

# **Road Asset Management**

## **RAMP**

**2013 - 2018**

**Rob Dickson**

**Director of Environment & Infrastructure**

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## Document Information

<b>Title</b>	Road Asset Management Plan
<b>Author</b>	Colin Ovens, Infrastructure Manager
<b>Description</b>	This Road Asset Management Plan (RAMP) represents and style of level of contents that are considered appropriate by SCOTS for RAMP2.

## Document History

<b>Version</b>	<b>Status</b>	<b>Date</b>	<b>Author</b>	<b>Changes from Previous Version</b>
1.0	Final	Dec 2013	C. Ovens Infrastructure Manager	Not applicable

## Document Control

<b>Version</b>	<b>Status</b>	<b>Date</b>	<b>Authorised for Issue by SCOTS RAMP Steering Committee</b>
1.0	Final	Dec 2013	Date of approval committee

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## Foreword

This plan sets out the council's plans for the management of the council's road asset for the next 5 years and beyond. It has been produced in accordance with national guidance and recommended good practices.

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 road assets. Recent harsh winters have shown that our 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.

Councillor Gordon Edgar  
Portfolio Holder for Roads & Infrastructure

Rob Dickson  
Director of Environment & Infrastructure

Robert Young  
Head of Engineering & Infrastructure

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## Document Control & Council Approval

Version Number/Date	Approved by Council
v1	Approved by Council on
<b>Next Update Due</b>	October 2014

## Responsibility for the Plan

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

Council Officer	Responsible for
Colin Ovens	Infrastructure Manager

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# 1. Introduction

## Overview

This plan sets out the council's plans for the council's road assets for the period 2013-2018. The Road Asset Management Plan (RAMP) records the council's plans for the maintenance of the Road asset. The "road asset" comprises of carriageways, footways, structures, street lighting, traffic management and street furniture.

Audit Scotland requires local authorities to develop Road Asset Management Plans and ensure that their road maintenance strategies and plans confirm that adequate prioritisation is given to those routes which are likely to contribute greatest to economic growth and improved quality of life.

Scottish Borders Council in partnership with all Scottish and Welsh local authorities are developing road asset management planning and the production of RAMP 2's together with a road maintenance manual (RMM) and an annual status and options report (ASOR).

## Purpose

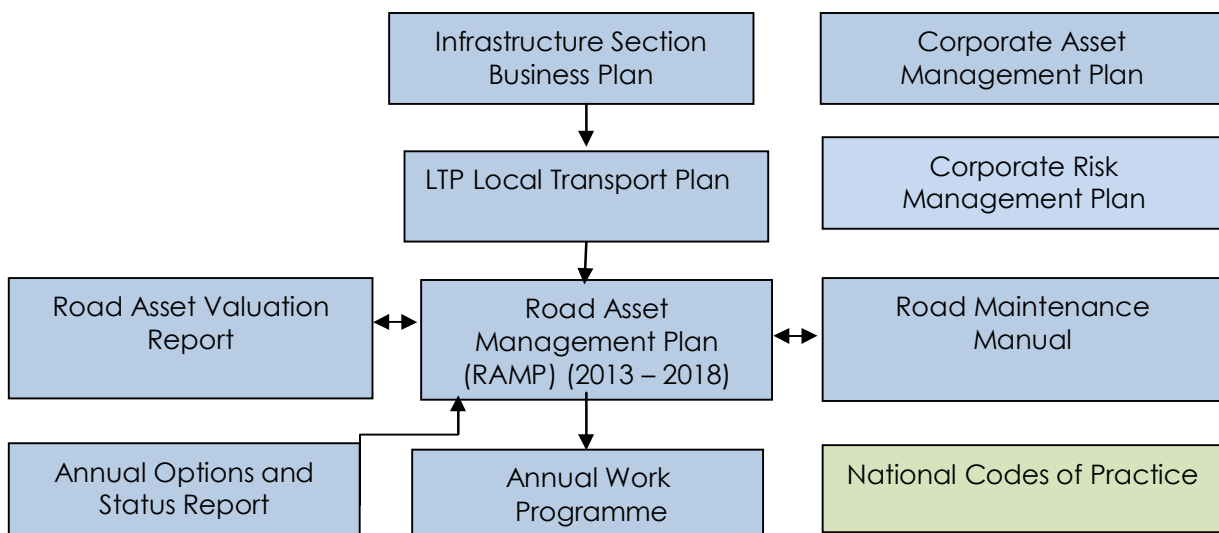
The purpose of the RAMP is to:

- Formalise strategies for investment in road asset groups
- Define service standards

The plan aims to improve how the road asset is managed and to enable a better value for money roads service to be delivered.

## RAMP and Other Plans

The RAMP relates to other council plans as illustrated below:



The RAMP is informed directly by the Local Transport Plan<sup>(1)</sup>, the Annual Status and Options Report<sup>(2)</sup> and the Road Maintenance Manual<sup>(3)</sup>. Targets and strategies contained in the RAMP are used to develop annual works programmes once the council's annual budget for roads has been agreed.

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## 2. Road Assets

### Road Assets

The council's road assets covered by this plan are:

- Carriageways 2,943 km
- Footways 878 km
- Structures 1106 Road Bridges
- Street Lighting 18,286 Lighting Columns
- Traffic Management Systems 21 Signalised Junctions and Pedestrian Crossings
- Road Drainage Infrastructure (extent unknown)
- Associated Street Furniture such as traffic signs, bollards, grit bins and seats etc.

### Assets Not Covered

Some related assets that the roads department maintain are the responsibility of other council departments.

The council owned road assets not covered in this RAMP are:

- Pay and display car parks
- Footpaths managed by Housing Associations
- Bus shelters
- Seats/verges/vegetation
- Land
- Public Rights of Way

### Inventory Data

This plan is based upon currently available inventory data for road assets, i.e. carriageway, footway, structures, street lighting, traffic signals and street furniture. 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 road asset data improvement plan. Photarc were awarded a contract in 2011 to gather required data sets for carriageways, footways, barriers, verges, signs, and street lights this information will be used to refine asset data in the future.

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### 3. Customer Expectations

#### Customer Preferences

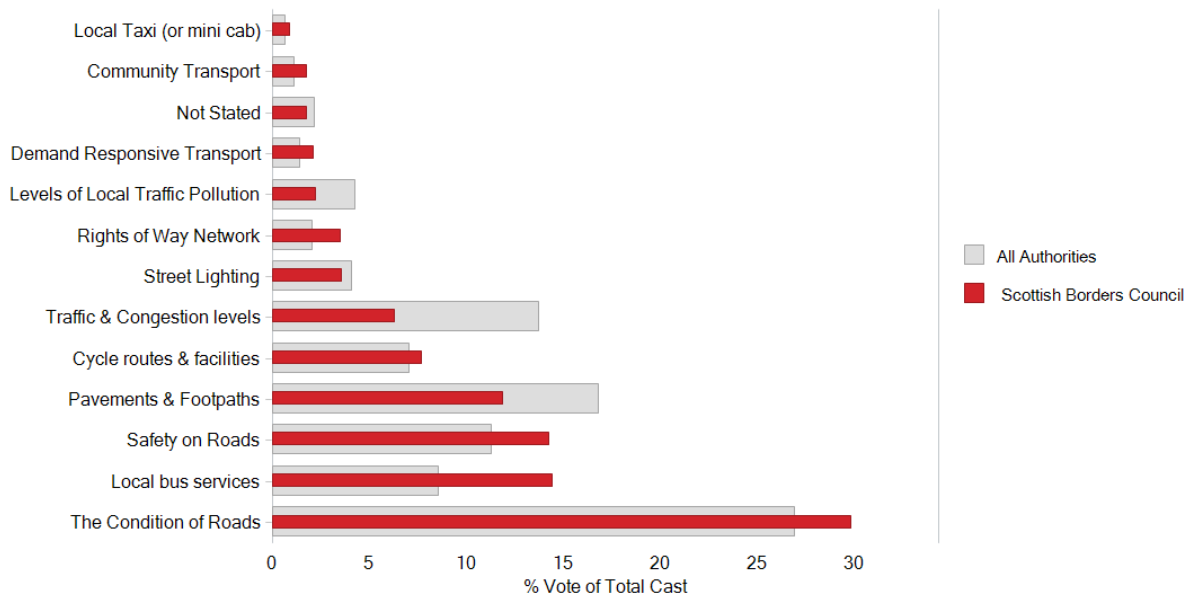
The council has recently undertaken public satisfaction surveys for roads through the Household Survey and National Highways and Transport (NHT) survey. The results are available at [www.scotborders.gov.uk](http://www.scotborders.gov.uk). The survey provides the view and preferences of a sample of residents. The results of the survey have been reviewed as part of the preparation of this plan. This plan has been informed by the following key findings:

#### IMPORTANCE V SATISFACTION

Question 1 of the survey asks the public 'how important do you consider...' and Question 2 'how satisfied you are with...' key aspects of service. This graph overlays the importance and satisfaction results for Scottish Borders Council (responses to Question 1 vs responses to Question 2)

## MOST IN NEED OF IMPROVEMENT

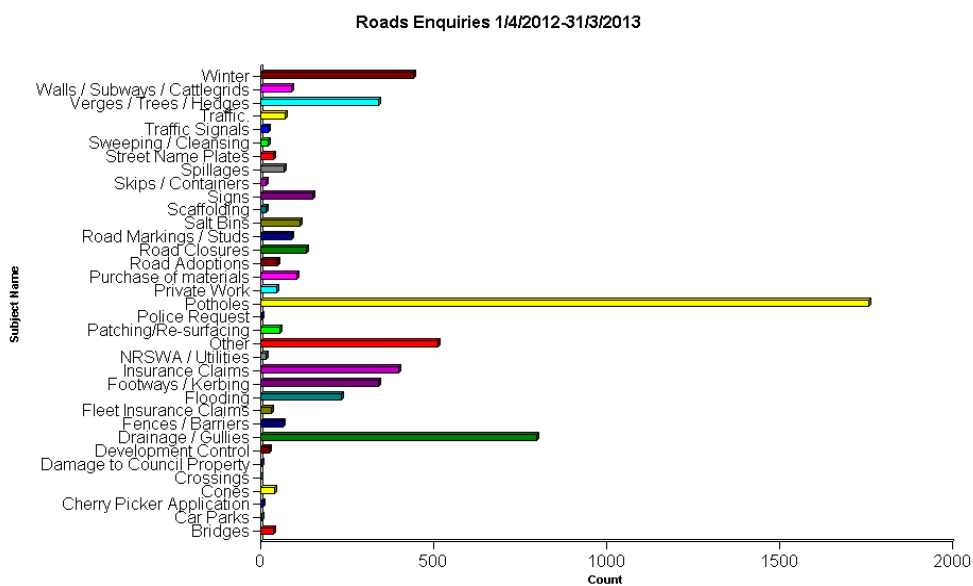
This graph plots the results to Question 4 of the survey for Scottish Borders Council, which asks the public to pick the three aspects of service 'most in need of improvement', and compares them with the results for all other Authorities in the survey. (This graph is produced using unweighted data)



The survey results indicates a desire for continued and potentially increased investment in the road asset particularly the condition of roads.

## Customer Contacts

Customer contacts regarding roads are recorded in the councils customer relationship management system (CRM).



A summary of the contacts received by asset type is shown below for the year 2012/13 shows that customer enquiries are majority related to potholes and road conditions.



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## 4. Demands

### Asset Growth

The asset grows each year due to the adoption of new roads and construction of new road links. Over the last 5 years the following additional assets have been adopted by the council:

- Carriageways, 225 km of unclassified roads
- Footways, 23 km
- Street Lighting, 1,200 columns

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 and Composition

Traffic growth over the last 10 years has not placed any additional pressure on the road network in considering the general volume of traffic and in particular, large commercial vehicles. **CHECK**

### 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 in the form of a mass of defects resulting from freeze/thaw action.
- Flooding: the summer of 2012 was the 17<sup>th</sup> the wettest recorded and this resulted in damage to the road network including surface condition failures, blocked drainage systems and embankment collapses.

These pressures are creating a need for additional funding. If such event occur during the plan it may be necessary to revise the standards that are affordable unless additional funding is provide from central government, as occurred during recent harsh winter conditions.

## 5. Service Standards

This plan is based upon delivering the service standards below. The standards reflect the funding levels in section 6 and 7. They are the standards that users (customers) can expect from the regions road assets during the plan period. This plan targets delivery of service standards shown below. Details of how the specific measures shown below are calculated are included in the road maintenance manual.

### SCOTS CORE PERFORMANCE INDICATORS

Service	Measured By	2013/14
<b>Carriageways</b>		
Safety	Percentage of Cat 1 defects made safe within response times	80%
	Percentage of safety inspections completed on time	100%
Condition	Percentage of principal roads network where structural maintenance should be considered (SRMCS type survey only)	45%
	Percentage of "B" Class roads to be considered for maintenance treatment (SRMCS type survey only)	50%
	Percentage of "C" Class roads to be considered for maintenance treatment (SRMCS type survey only)	50%
	Percentage of unclassified, non-principal roads network where maintenance should be considered (SRMCS type survey only)	55%
	Percentage of carriageway length treated	5%

<b>Footways</b>		
Safety	Percentage of Cat 1 defects made safe within response times.	80%
	Percentage of safety inspections completed on time	100%
Condition	Percentage of footway area to be considered for maintenance treatment	33%
	% of footway area treated	1%

<b>Street Lighting</b>		
Safety	Percentage of repairs within 7 days	95%
	Percentage of street lights having exceeded their expected service life	15%
Environment	% of street lights giving modern LED white light	25%

<b>Structures</b>		
Condition	Percentage of primary inspections carried out on time	100%
	Percentage of general inspections carried out on time	100%
	Bridge Stock Condition Indicator (BCIav)	TBA
	Bridge Stock Condition Index (BCIcrit)	TBA

NB. An action for the Structures team is to improve the data inventory of all structures. It is likely that during the plan period inspections will identify additional structures that have deteriorated to the point of requiring attention. Priorities may need to be adjusted to accommodate this. Long term predictions take into account the ongoing deterioration of the structures.

Other Standards (i.e. beyond the CORE PIs and for other asset groups will be added as seen appropriate, see APSE Performance Network) .

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## 6. Financial Summary

### Asset Valuation

As at 30<sup>th</sup> August 2013 the Road asset is valued as follows:

Asset Type	Gross Replacement Cost (GRC)	Depreciated Replacement Cost (DRC)	Annualised Depreciation Cost (ADC)	Comments
Carriageways	£2,469,149,000	£2,169,864,000	£269,285,000	<i>Carriageways GRC amounts to some 85% of the overall roads GRC.</i>
Footways & Cycleways	£152,038,000	£105,763,000	£46,275,000	
Structures	£267,958,000	£245,717,000	£22,241,000	
Street Lighting	£37,874,000	£12,713,000	£25,161,000	
Traffic Management	£717,000			<i>No model to calculate DRC &amp; ADC</i>
<b>Total</b>	<b>£2,927,736,000</b>	<b>£2,534,057,000</b>	<b>£362,962,000</b>	

The valuation figures above illustrate the massive financial value of the road asset. The current method of valuation of these assets requires the council to report asset value on the basis of historical cost. This will be replaced by figures calculated on the basis of a depreciated replacement cost in future.

In theory the annualised depreciation represents the average investment required in planned maintenance (renewal of the asset) required to maintain the asset.

## Historical Expenditure

Historical expenditure invested in works on the Road asset is shown below:

Asset	Works	Historical Expenditure £ 000					
		07/08	08/09	09/10	10/11	11/12	12/13
Carriageways	Reactive & Routine	4,740	2,990	1,434	2,787	1,763	1,790
	Planned	2,837	4,393	2,559	979	2,670	2,347
Footways	Reactive & Routine	615	303	217	397	325	174
	Planned	374	115	257	158	760	1,947
Structures	Reactive & Routine	478	424	476	548	481	171
	Planned	250	365	637	687	910	1,315
Street Lighting	Energy Costs	591	510	510	550	613	728
	Reactive & Routine	390	289	559	506	586	409
	Planned	834	800	865	415	456	593

## Planned Funding

The current funding level for the main asset groups of carriageways, footways, structures & street lighting are shown below.

Asset	Works	13/14
		Current Budgets £000's
Carriageways	Reactive & Routine	1273
	Planned	4356
Footways	Reactive & Routine	100
	Planned	160
Structures	Reactive & Routine	228
	Planned	920
Street Lighting	Energy Costs	680
	Reactive & Routine	328
	Planned	200

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Investment in carriageways was boosted by additional £2.0m funding to enable a backlog of repairs to be carried out caused by the two unseasonably harsh winter weather of 2009/10 & 2012/13 followed by the one extreme wet summer of 2012.

## 7. Asset Investment Strategies

The Plan has a current focus on the needs of the carriageway asset based on a combination of condition data, target RCI results and results of the Household Survey and NHT survey which sees carriageway condition as the most important issues that affects current road users. The future strategy for carriageways has been determined using predictions of future condition over a 20 year period. The predictions enable a strategy to be created that looks at the 'whole life cost' of maintaining the carriageway 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 strategy for the carriageway asset is summarised below. The strategy for the other major asset types will be developed in future RAMP's.

### Investment between Asset Types

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

- Carriageways: level of investment increased to derive an acceptable level of RCI
- Footways: level of investment maintained at similar levels (not developed)
- Structures: level of investment maintained at similar levels ( not developed)
- Street lighting; level of investment maintained at similar levels, plus additional investment in "spend to save" energy efficiency initiative
- Traffic signals; level of investment maintained at similar levels (not developed)

### Carriageways

Category	Description	Basis of Strategy
Routine and Reactive Repair	Repair of defect to current intervention standards and response times.	- The strategy requires the deployment of works teams on emergency repairs and on other non emergency repairs such as patching.
Planned Maintenance Preventative	A programme of preventative treatment or roads in the initial stages of deterioration.	- The strategy is predicted to require increased programmes of surface dressing on rural roads and consideration to the use of micro asphalt treatments in urban areas – see Option 5 in Section 8
Planned Maintenance Corrective	Programme of resurfacing where a preventative treatment cannot be applied	- The strategy is predicted to require a more substantial investment cost through more expensive treatments, with priorities still targeted towards 'A' & 'B' class roads – see Option 5 in Section 8.

The strategy will apply both low cost preventative treatment (such as surface dressing/micro asphalt) together with more expensive corrective treatment (such as overlays and resurfacing). The level of investment is predicted to be insufficient to manage an appropriate level deterioration of condition occurring over the road network.

### Street Lighting

Category	Description	Basis of Strategy
Routine and Reactive Repair	Repair of defect to current intervention standards and response times.	The strategy requires the deployment of works teams on emergency and other non emergency repairs.
Planned Maintenance Corrective	Programme of structural renewal	The strategy is predicted to require approximately 100 no columns replaced pa.
Invest to save		An Invest to Save initiative for energy efficiency has been approved by SBC. The specific details are yet to be decided, however, this will include new equipment to enable the cost of energy in Street Lighting to be reduced.

### THE FOLLOWING ASSET GROUPS REQUIRED TO DEVELOPED IN TERMS OF FUTURE INVESTMENT PLANNING

#### Footways – requires further development

Category	Description	Basis of Strategy
<i>Routine and Reactive Repair</i>	<i>Repair of defect to current intervention standards and response times.</i>	<i>The strategy requires the deployment of works gangs on emergency repairs and on other non emergency repairs such as patching.</i>
<i>Planned Maintenance Preventative</i>	<i>A programme of preventative treatment of bituminous footways in the initial stages of deterioration.</i>	<i>The strategy is predicted to require:</i> <ul style="list-style-type: none"> <li>- <i>Footway Surface Treatment 1 km pa on average</i></li> </ul>
<i>Planned Maintenance Corrective</i>	<i>Programme of resurfacing/renewal of footways.</i>	<i>The strategy is predicted to require approximately:</i> <ul style="list-style-type: none"> <li>- <i>Renewal of flagged footways 19,000 sqm</i></li> <li>- <i>Resurfacing of bituminous footways 33,000sqm pa</i></li> </ul>



The strategy will apply a low cost preventative treatment (such as Footway Surface Treatment) before they deteriorate to a condition where more expensive treatments are required for many footways. The level of investment is predicted to be insufficient to prevent some deterioration of condition occurring however the level of deterioration shall be minimised through the use of the proposed appropriate preventative maintenance investment.

### **Structures - requires further development**

<b>Category</b>	<b>Description</b>	<b>Basis of Strategy</b>
<i>Routine and Reactive Repair</i>	<i>Repair of defect to current intervention standards and response times.</i>	<i>The strategy requires the deployment of works gangs/other agencies on emergency repairs and on other non emergency repairs.</i>
<i>Strengthening (council structures)</i>	<i>Strengthening of bridges currently assessed as being weak.</i>	<i>The strategy involves:</i> <ul style="list-style-type: none"> <li>- <i>Strengthening of bridges</i></li> </ul>
<i>Refurbishment</i>	<i>Refurbishment of structures that have deteriorated into a poor or very poor condition</i>	<i>The strategy involves:</i> <ul style="list-style-type: none"> <li>- <i>Road bridges</i></li> <li>- <i>Footbridges</i></li> <li>- <i>Culverts</i></li> <li>- <i>Retaining walls</i></li> </ul>
<i>Parapet works</i>	<i>Strengthening or replacement of weak parapets</i>	<i>The strategy targets replacement of parapets</i>
<i>Scour Protection</i>	<i>Scour protection works on structures susceptible to scour</i>	<i>As appropriate from surveys</i>
<i>Other Specific</i>		

The structures strategy targets the strengthening of those structures which are on high priority routes in the region.

### **Traffic Signals – requires further development**

<b>Category</b>	<b>Description</b>	<b>Basis of Strategy</b>
<i>Routine and Reactive Repair</i>	<i>Repair of defect to current intervention standards and response times.</i>	<i>The strategy requires the deployment of works gangs/other agencies on emergency repairs and on other non-emergency repairs.</i>
<i>Refurbishment of signalised</i>	<i>Refurbishment of junction that have</i>	<i>The strategy allows or renewal of 3 junctions</i>

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<i>junctions</i>	<i>deteriorated or the equipment has become obsolete/unreliable</i>	
<i>Refurbishment of signalised crossings</i>	<i>Refurbishment of junction that have deteriorated or the equipment has become obsolete/unreliable</i>	<i>The strategy involves the renewal of 1 pedestrian crossing.</i>

## 8. Future invest plan

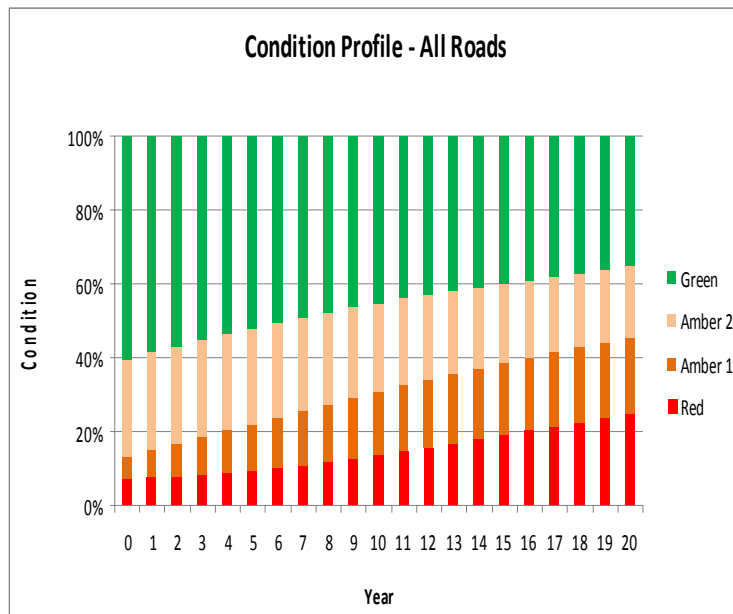
Various Options have been modelled which relate to possible investment strategies linked to predicted condition and 20 year total investment outputs for carriageways. Funding beyond year 5 for carriageways is shown below as an estimate allowing the prediction of long term condition modelling.

### OPTIONS 1 to 5

No	Option	Funding	Predicted Condition year 20 (2033)	Total investment over 20 years	Comment
1	Steady State	£4.3m	41.7%	£135.3m	Keeps RCI at current level
2	Current core budget	£1.35m	65%	£43.7m	Further significant increase in RCI No budget increase
3	Short term investment	Increasing budget +500k per year for 6 years	47%	£124.3m	Further deterioration in RCI but slowed down. Short term budget increase
4	Medium term investment	Increasing budget year 3-7 +750k year 8-12 +750k year 13-20 +750k	48%	£96.3m	Further deterioration in RCI but slowed down. Medium term budget increase
5	Medium term investment	Increasing budget year 3-7 +750k year 8-12 +1000k year 13-20 +1250k	45%	£111m	Further deterioration in RCI but slowed down. Medium term budget increase

## OPTION 2

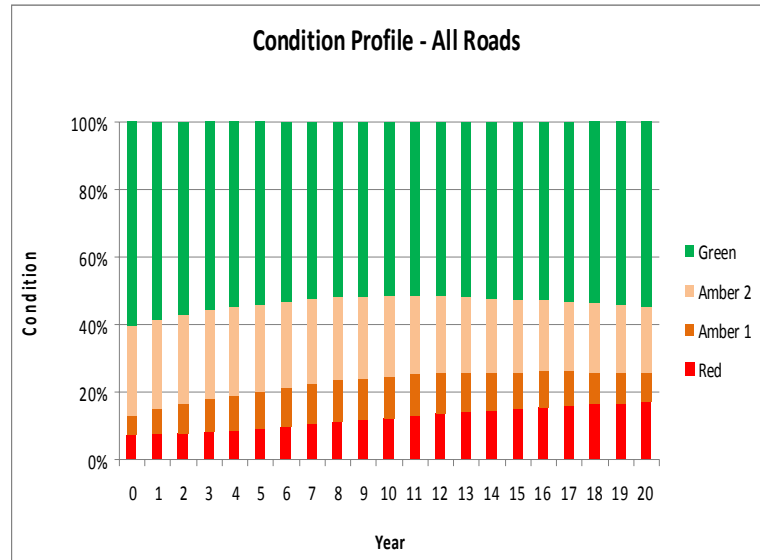
OPTION 5 - Proposed Investment Plan ( £000's)				
Year	Increase in base Budget	Base Budget	Additional Inflation @ 5%	Proposed Budget + inflation
1		1357		
2		2253		
3		1357	68	1425
4		1357	139	1496
5		1357	214	1571
6		1357	293	1650
7		1357	375	1732
8		1357	462	1819
9		1357	553	1910
10		1357	648	2005
11		1357	749	2106
12		1357	854	2211
13		1357	965	2322
14		1357	1081	2438
15		1357	1203	2560
16		1357	1331	2688
17		1357	1465	2822
18		1357	1606	2963
19		1357	1754	3111
20		1357	1910	3267
	<b>TOTAL</b>	<b>28,036</b>	<b>15,677</b>	<b>43,713</b>



Current RCI	20 year RCI
<b>41.7%</b>	<b>65%</b>

## OPTION 5

OPTION 5 - Proposed Investment Plan ( £000's)				
Year	Increase in base Budget	Base Budget	Additional Inflation @ 5%	Proposed Budget + inflation
1		1357		
2		2253		
3	750	2120	106	2226
4		2120	217	2337
5		2120	334	2454
6		2120	456	2576
7		2120	585	2705
8	1000	3120	1061	4181
9		3120	1270	4390
10		3120	1489	4609
11		3120	1720	4840
12		3120	1962	5082
13	1250	4120	3104	7474
14		4120	3477	7847
15		4120	3870	8240
16		4120	4282	8652
17		4120	4714	9081
18		4120	5387	9757
19		4120	5875	10245
20		4120	6205	10757
	<b>TOTAL</b>	<b>65,070</b>	<b>46,003</b>	<b>111,073</b>



Current RCI	20 year RCI
<b>41.7%</b>	<b>45%</b>

The detailed funding requirements for carriageway, as per Option 5 above, and street lighting energy efficiency programme investment as per the 13/14 Capital Plan are shown in the table below:

Asset	Works	Funding Required £k					Long Term Funding Assumed £k
		13/14	14/15	15/16	16/17	17/18	Y5-Y20 pa
Carriageways	To improve the (RCI)	2,226	2,337	2,454	2,576	2,705	95,600
Street Lighting	To energy consumption	1,000	500	1,000	1,000	500	0

An inflation figure of 5% has been used to calculate future invest proposals for carriageways:

## 9. Risks to the Plan

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

<b>Plan Assumption</b>	<b>Risk</b>	<b>Action If Risk Occurs</b>
The plan is based upon winters being normal	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 & 8	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 deteriorate 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 councils corporate risk management strategy<sup>(4)</sup>. In addition to the risks above a Road 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.