b>Expected Service Lives</b>		
Total useful life		

## 8.5 Useful Lives

The rates useful lives used are shown in table. The useful lives of typical maintenance treatments have been used. The figures are used as the basis for the calculation of depreciation.

<b>Table 8.5 Useful Lives</b>				
<b>Traffic Management System Assets</b>	<b>Equipment</b>		<b>Civils</b>	
	<b>Useful Life (years)</b>	<b>Basis</b>	<b>Useful Life (years)</b>	<b>Basis</b>
<b>Traffic Signal (Junction) Subtypes</b>				
Minor Junction	20	Default Values	40	Default Values
Medium Junction	20	Default Values	40	Default Values
Major Junction	20	Default Values	40	Default Values
Complex Junction	20	Default Values	40	Default Values
<b>Traffic Signal (Pedestrian Crossing) Subtypes</b>				
Single Carriageway	20	Default Values	40	Default Values
Double Carriageway	20	Default Values	40	Default Values
<b>Other Traffic Management System Subtypes</b>				
Information Systems	0	0		
Safety Cameras	15	Local Engineer		

		Estimate		
Variable Message Signs	0	0		
Vehicle Activated Signs	15	Local Engineer Estimate		
Real Time Passenger Information	15	Local Engineer Estimate		

## 8.6 Cost Data

The rates used for maintenance treatments were derived *the maintenance treatment rates used in the valuation were derived from rates in the current term maintenance contracts and from tendered schemes undertaken within the last 2 years. The unit rates were adjusted to take account of traffic management costs, preliminaries and design and supervision costs.*

Traffic Management System Assets	Equipment		Civils		Source
	Renewal Rate (£/site)	Basis	Renewal Rate (£/site)	Basis	
<b>Traffic Signal (Junction) Subtypes</b>					
Minor Junction	£15,000.00	Default Values	£10,000.00	Default Values	SCOTS
Medium Junction	£25,000.00	Default Values	£15,000.00	Default Values	SCOTS
Major Junction	£35,000.00	Default Values	£20,000.00	Default Values	SCOTS
Complex Junction	£45,000.00	Default Values	£30,000.00	Default Values	SCOTS
<b>Traffic Signal (Pedestrian Crossing) Subtypes</b>					
Single Carriageway	£10,000.00	Default Values	£10,000.00	Default Values	SCOTS
Double Carriageway	£15,000.00	Default Values	£15,000.00	Default Values	SCOTS
<b>Other Traffic Management System Subtypes</b>					
Information Systems	£0.00	0	£0.00	0	SCOTS
Safety Cameras	£0.00	0	£0.00	0	SCOTS
Variable Message Signs	£0.00	0	£0.00	0	SCOTS
Vehicle Activated Signs	£0.00	0	£0.00	0	SCOTS
Real Time Passenger Information	£0.00	0	£0.00	0	SCOTS

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### Remaining Lives

The remaining lives of the components that depreciate have been based upon the condition assessment.

## 8.7 Traffic Management Systems Valuation Summary

Based upon the figures shown above and the assumptions stated the current value of the councils Traffic Management Systems assets has been estimated as:

<b>Table 8.7 Traffic Management Systems Valuation</b>			
<b>Traffic Management System Assets</b>	<b>Gross Replacement Cost</b>	<b>Depreciated Replacement Cost</b>	<b>Annualised Depreciation Cost</b>
<b>Traffic Signal (Junction) Subtypes</b>			
Minor Junction	£50,000	£29,417	£2,167
Medium Junction	£760,000	£513,250	£33,250
Major Junction	£0	£0	£0
Complex Junction	£0	£0	£0
<b>Traffic Signal (Pedestrian Crossing) Subtypes</b>			
Single Carriageway	£720,000	£501,667	£30,000
Double Carriageway	£330,000	£150,000	£10,000
<b>Other Traffic Management System Subtypes</b>			
Information Systems	£0	£0	£0
Safety Cameras	£140,000	£79,333	£9,333
Variable Message Signs	£0	£0	£0
Vehicle Activated Signs	£179,000	£101,433	£11,933
Real Time Passenger Information	£48,000	£27,200	£3,200
<b>Total</b>	<b>£2,227,000</b>	<b>£1,402,301</b>	<b>£99,884</b>

## 8.8 Interpretation of Results

Traffic signal equipment is in good order with reasonable levels of investment over past number of years. Problem relates to number of new installations being added to inventory and subsequent maintenance and long term replacement cost.

## **8.9 Recommendations**

Maintain inventory.

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## 9 Land

### 9.1 Assets Included

The area of land occupied by roads has been calculated using default values for each road class issued by CIPFA/HAMFIG.

### 9.2 Quantities

The area of land occupied by roads is summarised in table 9.5 below.

### 9.3 Sources of Information

#### Inventory

The area of land included is based upon default widths. The widths are added to the width used for carriageways and footways in order to derive the areas.

#### Unit Rates

Unit rates for land value have been supplied by the VAO (Valuation Office) at the request of Transport Scotland.

### 9.4 Land Valuation

Table 9.5: Land Valuation				
Highway	Width	Calculated Area	LAND Rate	Land Value
	(m)	(m <sup>2</sup> )	(£/m <sup>2</sup> )	(£,000s)
				0
	11.9	283,220	14.20	4,022
	11.5	297,850	0.85	253
	11.4	109,554	14.20	1,556
	11.4	385,890	0.85	328
	12.2	607,560	14.20	8,627
	9.6	317,760	0.85	270
	10.7	2,952,130	14.20	41,920
	9.0	299,700	0.85	255
		5,253,664		57,231



## 10 Road Asset Valuation Summary

### 10.1 Asset Values

Asset Type	Gross Replacement Cost (000's)	Depreciated Replacement Cost (000's)	Annual Depreciation (000's)
Carriageways	£583,612	£515,968	£5,168
Footways and Cycle Tracks	£110,963	£78,453	£1,647
Structures	£68,843	£68,223	£352
Lighting	£30,068	£12,835	£663
Street Furniture	£1,930	£820	£108
Traffic Management Systems	£2,227	£1,402	£99
Land	£57231	NA	N/a
<b>Total</b>	<b>£854,874</b>	<b>£677,701</b>	<b>£8,037</b>

### 10.2 Comparison with Current Investment Levels

Asset Type	Annual Depreciation	Current Investment (planned maintenance)	Investment/Annual Depreciation
Carriageways	£5,167,865	£2,667,838	52%
Footways and Cycle Tracks	£1,670,153	£452,257	27%
Structures	£352,371	£292,775	83%
Highway Lighting	£662,585	£202,888	31%
Street Furniture	£108,218	£63,000	58%
Traffic Management Systems	£99,884	£22,434	22%
Land	NA	NA	na
<b>Total</b>	<b>£8,061,075.55</b>	<b>£3,701,192.00</b>	<b>46%</b>

### **10.3 Recommendations**

Main issue is to continue to improve inventory data and reliability. Development of RMMS system should assist with this particularly in relation to footway lengths and carriageway and footway widths.

The above figures for the footway condition have been estimated on the basis of factoring up sample survey lengths for each footway category. An expansion of footway condition assessments both in function and reliability is required ie they must be more objective and transparent.

## Terms and Abbreviations

The following terms and Abbreviations are used in this report.

### **Gross Replacement Cost (GRC)**

The total admissible cost of replacing either the whole of an existing highway network or some part of it with an equivalent new asset.

### **Depreciated Replacement Cost (DRC)**

A method of valuation which provides the current cost of replacing an asset with its modern equivalent asset less deductions for all physical deterioration and all relevant forms of obsolescence and optimisation.

### **Depreciation**

The systematic allocation of the depreciable amount of an asset over its useful life arising from use, ageing, deterioration or obsolescence.

### **Impairment**

A reduction in net asset value due to a sudden or unforeseen decrease in condition and/or performance of an asset compared to the previously assessed level which has not been recognised through depreciation.

### **Annual Depreciation (AD)**

The aggregate cost of all the capital replacements/ treatments needed to maintain/restore its service potential over the life cycle, spread over the estimated number of years in the cycle.

### **Useful Life (UL)**

The period for which an asset is expected to be available for use by an entity.

### **Residual Value (RV)**

The net amount that could be obtained for an asset at the end of its useful life.

### **Remaining Life (RL)**

The difference between the useful life and current age.

### **Accumulated Consumption**

A measure of the proportion of the gross asset value that has been consumed to date.

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## References

1. Whole of Government Accounts, Accounting for Highways Infrastructure Assets in the Local Authority Sector on a Depreciated Replacement Cost Basis, HM Treasury, March 2011, [http://www.hm-treasury.gov.uk/d/wga\\_hia\\_timetable\\_2012\\_13.pdf](http://www.hm-treasury.gov.uk/d/wga_hia_timetable_2012_13.pdf)
2. Code of Practice on Transport Infrastructure Assets, Guidance to Support Asset Management, Financial Management and Reporting, CIPFA, 2010. (<http://www.cipfa.org.uk/pt/infrastructure/index.cfm>)
3. The SCOTs Road Asset Management Project, is a joint project under which all 32 Scottish Road Authorities are developing their Road Asset Management Plan under a consistent framework. (<http://scots.sharepoint.apptix.net/asset/default.aspx>)
4. SRMCS project is a joint project under which all 32 Scottish Road Authorities have jointly procured vehicle based road condition surveys. (insert hyperlink to SCOTSNET)

## Appendix A: Personnel

The following council personnel completed this valuation:

Asset Type	Name	Position	Role
Carriageways	Charles Armstrong	Roads and Transportation Manager	Senior Manager
	William McLeish	Project Coordinator	Maintenance speciality
Footways and Cycletracks	Charles Armstrong	Roads and Transportation Manager	Senior Manager
	William McLeish	Project Coordinator	Maintenance speciality
Structures	Charles Armstrong	Roads and Transportation Manager	Senior Manager
	Barry Scott	Senior Engineer	Specific structural speciality
Highway Lighting	Charles Armstrong	Roads and Transportation Manager	Senior Manager
	Drew Carlin	Project Coordinator	Specific Lighting speciality
Street Furniture	Charles Armstrong	Roads and Transportation Manager	Senior Manager
	Drew Carlin	Project Coordinator	Specific Lighting speciality
Traffic Management Systems	Charles Armstrong	Roads and Transportation Manager	Senior Manager
	Dermot McGonigle	Senior Engineer Traffic	Traffic Signal specialist
Lands	Charles Armstrong	Roads and Transportation Manager	Senior Manager

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## **Appendix B: Maintenance Cost Rate Derivation**

Contract rates.

Technical assessment.

Technical Estimates

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## Appendix C: SCOTS Structures Valuation Method

The valuation used for structures in this reports has been computed using the method below. This method is intended to provide Scottish road authorities with a practical method of calculating an asset valuation that is in accordance with the principles set out in the CIPFA Transport Asset Code. It is based upon data that all authorities should already hold as such it can be computed now. The method set out below will be built into the SCOTS Financial Reporting Tool such that it can be computed consistently by all authorities.

### 1. Calculation of the Gross Replacement Cost

The gross replacement cost has been computed based upon groups of like structures in terms of their primary material, size and what they cross (i.e. road, rail, water). Unit replacement cost rates were produced centrally by SCOTS bridges group and a consistent categorisation of structures used to which these rates were applied.

2.

### 3. Calculation of Depreciated Replacement Cost

The depreciated replacement cost has been calculated as follows:

- a. For each structure group a calculation has been made to identify what the depreciable component of each structure type is estimated to be. This has been computed by identifying the typical components that are present on each structure type. The replacement cost of these items has then been computed and used to determine what the depreciable component of each structure type is. A calculation of the component renewals figure has then been undertake and can be used for this purpose
- b. The GRC for the depreciable component of each structure has been multiplied by the BClave score to provide a DRC figure for the depreciable component.
- c. Impairment" of structures requiring strengthening.

For any structure that has been identified as needing strengthening the estimated cost of the strengthening works has been deducted from the DRC calculated above. In effect impairing these structures by the cost of returning the structure to a full load carrying capacity.

$\text{DRC} = \text{GRC (non depreciable component)} + \text{GRC (depreciable component)} \times \text{BClave} - \text{impairment (cost of required strengthening works)}$
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### 4. Calculation of Annualised Depreciation

The annualised depreciation has been calculated as follows:

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- a. For each group of structures typical components have been identified. For each component an estimate has been made of the average size and number of each type of component that typically exists. For these components unit replacement costs have been estimated and average expected service lives ascribed. The AD has then calculated by dividing the component replacement costs for each it by its average expected service lives.

$\text{Annualised Depreciation (ADC)} = \sum \text{Component replacement cost} / \text{average expected service life}$
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