ORKNEY
ISLANDS COUNCIL

Roads Asset Management Plan

2023 to 2028

November 2022.

Contents

Foreword

In Orkney we have a diverse geographical area across 20 populated islands, which presents challenges when providing a holistic roads service. Our Road Infrastructure is vital to these communities and forms an intrinsic part of our economic infrastructure supporting business and tourism alike.

This document sets out the Council's plans for the management of the road asset from 2023 to 2028. It has been produced in accordance with national guidance and recommended good practice, developed through the SCOTS (Society of Chief Officers for Transportation in Scotland) Road Asset Management Project.

This work identifies the strain which is placed on the current road network and how we can look to address this moving forward. Given current challenging budget conditions this requires a balance to be struck between addressing budget constraints and maintaining the road network, as described in the plan. Various asset management tools and techniques are used to ensure we provide a value for money service.

The delivery of this plan focuses on the task ahead to ensure that all road users, be they residents, businesses or tourists are able to use our road network safely and without undue delay or disruption throughout the year. The level of budget sufficient to maintain roads assets at a manageable condition, and ultimately improve this vital infrastructure is clearly defined, together with the impacts of lower levels of investment, noting that the aim is to ensure long-term socio-economic benefits for the local communities we serve and to minimise financial burden on future generations.

D Dawson

Chair

Development and Infrastructure Committee

Document Control and Council Approval

Version Number/Date.	Approved by Council.
v1/November2022.	Full Council 06 December 2022
Next Update Due.	April 2028.

Responsibility for the Plan

The persons responsible for the delivery of and updating of this plan are shown below.

Position.	Responsible for.
Orkney Islands Council.	Custodians of the Islands' road assets.
Development and Infrastructure Committee.	Approval of the RAMP and subsequent amendments. Set agreed levels of service and allocate budgets accordingly. Ensure appropriate resources are made available.
Corporate Director for Neighbourhood Services and Infrastructure.	Review existing policies and develop new policies related to roads asset management. Implement corporate asset management strategies and ensure that accurate and reliable asset information is presented to the Council.
Head of Neighbourhood Services.	Delivery of Service to Meet the Plans in the RAMP.
Service Manager Roads and Grounds.	Monitoring of Service to ensure that the Plans in the RAMP are met.
Roads Support Manager.	
Roads Support Officer.	

1.Introduction

Overview

This Roads Asset Management Plan (RAMP) sets out the plans for Orkney Islands Council (OIC) road assets for the period 2023 to 2028. The Council's Corporate Asset Management Plan (CAMP) outlines how OIC aims to apply asset management principles to the management of the Islands' infrastructure. This plan supports the CAMP with a detailed plan for the "road asset" which covers carriageways, footways, structures, street lighting, traffic management, street furniture and road drainage.

The benefits of road asset management planning are widely recognised. Its application is promoted by the Society of Chief Officers of Transportation for Scotland (SCOTS), Audit Scotland and many other relevant Scottish and UK agencies. This plan represents OICs response to these requirements and formalises OIC's plans for roads.

SCOTS has provided guidance to assist authorities to prepare RAMPs that are appropriate to local conditions. This plan has been produced in accordance with those guidelines. The plan is the output from a process of reviewing condition and performance, reporting the options for future investment to Council and the subsequent choice of appropriate affordable standards.

Future updates of this plan will be guided by Annual Status and Options Reports (ASORs). The delivery of the roads service and works programme will be guided by the RAMP and the Roads Management and Maintenance Plan (RMMP).

Purpose

The purpose of this RAMP is to:

- Define the service standards that customers can expect to be delivered over the plan term.
- Formalise strategies for investment in road asset groups.
- Assist the Council to meet its statutory duty to pursue best value.
- Ensure that investment in different road asset types is based upon assessed need.

The RAMP will help OIC allocate resources to where they are likely to provide the best long-term benefits.

Corporate Asset Management Plan

The Corporate Asset Management Plan sets out the structure for Council asset management plans. and their relationship within the Council Corporate Strategy, as detailed below.

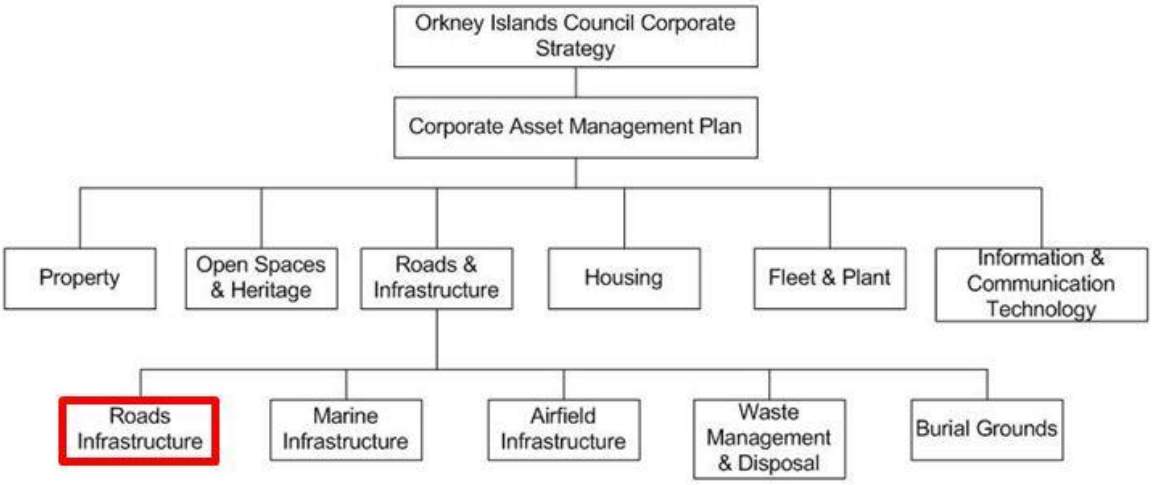

Figure 1 – Council asset management plan structure

RAMP and Other Plans

The RAMP relates to the Council's other strategic documents and plans as illustrated below:

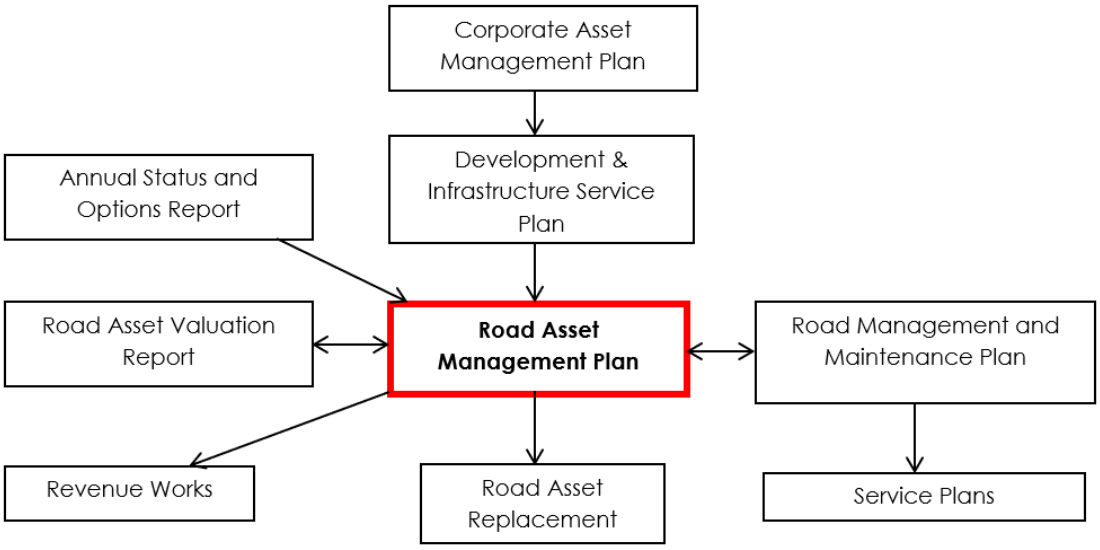

Figure 2 – How the RAMP relates to other Council Documents.

The RAMP is informed directly by the Development and Infrastructure Service Plan, the Annual Status and Options Report (ASOR) and the RMMP. Targets and strategies contained in the RAMP are used to develop works programmes in the road asset replacement programme and to prioritise revenue works once OIC's annual budget for roads has been agreed.

2. Road Assets

Road Assets

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

Asset Type.	**Quantity.**
Carriageways.	• 984.51km.
Footways, Footpaths and Cycleways	• 127km.
Structures.	• 46 Road Bridges, • 1 Foot Bridge, • 4 Causeways, • 9 Cattlegrids, • 18km Retaining walls, • 18km Seawalls, • 39km Embankments, • 4km Parapet Walls, • 1km Gabion Baskets • 1km Headwalls.
Street Lighting.	• 3,232 Lighting Columns, • 135 Wall Lights, • 525 Lit signs • 34 Lit Bollards.
Traffic Management Systems.	• 12 Zebra Crossings.
Road Drainage Infrastructure.	• 1,030km of Open ditches, • 158km of Pipes, • 68km of French drains, • 7km of Channel drainage • 5,575 gullies.
Street Furniture	• 6,602 Signs, • 1,106 Bollards/Verge Markers, • 7km Safety Railing • 5km of Railing.
Other Assets	• 30 Electric Vehicle Charging Points, • 9 Car Park ticket machines, • 2 Weather Stations.

Table 1 – Roads assets

The asset also includes road markings, car parks, verges, and street furniture such as traffic calming features.

Assets Not Covered

Some related assets that the Roads Services maintain are the responsibility of other Council service areas. The Council owned assets not covered in this RAMP are:

- Footpaths, street lighting and amenity areas managed by other Council services.
- Electric Vehicle Charging Points that are managed by other Council services.
- Bus shelters managed by Transportation.
- Non-adopted roads.
- Non-adopted bridges.
- Public rights of way and Core Paths.

Inventory Data

This plan is based upon currently available road asset data. Although the Council holds substantial data for some asset inventory types such as Carriageways, Footways and Street Lighting there are some asset data that is not currently held or is only partially complete. Where this is the case, this plan uses local estimates and sample surveys. Improvement of this data is key to effective asset management and will continue through the course of this plan.

3. Customer Expectations

Customer Satisfaction

Customer satisfaction statistics will be gathered by ongoing online surveys and reported on an annual basis within the ASOR.

Customer Contacts

Customer contacts regarding roads are recorded as part of the method of logging and responding to queries and requests for service. The statistics below show that the level of customer contact for carriageways has increased over the past 10 years which is indicative of a deteriorating network.

Footway and streetlight contacts however continue to fall which is a result of largescale replacement programmes in recent years in association with streetlight works. This demonstrates the benefit of investment in the asset and highlights the importance of maintained steady state investment to ensure that the benefits of this largescale historical investment are maximised for as long as possible.

The aim of this plan is to continue to deliver a good condition asset and work to minimise the need for members of the public to report defects.

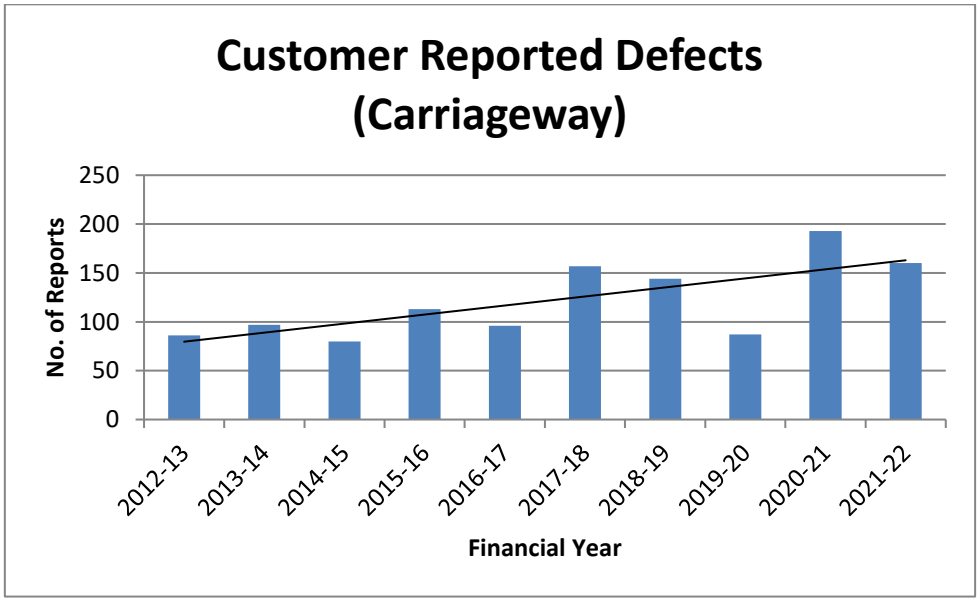

Figure 3 – Customer reported defects on Carriageways

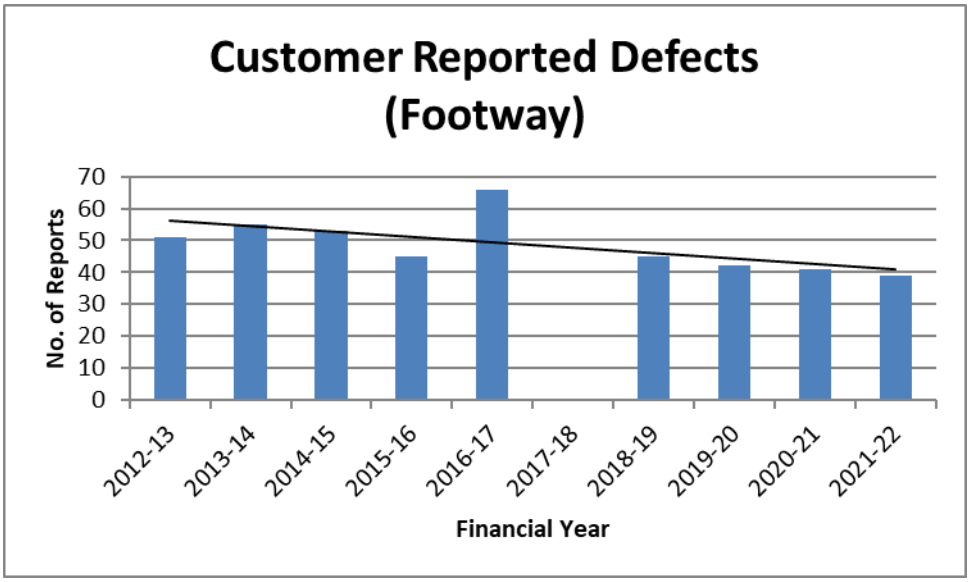

Figure 4 – Customer reported defects on Footways

No data held for 2017/18. This information was stored on an old customer reporting system which is no longer available.

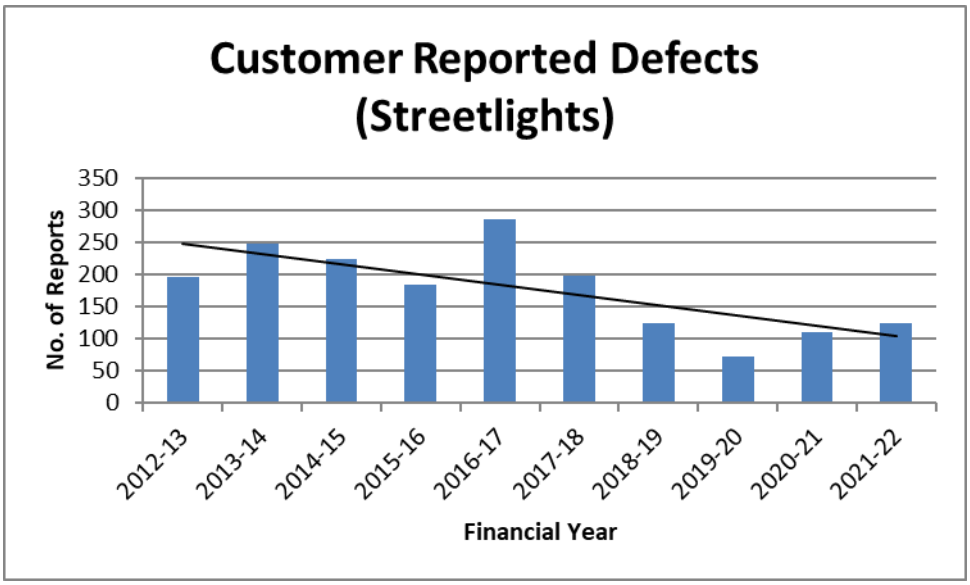

Figure 5 – Customer reported defects on Streetlights

4. Demands

This plan aims to maintain the good condition and performance of the asset. There are increasing demands on the asset that have been noted and, where possible, are being managed. These are:

Asset Growth

The road asset has increased by approximately 5.2km in the last 10 years. This is mainly due to new housing developments complete with associated infrastructure. These new assets create increased maintenance and management costs.

Traffic Growth and Composition

Over the longer term, traffic has significantly increased such that many of our roads carry traffic far in excess of what they were designed for. Some routes are subjected to particular pressure from high levels of HGV traffic and in recent years increasing quantities of tour buses as a result of our thriving tourist sector. This is particularly damaging on single-track roads, such as Brodgar Road, which are not built to facilitate such volumes of traffic. There is a growing need for additional passing places or widened sections on these roads.

The width of the road network in general is not sufficient to deal with the volume of traffic currently experienced. This is becoming increasingly obvious on A-roads such as the A966 through Rendall, Evie and onwards to Birsay, or the A964 through Orphir. The limited widths of these roads mean that traffic must overrun the carriageway edge when passing larger vehicles. The carriageway strategy includes an allowance for edge treatment of these roads, but this need will increase over and beyond the duration of this plan and ultimately consideration should be made for large-scale road widening on certain routes.

Environmental Conditions

Pressure is placed upon the asset from environmental conditions. The nature of cold weather in Orkney with temperatures persistently hovering above and below 0C causes damage to carriageways with a freeze/thaw action resulting in cracking in the road. Particularly cold winters such as experienced in 2019 also significantly impacts available resource as more crews are diverted from carriageway repairs to maintain access to strategic transport routes. Preventative treatments such as surface dressing can assist to make our roads as resilient as possible to such effects, noting that this is most effective on roads that are already in relatively good condition and does not remedy structural damage. It is not however possible to completely prevent the damage that can occur from severe winter weather.

Changes in weather patterns also create pressures in dealing with a higher number of high intensity rain events. This can and does lead to increased demand for reactive maintenance attending sites where surface water flooding occurs. It is possible that a continuance of this may lead to need for remedial measures to increase the network’s resilience to such events.

Covid-19

The unprecedented outbreak of the global Coronavirus pandemic in March 2020 presented the Council with exceptional challenges which have not been experienced on this scale for many years. UK wide lockdowns and extended periods of social distancing determined that only essential works were undertaken by Local Authorities, therefore all programmed works faced delay or cancellation. Not only did works undertaken during this period cost more but there is now a substantial backlog of works, which given current resource levels will take many years to recover from.

Utility Activity

Utility activity has a direct effect on road condition. The repairs that users see are a combination of works undertaken by the Council and works carried out by utility operators. Utility companies have statutory rights to install and maintain their apparatus in the public road and are responsible for carrying out their own reinstatements. Even when the utility has reinstated the surface to the required standard there will be long term effect on the road from the disturbance of it having been excavated, though this may not become evident for years.

Structural Backlog

All these factors, as well as natural degradation and damage repair to roads, verges, drainage, signs, lighting etc., contribute to the rate of deterioration of the road network and therefore a structural backlog that is outstripping the available budget for annual maintenance.

5. Service Standards

This plan sets out two different scenarios for service standards. One is based upon maintaining the current steady state, noting that this will require increased funding, as detailed in Section 6. The other sets out the standards that will be achieved if current funding levels are maintained, noting that these will be lower.

Service.	**Measured By.**	**Targets**		
		2022	**2028 – Steady State, increased budget**	**2028 – current budget to continue.**
	Carriageways.			
Safety.	Percentage of Cat 1 defects made safe within response times.	100%	100%.	100%
	Percentage of safety inspections completed on time.	100%	100%.	100%
Condition.	Percentage of all roads to be considered for maintenance treatment.	<25%	<25%.	<35%
	Footways.			
Safety.	Percentage of Cat 1 defects made safe within response times.	100%	100%.	100%
	Percentage of safety inspections completed on time.	100%	100%.	100%
Condition.	Percentage of footway area to be considered for maintenance treatment.	<25%	<25%	<30%
	Street Lighting.			
Safety.	Percentage of repairs within 7 days.	85%	85%.	85%
Condition.	% of columns which have exceeded their Expected Service Life.	0%	0%.	<10%
	Structures.			

Safety.	Percentage of General Inspections carried out on time.	100%	100%.	100%
Condition.	Bridge Stock Condition Indicator (BSCI ave).	NA.	TBA**.	TBA**
	** During the term of the plan a round of general inspections will be completed. The results of these will be used to calculate a BSCI from which an initial standard will be set.			

Table 2 – Service Standards

6. Financial Summary

This plan is based upon assumed levels of funding. The predictions of future condition used to create the plan use these assumed figures. If actual funding allocated to manage road assets varies significantly from these figures it may be necessary to adjust the standards contained in the plan to align with the actual budget levels.

Sources of Funding and Budget Allocation

Funding for roads to deliver this plan comes from the following primary sources:

- Revenue Funding; is split between a number of service headings based on historical precedence and identified need.

- Capital Funding; capital funding for roads is spent using the asset replacement programme which is based upon achieving levels of replacement of each asset aimed as sustained a reasonable condition into the future.

Further sources of income for works on the public road include the following:

- Grants: Individual grants may be available for specific types of improvement work usually from Government or specialist interest groups. Budget holders produce applications for grant money with any funding allocated being used for the specific projects identified.

- Developer Contributions: when appropriate the Council seeks to obtain costs from developers, or works done by them, as contributions towards improvements to the road infrastructure, required in the local vicinity, as a result of the development.

Asset Valuation

As at April 2022 the road asset was valued by the APSE/SCOTS valuation tool as shown in the table below. This tool is then used to calculate the impact on the network of varied funding levels.

Asset Type.	Gross Replacement Cost £'000.	Depreciated Replacement Cost £'000.	Annualised Depreciation Charge £'000.
Carriageway.	£897,719	£785,920	£10,244
Footway.	£21,865	£14,407	£338
Structures.	£148,427	£145,395	£147
Street Lighting.	£8,236	£4,278	£285
Street Furniture.	£120	£77	£5
Land.	£11,073		
Total.	**£1,087,441**	**£950,075**	**£11,018**

Table 3 – Asset Valuation

Over recent years Local Authorities have been encouraged by APSE/SCOTS to look at asset values based on depreciated replacement cost rather than by historical cost. The valuation figures above illustrate the massive financial value of the road asset.

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

Historical Expenditure

The historical expenditure invested in the road asset has resulted in the current condition and level of performance of the road asset. It is worth noting as it provides useful context for future funding levels.

Historical expenditure invested in works on the Road asset is shown below. The budget for 21/22 and 22/23 was increased by an annual contribution of £1.05m, with £366,600 allocated to capital works and revenue budgets increased by £683,400 in each year. Following this, budgets are anticipated to return to previous levels.

Asset.	Works.	Historical Expenditure £,000.				
		18/19.	19/20.	20/21.	21/22 baseline.	21/22 with additional roads renewal funds.
Carriageways.	Capital.	£377	£350	£550	£550	£1,300
	Revenue.	£1,110	£729	£832	£758	£1,100
Footways.	Capital.	£65	£65	£95	£95	£95

Asset.	Works.	Historical Expenditure £,000.				
		18/19.	19/20.	20/21.	21/22 baseline.	21/22 with additional roads renewal funds.
	Revenue.	£49	£56	£57	£58	£58
Structures.	Capital.	£25	£25	£25	£25	£25
	Revenue.	£66	£137	£141	£144	£144
Street Lighting.	Energy Costs.	£110	£110	£110	£110	£110
	Capital.	£811	£592	£230	£230	£230
	Revenue.	£231	£236	£216	£221	£221
Total budget:		**£2,844**	**£2,300**	**£2,256**	**£2,191**	**£3,283**

Table 4 – Historical expenditure

Planned Funding

The service standard targets shown in section 5 are based upon two funding scenarios, as shown in the table below. One assumes a budget sufficient to maintain steady state for both Carriageway and Footway assets, noting that this is higher than historical budget levels. The other assumes that funding levels return to 20/21 levels, noting that this will have an impact on service standards and on prioritisation of work.

Any changes to these funding predictions in the future will require an update of this RAMP.

Asset.	**Works.**	**Steady state**	**Current budget**
		Long Term Funding Required £,000.	
		Y1-Y20 pa.	**Y1-Y20 pa.**
Carriageway.	Capital.	£1,800	£550
	Revenue.	£1,196	£758
Footways.	Capital.	£95	£95
	Revenue.	£80	£58
Structures.	Capital.	£100	£25
	Revenue.	£144	£144
Street Lighting.	Energy Costs.	£110	£110
	Capital.	£200	£200
	Revenue.	£220	£220
Totals:		**£3,945**	**£2,160**

Table 5 – Required long-term budget to maintain steady state

7. Asset Investment Strategies

The strategies aimed at delivering the two different service standards scenarios contained in section 5 are set out below. Where possible these strategies aim to minimise the whole of life cost of maintaining the asset. Good asset management planning should ensure that both the short term and long-term needs are considered such that future generations are not left with disproportionate costs to meet.

These costs are as at September 2022.

Investment between Asset Types

In comparison to historical investment, future investment, for the main asset types, will be:

	Increased budget, Steady state asset condition	**Current budget, reduced asset condition**
Carriageways	Road condition will stay the same in the long-term. Defects expected to remain at similar levels.	Noticeable degradation of the network will quickly occur. Substantially more defects are expected.
Footways	This will allow a greater slurry sealing programme to secure the current good condition of footways. This will maintain the good condition of the network with the aim of encouraging healthier travel options in the long-term.	Condition will begin to slowly deteriorate. More defects are expected.
Structures	Coastal erosion assets are coming under increasing strain due to aging assets and recent storms. There is a backlog of improvements which are required to ensure the long-term protection of adjacent roads. Therefore, an increase in the capital budget is required to address these concerns.	Lack of preventative maintenance and reactive repairs may lead to coastal road networks being closed.

Street lighting	Level of investment to stay the same due to good condition of streetlight network. It is hoped that the strategy for streetlight replacement will change in the term of this plan. At present blanket replacement once columns are above a certain age takes place. This is now an outdated approach given current testing standards. Structural testing will therefore be explored with routine testing determining which columns will be replaced on an annual basis. Although this is expected to save money it is recommended to maintain current budget levels until this strategy is in place.

Over the duration of the plan additional data will be acquired, specifically for carriageways, footways and structures that may result in changes to how budgets are allocated between asset types.

Carriageways

Category	Description	Basis of Strategy
Routine and Reactive Repair.	Repair of defect to current investigatory standards and response times.	Strategy consists of: Repair of all defects considered to be potentially hazardous (Cat 1 defects) within 24 hours. Repair of all Cat 2 defects within 5 working days. However, due to limited resources, it is not always possible to meet this standard.
Planned Maintenance Preventative.	A programme of preventative treatment of roads in the initial stages of deterioration.	Preventative maintenance treatments are applied to roads in the first stages of deterioration. This assists to prevent minor defects appearing and minimises the need for higher cost resurfacing treatment. Preventative maintenance investment is critical to maintaining good condition roads on the islands. At the time of preparing the plan it was estimated that an investment in the region of £950k pa is required to maintain current condition and translates into a surface dressing programme of approximately 75km pa.

Planned Maintenance Corrective.	Programme of resurfacing where a preventative treatment cannot be applied due to more substantive failure.	There will always be roads that deteriorate to a level whereby surface dressing is insufficient. This element of the strategy involves the resurfacing (with bituminous overlay or inlay) of roads in a deteriorated condition. These are priorities on a worst first basis. At the time of preparing this plan it was estimated that approximately £1.8m pa of investment in reconstruction and resurfacing was required to maintain the roads in their current condition. This translates into a programme of approximately 6.75km pa. Our current Reconstruction and Resurfacing programme is £550,000.

Table 6 – Carriageway Strategy

Footways

Category	Description	Basis of Strategy
Routine and Reactive Repair.	Repair of defect to current intervention standards and response times.	The strategy for the routine and reactive repair of footways mirrors that of carriageways (see above).
Planned Maintenance Preventative.	A programme of preventative treatment of bituminous footways in the initial stages of deterioration.	Bituminous footways that have been around for many years can begin to deteriorate by fretting stones and beginning to fall apart. For footways in this condition their life can be extended using a thin surface treatment (slurry seal). A programme of slurry sealing is currently in place, but this requires a marginal increase in investment to ensure that current good condition standards are maintained. Should steady state levels not be provided it is expected that footway condition will slowly deteriorate.
Planned Maintenance Corrective.	Programme of resurfacing/renewal of footways.	Recent footway investment through the Asset Replacement Programme has been coordinated with street lighting replacement such that when street lighting has been replaced the footway has been resurfaced to provide a full upgrade of the street. This strategy will continue where possible but on a much smaller scale. The main priority is now to maintain the good condition of the network with preventative treatment.

Table 7 – Footway Strategy

Structures

Category	Description	Basis of Strategy
Routine and Reactive Repair.	Repair of defect to current intervention standards and response times.	Repairs to structures are currently identified during routine inspections or as a result of public notification. Historically most repairs have been minor involving small replacement of blocks and repointing. An annual budget has been sufficient to allow repair of most defects up until recently. There is now a backlog of repairs, particularly on coastal protection assets therefore there is a need for capital budget to be increased to ensure this critical infrastructure is maintained. Failure of coastal protection assets can lead to collapse of carriageway network.
Replacement.	Replacement of deteriorated bridges or those assessed as being weak.	There is currently no identified need to replace any structures.
Refurbishment.	Refurbishment of structures that show signs of deterioration.	Repairs to structures are currently identified during routine inspections or as a result of public notification.

Table 8 - Structures Strategy

Street lighting

Category	Description	Basis of Strategy
Routine and Reactive Repair.	Repair of defect to current investigatory standards and response times.	Repairs to Street lights are currently identified through our public reporting system and routine inspections.
Planned Maintenance Corrective.	Programme of structural renewal. (Asset Replacement Programme)	The strategy is predicted to require approximately 70no. columns replaced pa in the short term however this is to maintain blanket replacement of all columns over 30 years old. In the term of this plan, it is hoped that structural testing will be introduced so that only those columns in need of replacement are replaced.
Invest to save.		95% of lanterns have been replaced by LED alternatives which has seen substantial

		savings in revenue costs due to both electricity and repair need.

Table 9 – Streetlights Strategy

Traffic Management Systems

There are 12 pedestrian crossings in Orkney, all of which are in good condition and will not need replacement or refurbishment within the duration of this plan. Beyond the end of this plan there will be a need to programme replacement of the older installations as the equipment will reach its end of expected life and the controllers may become obsolete and unable to be repaired.

Street Furniture

A range of other roads assets such a road signs, road marking, safety fences etc. are managed via the road asset replacement programme. The programme makes allowance for the ongoing replacement of a proportion of these assets as they reach the end of their life or have been damaged such that they require replacement.

Drainage

The key priority is functionality of road gullies, drainage ditches, offlets and culverts. The identification and maintenance of key “carrier” pipes in urban centres and rural networks will also be undertaken. Where settlement and ponding arise the resurfacing required will be coordinated with wider geographic surfacing priorities. The data held on urban drainage systems is currently better than that of rural drainage.

Future Refinement

Any successors to this plan will reflect changing budgets and asset conditions.

It is not envisaged that this plan will be amended during its term 2023 to 2028 unless funding levels provided vary drastically from those on which the plan is based.

8.Risks to the Plan

The Council operates a corporate approach to risk management detailed in the corporate risk policy. In accordance with this strategy the risks of this plan not being achieved have been assessed and are recorded below

Plan Assumption	Risk	Action If Risk Occurs
Resources are available to deliver the improvement actions.	Pressures on resources mean that staff are not allocated to service improvement tasks, predicted benefits may not be fully achieved.	Target dates will be revised and reported.
The plan is based upon winters with an average number of frost days.	Adverse weather will create higher levels of defects and deterioration than have been considered.	Budgets and predictions will be revised, and this plan updated if abnormally harsh winters occur.
Available budgets have been assumed as shown in section 6.	Pressures on budgets mean that the Council may reduce the funding available for Roads.	Target service standards will be revised to affordable levels.
Construction inflation will remain at similar level to the last 5 years.	Construction inflation will increase the cost of works (particularly oil costs as they affect the cost of road surfacing materials).	Target service standards will be revised to affordable levels.
Levels of defect and deterioration are based on current data which is limited for some assets (e.g., drainage).	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.
Covid-19 protection measures will not return to levels experienced in 2020-2022.	Protection measures such as Lockdowns or Social Distancing can either limit efficiency of the service or greatly increase costs to achieve a similar level of service.	Target service standards will be revised to affordable levels.

Table 10 – Risks to achievement of the RAMP

The risks have been evaluated in accordance with Council policy. The risks are reviewed regularly throughout the year.