DEVELOPMENT AND INFRASTRUCTURE SERVICES

ANNUAL STATUS AND OPTIONS REPORT 2017

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Executive Summary

Introduction

- The Annual Status and Options Report is a product of our Roads Asset Management plan which records the level of service the Council is aiming to achieve and provides a means of identifying and prioritising the overall funding needs of our road assets.
- The Report presents a summary of the Council's roads assets as of April 2017. It details the current condition of the asset, future investment options and the impact of these options.
- Asset groups considered are; Carriageways, Footways, Street Lighting, Bridges and Structures. Inventory collection and condition assessments provide detail on the extent of the area's roads infrastructure and the impact recent investments have had on its condition.
- Roads infrastructure deterioration can be slow and often goes unnoticed, meaning that the impact of investment cannot be assessed in the short term. The investment options presented consider the projected impact over a 20 year period. This allows decisions to be taken with an understanding of medium and long term implications.
- The financial tools used to develop forecasts consider the existing condition of our infrastructure and scope the remedial costs of network improvement. It should be noted that no allowance has been made for construction inflation; forecasts are based upon today's prices.

Current Status and Key Issues

Carriageway

- 2310 km of carriageway.

  The Road Condition Index (RCI) has improved slowly since 2010 as a result of several years of increased capital investment. Reduced investment in the last 2 years has seen this improvement slow, however we have maintained a steady RCI with effective use of treatments which are aimed at halting deterioration at an early stage in the lifecycle of the road.

  Deterioration of the roads network is compounded by increased levels of heavy traffic and a relatively high level of utility excavations. The RCI (Road Condition Index) survey results indicates that 54.2% of the carriageway network should be considered for treatment.

  The steady state requirement of £10.1 million per year is unlikely to be met in the next few years. There is a high risk that the improvement we have seen in the RCI will not be sustainable in the long term. The steady state and backlog figures have been produced nationally. There are currently no similar figures available for footways, bridges and lighting

Footway

- 529 km of footway

  A significant percentage of our footways are considered to be in poor condition and 55.7% of the footway network should be considered for treatments. A new and enhanced inspection regime for footways is now in place and this will more readily identify areas requiring improvement.

  An industry standard full footway condition survey is being considered for 2017/18 and additional capital investment of £500k has been allocated for footway schemes that will be completed 2017/18.

Street Lighting

- There are 13, 506 street lighting columns and 14,447 luminaires across Argyll and Bute. 35% of these columns have exceeded their expected service life.

  Electricity costs will continue to rise over the coming years however the council have embarked on an LED street lighting replacement project changing all existing lanterns to new energy efficient LED lighting with a completion date of the end of March 2018, thus leading to lower energy costs and a reduction in our carbon foot print.

  Some of the savings from the LED project will contribute to a column replacement programme.

Structures

- 889 Bridges and 1643 retaining walls.

  18 of our bridges have temporary weight restrictions in place as a measure to reduce loadings and protect these structures.

  Currently the budget for 2017/18 financial year is £69k with limited budget available for future years given the overall budget forecast.

  We have seen an increase in the number of emergency works required on bridges in the past year. This is a consequence of a number of factors including larger heavier vehicles using road network and bridges, the age of many of the structures and the limited budget available for planned maintenance and/or replacement of these structures.

Summary

The Carriageway, Footway, Lighting and Structures assets are currently in a safe and serviceable condition. Maintenance options and steady state requirements indicate that the current investment in the network is insufficient to maintain standards indefinitely.

With reducing budgets and resources we continue to invest as effectively as possible to reduce immediate deterioration and make use of every available funding opportunity.

The roads network is a key asset for Argyll and Bute and is critical to supporting economic development. Every effort should be made to safeguard its future .

STATUS AND OPTIONS REPORT 2017

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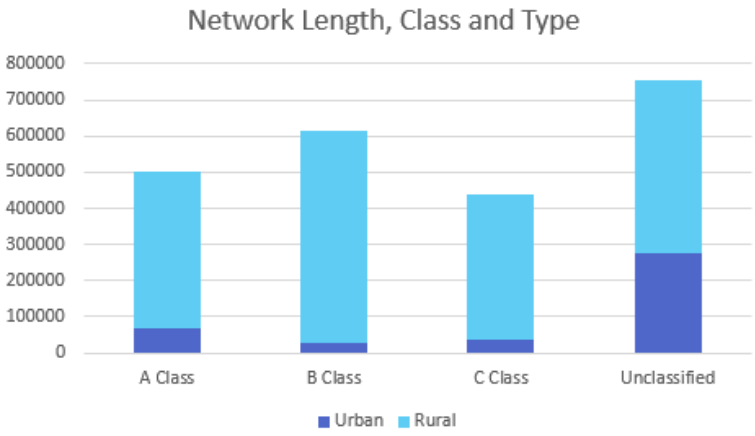
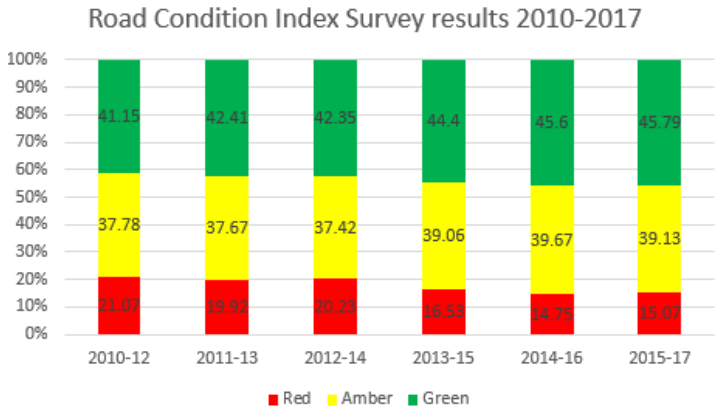
1.0 CARRIAGEWAYS



Road Length

A Class Roads	502km
B Class Roads	614km
C Class Roads	435km
Unclassified Roads	2,304km

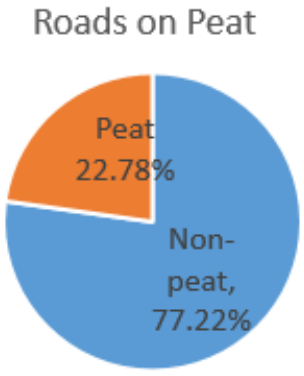
The table above shows that nearly one third of our network is made up of unclassified roads (U Class). Most of the carriageway is rural with over 80% of the network in rural areas.



Road Condition

Road condition is measured by the Scottish Road Maintenance Condition Survey (SRMCS) that assess parameters such as surface texture and cracking, smoothness and rutting. This provides an indication of the residual life of the road structure.

The results show in the last year the percentage of roads assessed as red has increased from 14.75% to 15.07% however, in the same period the percentage of green has increased from 45.6% to 45.79%. This shows improvement and provides confirmation on the effective delivery of the roads reconstruction programme.



Road Construction

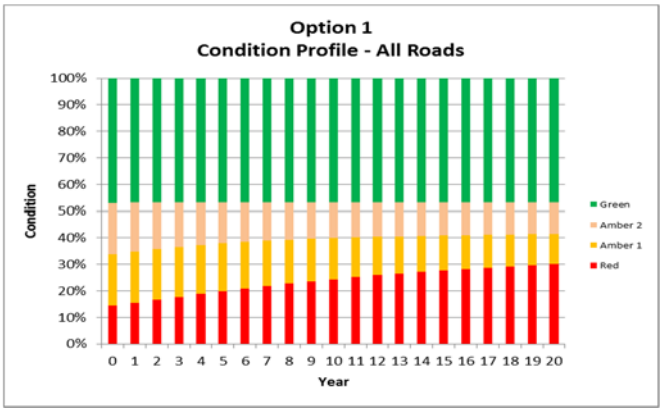
23% of our roads are constructed on peat. These incur greater construction and maintenance costs and may require restrictions on the weight of vehicles using the road.

New and innovative approaches in road maintenance techniques are being be considered in these settings**.** Techniques such as recycling existing materials with the addition of some new stone and bitumen having been successfully carried out in a number of locations. This saves transport costs and also reduces the environmental impact of repairing roads by reducing the amount of new material required.

The table to the left taken from the Asset Valuation return 2016/17 indicates a total Gross Replacement cost of £2,034m for our carriageway asset.

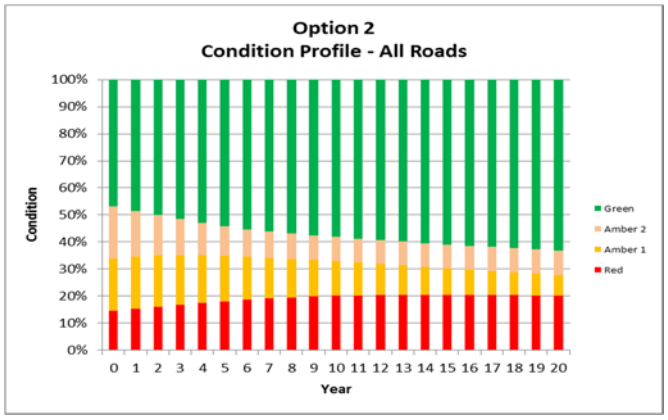
Asset Type	Gross Replacement Cost £'000	Depreciated Replacement Cost £'000	Annualised Depreciation Charge £'000
Carriageway	£2,034,113	£1,699,806	£28,105

1.1 CARRIAGEWAY INVESTMENT OPTIONS



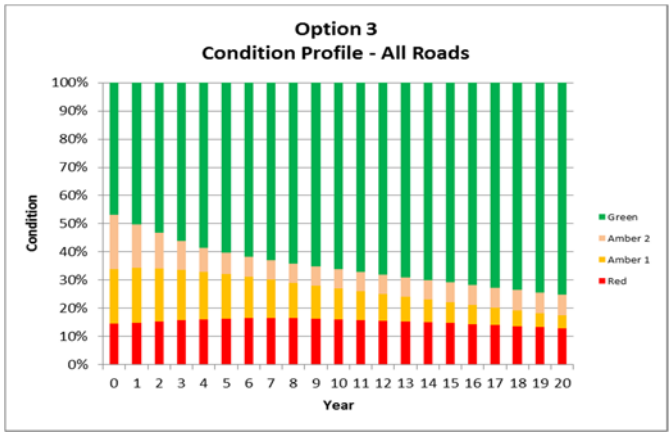
OPTION 1 - £5M

An annual investment of £5m would lead to no improvement on overall RCI with 53% of our roads requiring attention after 20 years and a significant increase in the percentage of roads in the red category. The volume of reactive temporary repairs would steadily rise year on year as would public liability claims. Customer satisfaction levels can be expected to steadily decrease.



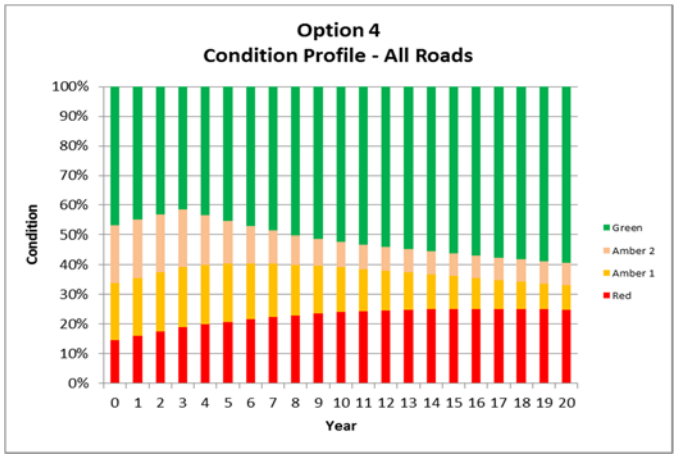
OPTION 2 - £8M

An annual investment of £8m would lead to slight improvement with 37% of our roads requiring attention after 20 years, however the percentage of roads categorised as red would increase slightly. The volume of reactive temporary repairs should decrease apart from on the roads of poorest condition. Customer satisfaction levels could improve as more roads would be categorised as green.



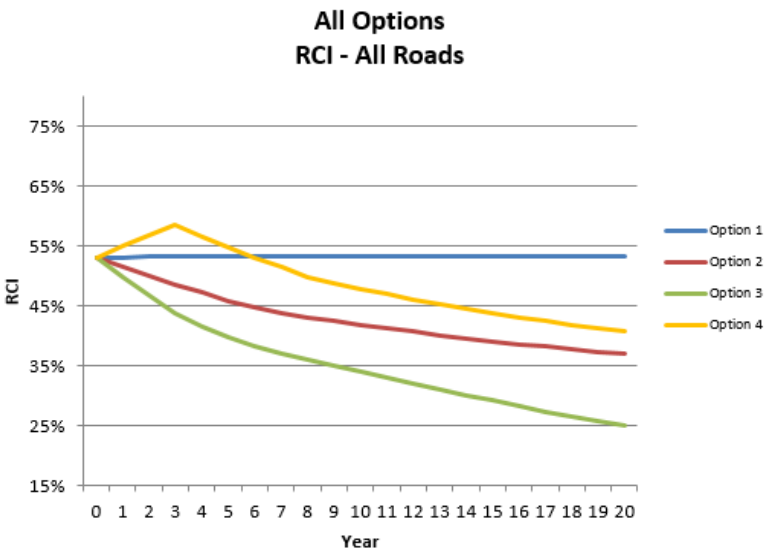
OPTION 3 - £11M

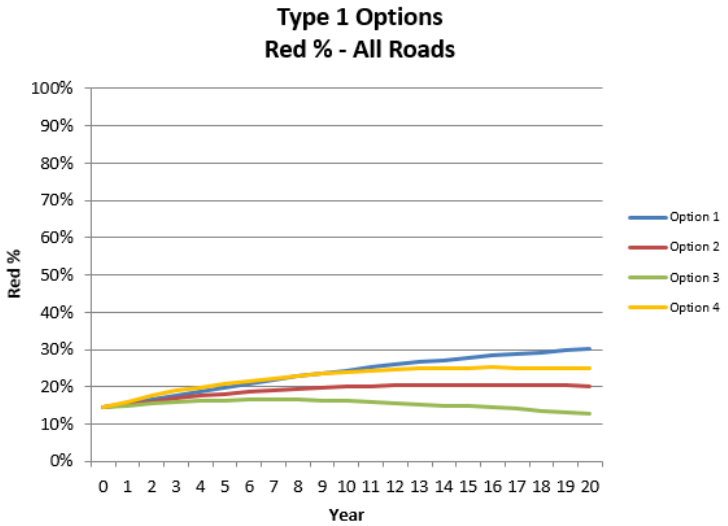
An annual investment of £11m would lead to a significant improvement with only 23% of our roads requiring attention after 20 years. The volume of reactive temporary repairs would reduce as would public liability claims. Customer satisfaction levels would also improve significantly.



OPTION 4 - £1.5M for 3 years then £8M

An annual investment of £1.5m for the next 3 years followed by £8million for the next 17 years would lead to a significant deterioration initially for the first 3 years with 58% of our roads requiring attention decreasing to 41% requiring attention after the 20 years. For the first 3 years reactive temporary repairs would increase but then start to decrease as would the public liability claims.





1.2 ROAD CONDITION

RCI Projections

This diagram shows the effect of the different investment options over a 20 year period i.e. the total percentage of roads requiring attention (the lower the % the better condition the road—small number is good).

Option 3 shows the greatest improvement. Options 2 and 4 also show improvement however it should be noted that in all options apart from Option 3 the red category roads increase - this is shown in the second graph.

Option 4 shows an initial worsening in condition due to reduced budget with an improving picture as budgets are predicted to increase in future years.

An increase in roads in the red category will lead to an increase in maintenance requirements for those roads.

This diagram demonstrates the effect the different investment options would have on the red condition roads. Over 20 years , Option 3 reduces the red condition roads significantly to only 12% of our network.

The following table shows a summary of the results of each option, green indicates an improving situation:

	Option 1	Option 2	Option 3	Option 4
Overall RCI	Steady State 55%	Significant Improvement (37%)	Significant Improvement (23%)	Slight improvement (41%)
% Green	The same (45%)	Improved (63%)	Significantly improved (74%)	Improved (59%)
% Red	Significant deterioration (30%)	Some Deterioration (20%)	Slight improvement (12%)	Deterioration (24%)
Reactive Maintenance	Increased maintenance requirements	less maintenance requirements	less maintenance requirements	Initially increased maintenance requirements-less longer term

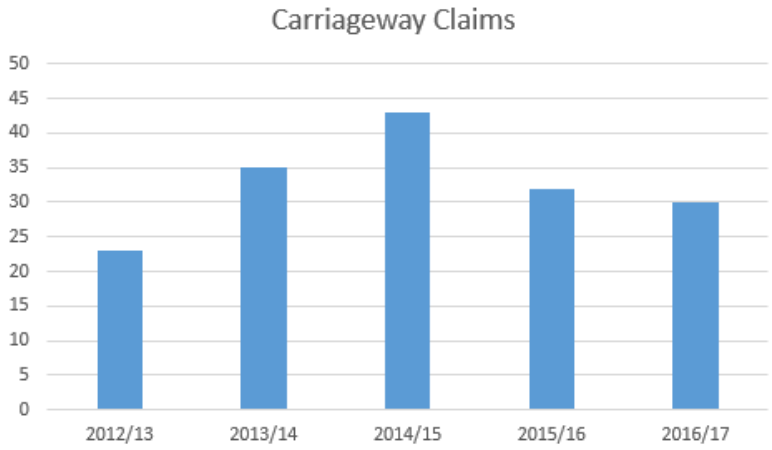
Maintenance Backlog - £101 million

The Scottish Road Maintenance Condition Survey (SRMCS) is used to annual to determine a Road Condition Indicator (RCI) value for each local authority road network. From these results SCOTS calculate the Maintenance Backlog for each authority every second year. The Maintenance Backlog is the cost of achieving in one year a network free from any sections in an amber or red condition using the latest survey date.

The Maintenance Backlog calculated in 2017 for Argyll and Bute is £101 million (Data source—SCOTS backlog Modelling Report March 2017). This figure has reduced from previous years following research having been carried out resulting in adjustments at a national level to financial assumptions and the rates applied for repair works. These changes apply to all councils in Scotland. However, whilst this figure has reduced there is still a very significant backlog of over £100 million to bring our roads up to an ideal standard.

Steady State - £10.1 million

This is the amount of investment required to maintain our roads to a steady state.



1.3 CARRIAGEWAY INVESTMENT & HIERARCHY

Historical Investment

This diagram shows the carriageway spend (in £ Millions) for capital and revenue works over the last 8 years.

Insurance Claims

Following an increase of claims against the council in years 2012 to 2015 there is now evidence of a decrease in the number of claims relating to roads faults. An enhanced carriageway inspection regime may have played a part in ensuring that early identification and intervention sees us dealing with faults prior to them becoming issues for road users. The enhanced inspection regime is the result of collaborative work of a number of councils. The claims graph is referring to £thousands in claim value.

Carriageway Category	Hierarchy Description	Type of Road	Description
1	Motorway	N/A	N/A
2	Strategic Route	Principal A Roads	Routes for fast moving long distance with little pedestrian traffic. Speed limits generally excess of 40mph
3a	Main Distributor	Major Urban Network and Inter Primary Links	Routes between strategic routes and linking urban centres to the strategic network
3b	Secondary Distributor	Classified Roads (B & C Class)	In rural areas these roads link the strategic and main distributor network.30 mph speed limits and high pedestrian activity
4a	Link Road	Roads linking the Main and Secondary Distributor	In rural areas these roads link the smaller villages to distributor roads
4b	Local Access Road	Roads serving limited numbers of properties carrying only access traffic	They are often single lane and unsuitable for HGV

Feature	Description	Category	Inspection Frequency
Roads	Strategic Routes Main Distributor Secondary Distributor Link Road Local Access Routes All other locations (car parks)	2 3(a) 3(b) 4(a) 4(b)	Up to 12 pa (Min 10) Up to 12 pa (Min 10) Up to 12 pa (Min 10) 4 pa Annually Annually

Carriageway Hierarchy and Frequency of Inspections

The tables here refer to our inspection regime and the frequency of inspection. A roads position or hierarchy category will determine how often the road is inspected. We have no category 1 roads (motorways).

1.4 ROAD DETERIORATION

In Argyll and Bute the road network covers a large area – 2321km to be specific. It is used daily by the majority of our residents and businesses and is fundamental to social, economic and the environmental wellbeing of our community. Maintaining roads is vital for our road users ensuring safe travel and network availability.

This picture shows an A class road with a recently increased volume of traffic where timber extraction operations timber and fish farms activities have taken their toll. It's the main route to Portavadie Marina - a major tourist attraction in the Cowal area and also provides access to Portavadie / Tarbert Ferry route.

The condition of the road is a concern especially in the event of severe winter weather. Water ingress can lead to a freeze thaw cycle. And further deterioration. The crazing of this bituminous road surface is very apparent in the picture. This is typical of many roads across Argyll and Bute.

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Footway—adjacent to the carriageway

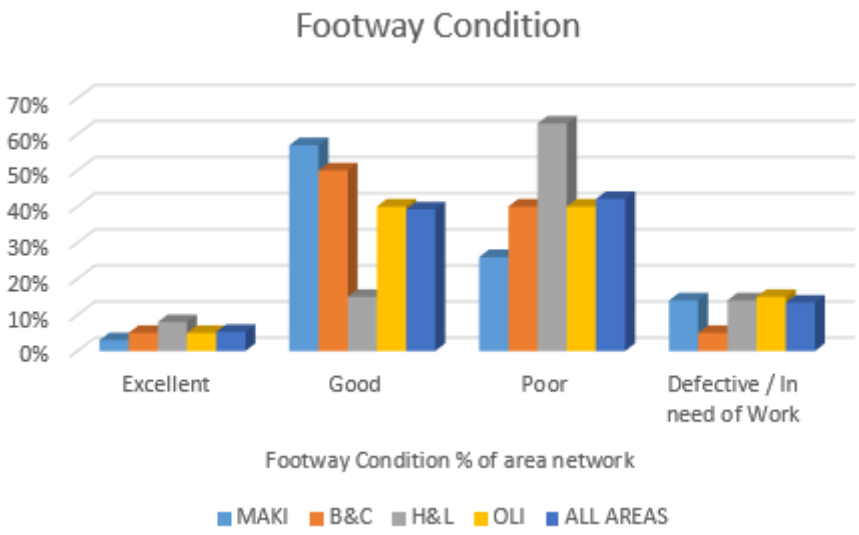
Footpath—remote from the carriageway

2.0 FOOTWAY STATUS

Footway Length

Total Footway Length 512km

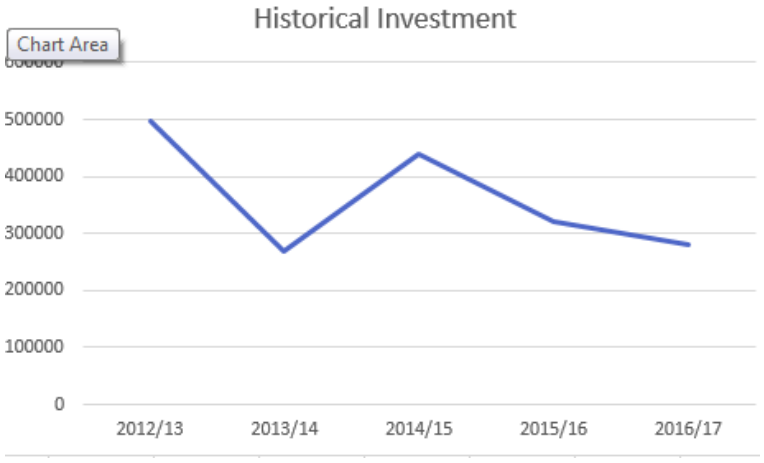
Total Footpath Length 9.19km



Footway Condition

44 % of the overall footway network is currently maintained at a satisfactory condition.

Excellent Condition	5.3%
Good Condition	39.2
Poor condition	42.1
Defective/	
In need of work	13.4%



FOOTWAY INVESTMENT

Last year (2016/17) £280,416 was spent on planned maintenance for footways.

Industry standard condition footway surveys are planned for this year (2017/18) and £500,000 footway capital investment program will deliver improvements in 17/18.

Table 4.7a Footway Valuation by Hierarchy

Footway Hierarc	Gross Replacement Cost	Depreciated Replacement Cost	Annualised Depreciation Cost
Higher Amenity	£9,291,189	£7,887,272	£59,920
Other Footways	£79,656,973	£58,868,576	£785,654
Total	**£88,948,162**	**£66,755,848**	**£845,573**

Table to the left taken from the Asset Valuation return 2016/17 indicates a total Gross Replacement cost £88,948,162 for our footway asset.

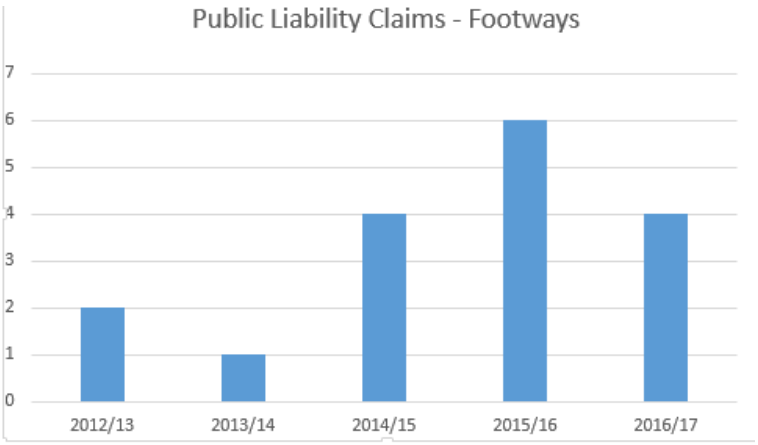
Footway Hierarchy

Category	Category Name	Description
1 (a)	Prestige Walking Zones	Very busy areas of town centre with high public space
1	Primary Walking Routes	Busy urban shopping and main pedestrian routes
2	Secondary Walking Routes	Medium usage routes through local areas feeding into primary routes
3	Link Footways/Footpaths	Linking local access footways through urban areas and busy rural footways
4	Local Access Footways/ Footpaths	Footways associated with low usage

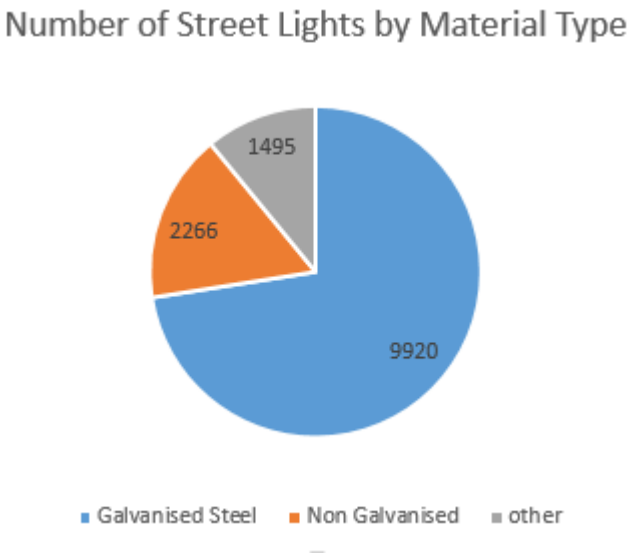
Feature	Description	Category	Frequency
Footways	Prestige Walking Zones	1 (a)	Up to 12 pa (Min 10)
	Primary Walking Routes	1	Up to 12 pa (Min 10)
	Secondary Walking Routes	2	4 pa
	Link Footway	3	2 pa
	Local Access Footways		Annually

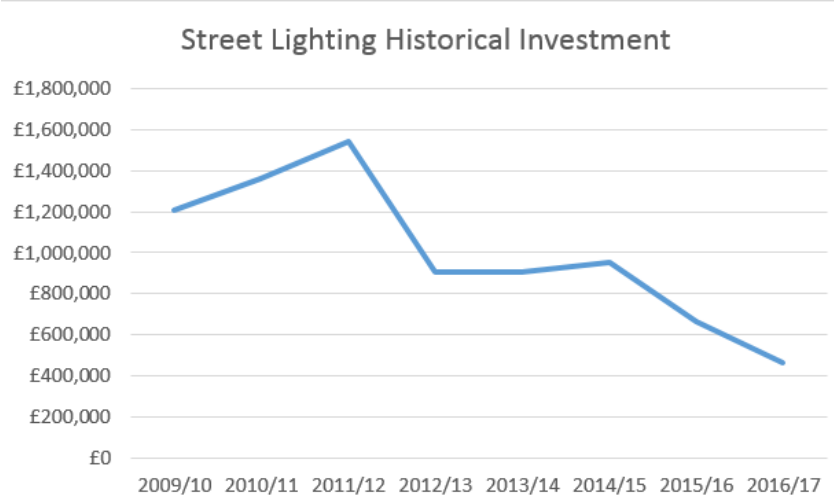
Footway Hierarchy and Frequency of Inspections

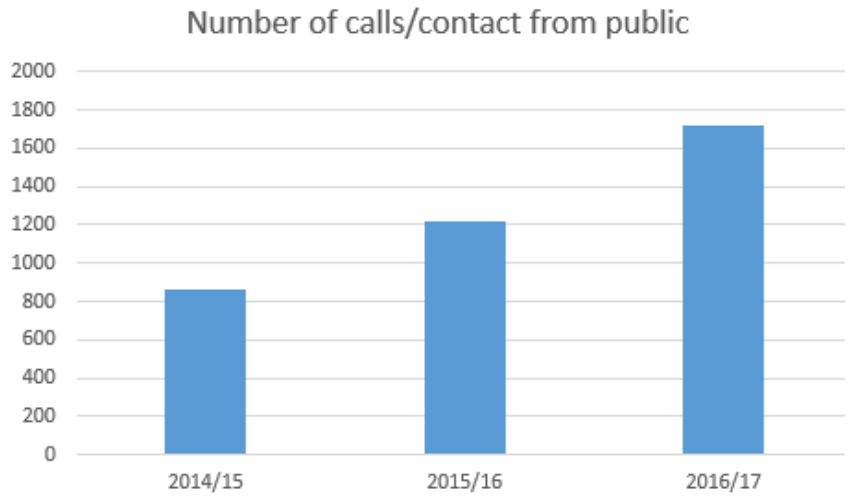
The tables here refer to our inspection regime and the frequency of inspection. The footway hierarchy determines how often the footway is inspected.



There has been a significant drop in the number of successful insurance claims during 2016/17 in comparison with statistics for the year 2015/16. The introduction of a new and enhanced footway inspection regime is expected to see further reduction in the number of successful 3rd party claims.







3.0 STREETLIGHTING STATUS

Lighting Columns	13681
Cable Length	4520 km

Condition

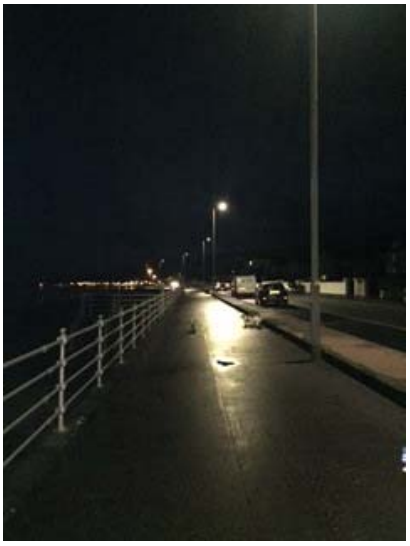
Over 35% of our lighting columns have exceeded their service life. As the LED replacement progresses the condition of each column is recorded and from this information a column replacement programme of works will be developed. At the end of the LED replacement, when a full column condition survey has been completed a replacement programme will follow based on a prioritised approach.

Historical investment in lighting is shown in the graph to the left.

Lower investment in previous years has impacted on reactive maintenance costs and has attributed to more columns exceeding their expected service life. Further work needs to be undertaken to understand the relationship between street lighting asset (column) age/condition and corresponding reactive maintenance costs.

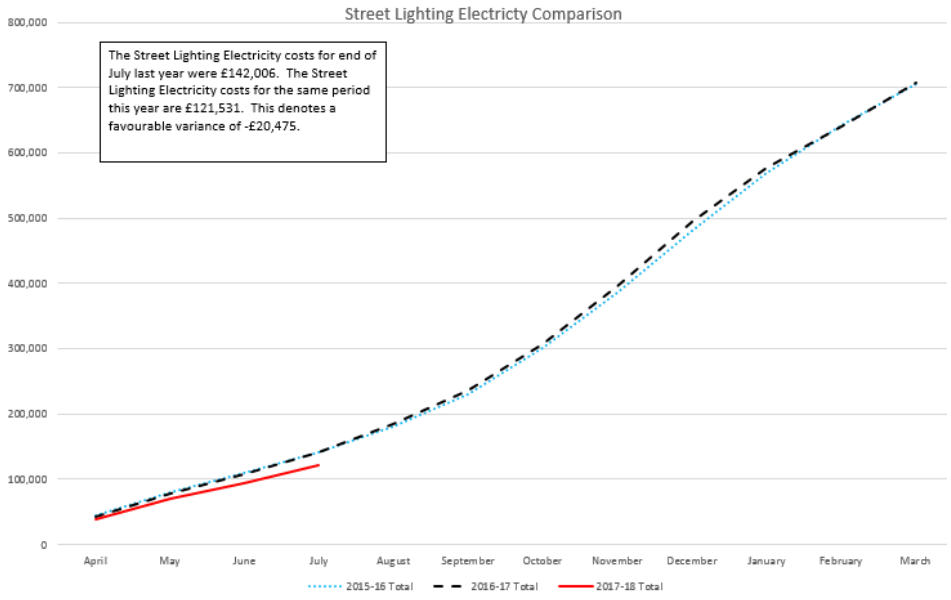
Customer Satisfaction

There has been a significant rise in customer enquiries last year. This is caused in part by the reducing investment over the last few years. Completion of the LED replacement program across the Council's network should see this number decrease in future years. LEDs have a longer life than conventional luminaires reducing dark lamps and the need for routine maintenance is expected to reduce accordingly.



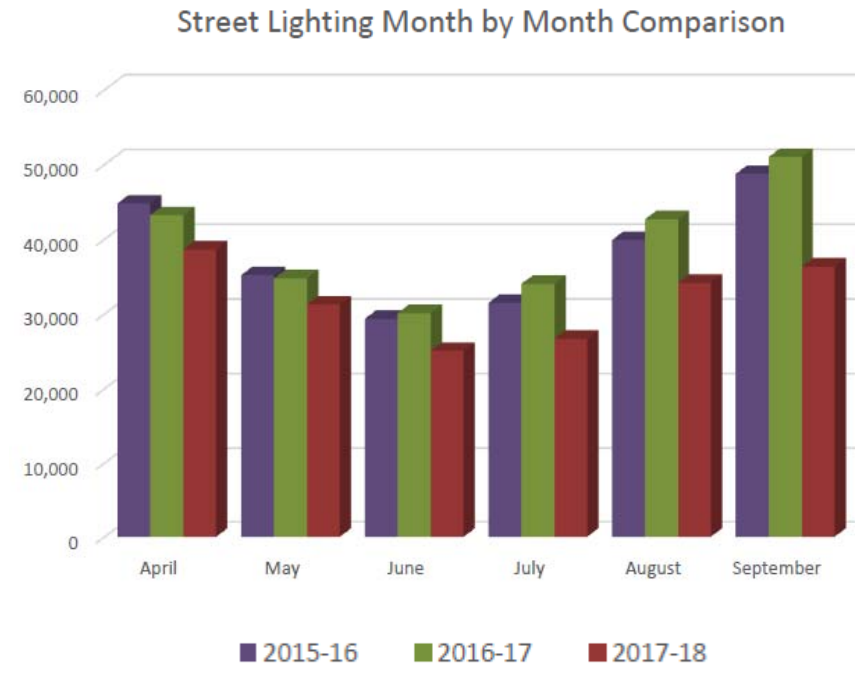
3.1 LED PROJECT

A programme to replace old SOX and SON lighting with new energy efficient (LED) luminaires has commenced and all of the council's lighting network should be converted to LED by April/May 2018.

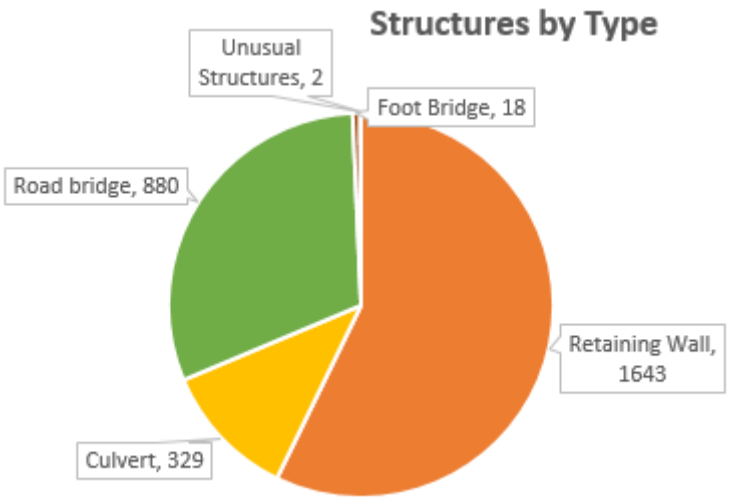


Already the difference in the electricity costs are recognised and we will continue to make savings as the project progresses. LED's are more resilient, use less energy and have a longer lifecycle.

Some of the savings generated through the LED project will fund column replacements and electrical upgrade projects for our street lighting network.



The graph to the left shows the electricity costs from 2015 to date. Since the LED project started in 2017 a clear reduction in costs can be seen and this will grow as the project progresses.



4.0 STRUCTURES STATUS

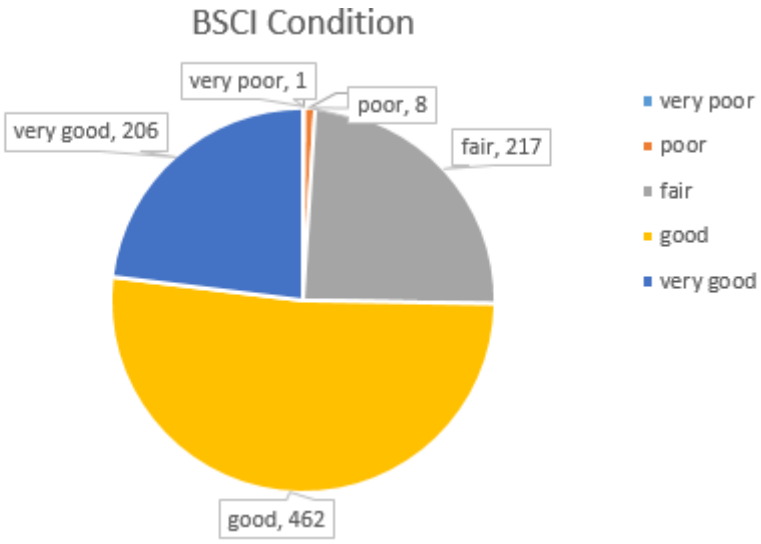
Assets

1,229 Bridges and Structures

1643 Retaining Walls

329 Culverts

2 Unusual Structures



Condition

Our bridges and structures are inspected and assessed to comply with the Management of High-way Structures Code of Practise.

27 council owned and maintained bridges as well as 4 privately owned bridges failed assessment under European Standards.

The average BCI value is 88.45

The latest Bridge Stock Condition index (overall condition) indicates the condition is falling slowly indicating stock is deteriorating.

INSPECTIONS	Number
General inspections scheduled to be undertaken	889
General inspections undertaken on time	881
Frequency of general Inspections (in Years)	2

The inspection regime applied to the structures stock for 2016/17 as illustrated here.

Weight Restrictions

The number of weight restricted bridges and retaining walls has been managed by a program of strengthening and replacement works and the established inspection regime.

Currently Knock Bridge, Mull has no weight restriction but the road itself has a 33 tonne restriction on it due to the condition of the road as opposed to problems with the strength of the bridge.

Structure Type	Gross Replacement Costs
Road Bridges	£112,975,464
Foot Bridges	£3,226,501
Unusual Structures	£2,289,856
Retaining Walls	£406,113,311
Culverts	£3,963,877

Gross Replacement Costs £528,566,009

ADDITIONAL PROJECTS

STTS Co—Funding Schemes

The Strategic Timber Transport Group were awarded a significantly increased award this year some of which will be used to develop projects throughout the year, working with Argyll and Bute Council to identify timber haulage routes in need of maintenance or repair. The STTG was introduced in 2005 to facilitate the sustainable transport of timber in the rural areas of Scotland for the benefit of local communities and the environment. In previous years STTG have co-financed a number of works in Argyll and Bute including major improvements, road widening and passing place improvements on the B836 and the B828 Glenmhor. Argyll and Bute Council are one of the beneficiaries of the STTG's co-funding support and £554k will be made available for four public road projects during 2017/18.

SUSTRANS—Hermitage Park Path and Cycle Network Project

Argyll and Bute Council are creating a path and cycle network through Helensburgh's Hermitage Park in partnership with the local community. This will significantly improve and encourage cycling and walking access and develop a convenient and attractive travel link through the park to local amenities. The project will include the complete overhaul of the main path network that directly connects the four main entry and exit points, which are located at the north, south, east and west points of the park. It will provide key links to a broader network of paths and cycle-ways in the area, including the John Muir Way and cycle path along Sinclair Street, which links to Regional Cycle Route 40 and in turn to NCR 7. Provision of a combined path and cycleway through the park will improve opportunities and encourage residents, be they commuters, school pupils or visitors to Helensburgh.

Annual Status and Options Report - Summary

The Carriageway, Footway, Lighting and Structures assets are currently in a safe and serviceable condition. Maintenance options and steady state requirements indicate that the current investment in the network is insufficient to maintain standards indefinitely.

With reducing budgets and resources we continue to invest as effectively as possible to reduce immediate deterioration and make use of every available funding opportunity.

The roads network is a key asset for Argyll and Bute and is critical to supporting economic development. Every effort should be made to safeguard its future .