Powys County Council

Highway Asset Management Plan

2017

Working Document

Foreword

This plan sets out the council's strategy for the management of the council's highway asset for the future. It has been produced in accordance with national guidance and recommended good practice developed through the SCOTS/CSSW Road/Highway Asset Management Project with the assistance of exp consulting limited.

It is widely recognised that the application of modern asset management practices can enable improved value for money. In these challenging times it is essential that the council embraces these methods and strives to ensure that every penny spent is invested as wisely as possible. This plan forms an important part of the council's commitment to apply good asset management to highways.

The plan recognises the views of highway users and residents and in particular the importance that is placed upon our highway assets. Recent harsh winters have shown that our highways are susceptible to damage when bad weather occurs. It is essential that an appropriate level of investment is put into the highway network to maintain and ultimately improve one of the main principles of the council, that of the economic wellbeing of the locality.

Councillor Signature

Councillor Liam Fitzpatrick
Portfolio Holder for Highways

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Document Control

Version Number	Amendments Made	Date
v1	Nil - Original	April 2017
Next Review Due		April 2018

Council Approval

Version Number	Council Committee	Date
v1		

Responsibility for the Plan

The responsibility for the delivery of and updating of this plan are shown below

Council Officer	Responsible for
Elected Member Responsible for Highways	Approval of the HAMP

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Introduction

Overview

The Highway Asset Management Plan (HAMP) sets out the council's strategy for the management and maintenance of the highway asset. The "highway asset" includes carriageways, footways, structures, street lighting, traffic management systems, grassed areas and street furniture. The HAMP will be developed to encompass all key assets and will focus initially on those elements that are considered to be of high value or risk.

This Plan is consistent with the Council's corporate approach to asset management as set out in the following key documents:

- Powys 2020 Vision for the future
- One Powys Plan 2014 – 2017
- Medium Term Financial Strategy

The purpose of the HAMP is to:

- Formalise strategies for investment in highway asset groups
- Define service standards

The plan aims to improve how the highway asset is managed and to enable a better value for money highways service to be delivered.

Corporate Asset Management

Management of the highway network requires linkages with other service assets primarily through:

- Joint liabilities on highways and Rights of Way reflected in the Rights of Way Improvement Plan (RoWIP);
- Property infrastructure used to support the delivery of highway services reflected in the Property Asset management Plan.

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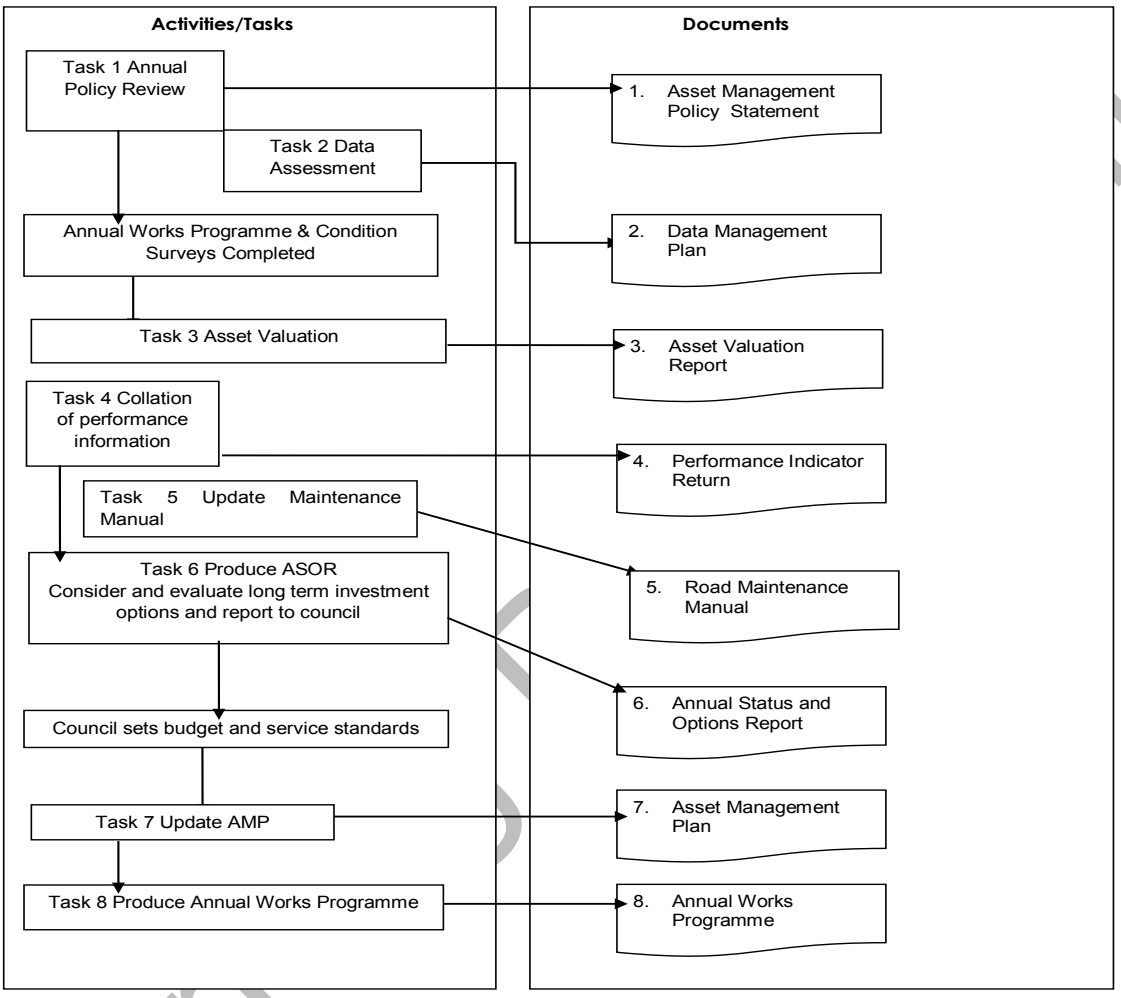
Society of Chief Officers for Transportation in Scotland (SCOTS) / County Surveyors Society Wales (CSSW)

This plan has been developed in accordance with the SCOTS/CSSW recommended asset management planning practices and is informed by the tasks and documents illustrated.



The HAMP is informed directly by the Mid Wales Joint Local Transport Plan(2), the Network Management Plan(3) and associated asset management planning documents. Targets and strategies contained in the HAMP are used to help develop annual works programmes based upon the council's highway budget allocation.

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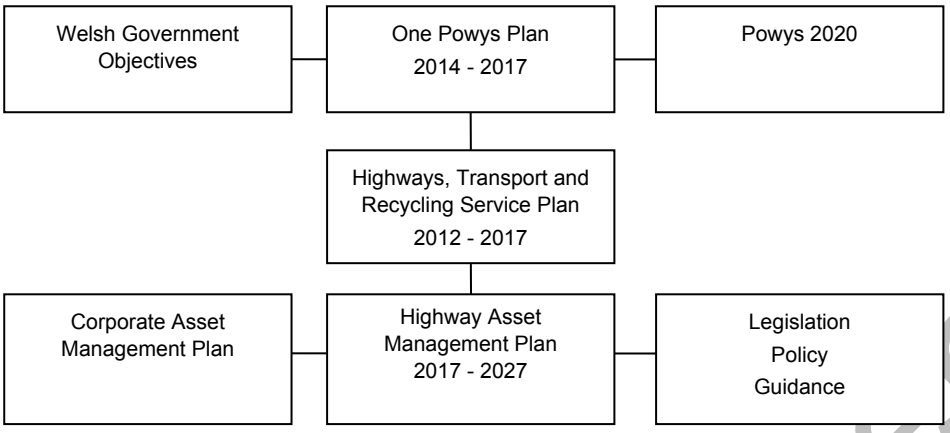
The following chart shows how the HAMP relates to other council plans



1. Highway Assets

Highway Assets

The council's highway assets covered by this plan are:

- Carriageways — 5,806 km (5,070 surfaced)
- Footways, footpaths & cycleways — 592 km
- Structures — 1,697 Bridges & Culverts,
  75 Footbridges
  254 Retaining Walls
  289 Cattle Grids
- Street Lighting — 11,435 Lighting Columns
  3,210 Pole / Building Mounted Lanterns
  1,499 Illuminated Signs, Flashing Lights and Bollards
- Traffic Management Systems — 22 Signalised Junctions
  33 Puffin / Pelican / Zebra Crossings
  135 School Crossing Signs
  24 Variable Message Signs
- Street Furniture — Approximately 50,000 non-illuminated highway signs

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Assets Not Covered or Partially Covered

Assets not in included or partially included in this plan but which will be considered for inclusion in a future revision to the plan include:

- Road Drainage Infrastructure
- Weather Stations
- Public Conveniences
- Car Parks

Assets that are the responsibility of other parties and not covered by this HAMP include:

- Trunk Roads – managed by the North and Mid Wales Trunk Road Agent (NMWTRA) on behalf of Welsh Government
- Public Rights of Way – managed by PCC Leisure and Recreation Service
- Housing Estate roads and footpaths – managed by PCC Housing Service
- Private roads, footpaths and structures – responsibility of each asset owner
- Utility apparatus – responsibility of Statutory Undertakers and private companies
- Festive lighting, decoration and bunting – Normally managed by Town or Community Councils; community or private organisations under licence from PCC or NMWTRA.

Inventory Data

This plan is based upon currently available inventory data for highway assets, i.e. carriageway, footway, structures, street lighting, traffic signals and street furniture. For some minor highway assets inventory data is not currently held, however, an attempt has been made to incorporate these assets within this plan using local estimates and sample surveys. A plan to improve asset data will form part of the council's Highway Asset Data Management Plan(6) which is due to be developed as part of the HAMP suite of documents.

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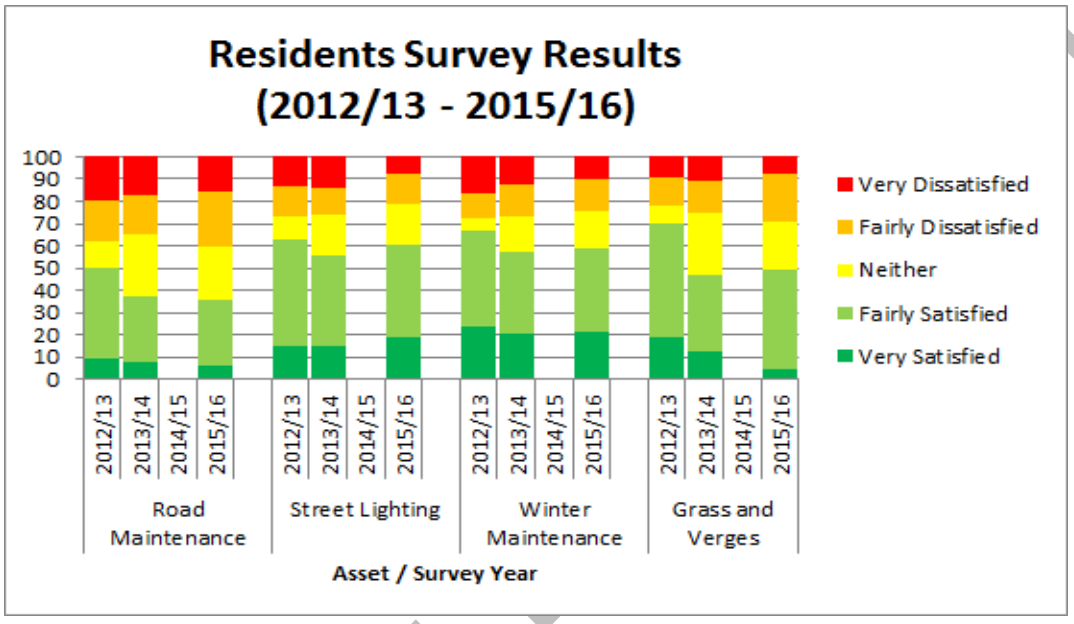
2. Customer Expectations

Customer Preferences

Powys County Council commissions periodic 'Residents Survey'. The purpose of the survey is to provide the council with a snapshot of satisfaction/dissatisfaction with key services. The following chart shows the results for the highway assets over the last four years



Data Note: No survey in 2014/15

The results from the 'Residents Survey' have shown:

1. An increase in dissatisfaction with the maintainance and repair of the council's roads. Further examination of the results reveals the main reason stated for the dissatisfaction relates to the number of pot holes. This increase appears mainly due to the severe winters and flooding that occurred over this period and decrease in funding.

2. An increase in dissatisfaction with the maintenance of grass and verges due to the quality of the work and frequency of cutting.

3. Winter maintenance and street lighting satisfaction has remained reasonably consistent.

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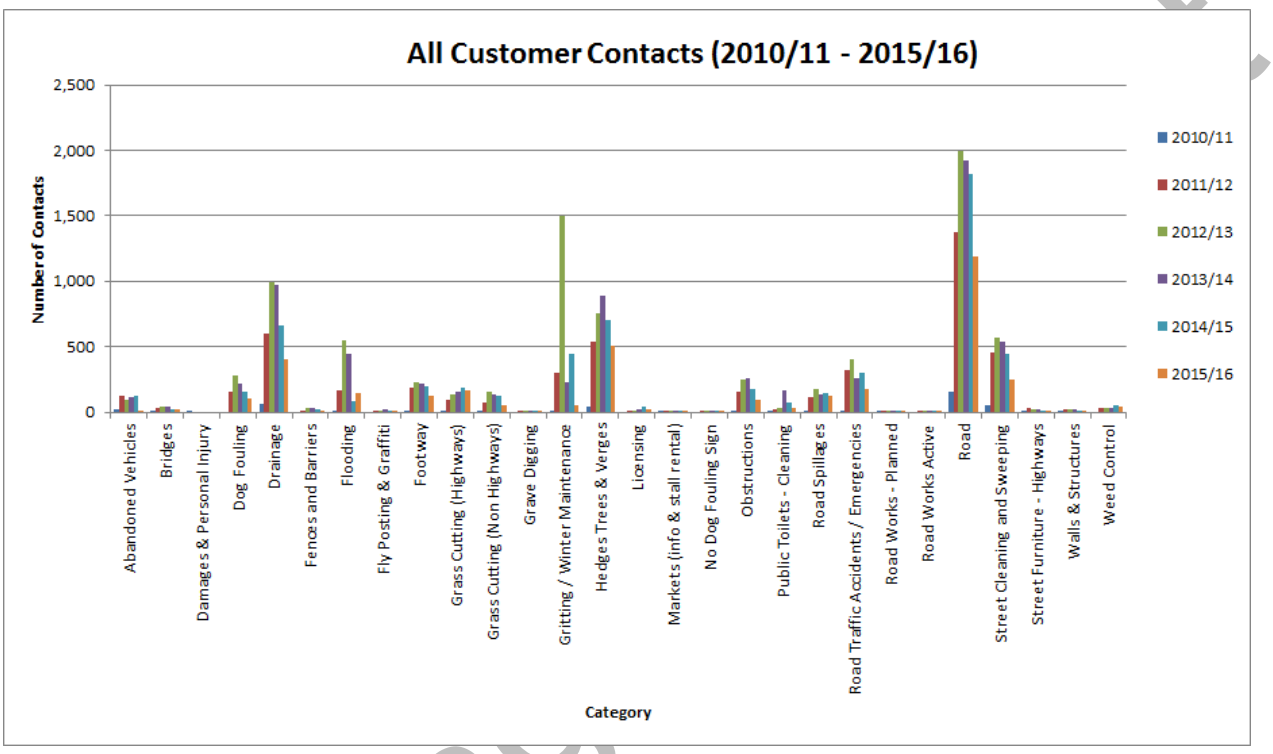
Customer Contacts

Customer contacts in relation to the highway assets are recorded in the council's customer relationship management system [Local Environment (LE) System].

A summary of the quantities of contacts received by category is shown below for 2010/11 to 2015/16. [This data needs updating to incorporate full 2015/2016 year]



The data shows that the category with the most customer contacts to the council is the 'Road'. This category represents the defects (mainly potholes) which reflects the current condition of the road.

The 'Drainage' asset is the second highest category reaching approximately 1,000 contacts in 2012/13 and 2013/14 when the significant winter storms caused widespread flooding.

Also of note is the number of contacts in regard to Hedges, Trees and Verges' problems which is reflected in the customer satisfaction survey reported above.

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3. Demands

Asset Growth

The asset grows each year due to the adoption of new roads and construction of new road links. Over the last 5 years the surfaced carriageway asset has grown by 17.7km (0.35%) compared with 42.4km (0.845%) over the last 10 years[8]

New assets create the need for maintenance, management and associated funding in future years as these additional assets age. This is particularly relevant to street lighting as energy costs generally increase immediately due to rising energy prices.

Traffic Growth

Annual county road traffic survey data is not available to show the level of traffic growth. Welsh Government traffic volume data shows an increase of 5.5% over the last 5 year period[9].

Traffic in Powys comprises a mix of cars and taxis; light vans; goods vehicles; buses and coaches; motorcycles and pedal cycles. Large Goods Vehicles (LGV) have the greatest impact on road condition. Across Wales they represent 3% of County A road traffic volume[9]. Traffic counts within Powys indicate the percentage of LGV's can be in the order of 10% on some routes. This percentage is likely to increase in future years.

Powys is one of the main areas designated by the Welsh Government under the Tan8 policy for the development of wind farms. Whilst the majority of the routing of large Abnormal Indivisible Loads (AILs) carrying the tower sections, blades and nacelle units will be on the trunk road network, final access to sites will necessitate the use of the local highway network. These large vehicles, along with the construction traffic required for the building of the wind farms, forest harvesting and other developments will likely lead to a substantial increase in LGV movements using roads not engineered for this type of traffic. This is likely to result in major disruption on the network and cause significant damage to the roads, putting an additional strain on budgets.

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Environmental Conditions

Pressure is being placed upon the asset as a result of environmental conditions including:

- Harsh winters: recent unseasonably harsh winters have caused significant damage to road surfaces resulting from freeze/thaw action.
- Flooding: occurrences in recent years have had a severe impact causing damage to property and the road network.

Well-being and Future Generations

- Well-being of Future Generations (Wales) Act 2015
- Powys Public Service Board, Well-being Assessment 2016

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4. Service Standards

This plan is based upon delivering the service standards below. The standards reflect the funding levels in section 6. They are the standards that users (customers) can expect from the council's highway assets during the plan period. Details of how the specific measures shown below are calculated are included in the Highways Maintenance Manual.

Service	Measured By	Target Standard	
		Standard	Compliance
Carriageways			
Safety	Undertake routine safety inspections on Category 2 Strategic Routes at intervals of	28 days	%
	Undertake routine safety inspections on Category 3(a) Main Distributors at intervals of	28 days	%
	Undertake routine safety inspections on Category 3(b) Secondary Distributors at intervals of	28 days	%
	Undertake routine safety inspections on Category 4(a) Link Road at intervals of	3 months	%
	Undertake routine safety inspections on Category 4(b) Local Access roads at intervals of	6 months	%
	Category 1 defects shall be corrected or made safe within	24 hours	%
	Category 2 defects shall be rectified or made safe within	2 Months	%
Condition	Maintain the condition of all 'A' roads such that the percentage in a RED condition remains below	%	N/A
	Maintain the condition of all 'A' roads such that the percentage in a RED and AMBER condition remains below	%	N/A
	Maintain the condition of all 'B' roads such that the percentage in a RED condition remains below	%	N/A
	Maintain the condition of all 'B' roads such that the percentage in a RED and AMBER condition remains below	%	N/A
	Maintain the condition of all 'C' roads such that the percentage in a RED condition remains below	%	N/A
	Maintain the condition of all 'C' roads such that the percentage in a RED and AMBER condition remains below	%	N/A
	Maintain the condition of all 'U' roads such that the percentage in a RED condition remains below	%	N/A
	Maintain the condition of all 'U' roads such that the percentage in a RED and AMBER condition remains below	%	N/A

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Service	Measured By	Target Standard	
		Standard	Compliance
Footways			
Safety	Undertake routine safety inspections on Prestige Area footways at intervals as described		100%
	Undertake routine safety inspections on Primary Walking Routes at intervals as described		100%
	Undertake routine safety inspections on Secondary Walking Routes at intervals as described		100%
	Undertake routine safety inspections on Linking Footways at intervals as described		100%
	Undertake routine safety inspections on Local Area Footways at intervals as described		100%
	Category 1 defects shall be rectified or made safe within	24 hours	100%
	Category 2 defects shall be rectified or made safe within	2 Months	100%
Condition	Maintain the condition of all footways such that the percentage meeting the condition rating level 4 remains below	%	N/A
	Maintain the condition of all footways such that the percentage meeting the condition rating level 3 & 4 remains below	%	N/A

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Service	Measured By	Target Standard	
		Standard	Compliance
Street Lighting			
Safety	Electrical testing of all equipment shall be undertaken at a frequency of	6 years	100%
	Emergency faults shall be made safe or repaired within ? hours of notification		100%
Condition	The percentage of street lights not working as planned at any one time should be no more than	%	N/A
	The percentage of street light columns exceeding their ESL should be no more than	%	N/A
	A non-emergency fault s shall be rectified within ? working days (Single Outage)	%	100%
	A non-emergency fault shall be rectified within ? working days (Section Fault 3 lights or more)	%	100%
	Bulk replacement of lamps shall be undertaken every x years (except where lanterns have been replaced with LED units)	years	100%
	Night time scouting of the whole of the asset shall be undertaken at intervals of	days	100%
	Average annual electricity consumption per street light (kwHrs)	kwhrs	N/A

Service	Measured By	Target Standard	
		Standard	Compliance
Structures			
Safety	Carry out General Inspections on Class 1 & 2 Roads at a maximum frequency of X years. Excluding structures programmed for a Principal Inspection.	2 years	100%
	Carry out General Inspections on Class 3 and Unclassified Roads at a maximum frequency of X years. Excluding structures programmed for a Principal Inspection.	3 years	100%
	Carry out Principal Inspections at a maximum frequency of X years.	6 years	100%
	Carry out Scour Inspections at a maximum frequency of X years.	years	100%
	Attend emergency maintenance call outs within X hrs and make	hours	100%

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Service	Measured By	Target Standard	
		Standard	Compliance
Structures			
	safe.		
	Attend non-emergency maintenance call outs within X hrs and make safe.	hours	100%
	Maintain all Structures such that the $BSCI_{ave}$ remains above	%	N/A
	Maintain all Structures such that the $BSCI_{crit}$ remains above	%	N/A
	Maintain all Structures such that the number of structures with a BCI_{ave} indicating a poor condition remains below		N/A
	Maintain all Structures such that the number of structures with a BCI_{crit} indicating a poor condition remains below		N/A
	Maintain all Structures such that the number of structures with a critical element with a BCI_{crit} indicating a poor condition remains below		N/A
	The total number of weight restricted bridges within the authority shall remain below		N/A
	The number of sub-standard structures subject to BD79 monitoring within the authority shall remain below		N/A

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Service	Measured By	Target Standard	
		Standard	Compliance
Traffic Signals			
Safety	Attendance at Major faults shall be within 'X' hours		100%
	Attendance at Minor faults shall be within 'X' hours		100%
	Undertake electrical inspections for electrical assets at each installation every “X” years		100%
Condition	Initial repair of major faults shall be within 'X' hours		100%
	Initial repair of minor faults shall be within 'X' hours		100%
	Complete repair all faults within 'X' hours/days		100%
	Bulk lamp change of wait signals except amber every 'X'months		100%
	Bulk lamp change of wait signals amber every 'X'months	n/a led	
	Bulk lamp change of regulatory signs every 'X'months	n/a led	
	The percentage of traffic signal installations exceeding their ESL should be no more than	years	100%
	Damage repair of major faults shall be within "X" days		100%
	Damage repair of less urgent faults shall be within "X" days		100%
	Failed lamps shall be replaced within "X" days	hours	100%

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5. Financial Summary

5.1 Planned Funding

The service standard targets shown in section 5 are based upon the following predicted funding levels. In future years the cabinet will decide upon the level of funding for the road taking into account the information and options supplied in the complimentary Asset Strategy and Options Reports (ASORs). Any updates required to the HAMP will then be made.

Section 5 of this HAMP is based upon the assumption that the funding levels remain the same for the next 3 years.

Asset	**Works**	**Funding Required £k**				**Long Term Funding Assumed £k**
		16/17	**17/18**	**18/19**	**19/20**	**Y3-Y20 pa**
Carriageways	Reactive	£	£	£	£	£
	Planned	£	£	£	£	£
Footways	Reactive	£	£	£	£	£
	Planned	£	£	£	£	£
Structures	Reactive	£	£	£	£	£
	Planned	£	£	£	£	£
Street Lighting	Energy Costs	£	£	£	£	£
	Reactive	£	£	£	£	£
	Planned	£	£	£	£	£
Traffic Signals	Energy/Communication Costs	Included in Street Lighting Energy Costs				
	Reactive	£	£	£	£	£
	Planned	£	£	£	£	£

Energy cost are shown at 2015 value although it is very likely that these will escalate significantly if recent trends in prices continue as they are predicted to do.

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5.2 Historical Expenditure

Historical expenditure invested in works on the Road/Highway Asset is shown below:

Asset	Works	Historical Expenditure £'000				
		11/12	12/13	13/14	14/15	15/16
Carriageways	Capital					
	Revenue					
Footways	Capital					
	Revenue					
Structures	Planned					
	Routine & Reactive					
Street Lighting	Energy Costs					
	Planned					
	Routine & Reactive					
Traffic Signals	Energy/Communication Costs					
	Routine, Planned & Reactive					
Totals:						

The above information shows that there was a total drop in expenditure from 2008/09 and 2009/10 to 2010/11 and beyond of approximately 37%. In the three year period between 2007/08 and 2009/10 the Council had obtained external funding for improving the carriageway and footway asset. Carriageways and footways had the biggest drop in expenditure between 2009/10 and 2010/11, dropping to a level pre external funding.

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5.3 Asset Valuation

As at March 2016 the highway asset is valued as follows:

Asset Type	Gross Replacement Cost (GRC)	Depreciated Replacement Cost (DRC)	Annualised Depreciation Cost (ADC)	Comments
Carriageways				
Footways & Cycleways				
Structures				
Street Lighting				
Traffic Management				
Street Furniture				
Total				

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6. Asset Investment Strategies

The strategies in this section have been determined using predictions of future condition over a 20 year period. The predictions enable strategies to be created to look at the whole life cost of maintaining the asset. Using long term predictions means that decisions about funding levels can be taken with due consideration of the future maintenance funding liabilities that are being created. Investment strategies for the major asset types are summarised below. These strategies are designed to enable the service standards in section 5 to be delivered.

Investment between Asset Types

In comparison to historical investment future investment is planned to be:

- Carriageways: level of investment maintained at similar levels
- Footways: level of investment maintained at similar levels
- Structures: level of investment maintained at similar levels
- Street lighting; level of investment maintained at similar levels, plus additional investment in "spend to save" energy efficiency initiatives
- Traffic signals; level of investment maintained at similar levels

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Carriageways

The overarching strategy for carriageways is to invest where possible in preventative maintenance in order to reduce the rate of deterioration of the asset.

The condition information indicates that the A & B roads are generally in a good condition with little strengthening or resurfacing maintenance required and may be allowed to deteriorate slightly and still be within the target standards.

The C and U roads will require a larger initial investment in resurfacing works in order to bring them up to the target standards prior to focussing on the preventative maintenance strategy.

Routine and reactive repairs are expected to continue at current levels and will require continued investment.

Category	Strategy	Comments				
Routine and Reactive Repair	Repair of defects to current intervention standards and response times.	The strategy requires the deployment of 12 works gangs on emergency and non-emergency repairs such as patching.				
Planned Maintenance Preventative	To catch roads in the initial stages of deterioration and prevent further deterioration.	The strategy is predicted to require the following annual approximate lengths of surface treatment:				
		Road Class	2016/17	2017/18	2018/19	2019/20
		A	km	km	km	km
		B	km	km	km	km
		C	km	km	km	km
		U	km	km	km	km
Planned Maintenance Corrective	Programme of resurfacing where the carriageway condition means a preventative treatment cannot be applied	The strategy is predicted to require the following annual approximate lengths of resurfacing:				
		Road Type	2016/17	2017/18	2018/19	2019/20
		A	km	km	km	km
		B	km	km	km	km
		C	km	km	km	km
		U	km	km	km	km
	Programme of strengthening where the carriageway condition requires a more substantial repair	The strategy is predicted to require the following annual approximate lengths of strengthening:				
		Road Type	2016/17	2017/18	2018/19	2019/20
		A	km	km	km	km
		B	km	km	km	km
		C	km	km	km	km
		U	km	km	km	km

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Footways

The overarching strategy for footways is to invest where possible in preventative maintenance of bituminous footways in order to reduce the rate of deterioration of the asset.

The condition information indicates that the Flagged footways are generally in a good condition with only a small amount of resurfacing maintenance required in order to remain within the target standards.

The bituminous footways will require an initial investment in resurfacing works in order to bring them up to the target standards prior to focussing on the preventative maintenance strategy. A small amount of strengthening works is required where constant overriding of the footway is causing severe damage and a higher standard of construction will reduce this.

Routine and reactive repairs are expected to continue at current levels and will require continued investment.

<table>
<tr><th>Category</th><th>Strategy</th><th colspan="5">Comments</th></tr>
<tr><td>Routine and Reactive Repair</td><td>Repair of defects to current intervention standards and response times.</td><td colspan="5">The strategy requires the deployment of 12 work gangs on emergency and non-emergency repairs such as small areas of broken slab replacement and patching etc.</td></tr>
<tr><td rowspan="3">Planned Maintenance Preventative</td><td rowspan="3">A programme of preventative treatment of bituminous footways in the initial stages of deterioration.</td><td colspan="5">The strategy is predicted to require the following annual approximate lengths of footway surface treatments:</td></tr>
<tr><td>Footway Type</td><td>2016/17</td><td>2017/18</td><td>2018/19</td><td>2019/20</td></tr>
<tr><td>All</td><td>km</td><td>km</td><td>km</td><td>km</td></tr>
<tr><td rowspan="6">Planned Maintenance Corrective</td><td rowspan="4">Programme of resurfacing/renewal of footways.</td><td colspan="5">The strategy is predicted to require the following annual approximate areas of footway renewals:</td></tr>
<tr><td>Footway Material</td><td>2016/17</td><td>2017/18</td><td>2018/19</td><td>2019/20</td></tr>
<tr><td>Flagged</td><td>km</td><td>km</td><td>km</td><td>km</td></tr>
<tr><td>Bituminous</td><td>km</td><td>km</td><td>km</td><td>km</td></tr>
<tr><td rowspan="4">Programme of strengthening of footways.</td><td colspan="5">The strategy is predicted to require the following annual approximate areas of footway renewals:</td></tr>
<tr><td>Footway Material</td><td>2016/17</td><td>2017/18</td><td>2018/19</td><td>2019/20</td></tr>
<tr><td>Flagged</td><td>km</td><td>km</td><td>km</td><td>km</td></tr>
<tr><td>Bituminous</td><td>km</td><td>km</td><td>km</td><td>km</td></tr>
</table>

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Street Lighting

The aim of the maintenance strategy is to ensure that all street lights are operating 99% of the time and all columns are in a safe condition. The night time inspection process enables 'dark lamps' to be identified and repaired within a seven day response time.

The structural testing programme enables columns in poor condition to be identified and replaced before an incident occurs.

The Council has developed a Carbon Management / Energy Reduction Plan which has highlighted major CO_2 emission savings available through improved street lighting management. All street lights which meet the appropriate criteria are turned off between midnight and 5am and a programme of lantern replacement with new energy efficient (LED) lanterns has been agreed where existing lanterns have become life expired.

<table>
<tr><th>Category</th><th>Strategy</th><th colspan="5">Comments</th></tr>
<tr><td>Routine and Reactive Repair</td><td>Repair of defects to current intervention standards and response times.</td><td colspan="5">The strategy requires the deployment of 3 number works gangs on emergency and other non-emergency repairs.</td></tr>
<tr><td rowspan="3">Planned Maintenance Preventative</td><td rowspan="3">Bulk lamp change</td><td colspan="5">The strategy is predicted to require the approximate annual quantities of lamp replacements per year:</td></tr>
<tr><td></td><td>2016/17</td><td>2017/18</td><td>2018/19</td><td>2019/20</td></tr>
<tr><td>Lamps</td><td></td><td></td><td></td><td></td></tr>
<tr><td rowspan="3">Planned Maintenance Corrective</td><td rowspan="3">Programme of structural renewal</td><td colspan="5">The strategy is predicted to require the following approximate annual quantities of columns to be renewed:</td></tr>
<tr><td></td><td>2016/17</td><td>2017/18</td><td>2018/19</td><td>2019/20</td></tr>
<tr><td>Columns Renewals</td><td></td><td></td><td></td><td></td></tr>
<tr><td rowspan="3">Carbon / Energy Reduction</td><td rowspan="3">Programme of lantern replacement</td><td colspan="5">The strategy is predicted to require the following approximate annual quantities of lanterns to be replaced with LED units:</td></tr>
<tr><td></td><td>2016/17</td><td>2017/18</td><td>2018/19</td><td>2019/20</td></tr>
<tr><td>Lantern Renewals</td><td></td><td></td><td></td><td></td></tr>
</table>

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Structures

The Council has identified

Routine maintenance needs are different for each structure type. These have been identified and estimated average amounts of annual work have been used to identify the works and funding requirement.

Category	**Strategy**	**Comments**				
Routine and Reactive Repair	Routine repair of defects to current intervention standards and response times.	The strategy requires the deployment of 5 work gangs/other agencies on emergency and other non-emergency repairs. (Bearing replacement, Waterproofing replacement, Painting, Joint repair/ replacement, Pointing etc.)				
Structure Type	**Work Type**	**Total No of Structures Requiring Works**	**Works for 2016/17**	**Works for 2017/18**	**Works for 2018/19**	**Works for 2019/20**
Road Bridges	Structure Strengthening Works					
	Parapet Upgrade Works					
Pedestrian Bridges	Structure Strengthening Works					
	Parapet Upgrade Works					
	Support Upgrade Works					
Culverts and Subways	Structure Strengthening Works					
	Parapet Upgrade Works					

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Traffic Signals

The aim of the traffic signals maintenance strategy is to ensure that all traffic signals are operating 99% of the time and all equipment remains in a safe condition. Installations are replaced only following obsolescence due to life expiry or external damage.

Where possible installations are replaced as a whole rather than replacing individual items of equipment.

<table>
<tr><th>Category</th><th>Strategy</th><th colspan="5">Comments</th></tr>
<tr><td>Routine and Reactive Repair</td><td>Repair of defect to current intervention standards and response times.</td><td colspan="5">The strategy requires the deployment of 2 work gangs/other agencies on emergency repairs and other non-emergency repairs.</td></tr>
<tr><td rowspan="3">Refurbishment of signalised junctions</td><td rowspan="3">Refurbishment of junction that have deteriorated or the equipment has become obsolete/unreliable</td><td colspan="5">The strategy is predicted to require the approximate annual quantities of junctions to be renewed:</td></tr>
<tr><td></td><td>2016/17</td><td>2017/18</td><td>2018/19</td><td>2019/20</td></tr>
<tr><td>Junction Renewals</td><td></td><td></td><td></td><td></td></tr>
<tr><td rowspan="3">Refurbishment of signalised crossings</td><td rowspan="3">Refurbishment of junction that have deteriorated or the equipment has become obsolete/unreliable</td><td colspan="5">The strategy is predicted to require the approximate annual quantities of pedestrian crossings to be renewed:</td></tr>
<tr><td></td><td>2016/17</td><td>2017/18</td><td>2018/19</td><td>2019/20</td></tr>
<tr><td>Pedestrian Crossing Renewals</td><td></td><td></td><td></td><td></td></tr>
</table>

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7. Risks to the Plan

The risks that could prevent achievement of the standards specified in this plan (section 6) are:

Plan Assumption	Risk	Action If Risk Occurs
The plan is based upon winters being normal	Adverse weather will create higher levels of detects and deterioration than have been allowed for.	Budgets and predictions will be revised and this plan updated if abnormally harsh winters occur.
Available budgets have been assumed as shown in section 7	External pressures mean that government reduce the funding available for roads	Target service standards will be revised to affordable levels
Construction inflation will remain at level similar 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. footways)	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.
Resources are available to deliver the improvement actions	Pressures on resources mean that staff are not allocated to service improvement tasks such that the predicted benefits cannot be fully achieved	Target dates will be revised and reported.

The risk has been evaluated in accordance with the councils corporate risk management strategy [4] .In addition to the risks above a Road/Highway Asset risk register is maintained recording the risks associated with each asset type. A review of this register is used annually when programmes of works are developed.

References

1) Asset Management Policy
2) Mid Wales Joint Local Transport Plan 2015
3) Network Management Plan
4) Highway Asset Maintenance Manual
5) Annual Status and Options Report
6) Highway Asset Data Management Plan
7) Service Improvement Action Plan
8) Welsh Government Road Length data
9) Welsh Government Traffic Volume data

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