



# ANNUAL STATUS AND OPTIONS REPORT

JANUARY 2024

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## Carriageways

### 1.1 Road Length

ALL ROUTES (Kms)				MAINLAND			ISLAND		
Road Class	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
A	120.436	384.854	505.29	58.765	206.345	265.11	61.671	178.509	240.18
B	138.952	474.556	613.508	34.322	350.047	384.369	104.63	124.509	229.139
C	69.067	365.198	434.265	35.934	251.103	287.037	33.133	114.095	147.228
Unclassified	358.588	374.46	733.048	237.848	243.628	481.476	120.74	130.832	251.572
<b>Totals (Km)</b>	<b>687.043</b>	<b>1599.068</b>	<b>2286.11</b>	<b>366.869</b>	<b>1051.123</b>	<b>1417.99</b>	<b>320.174</b>	<b>547.945</b>	<b>868.12</b>

### 1.2 Condition

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

The table opposite analyses the various conditions of road category for an overall network figure. This is based on a factored calculated figure produced by SCOTS which is a percentage of our roads and **not**

Overall Road Condition % by Class				Road Condition Index (Red% + Amber%)
Road Class	% RED	% AMBER	% GREEN	
A	7.46	29.9	62.64	37.4
B	15.77	40.7	43.53	56.5
C	13.86	38.59	47.55	52.5
U	16.37	34.75	48.88	51.1
Urban	3.92	27.66	68.42	31.6
Rural	16.15	38.03	45.82	54.2
<b>All</b>	<b>13.76</b>	<b>36</b>	<b>50.24</b>	<b>49.8</b>

specific lengths. It should be noted that the external Road Condition Index (RCI) report did not survey our full area with most of our Islands missed, we have therefore used last year's figures as the most up to date RCI score. We have been advised that the external provider will endeavour to get the rest of the network surveyed as soon as possible, the ASOR will be update when this data is received via a covering report.

### 1.3 Asset Valuation

<b>Carriageways Valuation (These values include the regional and inflation factors for the current year)</b>			
<b>Road Classification</b>	<b>Gross Replacement Cost</b>	<b>Depreciated Replacement Cost</b>	<b>Annualised Depreciation Cost</b>
Principal (A) Roads (Urban)	£243,477,338	£217,077,320	£2,417,584
Principal (A) Roads (Rural)	£528,709,818	£492,266,921	£3,087,858
Classified (B) Roads (Urban)	£231,543,236	£206,547,686	£2,302,252
Classified (B) Roads (Rural)	£382,314,340	£350,208,437	£2,485,939
Classified (C) Roads (Urban)	£91,122,828	£79,238,946	£1,021,479
Classified (C) Roads (Rural)	£245,600,490	£219,604,424	£1,971,191
Unclassified Roads (Urban)	£421,683,747	£353,474,058	£5,884,204
Unclassified Roads (Rural)	£200,882,470	£175,900,806	£1,772,881
<b>Total</b>	<b>£2,345,334,267</b>	<b>£2,094,318,597</b>	<b>£20,943,387</b>

#### 1.4 Investment

The capital reconstruction programme in 2022-23 delivered £7.5m of investment on a range of surfacing projects aimed at improving network condition across Argyll. The table details the surfacing quantities and value within each activity. The percentage split across activities shows the bulk of investment (77%) is attributed to Surface Dressing (SD) and thin surfacing works to maximise network coverage. The aim being to seal and extend surface life with a SD treatment and tackle as much deteriorated surface as possible with thin surfacing works so as to help reduce demand for reactive treatment works.

Argyll and Bute Council, applies annually for Strategic Timber Transport Scheme (STTS) funding from the Scottish Government. Since 2005, the Strategic Timber Transport Scheme (STTS) has financed projects that facilitate the sustainable transport of timber in rural areas of Scotland and deliver benefits for local communities and the environment through innovative projects and partnerships.

The fund typically contributes 50-70% of the costs of successful applications, with the remainder coming from Local Authorities and/or forestry sector partners. The Overall level of funding for 2024-25 is expected to be confirmed at the February Council Budget meeting.

Surface Treatment	Length (m)	Cost (£)	Percentage
Surface Dressing	82389	£2,263,946	%
Thin/Micro Surfacing (up to 25mm)	1191	£108,125	1%

Thin Overlay (>25mm to 60mm)	39010	£2,244,509	29.7%
Moderate Overlay (>60mm to 100mm)	866	£94,181	1%
Structural Overlay (>100mm)	1130	£146,570	2%
Thin Inlay (>25mm to 60mm)	9079	£1,250,779	17%
Moderate Inlay (>60mm to 100mm)	3658	£565,766	8%
Structural Inlay (>100mm)	1019	£227,842	3%
Planned Patching	NA	£24,366	0.3%
Reconstruction (250mm+)	3707	£599,584	8%
	Total	£7,525,669	

### 1.5 Maintenance Backlog

The SCOTS Headline Maintenance Backlog figure is calculated every two years using road condition data collected via the Scottish Road Maintenance Condition Survey (SRMCS). The calculation uses surveyed condition data with a surfacing treatment matrix and national average unit rates to determine the extent of surfacing maintenance required to bring whole network surface to an 'A1' condition with no defects. The value of backlog maintenance for Argyll and Bute's Road Network is £122.5M.

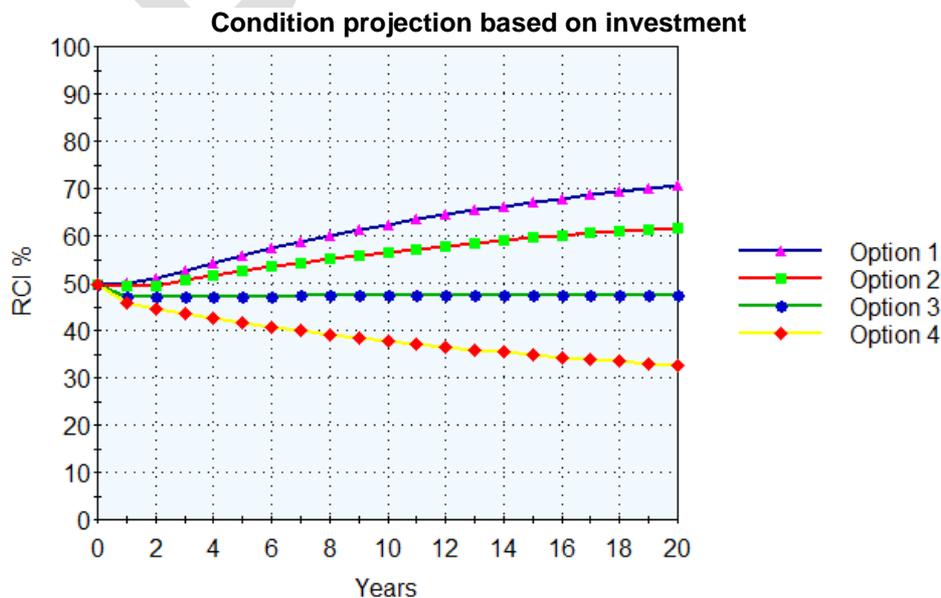
The backlog maintenance figure is calculated by WDM on behalf of SCOTS using a modelling tool that applies various surfacing treatments to the whole network based on RCI condition and national average unit rates for treatments. This produces the Headline Maintenance Backlog (£122.5M)

The table and graph below predict future RCI values based on four different investment options. The £8M represents a steady state/slight improvement to the network. This model has effectively been confirmed by the investment in the road network over recent years and the slight but steady improvement in road condition (RCI).

The investment values will likely be increased in future modelling to reflect the inflationary increases. However, for the purpose of the modelling over a 20 year period, these figures provide a good indication of likely future condition. However, it should be noted that this modelling does not take into account spikes in investment following significant weather events e.g. the October 2023 weather event.

### 1.6 Capital Resurfacing Investment Options

The SCOTS cost projection modelling tool enables an indicative illustration of predicted road surface condition in terms of RCI to be developed for a range of investment options over a 20yr term. This allows comparisons between various levels of investment. Options 1-4 are illustrated in the table and chart below for £3m, £5m, £8m and £11m respectively.



**Predicted future RCI values based on the four investment options  
(i.e. lower % = better condition)**

Year	Option 1	Option 2	Option 3	Option 4
0	49.80%	49.80%	49.80%	49.80%
1	50.10%	49.20%	47.01%	45.75%
2	50.84%	49.38%	47.07%	44.63%
3	52.61%	50.49%	47.12%	43.56%
4	54.27%	51.53%	47.16%	42.57%
5	55.83%	52.51%	47.20%	41.63%
6	57.30%	53.43%	47.23%	40.75%
7	58.67%	54.29%	47.26%	39.93%
8	59.97%	55.10%	47.29%	39.16%
9	61.19%	55.86%	47.31%	38.43%
10	62.33%	56.58%	47.33%	37.74%
11	63.41%	57.25%	47.35%	37.09%
12	64.42%	57.88%	47.36%	36.47%
13	65.37%	58.48%	47.37%	35.89%
14	66.27%	59.04%	47.38%	35.34%
15	67.11%	59.57%	47.39%	34.82%
16	67.90%	60.06%	47.39%	34.34%
17	68.64%	60.53%	47.40%	33.88%
18	69.35%	60.97%	47.40%	33.44%
19	70.01%	61.38%	47.40%	33.03%
20	70.63%	61.77%	47.40%	32.65%

Option 1 - £3m annual investment shows **substantial deterioration** of network RCI

Option 2 - £5m annual investment shows **slower deterioration** of network RCI

Option 3 - £8m annual investment shows steady or **slow improvement** of network RCI (steady state)

Option 4 £11m annual investment shows **greatest improvement** rate of network RCI

**1.7 Winter Maintenance**

Table below identifies the last 8 years of road and winter maintenance revenue budget

Budgets	Roads	Winter	Total	Winter %
2015-16	£3,957,298	£1,644,490	£5,601,788	29.36%
2016-17	£3,972,055	£1,836,286	£5,808,341	31.61%
2017-18	£3,832,056	£1,636,828	£5,468,884	29.93%

2018-19	£3,832,056	£1,621,674	£5,453,730	29.74%
2019-20	£3,411,055	£2,122,154	£5,533,209	38.35%
2020-21	£3,506,058	£2,122,618	£5,628,676	37.71%
2021-22	£ 3,422,540	£ 2,119,974	£5,542,514	38.25%
2022-23	<b>£3,542,940</b>	<b>£2,108,942</b>	<b>£5,651,882</b>	37.31%

Table below shows outturn actual revenue spend on Roads and winter maintenance for the last 8 years. The proportion of spend on winter within the total revenue outturn shows a fluctuation due to unplanned weather events

Spend	Roads	Winter	Total	Winter %
2015-16	£4,173,702	£1,832,248	£6,005,950	30.51%
2016-17	£4,243,332	£1,885,851	£6,129,183	30.77%
2017-18	£3,926,258	£2,669,341	£6,595,599	40.47%
2018-19	£3,765,604	£1,791,150	£5,556,754	32.23%
2019-20	£3,485,315	£2,165,845	£5,651,160	38.33%
2020-21	£ 3,360,100	£ 2,251,432	£ 5,611,532	40.12%
2021-22	£3,516,984	£2,355,154	£5,872,138	40.10%
2022-23	<b>£3,746,846</b>	£2,661,350	£6,408,196	41.54%

Winter Treatment Information	Ten Year Average	
Total number of planned treatment runs ( equiv Full Fleet)	66	Runs
Total aggregate annual treatment mileage travelled by all gritting vehicles on all planned routes	105,902	Miles
Total tonnage of salt used on carriageways	12,535	Tonnes
Total Winter actual spend carriageways	£2,158,905	Spend

### 1.8 Revenue Funded Preventative Maintenance Investment Options

The value of undertaking adequate preventative maintenance works cannot be overstated. It is the most vital and fundamental function required to extend infrastructure service life, strengthen network resilience, and minimise demand for capital investment.

Below are a number of initial revenue budget investment options for consideration. These will all require further investigation, research, and development to progress more detailed information on which option is best suited to support council objectives within the confines of available resources.

**OPTION 1** Increased pressure on council budgets and the need to realise savings may reduce current investment levels for preventative maintenance activities. This needs careful consideration and will impact the quantity of works afforded necessary to provide adequate protection to vital road assets. It will increase demand for more expensive reactive works which is the vicious cycle essential maintenance activities are currently experiencing. It will increase future demand for capital investment far greater than initial savings realised.

Benefits	Drawbacks	Considerations
Delivers short term budget savings	Less maintenance works afforded	Doesn't support corporate objectives
	Increased asset deterioration	Difficult to demonstrate value
	Greater demand for expensive reactive works	Future demand for capital investment far greater than initial savings realised
		May compromise current internal service delivery

**OPTION 2** Maintain existing investment levels and consider prioritising activity funding using a risk based approach. Prioritised activities should be delivered through a planned programme of works to maximise value for money through appropriate service standards. Combined with improved recording of maintenance works asset information can be enhanced to assist driving an improved asset management approach that can break the current vicious cycle of reactive maintenance demands.

Benefits	Drawbacks	Considerations
Maintains existing budget	No council budget saving	Supports some corporate goals
Retains internal service delivery	Requires change in approach	Training to focus efforts on prioritised business needs
Need more focus on planned works	Needs commitment to deliver	Some investment in better mobile technology
Need better data capture and analysis		Development of appropriate service standards
Better value works can be afforded		Additional resources needed to implement any changes

**OPTION 3** Maintain or increase investment levels through a zero based budget approach. This would essentially allocate a percentage budget for reactive maintenance with the balance of funding allocated through planned schedules and programmes of works to effectively justify and approve funding allocation against a measured works quantity to meet appropriate service standards. This would refocus effort on delivering measured work packages whilst improving capture of asset information to assist delivery of the benefits from implementing recognised asset management practices.

Benefits	Drawbacks	Considerations
Better control of costs	No Council budget savings	Supports council objectives
Delivers better value maintenance services	Potential increased budget required	Implementing SCOTS Asset Management recommended practices
	Requires significant changes	Investment in better mobile technology
More informed decision making	Needs commitment to deliver	Staff training & Additional resources to implement

**OPTION 4** Consider funding some maintenance activities using a capital funding allocation. Preventative maintenance is a critical activity some of which can be easily quantified (Ditching, Gully cleaning, Patching etc.). Delivering planned measurable works would greatly enhance ability to demonstrate value and prudent stewardship of assets.

Benefits	Drawbacks	Considerations
Vital maintenance activities delivered	Compliance with capital investment rules	Supports council objectives
Ability to demonstrate value	May impact capital investment on other assets	Implementing SCOTS Asset Management recommended practices
Improved asset management		Investment in better mobile technology
		Staff training & Additional resources to implement

## 2.0 Footways

### 2.1 Length

Footways/Footpaths Cycleways Quantities by Hierarchy		
Footway Hierarchy	Length (m)	Area (sqm)
Higher Amenity Footways	41,977	117,536
Other Footways	470,174	1,001,471
<b>Total</b>	<b>512,151</b>	<b>1,119,006</b>
All Footpaths	9,349	11,219

<b>Total</b>	<b>9,349</b>	<b>11,219</b>
Cycle Lanes	0	0

## 2.2 Condition

Asset condition surveys for our Footways are not currently undertaken due to limited resources and cost implications.

## 2.3 Asset Valuation

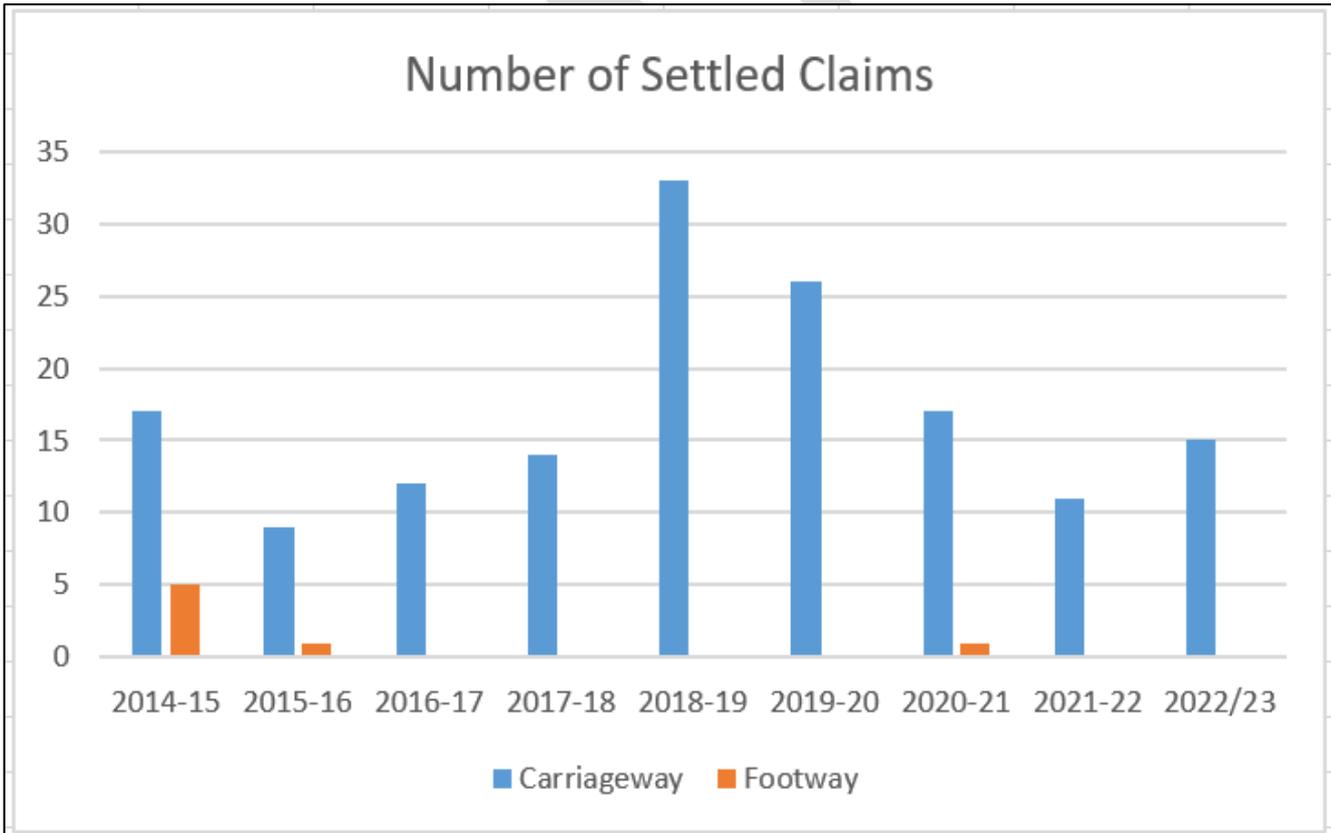
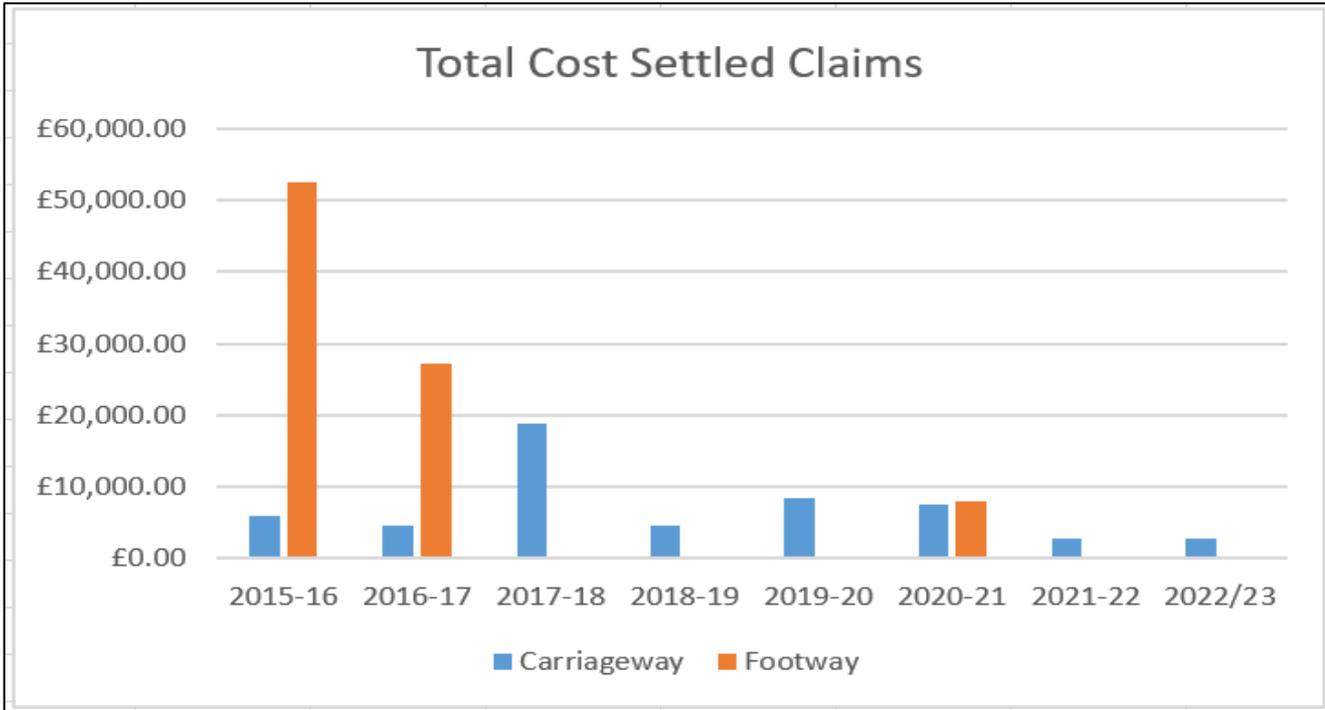
Footway Hierarchy	Gross Replacement Cost	Depreciated Replacement Cost	Annualised Depreciation Cost
Higher Amenity Footways	£11,057,091	£9,386,342	£71,308
Other Footways	£94,796,737	£73,596,142	£934,977
<b>Total</b>	<b>£105,853,828</b>	<b>£82,982,484</b>	<b>£1,006,285</b>

## 2.4 Investment

Footways investment of £1m over previous 3 years has tackled some of the worst identified sections of the network aimed at reducing reactive maintenance demands. The planned capital investment for 2021/22 was £900k and a further £500k for 2022/23 Table 2.4a details the extent of capital works undertaken 2019-20.

Treatment	Length (m)	Cost (£)
Surface Treatment	802	£20,641.74
Resurfaced	1,913	£139,205.57
Reconstruction	471	£74,045.90
<b>Totals</b>	<b>3,186</b>	<b>£233,893.21</b>

**2.5 Public Liability Claims**



## 2.6 Investment Options

Below are a number of initial revenue budget investment options for consideration. These will all require further investigation, research, and development to progress more detailed information on which option is best suited to support council objectives within the confines of available resources. Investment options should be linked to the long-term maintenance strategy for the asset.

<b>Option 1</b> Undertake maintenance only on a reactive basis to repair defects within existing revenue budget allocation		
<b>Benefits</b>	<b>Drawbacks</b>	<b>Considerations</b>
Continues service delivery for defects	Continued long term asset deterioration	Adopting risk based approach to managing the asset
	Growing demands for capital investment	Resource condition survey of asset to gain information on asset needs
	Rising number of public liability claims	Development of long term maintenance strategy for asset group
	Reactive maintenance is expensive and poor value	Resource development of a prioritised list of planned works
<b>Option 2</b> Increased investment in revenue planned maintenance activities		
<b>Benefits</b>	<b>Drawbacks</b>	<b>Considerations</b>
Investment tackles asset deterioration	Limited asset information and condition data	Implementing SCOTS asset management recommended
Planned works deliver better value	Resources required to identify, quantify undertake works	Resource development of a prioritised list of planned works
Reduced demand for reactive works	Level of works limited within available revenue budget allocation	Development of long term maintenance strategy for asset group
Less complaints		
<b>Option 3</b> Develop business case for investment through capital budget for resurfacing/reconstruction of sub standard footways and footways. Develop a 3- 5 year rolling programme of works that can be prioritised in line with available resources.		
<b>Benefits</b>	<b>Drawbacks</b>	<b>Considerations</b>
Investment tackles deterioration and gradually improves whole asset	Limited asset information and condition data	Development of long term maintenance strategy for asset group
Demonstrates prudent stewardship of assets	Resources required to identify scope of works	Investment in mobile technology to capture asset data
Supports Corporate objectives	Requires increased levels investment	Implementing SCOTS asset management recommended
<b>Option 4</b> Capital investment for improvement in kerbing in conjunction with carriageway surfacing and street lighting projects. Requires a holistic planned approach across all asset groups to collaborate works programmes to support overall council goals and objectives. A Streetscene approach to delivering improvements		
<b>Benefits</b>	<b>Drawbacks</b>	<b>Considerations</b>
All asset approach to maintenance	requires substantial capital investment	Use of SCOTS asset management tools
		Investment in mobile technology
		Development of appropriate maintenance strategy

### 3.0 Street lighting

#### 3.1 Inventory

Street Lighting Quantities		Other Street Lighting Assets	
Column Material	Quantity	Other Street Lighting Assets	Quantity
Non Galvanised Steel	2,209	Wall Bracket	1,196
Galvanised Steel	9,196	Wooden Pole	110
Concrete	29	High Mast Column	0
Aluminium (pre 2000)	1,119	Control Cabinet	751
Aluminium (post 2000)	0	Other	0
Stainless Steel	8	<b>Total</b>	<b>2,057</b>
Cast Iron	0	<b>Cable Assets (Estimated)</b>	<b>Quantity (m)</b>
<b>Total</b>	<b>12,561</b>	Cable under Carriageway (10%)	43,050
<b>Luminaires</b>	<b>Quantity</b>	Cable under Footway (50%)	215,250
All	13,896	Cable under Verge (40%)	172,200
<b>Total</b>	<b>13,896</b>	<b>Total</b>	<b>430,500</b>

Illuminated Sign Assets	
Illuminated Signs	Quantity
Signs	433
Bollards	46
<b>Total</b>	<b>479</b>

#### 3.2 Condition

The condition of street lighting columns was assessed as part of the LED Luminaire replacement programme using a four level condition rating as shown in the table below.

Street Lighting Columns		
Condition Rating		% Total Asset
1- V. Good	4708	33.95%
2 - Good	8869	63.96%
3 - Fair	174	1.25%
4 - Poor	116	0.84%
<b>Total</b>	<b>13867</b>	

### 3.3 Valuation

<b>Street Lighting Valuation</b>			
<b>Column Assets</b>	<b>Gross Replacement Cost</b>	<b>Depreciated Replacement Cost</b>	<b>Annualised Depreciation Cost</b>
Non Galvanised Steel	£3,979,085	£394,493	£159,163
Galvanised Steel	£16,599,396	£6,668,805	£553,313
Concrete	£28,748	£958	£958
Aluminium (pre 2000)	£1,147,178	£60,664	£28,679
Aluminium (post 2000)	£0	£0	£0
Stainless Steel	£7,919	£7,240	£113
Cast Iron	£0	£0	£0
<b>Cable Assets</b>			
Cable under Carriageway	£3,694,864	£2,003,337	£61,581
Cable under Footway	£16,514,690	£8,955,182	£275,245
Cable under Verge	£11,197,303	£6,071,123	£186,622
<b>Other Street Lighting Assets</b>			
Wall Bracket	£622,116	£519,553	£15,553
Wooden Pole	£108,882	£23,954	£2,178
High Mast Column	£0	£0	£0
Control Cabinet	£218,473	£100,602	£4,369
<b>Total</b>	<b>£54,118,652</b>	<b>£24,805,911</b>	<b>£1,287,775</b>
<b>Luminaires Assets</b>			
<b>Total</b>	<b>£2,862,063</b>	<b>£2,121,491</b>	<b>£143,103</b>
<b>Illuminated Signs Assets</b>			
Signs	£249,879	£122,527	£9,995
Bollards	£17,908	£8,892	£716
<b>Total</b>	<b>£267,787</b>	<b>£131,419</b>	<b>£10,711</b>
<b>All Assets Total</b>			
	<b>£57,248,502</b>	<b>£27,058,821</b>	<b>£1,441,590</b>

### 3.4 Investment

Funding	Funding source	Current Year	Anticipated Investment (£m)		
		2023-24 (£m)	2024-25	2025-26	2026-27
Block Allocation	Scottish Government	£150k	£150k	TBC	TBC
Block Allocation Carried Forward	Scottish Government	Nil			
Additional Council Allocation	Council	£740k			
Prudential Borrowing	Council	£674k (Not New Legacy – Over)			

### 3.4 Investment (Cont).

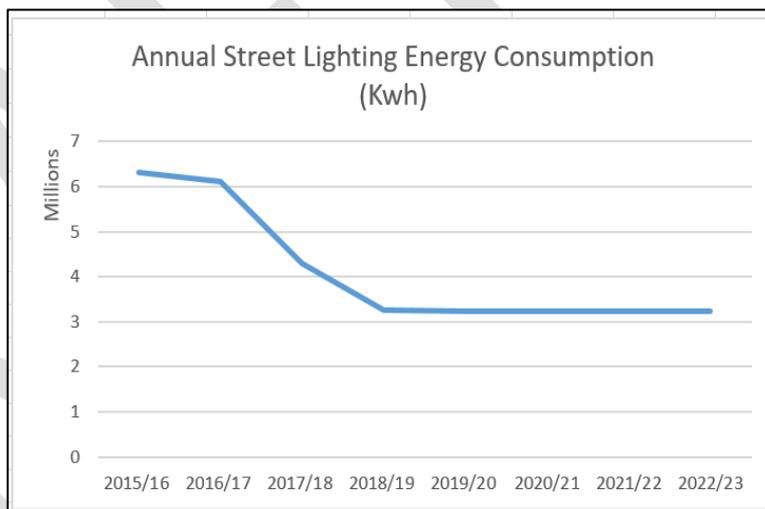
The replacement of deteriorated assets that have reached the end or beyond their expected service life is currently not part of a longer term maintenance strategy or plan. For many years the need to deliver investment savings has over ridden the need for asset renewals. This reduced funding has delayed asset renewal projects creating an even older and more fragile asset base leading to a growing backlog of outages and reactive maintenance demands on very limited resources.

The LED project highlighted the condition of assets and the growing need for action to develop a longer term maintenance strategy for investment in asset renewals. Table 3.4 provides an indicative treatment cycle based on current average expected asset renewal and clearly illustrates the present investment strategy is unsustainable.

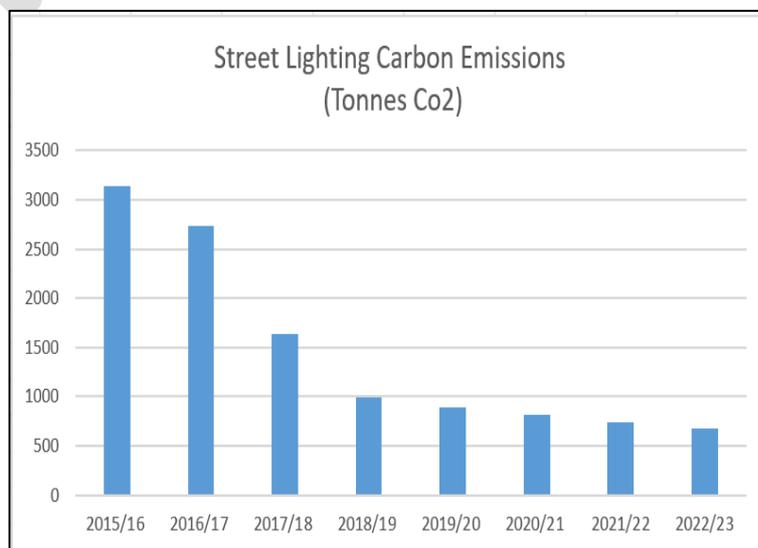
Treatment	Expected Service Life (Yrs)	Annual Quantity (Ave)	Inventory (No.)	Treatment Cycle (Years)
Column Replacement	30	25 No.	13047	522
Cable replacement	60	750 Lin m.	430,500 (Lin.m)	574
Luminaire (LED)	20	N/A	14640	All new assets

### 3.5 Energy Consumption

Year	Total	Unit
2015/16	6325655.3	kWh
2016/17	6119183.7	kWh
2017/18	4288415.2	kWh
2018/19	3267835.1	kWh
2019/20	3232557.7	kWh
2020/21	3228999	kWh
2021/22	3224175	kWh
2022/23	3224175	kWh



Year	Carbon Total	Units
2015/16	3140	tonnes CO2
2016/17	2733	tonnes CO2
2017/18	1636	tonnes CO2
2018/19	996	tonnes CO2
2019/20	889	tonnes CO2
2020/21	810	tonnes Co2
2021/22	738	Tonnes Co2
2022/23	673	Tonnes Co2



### 3.6 Investment Options

Below are a number of initial revenue budget investment options for consideration. These will all require further investigation, research, and development to progress more detailed information on which option is best suited to support council objectives within the confines of available resources. Investment options should be linked to development of a long-term maintenance strategy for the asset.

<b>Option 1</b> Undertake maintenance on a reactive basis to repair defects within existing revenue budget allocation.		
<b>Benefits</b>	<b>Drawbacks</b>	<b>Considerations</b>
Continues service delivery for defects	Continued long term asset deterioration	Adopting risk based approach to managing the asset
	Growing demands for capital investment	Resource condition survey of asset to gain information on asset inventory, condition Etc.
	Rising number of public liability claims	Development of long term maintenance strategy for the asset group
	Reactive maintenance is expensive and poor value	Resource development of a prioritised list of planned works

<b>Option 2</b> Increased investment in planned revenue maintenance activities		
<b>Benefits</b>	<b>Drawbacks</b>	<b>Considerations</b>
Investment tackles worst asset deterioration	limited asset information and condition data	Implementing SCOTS asset management recommended practices
Planned works deliver better value	resources required to identify and quantify works	Current use, Is it needed? Can it be removed?
Reduced demand for reactive works	Level of works limited within available revenue budget allocation	Resource development of a prioritised list of planned works
Less complaints		Development of long term maintenance strategy for asset group

<b>Option 3</b> Develop a business case for investment through capital budget for replacement of obsolete, damaged and deteriorated assets particularly vehicle safety barriers. Align the business case to a suitable long term maintenance strategy for the asset group.		
<b>Benefits</b>	<b>Drawbacks</b>	<b>Considerations</b>
Investment tackles deterioration and gradually improves whole asset	limited asset information and condition data	Development of long term maintenance strategy for asset group
Demonstrates prudent stewardship of assets	resources required to identify scope of works	Investment in mobile technology to capture asset data
Supports corporate objectives	Requires increased levels investment	Implementing SCOTS asset management recommended practices

<b>Option 4</b> Business case development for capital investment in conjunction with other asset groups that aligns with the Road Asset management Plan (RAMP) and council priorities.		
<b>Benefits</b>	<b>Drawbacks</b>	<b>Considerations</b>
Whole asset approach to maintenance	requires substantial capital investment	Use of SCOTS asset management tools
	Requires significant improvement in asset data	Investment in mobile technology
		Development of appropriate maintenance strategy

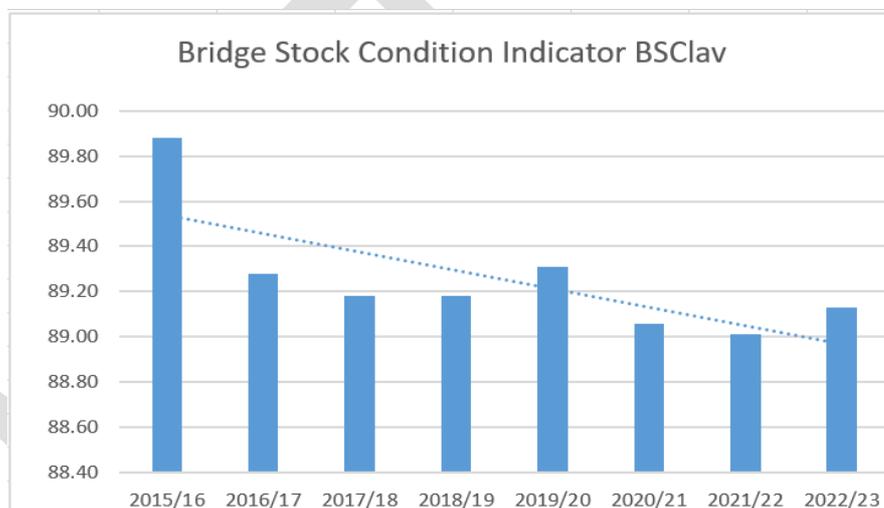
## 4.0 Structures

### 4.1 Assets

Table 4.1 : Structures Inventory	
	Quantity
Road Bridges	890
Footbridges	11
Unusual Structures	2
Retaining Walls	1888
Height, Sign and Signal Gantry	0
Culverts	294
Subways	0
<b>Total</b>	<b>3085</b>

### 4.2 Condition

Our bridges and structures are inspected and assessed to comply with the “*Well-managed highway infrastructure*” Code of Practice. Data gathered from bridge inspections is used to calculate a Bridge Stock Condition Indicator value which can enable analysis and trending of condition information. The condition results since 2012/13 are illustrated in the chart below which shows a steady decline in overall bridge stock condition from a reduction in capital investment with revenue investment being prioritised towards reactive repairs. The long term trend line in blue shows a continued deterioration of assets with condition of less critical structures expected to decline further without increased levels of investment.



There are currently 53 structures subject to special monitoring precautions and 28 bridges that have failed the European standard assessment (prior to restrictions). 15 bridges are currently subject to acceptable weight restrictions.

Bridges are subject to regular inspections with principal inspections every 6 years and general inspections every 2 years.

### 4.3 Asset Valuation

Table 5.5 Structures Valuation Summary			
Structure Type	Gross Replacement Cost	Depreciated Replacement Cost	Annualised Depreciation Cost
Road Bridges	£115,251,542	£108,769,286	£1,268,947
Footbridges	£2,934,648	£2,924,575	£2,117
Unusual Structures	£2,286,856	£1,876,450	£18,390
Retaining Walls	£166,492,505	£166,442,331	£20,470
Height, Sign and Signal Gantries	£0	£0	£0
Culverts	£3,533,754	£3,528,339	£294
Subways	£0	£0	£0
<b>TOTALS</b>	<b>£290,499,306</b>	<b>£283,540,981</b>	<b>£1,310,218</b>

#### 4.4 Investment

PLANNED INVESTMENT						
		2022-23	2023-24	2024-25	2025-26	Comments
<b>CAPITAL</b>	Bridge Strengthening/Replacement Programme	£350k	£350k	£350k		Bridge & Retaining Wall: • Strengthening • Replacement
	Previous Years BSRP Slippage	£999k				
	Local Bridge Maintenance Fund – Grant Funding Secured *	£244k	£4,972k			
	Coastal Protection		£100k	£100k		Coastal Protection Strengthening repairs
	Ardbeg Seawall / Bute Sea Wall Repairs	£67k	£683k			Repairs of asset following December 2021 storm damage
	Coastal Change Adaptation	£1k	£159k			Secured funding for Coastal Change Adaptation
<b>REVENUE</b>	Structural Maintenance	£231k	£231k	£231k	£231k	Bridges & Retaining Walls: • Maintenance & Repair, • Inspection, • Asset Management • Abnormal Load Monitoring, • Technical Approval Budget confirmed Annually
	Structural Assessment	£64k	£64k	£64k	£64k	Assessment of Bridges & Retaining Walls. Budget confirmed Annually
	Coastal Protection	£180k	£180k	£180k	£180k	Inspections, Maintenance & Repairs, Asset Management Budget confirmed Annually

- Note contract price increases due to a number of factors, which are reported elsewhere to March EDI Committee, mean that there is a significant shortfall with the available Scottish Government Local Bridge Maintenance Fund.

#### 4.5 Maintenance backlog

Headline Backlog Figure	Steady State Figure	Source
£29.2m	N/A	Argyll and Bute Council Asset Management Reporting

#### 4.6 Flood Risk Management

Argyll and Bute Council has a statutory duty under the Flood Risk Management Act (Scotland) 2009 to reduce the overall flood risk through Local Flood Risk Management Plans subject to funding availability. This includes Flood Incident Investigation, Waterbody Assessments, Provision of Flood Consultancy (General Flood Advice), Clearance and Repair Works, Mapping, Flood Risk Assessments, Flood Studies, Flood Monitoring Network, Production and Update of Local Flood Risk Management Plans. These works are undertaken in conjunction with the Scottish Environment Protection Agency (SEPA) and other *responsible authorities* as defined under the Act. The current budget allocation for flood risk management are:

PLANNED INVESTMENT						
		2022-23	2023-24	2024-25	2025-26	Comments
FLOOD RISK MANAGEMENT						
CAPITAL	Flood Protection	£12k	£838k	£305k	£155k	<ul style="list-style-type: none"> <li>Tigh Dearg</li> <li>Rothesay FPS Performance</li> </ul>
	Helensburgh Flood Mitigation	£1k	£431k			
	Campbeltown Flood Protection Scheme	£4.114m	£9.729m	£0.029m	£0.33m	Design & Construction of Flood Protection Scheme. 80% of costs at contract award funded by Scottish Government. All other costs funded by ABC.
REVENUE	Flood Management	£222k	£222k	£222k	£222k	<ul style="list-style-type: none"> <li>Flood Incident Investigation</li> <li>Waterbody Assessments</li> <li>Provision Of Flood Consultancy (General Flood Advice)</li> <li>Clearance and Repair Works</li> <li>Mapping</li> <li>Flood Risk Assessments</li> <li>Flood Studies</li> <li>Flood Monitoring Network</li> <li>Production and Update of Local Flood Risk Management Plans</li> </ul> Budget confirmed Annually
	Flooding Direct Costs	£100k	£100k	£100k	£100k	Works by ABC Operational Services Budget confirmed Annually

#### 4.7 Match Funding Opportunities

The Scottish Government currently offers 80% funding opportunity for local authorities towards development of necessary flood protection schemes. The actions defined in section 4.6 ensure the Council meets the Scottish Government's defined process to enable capture of any potential funding for Argyll.

#### 4.8 Investment Options

Below are a number of initial revenue budget investment options for consideration. These will all require further investigation, research and development to progress more detailed information on which option is best suited to support council objectives within the confines of available resources. Investment options be linked to development of a long term maintenance strategy for the asset.

<b>Option 1</b> Undertake maintenance only on a reactive basis to repair defects within existing revenue budget allocation		
<b>Benefits</b>	<b>Drawbacks</b>	<b>Considerations</b>
Continues service delivery for defects	Continued Asset deterioration	Development of a long term maintenance strategy
	Increased risk of more weight restrictions or road closures	Strengthen the business case for investment
	Impacts Economy and vital transport links	Explore funding opportunities Etc. (Flood prevention Etc)
	Reactive maintenance is expensive and poor value	

<b>Option 2</b> Increased investment in revenue planned maintenance activities		
<b>Benefits</b>	<b>Drawbacks</b>	<b>Considerations</b>
Continues service delivery for defects	Asset deterioration remains greater than investment	Development of a long term maintenance strategy
Tackles some preventative maintenance backlog	Impacts Economy and vital transport links	Strengthen the business case for investment
Contributes to lowering risk of more weight restrictions or road closures	Reactive maintenance is expensive and poor value	Explore funding opportunities Etc. (Flood prevention Etc)

<b>Option 3</b> Develop business case for investment through capital budget for strengthening and refurbishment of structures. Development and implementation of an appropriate long term maintenance strategy for the asset group. Continued improvement in asset management.		
<b>Benefits</b>	<b>Drawbacks</b>	<b>Considerations</b>
Contributes to development of more sustainable asset management regime	Requires investment	Development of a long term maintenance strategy
Planned preventative maintenance programme of works	Requires resource to develop business case	Strengthen the business case for investment
More sustainable asset condition		Explore funding opportunities Etc. (Flood prevention Etc)
Supports corporate objectives		Resources to undertake increased workload

<b>Option 4</b> Development of a successful business case for investment to tackle deterioration and improve overall asset condition as part of a developed asset management process.		
<b>Benefits</b>	<b>Drawbacks</b>	<b>Considerations</b>
Sustainable asset management regime	Requires substantial level of investment	Development of a long term maintenance strategy
Improves asset condition	Requires resource to develop successful business case	Resources to undertake/ manage increased workload and project design and development.
Reduced weight restrictions	May require additional data capture to support business case development	Explore funding opportunities Etc. (Flood prevention Etc)
Supports corporate objectives		

## 5.0 Traffic Signals

### 5.1 Inventory

Traffic Signal Types	Quantity	Other Traffic Management System Types	Quantity
Traffic Signal (Junction)		Information Systems	2

Minor Junction	0	Safety Cameras	0
Medium Junction	11	Variable Message Signs	2
Major Junction	0	Vehicle Activated Signs	18
Complex Junction	0	Real Time Passenger Information	0
<b>Traffic Signal (Pedestrian Crossing)</b>			
Single Carriageway	14		
Double Carriageway	0		
<b>Total</b>	<b>25</b>	<b>Total</b>	<b>22</b>

## 5.2 Valuation

Traffic Signal Types	Quantity	Gross Replacement Cost	Depreciated Replacement Cost	Annualised Depreciation Cost
Junctions	11	£571,923.00	£335,788.13	£23,830.13
Pedestrian Crossings	14	£323,512.00	£142,547.48	£14,153.65
<b>Total</b>	<b>25</b>	<b>£895,435.00</b>	<b>£478,335.60</b>	<b>£37,983.78</b>

## 5.3 Investment

Traffic management systems require specialist contractors to undertake regular inspection and necessary maintenance. Increasing reactive maintenance costs are being incurred as some assets are functioning beyond their expected service lives and when problems arise replacement of obsolete parts is difficult to procure.

Many traffic management assets have had essential works postponed over time due to budget restrictions. Although it is the smallest asset group, delays in asset renewal particularly electronic hardware can lead to parts becoming obsolete as advances in technology become available. A recent survey has highlighted the need for some urgent repairs to bring systems up to date. Historically junctions and pedestrian crossing have been replaced ad hoc in response to system failures or inability to obtain replacement components. Generally this equates to approx. one junction or crossing per year. The table below provides an indicative illustration of the asset renewal cycle.

<b>Planned Investment Budgets</b>			
	<b>2023-24</b>	<b>2024-25</b>	<b>2025-26</b>
Capital	£-Nil	£-Nil	£-Nil
Revenue	£45k	£45k	£45k
<b>Total Budget</b>	<b>£45k</b>	<b>£45k</b>	<b>£45k</b>

## 5.4 Investment Options

Below are a number of initial revenue budget investment options for consideration. These will all require further investigation, research and development to progress more detailed information on which option is best suited to support council objectives within the confines of available resources. Investment options should be linked to development of a long term maintenance strategy for the asset.

**Option 1** Continue to fund Traffic Signals within existing annual allocation of £45k revenue budget

Benefits	Drawbacks	Considerations
Maintains existing service	Specialised works undertaken by external contractors	Revised tender for routine inspection and maintenance
	Deteriorated asset base drives increasing reactive maintenance costs	Requires additional resource to develop appropriate business case.
	Requires occasional capital investment to replace obsolete /defective equipment.	

**Option 2** Utilise latest condition survey data to develop an appropriate business case for investment in renewal of apparatus

Benefits	Drawbacks	Considerations
Improved asset reliability	Requires investment	Resource and staff training to improve asset knowledge
Reduced maintenance costs	Requires resource to develop suitable business case for investment using capital budget	Development of a suitable maintenance strategy for asset
		Requires resource to procure tenders and administer/supervise potential contract works

**Option 3** Produce a business case based on latest survey data to upgrade all apparatus to meet compliance with current standards over a three to five year period

Benefits	Drawbacks	Considerations
Modernises asset to meet current standards	Requires investment	Resource to manage and supervise works
Improves reliability	Requires resource to develop suitable business case for investment using capital budget	resource required to procure tender documentation and administration of same
reduces reactive maintenance costs		Use SCOTS Asset management tools
Improves user experience		

**Option 4** Utilise latest condition survey data to identify asset needs. Address any priority repairs and progress a maintenance strategy as part of the RAMP to develop a long term investment plan over next three - five years to bring asset condition to meet compliance with current standards.

Benefits	Drawbacks	Considerations
Modernises asset to meet current standards	Requires investment	Resource to manage and supervise works
Improves reliability	Requires resource to develop suitable business case for investment using capital budget	Resource required to procure tender documentation and administration of same
reduces reactive maintenance costs		Use SCOTS Asset management tools
Improves user experience		Assess need for individual assets. Can they be removed? Are alternative control measures available?

## 6.0 Street Furniture

### 6.1 Assets

<b>Table 6.1 Street Furniture Quantities</b>		
<b>Street Furniture Assets</b>	<b>Quantity of Assets</b>	<b>Unit</b>
Traffic Signs (non-illuminated)	5,013	Number
Safety Fences	61,629	Length (m)
Road Blockers	0	Number
Hostile Vehicle Barriers	0	Length (m)
Pedestrian Barriers	197	Length (m)
Street Name Plates	Currently no data in system	Number
Bins	Currently no data in system	Number
Bollards	276	Number
Bus Shelters	315	Number
Grit Bins	584	Number
Cattle Grids	162	Number
Gates	Currently no data in system	Number
Trees	Currently no data in system	Number
Seating	Currently no data in system	Number
Verge Marker Posts	2,322	Number
On-Street Parking Meter	92	Number
Electric Car Charging Points	30	Number
Milestones	Currently no data in system	Number
Information Boards	Currently no data in system	Number
Bike Parking Lockers	0	Number
Bike Parking Stands	Currently no data in system	Number
Automatic Trash Screens	0	Number
Watercourse Telemetry	Currently no data in system	Number
Weather Stations	14	Number

### 6.2 Condition

Asset condition surveys are not currently undertaken due to limited resources and cost implications.

The condition of vehicle safety barriers has been reported previously and requires substantial investment to address. Initial local officer estimates indicate £2.5m investment needed which requires resource to develop an appropriate business case. It should be noted that vehicle barriers are a specialist work requiring appropriate national certification and staff training to enable progress. There is currently no staff resource with required certification so design works will need external consultants to survey and quantify full extent of works.

### 6.3 Electric Vehicle Charging

There is growing demand for the installation of electric vehicle charging points across Argyll. A number of units have already been installed since 2017 as detailed in tables below. Future installations are also shown based on current funding until 2021. Consideration is required on the ongoing management and future maintenance and inspection of these assets. This will require resource and budget allocation moving forward together with an associated maintenance strategy for an asset that is likely to see accelerated growth over future years.

Asset Inventory	
Type	No.
Rapid	11
Fast	10
Unknown	7

Planned Future Installation		
Year	Type of Unit	
	Fast	Rapid
2019-20	2	2
2020-21	1	1
2021-22	1	1
2022-23		
2023-24		

Electric Vehicle Charging points	
Year	Units
2017	4
2018	3
2019	8
2020	1
2021	
2022	
2023	

## 6.4 Valuation

Street Furniture Valuation			
Street Furniture Assets	Gross Replacement Cost	Depreciated Replacement Cost	Annualised Depreciation Cost
Traffic Signs (non-illuminated)	£158,244.37	£79,126.92	£7,912.22
Safety Fences	£4,668,248.84	£2,334,158.51	£233,412.44
Road Blockers	£0.00	£0.00	£0.00
Hostile Vehicle Barriers	£0.00	£0.00	£0.00
Pedestrian Barriers	£14,922.28	£7,338.43	£596.89
Street Name Plates	£0.00	£0.00	£0.00
Bins	£0.00	£0.00	£0.00
Bollards	£17,424.87	£8,557.13	£696.99
Bus Shelters	£3,861,156.16	£1,933,642.49	£193,057.81
Grit Bins	£73,730.33	£38,119.25	£4,915.36
Cattle Grids	£818,124.21	£401,385.88	£32,724.97
Gates	£0.00	£0.00	£0.00
Trees	£0.00	£0.00	£0.00
Seating	£0.00	£0.00	£0.00
Verge Marker Posts	£58,620.03	£30,289.54	£3,908.00
On-Street Parking Meter	£382,668.48	£191,750.18	£19,133.42
Electric Car Charging Points	£668,491.33	£367,670.23	£66,849.13
Milestones	£0.00	£0.00	£0.00
Information Boards	£0.00	£0.00	£0.00
Bike Parking Lockers	£0.00	£0.00	£0.00
Bike Parking Stands	£0.00	£0.00	£0.00
Automatic Trash Screens	£0.00	£0.00	£0.00
Watercourse Telemetry	£0.00	£0.00	£0.00
Weather Stations	£249,913.02	£128,526.70	£12,495.65
<b>Total</b>	<b>£10,971,543.91</b>	<b>£5,520,565.25</b>	<b>£575,702.89</b>

## 6.5 Investment

The street furniture asset consists of many different individual assets all of which deteriorate at different rates. Generally, assets deteriorate to the point where they stop performing their intended function and are replaced with new items in line with available funding. Table 6.4 below provides an indication of the renewal cycle for some street

furniture assets based on previous year budget allocation and estimated asset renewal rates to calculate an indicative renewal cycle based on current funding allocation.

**Table 6.4 Indicative Treatment Cycle for Asset Renewals**

<b>Item</b>	<b>Budget Allocation 2023-20</b>	<b>Current Inventory Data</b>	<b>Annual Replacement Quantity</b>	<b>Indicative Renewal cycle</b>
Cattle Grid	£24,000	162	1.6	101
Traffic Signs	£52,000	5010	173	29
Vehicle Safety Fence	£100,000	616289	653	94

### 6.6 Investment Options

Below are a number of initial revenue budget investment options for consideration. These will all require further investigation, research, and development to progress more detailed information on which option is best suited to support council objectives within the confines of available resources. Investment options should be linked to development of a long-term maintenance strategy for the asset.

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**Option 1** Undertake maintenance on a reactive basis to repair defects within existing revenue budget allocation.

Benefits	Drawbacks	Considerations
Continues service delivery for defects	Continued long term asset deterioration	Adopting risk based approach to managing the asset
	Growing demands for capital investment	Resource condition survey of asset to gain information on asset inventory, condition Etc.
	Rising number of public liability claims	Development of long term maintenance strategy for the asset group
	Reactive maintenance is expensive and poor value	Resource development of a prioritised list of planned works

**Option 2** Increased investment in planned revenue maintenance activities

Benefits	Drawbacks	Considerations
Investment tackles worst asset deterioration	limited asset information and condition data	Implementing SCOTS asset management recommended practices
Planned works deliver better value	resources required to identify and quantify works	Current use, Is it needed? Can it be removed?
Reduced demand for reactive works	Level of works limited within available revenue budget allocation	Resource development of a prioritised list of planned works
Less complaints		Development of long term maintenance strategy for asset group

**Option 3** Develop a business case for investment through capital budget for replacement of obsolete, damaged and deteriorated assets particularly vehicle safety barriers. Align the business case to a suitable long term maintenance strategy for the asset group.

Benefits	Drawbacks	Considerations
Investment tackles deterioration and gradually improves whole asset	limited asset information and condition data	Development of long term maintenance strategy for asset group
Demonstrates prudent stewardship of assets	resources required to identify scope of works	Investment in mobile technology to capture asset data
Supports corporate objectives	Requires increased levels investment	Implementing SCOTS asset management recommended practices

**Option 4** Business case development for capital investment in conjunction with other asset groups that aligns with the Road Asset management Plan (RAMP) and council priorities.

Benefits	Drawbacks	Considerations
Whole asset approach to maintenance	requires substantial capital investment	Use of SCOTS asset management tools
	Requires significant improvement in asset data	Investment in mobile technology
		Development of appropriate maintenance strategy

## 7. Road and Infrastructure Recent Projects

Photographs below showing some of the works projects undertaken by Roads and Infrastructure teams illustrating the diverse scope of works particularly during increased demands clearing and rectifying network damage following recent storm events.



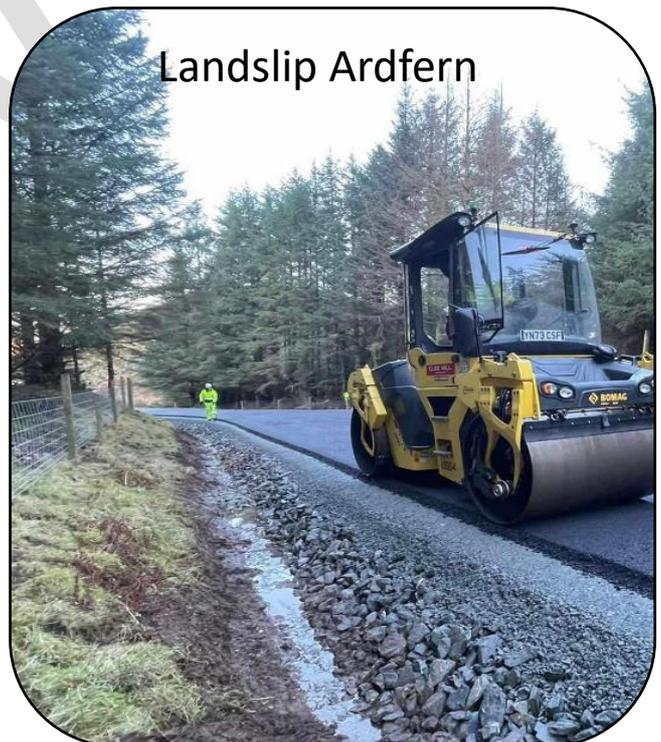
Kilmelford Bridge



Lochgilphead Town Centre



Landslip Ardfern



Landslip Ardfern

## 8.0 Climate Adaptation

We are seeing an increasing number of weather events locally, nationally and internationally no doubt linked to climate change which compromise the transport network. The most recent event was experienced in October 2023 and over recent years in Argyll and Bute we have had several weather events including:

- West of Mull bridge wash out At the foot of Ben More July 2012;
- Clachan snow event March 2013 – significant snow fall blocked the road and the weight of frozen snow on power lines resulted in power lines breaking and several thousand households being without power;
- Beast from the east February 2018;
- Sea wall wash out Bute December 2021;
- Numerous flood events in locations such as Lochavullin Oban, East and West Clyde Street Helensburgh, Rothesay, Campbeltown (flood prevention works underway) Lochgilphead Front Green etc.
- October 2023 – severe heavy rainfall resulted in transport connections into and out of Argyll and Bute were severely compromised on Saturday 7 October and for a period of time, all of the trunk roads and many of the local roads were impassable. Numerous people became stranded due to flood waters, landslips and damaged structures. Mountain rescue were deployed along with the coastguard who arranged ground units and a helicopter to support the response to assist Police Scotland who were coordinating the responses in line with protocol for major incident response.

Adaptations have been carried out including reinforcement to bridge abutments, reinforcement and rebuilding of embankments, provision of temporary roads to avoid unstable slopes with a long term proposal to divert the road near Ardfern on a permanent basis. Furthermore, adaptation is being incorporated into various other works including sea defence, flood prevention works etc.

The following images provide a snapshot of some of the damage caused during the October 2023 event.



The photo to the left shows the Ardfern landslip on the A816 – c.15000 tonnes of material blocked the road.



*The image to the right shows the extent of the Ardfern slip in green (at least 3 separate slip events took place) the purple shading is the ditch/pit which would catch any future flow, the blue line is a bund to keep the majority of any future flow in the ditch and the red is the proposed emergency road which takes traffic away from the slip affected area and provides a safe alternative route during future weather events.*



There is significant additional content and photographs available to Elected Members from the various presentations given immediately following the October 2023 weather event.

Environmental science provides the evidence that climate change is resulting in changing weather patterns. These weather patterns and also rising sea levels mean that increasingly we are having to adapt infrastructure to accommodate the demands of climate change. Such adaptation comes with significant cost and future investment to our infrastructure is likely to see an increasing percentage of funding directed towards climate adaptation.

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