Angus Council

Road Maintenance Strategy

April 2016 – V1.0

Contents

1. Introduction and Context

The policy framework for road maintenance is integral to other transport and wider policies of the local authority's work and the road network underpins every aspect of that. The needs of our communities are dependent on an available and reliable road network.

This Road Maintenance Strategy is written taking account of the principles of the Nationally Approved document Well-Maintained Highways - Code of Practice for Highway Maintenance Management. The Code is currently the subject of review nationally. The strategy does however take account of budget availability.

This Strategy is concerned with the delivery of the operational aspects of road maintenance. It is focussed on maintenance of the road infrastructure, and will cover the legal responsibility the Council has as "Roads Authority", what is done to discharge this obligation, issues surrounding ability to discharge these duties including budget provision and rationale for future spend prioritisation.

The Strategy is based on the principles of best value and continuous improvement and includes Network Management where the network is managed to meet the requirements of the New Roads and Street Works Act and Transport (Scotland) Act to improve co-ordination between stakeholders in delivering work programmes.

It **does not** cover Road Safety and Improvements – Improvements to the network necessary to meet performance and reduction targets in relation to road safety and congestion as set out in the overall context of local traffic management and road safety requirements.

The public road network is the largest capital asset that the council has responsibility for. The duty to maintain the road network falls to the council, as the local Roads Authority, under the Roads (Scotland) Act 1984.

Within the council area, the road length maintainable is in the region of 1,800km. In addition there is an associated length of adopted footway and verge and footpaths.

Private, or Unadopted Roads, Core Paths and Public Rights of Way are **not** included in this Strategy.

Mirroring the national position, lack of investment has resulted in failures now becoming more apparent and a resultant increase in pothole repair works. The aim is to reduce the expenditure on temporary work and re-invest this in the network on permanent pothole repairs (first time fix). Also considered are cyclic activities such as gully emptying, grass cutting and lining.

2. Statement of Objectives

This Strategy aims to provide a sustainable solution, to arrest the level of deterioration of the road network in light of budget restraints.

The objectives of this Strategy are:

- to deliver the statutory obligations of the local authority under the Roads (Scotland) Act 1984 and maintain reliability of the actual condition of the road surface

- to be responsive to the needs of users and the community in the target time for attending to inspections and user concerns

- to contribute to effective road asset management, maintain the asset value and enhance the public realm

- to provide a clear, consistent, cost effective and appropriate response to road treatment needs across the council area in time.

Appendix 1 details the overall Asset Treatment Strategy.

3. Budget

The road maintenance budget is basically split into Capital and Revenue.

The Capital spend reflects the items indicated in Appendix 2 and are principally replacement activities carried out when the asset is no longer fit for purpose.

The overall budget can be split in line with need and the current need is to patch and surface dress more roads than resurface, "a stitch in time saves nine". The application of the Strategy will be shifting expenditure over time from "reactive" structural patching to planned overlay and resurface.

The Revenue spend reflects the items in Appendix 2 that are principally housekeeping routine activities that maintain the asset in a safe and serviceable condition, "running repairs".

4. Road Condition

The Scottish Road Maintenance Condition Survey (SRMCS), a collaborative venture with the other 31 Scottish local authorities, reports the annual road condition. The table below shows the trend over 9 years from 2007 to 2015 and the table below demonstrates this deteriorating condition and indicates the percentage of the network requiring attention.

Comparison with Scotland as a whole shows that Angus Council's road network is currently above average condition, sitting 6th out of the 32 Councils.

	Overall Network		A Class roads		B Class roads		C Class roads		U Class roads	
Year	2007	2015	2007	2015	2007	2015	2007	2015	2007	2015
Angus Council % requiring attention	26.64	28.89	18.92	19.94	29.35	32.05	24.08	27.07	29.07	31.16
Local Authority average % requiring attention	34.2	36.67	28.49	28.95	33.63	34.80	33.07	34.74	36.63	40.18

Table 1

28.89% of the Angus Council road network equates to 523km (325 miles).

The Code of Practice recommendations for resurfacing (top 40 to 70mm of road) are that 4% of the carriageway network should be resurfaced annually. This equates to 72km in Angus and would ensure that the entire network surface is replaced every 25 years. Currently Angus Council resurfaces 23.04 km or 1.28% annually, thus equating to resurfacing the entire network every 78 years.

Structural patching is the highest spend and needs to move to resurfacing as a more sustainable option. Reactive carriageway repairs is a reactive short term measure to ensure a safe network, which whilst protecting the Council liability by reducing loss and /or injury for users also needs to move to a more proactive solution.

The table in Appendix 3 details the budgets in terms of resurfacing and surface dressing. This baseline information will be used to assess the success of this Strategy over time.

The council has a road maintenance backlog of £201,117,775 (Annual Depreciation Report 13/11/2015). Whilst this Strategy is aimed at slowing the deterioration of the road network, without significant investment it won't improve the overall condition in the short to medium term nor reduce the backlog figure.

5. Road Network Hierarchy

The Roads (Scotland) Act 1984 requires the keeping of a List of Public Roads (LoPR), including footways, that are maintainable at public expense.

The LoPR is then broken down further into a road network hierarchy and this is the foundation of a coherent, consistent and auditable Road Maintenance Strategy. The Angus Council hierarchy reflects the need, priorities and actual use of each road in the network and has been in place since 1996.

In some cases, footway priorities conflict with carriageway priorities. As a result, it is necessary to define separate footway and cycle route hierarchies.

The Winter Service hierarchy correlates with the inspection/maintenance hierarchy. However some winter routes on lower hierarchy roads are included in higher priority gritting routes for route optimisation and efficiency purposes.

Hierarchy	Angus Council Inspection Frequency	Angus Council Length (km)	Examples
2 - Strategic Route	1 month	**43.10 km**	A92 Arbroath to Montrose
3(a) Main Distributor	1 month	**159.8 km**	A926 Kirriemuir to Blairgowrie A933 Arbroath to Brechin A930 Monifieth and Carnoustie to A92
3(b) Secondary Distributor	1 month	**335.9 km**	B9655 Glen Clova C16 Newtyle to Glamis
4(a) Link Road	3 months	**404.8 km**	Lochlands Drive, Arbroath
4(b) Local Access	6 months	**865.9 km**	U368 Carseburn
Table 2 Road Hierarchy			

Asset	Category	Angus Council Inspection Frequency	Examples
Footways/ paths	1(a) - Prestige Area	1 month	Forfar Town Centre
	1 - Primary Walking Route	1 month	Arbroath Road, Forfar
	2 - Secondary Walking Route	3 months	Taylor Street, Forfar
	3 - Link Footway	6 months	Whitehills Primary School – Service Road to Prior Road (currently inspected 3 monthly)
	4 - Local Access Footway	6 months	Isla Place, Forfar (currently inspected 3 monthly)
Cycle routes	A - Part of Carriageway	as for Roads	Craig O'Loch Road, Forfar
	B - Remote from carriageway Shared Use footway	6 months As for footway	Queenswell Road, Forfar
	C - Cycle trails	1 year	Not inspected by Roads
Car Parks	P2 – Important Pay and Display	1 month	None
	P3 – Other	3 month	

Table 3 Footway and Cycle Way Hierarchy

6. How We Maintain the Road Network

Each of these maintenance types contribute to the core objectives of safety, serviceability and sustainability.

The main types of road maintenance are as follows:

Reactive – This is defined as responding to inspections, complaints and emergencies

- all assets - provide permanent repair for safety purposes
- or sign and/or make safe for safety purposes
- or provide initial temporary repair for safety purposes

Routine/Cyclic – This is defined as dealing with:

- regularly scheduled activities
- carriageways, footways and cycle routes - minor works and patching – "pot hole" filling
- drainage systems - cleansing and repair
- embankments and cuttings – stability
- self-seeded landscaped areas and trees – management
- verges – grass cutting, noxious weeds, although weed killing hard surfaces is now undertaken by Parks on Roads behalf
- fences and barriers – tensioning and repair
- traffic signs and bollards – cleansing, repair and replacement at end of useful life
- road markings and studs – refreshing and replacement
- culverts within the road boundary less than 1.5m high/diameter – cleansing, minor works and replacement
- structural walls retaining less than 1.5m high – cleansing, minor works and replacement

Programmed – This is defined as dealing with:

- planned schemes primarily of resurfacing, patching/reinstatement, drainage or reconstruction
- carriageways - minor works, resurfacing, patching or reconstruction
- footways - minor works, resurfacing, patching or reconstruction

- cycle routes - minor works, resurfacing, patching or reconstruction

Winter Service – This is defined as dealing with:

- pre-treatment
- de-icing and gritting
- snow clearing

Emergency response – This is defined as dealing with:

- weather and other emergencies – Angus Council will primarily provide a 24/7 response to issues on the road network affecting the safety of the travelling public, within available labour resources;
- flooding - signing, pumping water and/or deploying sand bags to protect the road user;
- limited assistance to prevent against watercourse/river flooding although the primary responsibility remains with the individual to protect and preserve their property;
- high winds - signing road closures or removing fallen trees where the landowner cannot be readily traced;
- other emergencies - in conjunction with partner organisations reacting to road traffic collisions or other traffic related emergencies on the council network.

Regulatory – This is defined as dealing with:

- overhanging bushes/trees, encroachment, illegal signs.

Bridges and other Structures – This is defined as dealing with:

- damage caused by road traffic collisions, running repairs, etc.

7. Materials and Processes

Engineering judgement is of paramount importance in determining materials suitability and durability as well as the time of intervention – i.e. early intervention will often permit a cheaper option that will extend the life of the asset.

Generally Hot Rolled Asphalt (HRA) will be utilised on the 2,3A and 3B road network and Category 1 footways (high flow and reasonably flat areas) – this being a proven durable material. Proprietary Polymer Modified Macadams have been developed, to provide an enhanced performance to traditional dense base macadams, and will be used on lower categories in both road and footway, but may also be used on 3A/3B as deemed appropriate.

Traditional Dense Bitumen Macadams have been shown to deteriorate quicker as a result of heavier traffic or inclement laying conditions and whilst still a suitable material for certain conditions will be selectively used.

Proprietary thin surfacing materials or surface dressing can be used to seal lower category urban roads and extend their life.

Slurry sealing can be used on footways and minor roads/parking areas.

Many proprietary patching processes are available and these may be used selectively appropriate to the location e.g. spray patching, "Roadmaster" treatment, overband sealing, etc.

8. Recycling and Sustainability

Much of the excavated materials from road maintenance works are bitumen based and suitable for recycling into re-useable road building material.

All bitumen based material can be taken to Collace Quarry (Tayside Contracts' Quarry), or another approved recycling centre. Collace Quarry will recycle the material into a proprietary patented cold lay material, or recycled Type 1 that is certified for use in sub surface road construction layers. Cold Lay Material – can be used as appropriate in sub surface layers in both carriageways and footways with the approval of the Engineer. It cannot be used in wet conditions and laying must be strictly in accordance with the manufacturers specification in order to be successful. But this material does have the benefit of being able to be stored longer thus minimising the potential for waste.

Deep recycling (>70mm thick) – recycling can be utilised as appropriate, where a road needs reconstructed due to deep structural failure. This process involves pulverising the existing material, rejuvenating by the addition of a filler (cement/lime), reshaping the surface and applying a new surfacing coat. It reduces lorry movements involved in disposal and delivery, reduces quantities of virgin material and also tipping charges. While cost savings are minimum the process is quicker than conventional reconstruction and so disruption to the public is minimised.

Re-tread (recycling top bitumen layer < 70mm) with a surface course overlay is used in rural situations to restore shape, surface texture and seals the road from water ingress. It is generally limited to quiet rural locations.

New processes will be considered from time to time as they come to the market.

Gully waste is treated at the Kirriemuir Road Depot, Forfar where the waste feeds through reed beds cleansing the water and retaining the solids. These solids require disposal at an approved tip however the tipping charges are greatly reduced as it is only solids. Work has been carried out so that solid waste can be used as capping, etc. at Restenneth with no gate fee. The longer term aim is to build up management data to establish which gullies need cleansed less frequently and which more frequently in order to ensure resources are targeted more effectively.

9. How We Will Deliver the Strategy

Our aim is to deliver high quality road and footway maintenance services to our customers and communities with "customer first" at the forefront. We will offer a "one council", one stop approach. We are looking for continuous improvement in all that we do and will use benchmarking and management data and any feedback to help us with this. We need to produce performance information across the indicators for SCOTS and particularly for potholes to give informed management information on where we are and where we want to be given our resources. We will aim to get things right first time and learn from mistakes. With reduced budgets we will engage in making efficiencies.

Drainage – we will look to continue to deal with specific problem sites on a priority needs based (condition and safety) basis as resource allows. We will try to ensure drainage problems are rectified to stop further deterioration of the road make up before further large scale expenditure on the road make up itself. We will continue to carry out ditch and offlet clearing.

Schemes – we are already trying to address better programming. This should lead to better noticing of works through the Streetworks Register. Further work on analysing SCRIM and SRMCS results will be needed as we go forward to ensure we address the reasons for the red and amber results (see Table 1 percentage of network requiring attention) and to target future schemes to try to keep our results in the top quartile of Scottish Authorities appreciating of course that budgets will restrict aspirations and our ability to deliver. We will look at new processes and those such as slurry seals to extend the life of pavements to make the budget go further.

Surface Dressing – we are committed to increased programmes of dressing and other methods of sealing joints on patching work including summer patching programmes and hotbox and pothole repair work to halt/reduce deterioration.

Potholes – the pothole strategy work, arising from the council's "Scrutiny & Audit Action Plan", has been showing improvement particularly in terms of the first time fix plane and hotbox work. The "splodge" and seal is developing and we are trying to minimise feathering of edges by disc cutting such.

We will look to suggest those services which need more resource and those less and change procedures/policies where appropriate. Process mapping may be appropriate with colleagues external to the process brought in to give advice as appropriate.

We will continue to increase standards of enforcement in relation to skips, scaffolding and permit conditions being met along with ensuring a high focus is paid to utility

reinstatements. Traffic Management and health and safety issues will continue to be given high priority.

With a reduction in the grass cutting budget we have reduced grass cutting costs by the deletion of the wide cut back, and only cutting U class roads once per season, although concerns that these reductions may create safety (visibility) and flood (inundating ditches) for the future will be monitored.

Parks colleagues now carry out weed control on our behalf at a best value lump sum. They are responsible for any increase and new additions to the network.

With a reduction in the gully emptying budget we are using the "In Touch" computer recording system to identify gullies that need clearing rather than on a regular clean basis. A once rather than twice per year clean basis with extra as needed has been adopted until the data is available for analysis.

We will continue to promote agile working to unlock additional time to help with some of the above.

Winter Maintenance is subject to continuing review and we will work to offer improvements leading to ongoing savings.

The team of 8 Road Supervisors will continue to inspect the road network for safety defects and submit details of the areas that require structural repairs. This will continue to be the primary means of identifying required repairs for future year's works programmes. SRMCS and SCRIM results will also be used.

There will be occasions where professional judgement will override the system recommendations.

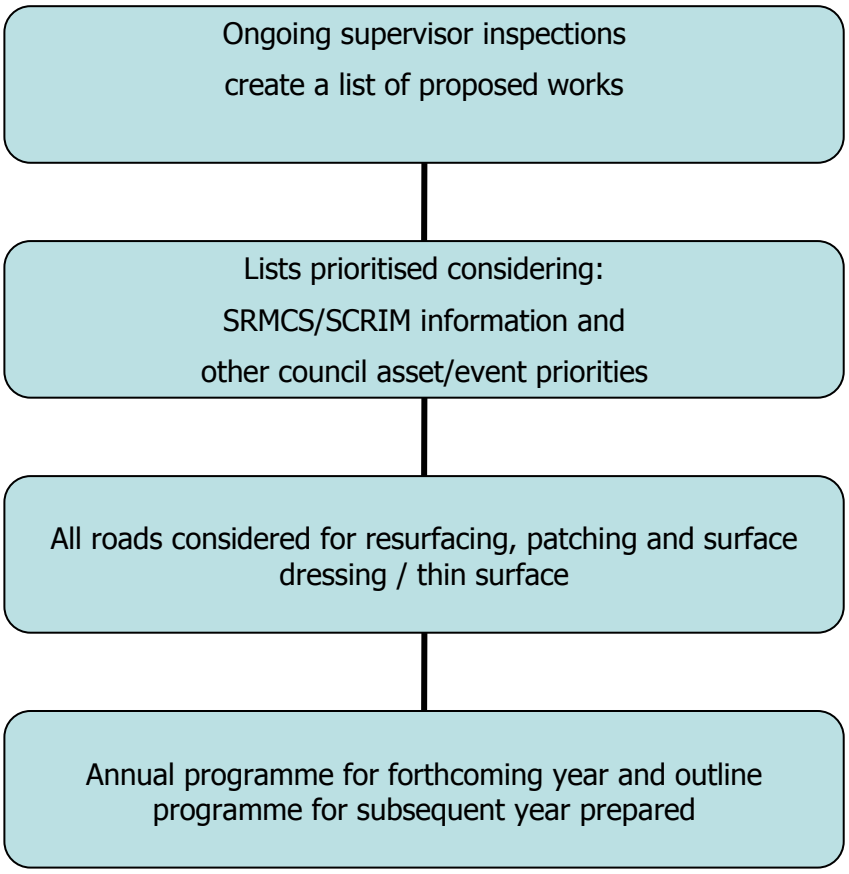
This will ensure that funding is targeted within the Council area to those roads most in need.

Project lists will be compiled each year detailing planned works for the subsequent financial year to the level of budget allocation. These will be shared with senior management to ensure the works tie in with other Council initiatives, do not interfere with local events and/or unnecessarily adversely affect the local economy as a result of road closures, etc.

The following, read in conjunction with Appendix 1 Overall Asset Treatment Strategy, outline the rationale and intervention standard across the various assets.

Please refer to table 2 on page 6 for information and examples on each category.

(i) Road Surfacing



The A Class network which is generally 3A in the council hierarchy should only be resurfaced or overlaid if more than 30% of the area under consideration requires attention. Only Hot Rolled Asphalt (HRA) should be considered as this is the most durable material available for the network.

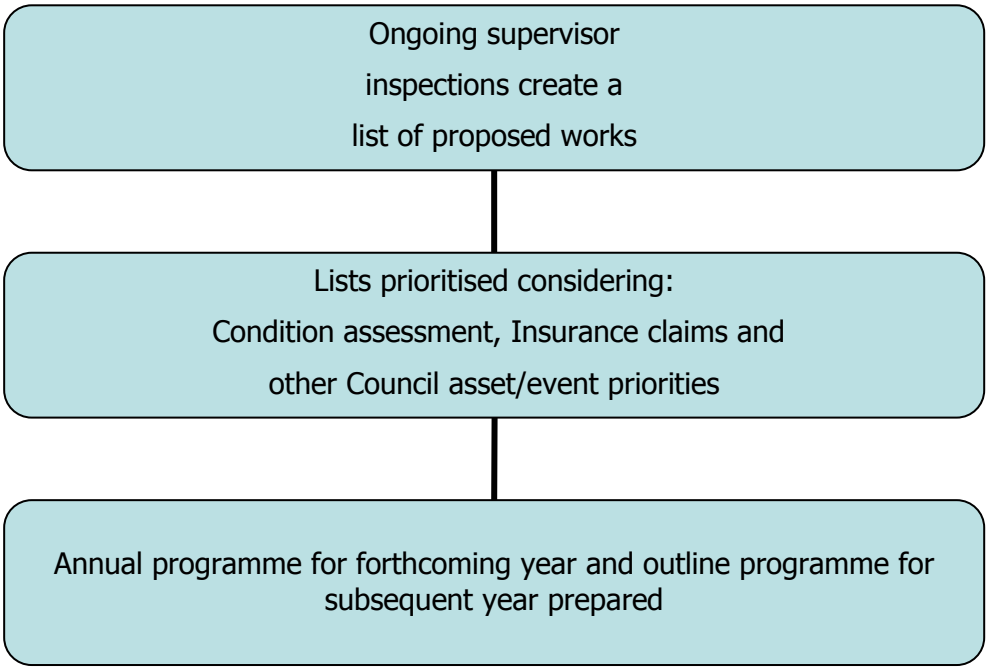
In order to extend their life A Class roads may be patched and surface dressed if appropriate.

The B Class network, which is generally 3B in the council hierarchy. Normally patch using HRA or modified macadam type material and may subsequently be surface dressed or receive a proprietary surface treatment unless sufficiently deteriorated to warrant resurfacing.

C and U Class or 4A and 4B should only be patched and may receive a surface dress or proprietary surface in an urban area. Exclusions to this will only be considered if patching would be excessive and surfacing a more cost effective choice.

Surface dressing is utilised to seal the road to prevent water ingress and restore texture and therefore extend the roads life. It does not add structural strength or shape to the road and will principally be used in rural locations.

(ii) Footways



Only those footways with a high incidence of potholes or undulations liable to cause a fall will be considered for treatment. Aesthetic considerations cannot be accommodated.

Category 3 and 4 in link paths in rural areas and urban housing areas patched in e.g. DBM – Dense Bitumen Macadam (similar to Taycoat) and put forward for subsequent slurry seal programme.

(iii) Structural Patching – Carriageway

Structural patching programmes are drawn up where regular reactive/temporary patching has been implemented over a period of time. This is the highest budget spend within Angus Council, and whilst it covers large areas of the network a patchwork effect with weak points in the carriageway remains. To avoid a patchwork quilt effect, we are considering machine laid wall to wall patching of large surfaced areas, whole junctions, etc. which provide economies of scale and this is proving productive.

(iv) Retaining Walls

Roads Maintenance section generally maintain retaining walls supporting the road less than 1.5m in height. Pointing and minor repairs to accident damage will be carried out and repairs to halt deterioration are considered.

(v) Embankment Repairs

Roads Maintenance section maintain embankments supporting the road and carry out preventative treatment to arrest deterioration.

(vi) Drainage

Removal of water from the road surface prevents ingress of water to the road and reduces deterioration of the surface. A pro-active approach to achieving this, over time, reduces the reactive defect repairs required and so reduces costs which can be diverted elsewhere.

Ditches - an annual programme of ditch clearing aimed at clearing all ditches as required. Installation of positive drainage systems – piped drainage systems can be installed to alleviate standing surface water. These will continue to be assessed and implemented as required and as the budget will permit. Priority will be given to higher speed limit roads as the consequence of hitting standing water at speed is higher. Gully emptying - the Council currently have approximately 26,900 road gullies and aim to empty them on an annual frequency. More frequent cleaning may be required at specific locations due to known issues. With the history of cleaning logged through the "In Touch" system the aim is to move to a more needs based cleaning regime rather than specific cleaning carried out whether needed or not.

(vii) Lining

White/yellow line refresh is currently carried out reactively and should last 2 to 3 years. It is estimated that it would cost £200k to refresh a third of the network. Lining is heavily weather dependant and is usually carried during the summer months as low temperatures and presence of salt in the winter reduces durability of the lines.

(viii) Sign Replacement

Road signs will be replaced when illegible following cleaning.

Street name plates will be replaced where illegible after cleaning and where none exist.

Milestones will be painted when greater than 30% is worn.

Only signs designed and erected in accordance with the Traffic Signs Regulations and General Directions are permitted, in law, to be erected within the road boundary.

(ix) Kerbing

Kerb replacement will only be undertaken when there is a serious risk of falling /tripping by the public. In most cases an appropriate temporary repair will be undertaken and added to a programme of replacement that will be carried out as funding permits. Installation of new kerbing is not a maintenance function but will be considered when carrying out major footway/surfacing works.

(x) Reactive repairs

Reactive repair squads are managed on a day to day basis by road supervisors. Proprietary repair materials are being used sparingly in an attempt to obtain a more durable repair, to reduce repeat visits, and in many instances achieve a first time permanent repair. The aim is to reduce temporary work and re-invest this in the network on a first time fix basis.

Defects requiring repair will identified through regular safety inspections and reports by the public.

The Council are **not** responsible for utility apparatus (BT/SSE/SGN etc) and these reported defects will be passed to the appropriate utility. The Council will however make safe, if necessary, if the defect is imminently dangerous, pending a full repair by the utility by plating, signing and barriering. Rocking covers, etc. will be passed direct to the utility.

The Utility will be charged for work if they do not respond to a request for urgent work within 2 hours.

(xi) Sweeping

Sweeping will not routinely be undertaken as this is a function of Waste Services. Sweeping will only be undertaken in reactive situations at locations where loss or injury is likely to be suffered by the travelling public, i.e. after road traffic crashes.

(xii) Tree / Scrub Cutting

It is the responsibility of owners of the trees etc. to maintain overhanging branches so they do not interfere with the safe passage of pedestrians and vehicles. The owner will be contacted and asked to cut overhanging branches. Angus Council will serve notice under the Roads (Scotland) Act if they fail to do so. If a tree falls down in a storm the owner, if known/found, will normally be asked to remove it to clear the road. The Roads Supervisor may need to erect warning signs and close the road meantime.

(xiii) Safety / Pedestrian Barriers

These assets will only be repaired when they are no longer serviceable and any repairs may require to be prioritised over a period of time. No aesthetic repairs will be carried out and bent/damaged sections that remain serviceable will not be replaced.

(xiv) Flood Alleviation Maintenance and Operation

Angus Council maintain the flood alleviation schemes constructed by the Council. This does not include altering or adding to them but merely the maintenance of the infrastructure in an operational condition.

Appendix 1 - Overall Asset Treatment Strategy

The table below details the elements of work undertaken and types of intervention that will be considered.

General Maintenance Standards Target - Attributed to Road Category (Defect notice may come from public, etc. or official inspection)			
Category	Structural	Routine	Cyclic
2 and 3A C/way 1 F/ways A Cycle Routes	Reconstruction / Resurface or Overlay if >30% of overall area needs treatment and a target frequency of 40 years Structural Patching from inspections included in prioritised programme Proprietary surface for urban sections or Surface Dressing for rural sections at target frequency of 10 years Consider Surface Dressing for urban sections if possible. Annual programme of edge strengthening as appropriate (kerbing) Installation of positive drainage as identified through defect notice or frequent flooding issues Retaining wall/embankment <1.5m - rebuild as required Kerbing repaired/ replaced when likelihood of loss or injury to the public or within a scheme with surfacing. Safety Barrier replacement as identified through defect notice or safety scheme programme. Pedestrian Barriers replacement as identified through defect notice or safety scheme programme.	Ditch clearing as needed Pipe cleansing as required by defect notice Reactive patching as identified by defect notice Grip/offlet cutting as required by defect notice Sign replacement as required by defect notice Overhanging branch etc removal as required – owner contacted when private Retaining wall <1.5m – pointing as required by inspection	Monthly inspection Gully emptying once per annum or more frequently if prone to silting Manhole/catchpits as gullies Lining 3 year cycle Road studs as required or within programmed surfacing schemes

3B C/way 2 F/ways P2 Car Parks A Cycle routes	Reconstruction / Resurface or Overlay where more cost effective than patching and a target frequency of 40 years Structural Patching from inspections included in prioritised programme Proprietary surface for urban sections or Surface Dressing for rural sections at target frequency of 10 years Consider Surface Dressing for urban sections if possible Annual programme of edge strengthening as appropriate (kerbing) Installation of positive drainage as identified through defect notice or frequent flooding issues Retaining wall/embankment <1.5m - rebuild as required Kerbing repaired/ replaced when likelihood of loss or injury to the public or as required within a programmed surfacing scheme Safety Barrier replacement as identified through defect notice or safety scheme programme. Pedestrian Barriers replacement as identified through defect notice or safety scheme programme.	Ditch clearing as required. Pipe cleansing as required by defect notice Reactive patching as identified by defect notice Grip/offlet cutting as required by defect notice Sign replacement as required by defect notice Overhanging branch etc removal as required – owner contacted when private Retaining wall <1.5m – pointing as required by inspection	Monthly inspection Gully emptying once per annum or more frequently if prone to silting Manhole/catchpits as gullies Lining 3 year cycle Road studs as required or within programmed surfacing schemes
4A c/way 3 F/ways P3 Car Parks A & B – Cycle routes	Reconstruction / Resurface or Overlay where more cost effective than patching and a target frequency of 40 years Structural Patching from inspections included in prioritised programme Proprietary surface for urban sections or Surface Dressing for rural sections at target frequency of 10 years Consider Surface Dressing for urban sections if possible. Annual programme of edge strengthening as appropriate	Ditch clearing as needed Pipe cleansing as required by defect notice Reactive patching as identified by defect notice Grip/offlet cutting as required by defect notice	3 Monthly inspection Gully emptying once per annum or more frequently if prone to silting Manhole/catchpits as gullies Lining 3 year cycle Road studs as required or within programmed surfacing schemes by defect notice

	Installation of positive localised drainage as identified through defect notice or frequent flooding issues Retaining wall/embankment <1.5m - rebuild as required Kerbing removed and patched unless vehicle access or specific edge restraint Safety Barrier replacement as identified through defect notice or safety scheme programme. Pedestrian Barriers replacement as identified through defect notice or safety scheme programme.	Sign replacement as required by defect notice Overhanging branch etc removal as required – owner contacted when private Retaining wall <1.5m – pointing as required by inspection	
4B c/way 4 F/ways C -Cycle trails	Reconstruction / Resurface or Overlay when unable to maintain the road in a safe condition and a target frequency of 40 years Structural Patching from inspections included in prioritised programme Proprietary surface for urban sections or Surface Dressing for rural sections at target frequency of 30 years Consider Surface Dressing for urban sections if possible. Annual programme of edge strengthening as appropriate Installation of localised positive drainage as identified through defect notice or frequent flooding issues Retaining wall/embankment <1.5m - rebuild as required Kerbing removed and patched unless vehicle access or specific edge restraint Safety Barrier replacement as identified through defect notice or safety scheme programme. Pedestrian Barriers replacement as identified through defect notice or safety scheme programme.	Ditch clearing as needed Pipe cleansing as required by defect notice Reactive patching as identified by defect notice Grip/offlet cutting as required by defect notice Sign replacement as required by defect notice Overhanging branch etc removal as required – owner contacted when private Retaining wall <1.5m – pointing as required by inspection	Annual inspection Gully emptying once per annum or more frequently if prone to silting Manhole/catchpits as gullies Lining 3 year cycle Road studs as required or within programmed surfacing schemes

Appendix 2 – Capital and Revenue Budget Split

Capital	2011/12 Spend ('000)	2015/16 Spend ('000)	Comments
Overlay / Resurfacing	3474	3438	
Surface Dressing	686	1300	Move to doing more surface dressing
Structural Patching	1730	2,050	More patching carried out from Capital rather than Revenue
Retaining Walls	57	181	
Drainage	279	431	More drainage work now
Footways	979	934	
Total	**7,205**	**8,334**	

Revenue	2011/12 Spend (£000)	2015/16 Spend (£000)	Comments
Planned Gully Emptying	354	245	Reduction
Sweeping and Cleansing	56	40	
Reactive Carriageway and Footway Repairs	1,469	640	
Safety Fencing and Guardrail Repairs	23	3	
Signs and Bollard replacement	47	30	
Road Markings and Studs	40	193	
Drainage	510	466	
Flood Alleviation Maintenance and Operation	10	5	
Reactive Bridge Repairs	0	26	
Retaining Walls < 1.5m	13	23	
Verge Maintenance	184	137	Reduction
Hit Squads for Various Reactive Repairs	See reactive carriageway above	240	
Other	73	54	
Total	**2,779**	**2,102**	

Revenue Allocation

Appendix 3- Value for Money

The table below details what the budget has bought in terms of resurfacing and surface dressing. This information will be used as a baseline to measure improvement going forward following implementation of the Strategy.

Year	Capital Expenditure on structural road maintenance (£,000)	Total Length of Surfacing (km)	% of network surfaced	Length of Surface Dressing (km)	% of network surface dressed	Two year combined RCI (Red and Amber) (Road Condition Index) for Angus	Angus Council position relative to other Scottish Local Authorities
2008 - 2009	5,286	32.4	1.8	49.9	2.77	26.64	8
2009 - 2010	4,940	20.5	1.14	38.0	2.11	27.1	4
2010 - 2011	5,297	28.4	1.58	33.4	1.85	29.4	5
2011 - 2012	6,226	37.9	2.10	33.7	1.87	29.0	5
2012 - 2013	7,160	20.3	1.12	30.5	1.69	27.9	6
2013 - 2014	6,827	18.3	1.01	34.5	1.91	30.1	8
2014 - 2015	4,811	24.12	1.34	39.95	2.22	30.07	7
2015 - 2016	7,250	23.04	1.28	56.87	3.16	28.89	6