

Southend-on-Sea Borough Council

Report of Chief Executive Director;
Neighbourhoods and Environment

To
Cabinet

On
28 February 2020

Agenda
Item No.

Report prepared by: Sharon Harrington, Group Manager;
Traffic Management & Highways Network

Footway Re-surfacing Policy Change (inc. 2020/21 programme)

Place Scrutiny Committee(s)
Executive Councillor: Councillor Woodley
Part 1 (Public Agenda Item)

1. Purpose of Report

- 1.1 This report seeks approval to amend the policy regarding the materials used for resurfacing of our footpaths in the Borough.

2. Recommendations

The Cabinet are recommended to agree:

- (i) Note the content of the report
- (ii) Agree to the officer recommendations for the change of material
- (iii) Agree to 2020/21 programme

3. Introduction

- 3.1 The majority of carriageways and footways in the Borough were built within the last 100 years. Many of these were either constructed at the same time as part of large estate developments or are evolved roads (i.e. of minimal construction). The network is now aging/deteriorating at comparable rates and the reactive works are putting pressure on the maintenance budgets.
- 3.2 Due to the current issues with reactive maintenance budget spends, particularly around the flagged paving, Southend are proposing to switch to a strategy of replacing Artificial Stone Paving (ASP) and red asphalt surfacing in favour of black asphalt as they reach end of life.

4. Background

4.1 Currently the Councils' footways consist of four principal materials;

- Imperial size Artificial Stone Paving (ASP)
- Metric size Artificial Stone Paving (ASP)
- Red asphalt surfacing
- Black asphalt surfacing

Historically, the Council has adopted a principle of 'like for like' replacement. However in recent years a number of factors have affected the viability of adopting a like for like approach. These include:

- Tree root activity in footways with ASP, which causes damage.
- ASP, not being flexible, heaves under root activity causing trips and hazards, which frequently exceed the Council's accepted safety limits, and make them Cat 1 defects and therefore require immediate repair.
- It is more challenging replace like for like in these circumstances and the usual practice is to 'make safe' with black asphalt patching. This gives a patchwork effect.
- This can look rather unsightly if done as individual slab replacement. A more appropriate solution would be to carry out a more extensive 'full width patch. However, the ad hoc and minor repairs budget is currently insufficient to meet the Council's obligations to complete all the identified safety works.
- Red asphalt always fades therefore the colour will never be matched with a patch. Red asphalt is also not widely used and therefore there is always a need to spend more than required due to the minimum order value.

4.2 The Council has a mixture of footways paved with historic Imperial ASP and new Metric ASP. The sizes of Imperial and metric are: 610 x 610mm & 600 x 600mm respectively. Metric slabs are therefore 10mm shorter than Imperial slabs, which means that where Imperial is replaced with Metric there is a 10mm gap, which requires a cement fillet, which looks unsightly and is liable to fail.

4.3 The Council's Highways Maintenance Term Contractor has limited quantity in store, and when possible, salvages old slabs from footway resurfacing schemes to take to store. This second-hand Imperial stock held in store is then used for individual slab replacement. However, this store is nearly exhausted, and sourcing new Imperial slabs is proving to be uneconomical.

4.4 Metric slabs are in common use; however the manufacturer will only manufacture once a sufficient quantity has been ordered to make a production run viable. Therefore, larger quantities have to be ordered and stored by the council – at an additional cost.

- 4.5 Footways paved in red asphalt, tend to fade quickly and depending to the batching plant used, can vary from almost pink to deep crimson. SBC source from one particular plant and specify one particular dye. However, SBC are unable to require utility companies to source from the same plant.
- 4.6 The Council has undertaken preliminary life cycle analysis (detail of which is shown in Appendix 2) to compare the outputs of the current strategy and the proposed new strategy 'flags to asphalt' strategy.
- 4.7 The initial outputs of the proposed new strategy show a gradual decline in reactive costs which then enable additional funding to be moved towards preventive maintenance, which is good asset management practice. The current strategy clearly shows that the current level of poor flagged footways and their associated repairs overwhelm the current reactive maintenance budget.
- 4.8 Therefore, the recommendation from this analysis is to adopt the new strategy. *(Please note these models were based on historical information)*

5. Going forward

- 5.1 The 2020/21 programme has been developed for highway and footways resurfacing based on a £3m budget per annum being made available.
- 5.2 The 2020/21 programme has been outlined for resurfacing of 35 roads and 8 footpaths however it must be noted that this has been costed using black asphalt / bituminous material and should there not be agreement for this material there will need to be a reduction in the amount of works that can be undertaken. **(Appendix 1)**

6. Contribution to the Southend 2050 Road Map.

6.1 Opportunity & Prosperity:

- Residents feeling valued having safe roads and pavements

6.2 Safe & Well:

- Everyone feels safe at all times of the day.
- Black Asphalt will reduce slips and trips making journeys for pedestrians safer and taking off the pressure from our health service.
- Older people are more willing to come outside their front doors for a walk.

6.3 Pride & Joy:

- People are proud of where they live.
- A place that residents and visitors can enjoy in all seasons.

6.4 Connected & Smart:

- It's easy for me to get around when I want.

7. Options Appraisal

7.1 Do nothing – maintain current strategy

This is not an option; the current policy states “like for like”; which is not possible as the current flagstones are not available to purchase and at detailed above is proving economically unsustainable. Members and Residents alike that we have spoken to are more frustrated with expecting something they are not getting.

7.2 Replace Flags in black asphalt material

This is the preferred option; the life-cycle of black asphalt is the best cost effective measure and will allow the budgets to stretched further.

In addition, it will reduce the number of Cat 1 defects recorded and also align with the proposal of increased tree planting within the Borough.

Highways-Investment-Programme

April 2020 to March 2021

The highway network, and maintenance of the surfaces is crucial to the economic, residential and commercial wellbeing of Southend-on-Sea. We work to protect and maintain this valuable asset through our Highways Investment programme.

Our detailed programme of highway works will be delivered by our specialist teams to maintain and improve our roads, footpaths to ensure the safety of Highway users throughout the borough.

The following locations are to be treated from April 2020 to March 2021. Please note that works are subject to conditions and may affect start date and completion:

Carriageway Resurfacing works	
St Laurence	
Applerow	Whitehouse Road to Orchard Grove
Beechmont Gardens	All
Fairlawn Gardens	All
Eastwood Park	
Eastwood Rise	Rayleigh Rd to 59 Eastwood Rise
Green Lane	Between Dandies Dr & Riverdale
Leigh / Chalkwell	
Hillside Crescent	Woodfield Rd to Hillside Crescent – (on boundary of both wards)
Chalkwell	
Cranley Road	Finchley Road To Cranley Avenue
Cotswold Road	All
Rockleigh Avenue	All
Cobham Road	All
Genesta Road	Valkyrie Rd to No. 38 Alisa Road
Milton	
Cossington Road	Canewdon Road to St Helens Road
St Luke's	
Norwich Avenue	Pantile Ave to Norwich Close

Leigh	
Rectory Grove	No. 94 to Hadleigh Road
Farleigh Drive	All
Victor Drive	All
Cranleigh Drive	Elm Road to House No. 65/67
Grand Parade	Stretch of road at roundabout j/w Woodfield Road
Lymington Avenue	London Road to Glendale Gardens
Ronaldhill Grove	All
Victoria	
Salisbury Avenue	From Cliff Ave to Rochford Ave
Boston Avenue	From Harcourt Ave to speed table o/s school
Westborough	
Fairfax Drive	Southbourne Grove to Westbourne Grove
West Leigh	
Belton Way East	1st section: From Marine Parade lights down to lc 6. 2nd section: From lc 12 up to min rabout to Belton Way East
Herschell Road	London Road to Western Road
Medway Crescent	All
Belfairs	
Linksway	All
St Clements Drive	All
Prittlewell	
Mayfield Avenue	Hobleythick Lane to No. 81
Southbourne Grove	Prittlewell Chase to Bridgwater
Thorpe	
Parkanaur Avenue	Thorpe Hall Gdns to Johnston Road
Southchurch	
Shoebury Road	From 89-91
West Shoebury	
Bridge Close	All
Elm Road	Bridge Close to No.74 Elm Rd
Elm Close	All

Footway works	
Chalkwell	
Crowstone Close	Entire
Lansdowne Avenue	From junction with London Road to junction to Leigh Road
Blenheim Park	
Eastwood Lane South	Entire
Southborough Drive	Entire
Prittlewell	
Highfield Close	Entire Length
Kursaal	
Wimbourne Road	Junction of Bournemouth Road to Sutton Road
Wimbourne Road	Junction of Christchurch Road to junction of Sutton Road
St Laurence	
Applerow	Junction of Orchard grove to Whitehouse Road

Appendix 2 – Life Cycle Models

This appendix outlines the assumptions and inputs that were made to achieve the current results. These are open to review and change and it is a very simple process to update any elements of the model and recalculate.

We have developed 2 models to compare the outputs – ‘the current strategy’ and the ‘flag to bits’ (proposed new strategy) versions. They were developed with our condition survey supplier Gaist, and used their current system.

The initial inputs (which are open for revision) for both versions were as follows:

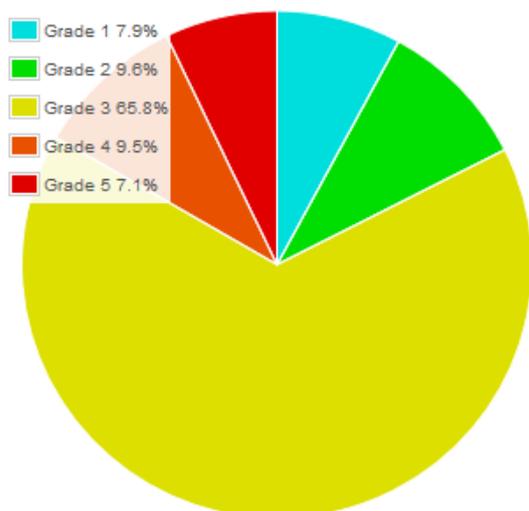
Start Year – 2019 and we have assumed an analysis period of 31 years to fall in line with the 2050 vision.

Condition bands – we have used 5 (Grade 1 to 5, with 5 being the worst), which are based on the Gaist survey results from 2018.

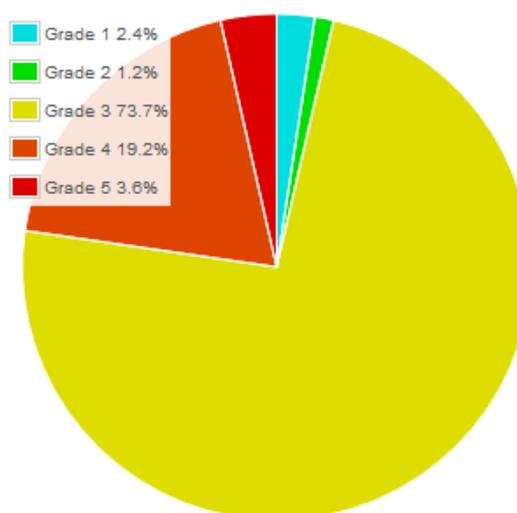
Asset Groups – we have used 4 (Bituminous, Flags, Concrete and Conservation Area Flags). There is a further group of ‘Other’ (which includes areas of cobbles, unbound aggregate etc), however this group amounted to less than 1% of the network so was discounted at this time).

Areas of Asset Groups – Again the 2018 Gaist survey data was used to calculate these areas and percentage spread across the condition bands (Bits and Flag condition breakdowns are shown below).

Bituminous



Flag



Transition Matrices – we have used the same format as other Gaist models (shown below).

From:	To: Grade 1	Grade 2	Grade 3	Grade 4	Grade 5
Grade 1	0.98	0.02	0	0	0
Grade 2	0	0.97	0.03	0	0
Grade 3	0	0	0.96	0.03	0.01
Grade 4	0	0	0	0.95	0.05
Grade 5	0	0	0	0	1

Treatment Types – we have suggested 9 based on current/future practice, please refer to the models for details.

Effect of treatments – These have been assumed based on the treatment type and that the better the treatment, the higher effect it has on the change in condition banding.

Treatment Costs – we have taken elements of the Lot 5 pricing schedule and developed an overall cost for replacing/repairing the various surface types. It is accepted that we may not have included all elements required to replace a footway but as the same pricing have been used in both models they are comparable.

For Treatment types, effect and costs an example of the breakdown is shown below (please refer to model for full details).

Name	From	To	Cost per m ²
G3 - Flag Lift & Relay	Grade 3	Grade 2	58.76
G4 - Flag Lift & Relay	Grade 4	Grade 2	58.76
G5 - Flag Lift & Relay	Grade 5	Grade 3	58.76
G3 - Flag Replace New	Grade 3	Grade 1	51.56
G4 - Flag Replace New	Grade 4	Grade 1	51.56
G5 - Flag Replace New	Grade 5	Grade 1	51.56
G3 - Flag Replace to Bil	Grade 3	Grade 1	41.98
G4 - Flag Replace to Bil	Grade 4	Grade 1	41.98
G5 - Flag Replace to Bil	Grade 5	Grade 1	41.98
G5 - Flag Small Repair	Grade 5	Grade 3	43

Treatment Strategies – We have again made assumptions on the percentages treated as there was no clear information made available at the time of constructing the models. On the current strategy it has been assumed that due to the available budget that only Grade 5 areas would be

treated (worst first scenario and representative of the reactive budget spend). The capital budget is £400k (detailed in next section) and any remaining budget is directed towards reactive maintenance.

Treatment Periods • Year From: 1 To: 31 Budget: 400000

+ Import

1.	↓ Up to	5	% of	G5 - Flag Lift & Re	on Flag	✕
2.	↓ Up to	20	% of	G5 - Flag Small Re	on Flag	✕
3.	↓ Up to	5	% of	G5 - Bits Resurfac	on Bituminous	✕
4.	↓ Up to	17.5	% of	G5 - Bits Small Re	on Bituminous	✕
5.	↓ Up to	5	% of	G5 - Conc Resurf	on Concrete	✕
6.	↓ Up to	5	% of	G5 - Flag Con Lift	on Flag Conservation Area	✕

The new proposed strategy assumes more work undertaken in the G4 Band in line with good asset management practice. It would be hoped this would normally extend to Band 3 but unfortunately the budgets used don't allow for this (this can be adjusted if budget spend incorrect or more funds are made available). Therefore the capital budget is now £600k as more funds are diverted away from reactive maintenance and towards resurfacing, which includes replacing Flags with Bituminous surfacing.

Treatment Periods • Year From: 1 To: 31 Budget: 600000

+ Import

1.	↓ Up to	5	% of	G5 - Bits Resurfac	on Bituminous	✕
2.	↓ Up to	10	% of	G5 - Flag Replace	on Flag	✕
3.	↓ Up to	10	% of	G5 - Bits Relay Su	on Bituminous	✕
4.	↓ Up to	5	% of	G4 - Bits Relay Su	on Bituminous	✕
5.	↓ Up to	5	% of	G4 - Bits Resurfac	on Bituminous	✕
6.	↓ Up to	5	% of	G4 - Bits Relay Su	on Bituminous	✕
7.	↓ Up to	5	% of	G5 - Conc Resurf	on Concrete	✕
8.	↓ Up to	5	% of	G5 - Flag Con Lift	on Flag Conservation Area	✕

Budgets – The budgets have been touched on in the previous section but only limited information/overview was available at the time of the model development so some further assumptions were made (these are obviously open to revision). The reactive budget detailed from Symology extracted data for 2018/19 (with non-footway elements stripped out) was deemed to be approximately £291k. The remaining budget was built up from £200k detailed as improvements around tree areas. In addition it was detailed that there was an annual £2m budget for carriageway and footway works and we have assumed 10% (£200k) would go directly to footway works. This gives a total budget of £691k.

In the current strategy it is assumed that £291k would be detailed as reactive maintenance (and a rate of 0.17p per m2 has been applied to account for this). In the new proposed model it

assumes that most of the reactive budget would move towards capital replacement costs instead and therefore only a rate of 0.05p has been applied for the reactive budget (£91,000).

Provisional Results

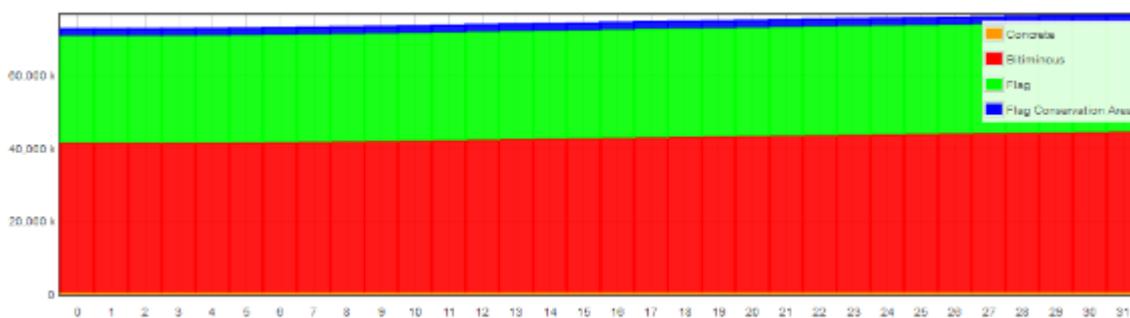
To full understand the initial results, both models should be directly referred to for the full details of the life cycle plan. However, for the purposes of this report some initial comparisons have been made and are shown below.

Overview – Backlog – The current strategy is based on undertaking large elements of reactive repair work, minor repairs, lifting and relaying the Flags at the expense of longer term footway replacement. It is clear (see below) that the current strategy shows an ever increasing backlog.

However the new proposed strategy, which has a greater capital spend, shows a slight decrease in the level of Backlog over the period of the model. Unfortunately this is probably limited by the current available budget used.

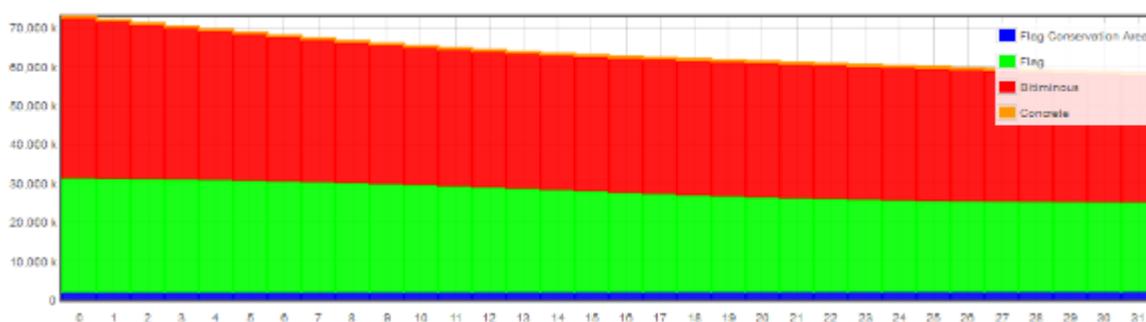
Current Strategy

Backlog



Proposed Strategy

Backlog

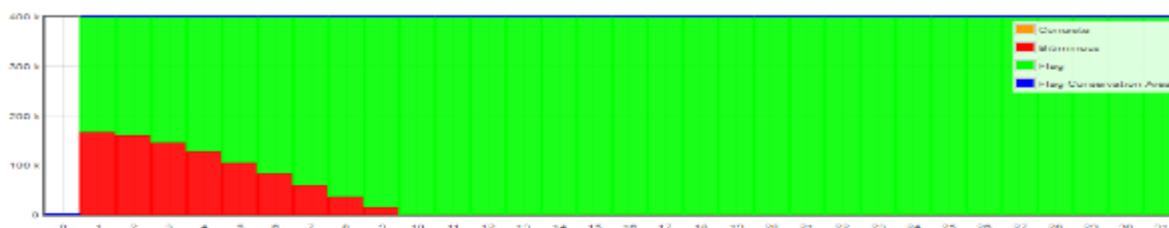


Capital/Reactive Costs – Again the difference in the two strategies are clear, in that on the current strategy the reactive cost requirements will continue to climb. Whereas, the proposed shows a gradual decline in reactive costs as more funds are put towards active resurfacing. In terms of the capital costs, it's clear that the Flagged footways overwhelm the budget

restrictions on the current strategy due to the level of poor flagged footways that require attention.

Current Strategy

Capital Costs

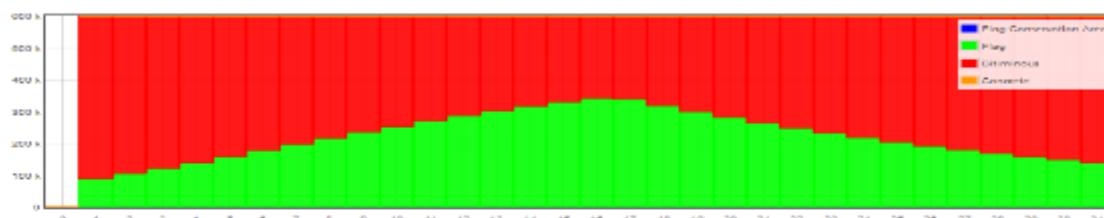


Reactive Costs

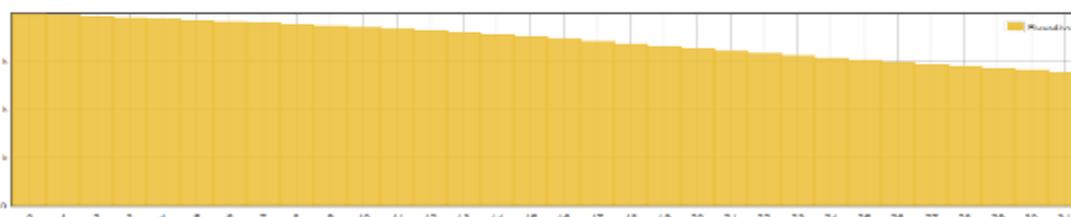


Proposed Strategy

Capital Costs



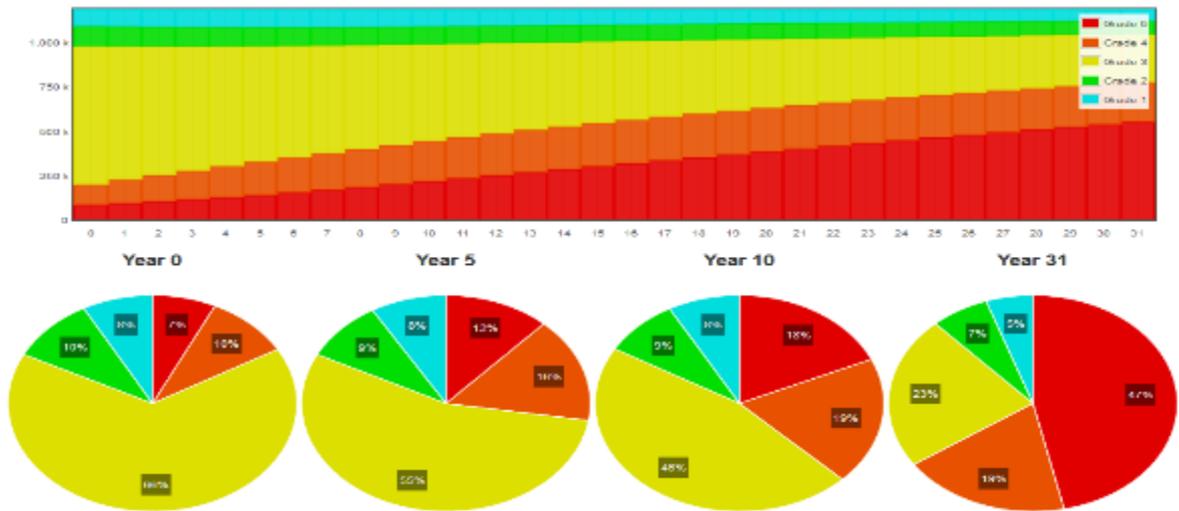
Reactive Costs



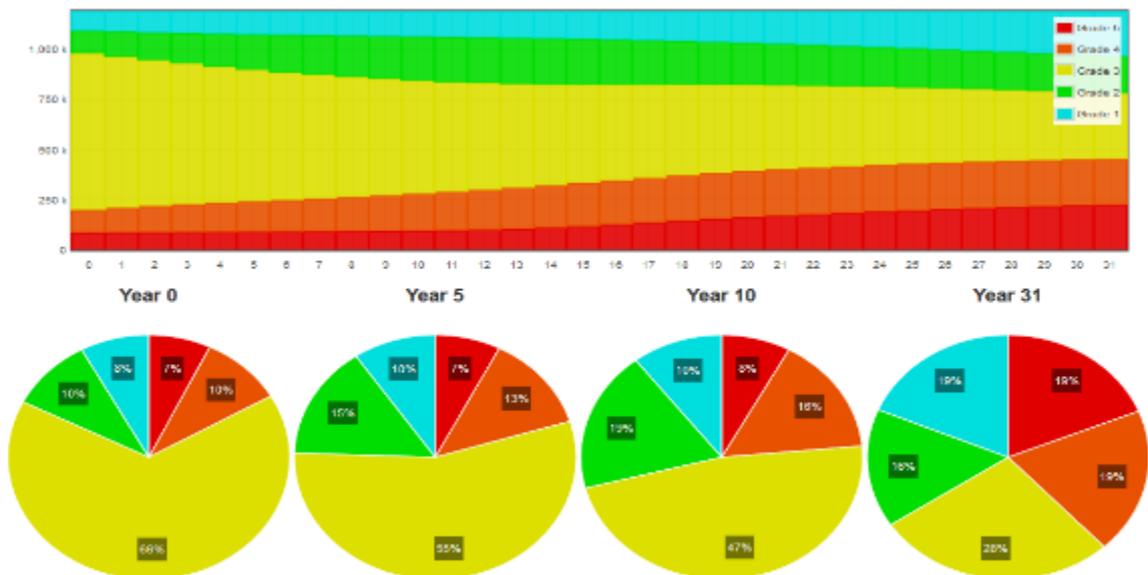
Condition – Both strategies show a decline in the condition of the Bituminous footways, however there are obvious differences in the nature of that decline. On the current strategy nearly 50% of Bituminous footways will be in very poor condition by 2050.

While under the new proposed strategy the poor footways will still show a decline but at a much reduced rate. This outcome is obviously restricted by budget and the general assumptions made in this model.

Bituminous



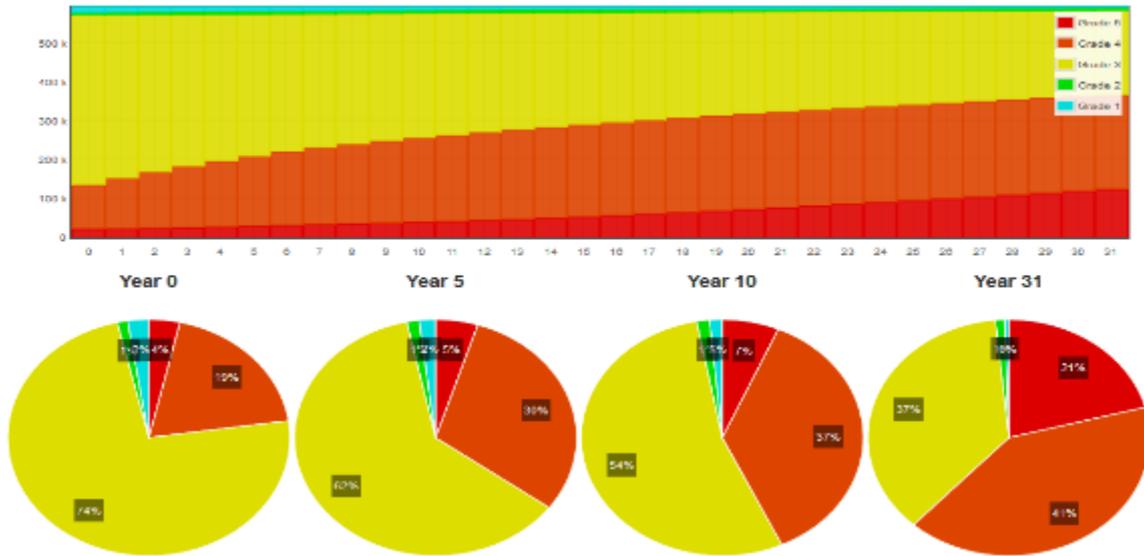
Bituminous



Again both strategies show a decline in the condition of the Flagged footways, but unlike the Bituminous levels, there is not such a marked change.

However, it should be noted that although the condition doesn't show much variation under the new strategy, the area of the poor flagged footways is constantly reducing due to the change in strategy by replacing flagged footways with Bituminous.

Flag



Flag

