HIGHWAYS ASSET MANAGEMENT PLAN

ANNUAL STATEMENT REPORT 2020

Environment Directorate,
Highways and Transport
Division

carmarthenshire.gov.wales

Cyngor Sir Gâr
Carmarthenshire
County Council

Contents

Section 1 – Introduction

1.1 Introduction

The highway network plays a vital role in facilitating the safe and efficient movement of goods and people. It underpins not just our economy but also the fabric and wellbeing of our communities. In common with highway authorities around the country the highway network in Carmarthenshire does however have a maintenance backlog and this is recognised through the HAMP where a risk-based approach is adopted in line with the recommended Code of Practice.

Going forward a HAMP Maintenance Manual will be developed to provide a specific focus on areas such as Network Hierarchies and Safety Inspection Policies.

Maintaining the highway network in a serviceable condition remains a challenge, particularly when considering the external influences which combine to undermine our roads. Severe weather events can significantly undermine our highways and issues such as the COVID pandemic challenge the logistical operation of maintaining our highways. Despite these challenges there has also been considerable progress made in how we manage our asset.

1.2 Challenges

The County has been subject to a number of significant weather events during 2019-20. Although Storm Callum caused widespread damage in 2018, particularly along the A484, there have been a number of subsequent major storms which have brought down trees, flooded roads and damaged the fabric of our highway infrastructure. These included:

- Storm Lorenzo 3rd October 2019
- Storm Hannah 26th to 27th April 2019
- Storm Ciara 8th to 9th February 2020
- Storm Dennis 15th to 16th February 2020
- Storm Ellen 19th to 21st August 2020
- Storm Francis 25th August 2020
- Storm Aled 2nd to 4th October 2020

It is considered that the frequency of these events is increasing, and this will have an impact on the highway network.

COVID 19 has clearly changed the way we all go about our daily lives on a personal level and has impacted all aspects of society. The County Council is a primary responder and a large part of this duty includes managing the highway and transport networks to ensure that vital services and support systems are maintained through difficult times. Although this has challenged our own logistical operations, we have nevertheless reacted to support regional COVID responses and major incidents such as the oil tanker derailment at Llangennech.

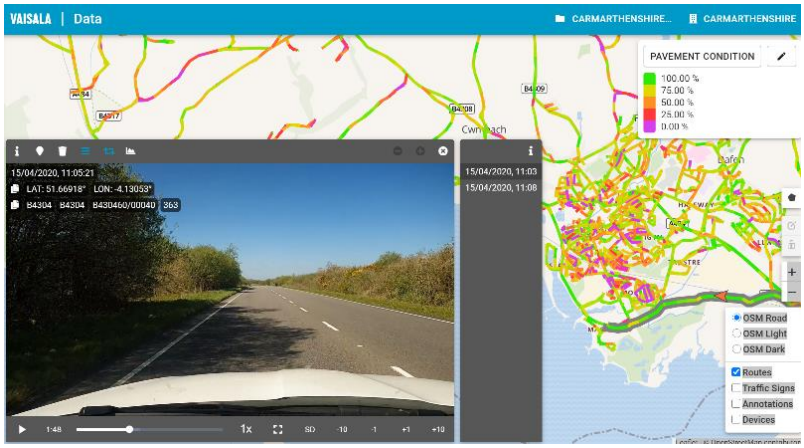
Ash Dieback is an additional challenge for our highway teams. Our 3500Km highway network is predominantly rural in nature and many highway verges and boundaries contain ash trees with the majority likely to be killed by the disease. Our highway teams have undertaken specific inspections of 581Km of A and B Class roads which has identified 2,512 diseased highway trees and 10,392 private trees requiring attention. Despite the COVID pandemic we have continued with surveys of 1155Km of C Class road, identifying 218 highway trees and 14386 private trees which have advanced ash dieback. A major tree felling programme is in place and follow-up surveys planned along with surveys of our unclassified highway network.

1.3 Achievements

Highways and Transportation has been successful in securing Welsh Government funding for the repair of a number of structures damaged by Storm Callum, particularly along the A484 north of Carmarthen where there is an extensive repair programme in place. A drainage survey system has been put in place with a pilot project undertaken to clean and survey sections of the most flood prone parts of the highway network. The A484 has been a particular focus. The study maps the drainage asset and identifies problems which may contribute towards flooding for proactive attention.

New map-based technology has also been introduced to undertake surveys of the highway network using an adapted smartphone. The surveys were undertaken through the summer months when other works were restricted to build up an inventory of the highway network.

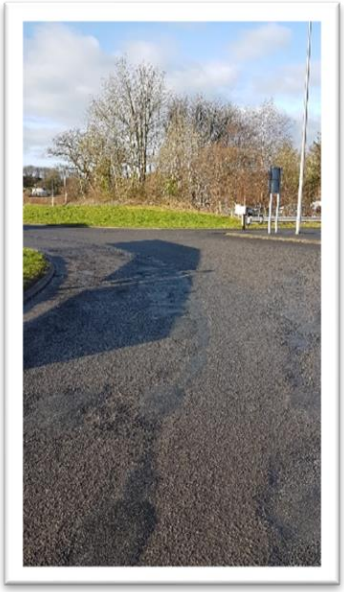
The data collected utilises artificial intelligence to assess highway condition, map traffic signs and road markings.



To date 96% of the highway network has been surveyed and survey data can be access remotely by staff which reduces the need for site visits.

1.4 Highways

The road, or carriageway asset, is by far the largest asset in terms of operational importance and investment value. Over recent years traffic volumes have continued to increase along with customer expectation. Increased levels of usage combined with the effects of more frequent adverse weather events can accelerate the deterioration of road surfaces. During the first few months of the COVID lockdown we saw dramatically reduced traffic volumes. However, this was short lived and whilst travel patterns have adjusted there has been a gradual return to the original volumes. Heavy goods vehicle journeys, which cause the most significant stress on the fabric of the highway are less likely to have reduced during this period as essential supply chains were maintained.



Carmarthenshire's highway network provides the vital infrastructure which supports and facilitates connectivity within our County and with the rest of Wales. Our road system ensures businesses continue to operate, people get to work, food reaches shelves, children get to school and hospitals. It is difficult to think of many activities in the community or of many services delivered by the County Council which are not at some stage reliant on our highway network.

Ensuring this network remains fit for purpose and provides for the safe and efficient movement of goods and people is an essential component in maintaining a healthy, vibrant and prosperous Carmarthenshire.

1.5 Structures

A number of bridge strengthening projects are progressing this year including Doethie bridge near Rhandirmwyn and Berem Bridge Pontyberem. The authority has a significant number (54) of sub-standard structures due to assessed weight capacity which are regularly monitored to maintain safe operation. In addition to on-going maintenance of existing structures stock the number of failed edge of highway supports is on the increase due to severe weather events, reduced highway drainage maintenance and the additional impact from increased traffic volumes and larger agricultural vehicles on the highway network.

- The Authority has 54 bridges where carrying capacity is less than the required EU loading requirement. The current rate of funding available for bridge strengthening is below that of what is required to make inroads in addressing the problem at hand. In accordance with Technical Standards, monitoring alone of sub-standard structures should be for a defined period of time. Should sufficient funding not be forthcoming, then the number of structural weight restrictions on the highway network will increase.

- The Authority is faced with an increasing number of highway support issues along the highway network which are closely associated with adverse weather conditions, particularly heavy rainfall.

- Immediately following the severe weather and flooding due to Storm Callum a programme of special inspections was carried out on main rivers and structures vulnerable to scour. No issues were identified during these initial reactive inspections.

- A large proportion of the bridge stock, especially those located on fast flowing rivers, are susceptible to scour. Scour will be identified during the inspection programme, and remedial works undertaken as required. Level 1 scour assessments are planned to proceed this winter and a Level 2 assessment programme will be developed subject to approved funding case.

1.6 Lighting

Our street lighting system includes over 20,000 lighting units. We also manage 5000 units for our Town and Community Councils. Since the last Annual Statement, the Public Lighting Team have worked in partnership with Town and Community Councils to introduce LED lighting units in Community Lights. This project was developed on an invest to save basis to reduce carbon emissions, lowered energy costs and improved light quality. The project was completed in March 2020.

The Public Lighting Team have also introduced new technology to enable mobile working so that lighting surveys, checks and works can be recorded electronically in place of the previous paper-based system.

There are two significant challenges for the Public Lighting Team:

- A large number of older steel lighting columns are life expired. Regular inspections help to reduce the risk of failure and where structural issues are identified they will be removed immediately.

- There are around 304Km of underground electric cables supplying lighting units which are deteriorating, and this is leading to an increasing number of cable faults and power outages.

Section 2 – Highways

2.1 Highways Status Report

The Transportation and Highways Division has been able to maintain key services this year despite the lockdown restrictions. A large programme of road refurbishment has been delivered and by early November we will have resurfaced 22km of priority sections of road. In addition, we surface dressed 63km of road providing essential surface restoration and preventative maintenance treatment. A significant portion (44%) of this has been funded by Welsh Government road refurbishment grant. There is no indication of grant funding for 2021 and our road refurbishment programmes in 2021 will be significantly reduced as a result and in addition to a £300k reduction in revenue funding from PBB's. We continue to have an overall lower than average level of investment in our Highways and transport, ranking 18th out of 22 authorities and remain in the lower quartile across Wales.

Based on known funding levels, the length of road estimated to be in a poor condition is predicted to increase from 9% to 28% over the next 20 years.

Key Facts
Carmarthenshire has the **second largest** highway network in Wales (3482 Km of highway) and is more than double the Welsh average of 1578km
We have the **third highest traffic volume** in Wales - in 2018 the wales average was 1.33 billion vehicle km/per year and Carmarthenshire were third at 2.06 billion (Cardiff 3.0 and RCT at 2.15 were highest)
In 2018/19 our **spend on highways and transport was ranked 18th out of 22** authorities on money spent per km on highways and transport services. £4620/km compared to a Welsh average of £10524/km.

(* data from StatsWales.gov.wales)

There have been a number of particular points of note over the last year (2019-20) regarding our highway network. Work has continued in delivering projects funded by the £5.2M road refurbishment grant from Welsh Government (2018-21) and the £3.1M grant in March 2019 for remedial works following Storm Callum. A further £936k has been secured from Welsh Government to address storm damage highway infrastructure and work is progressing on a number of schemes.

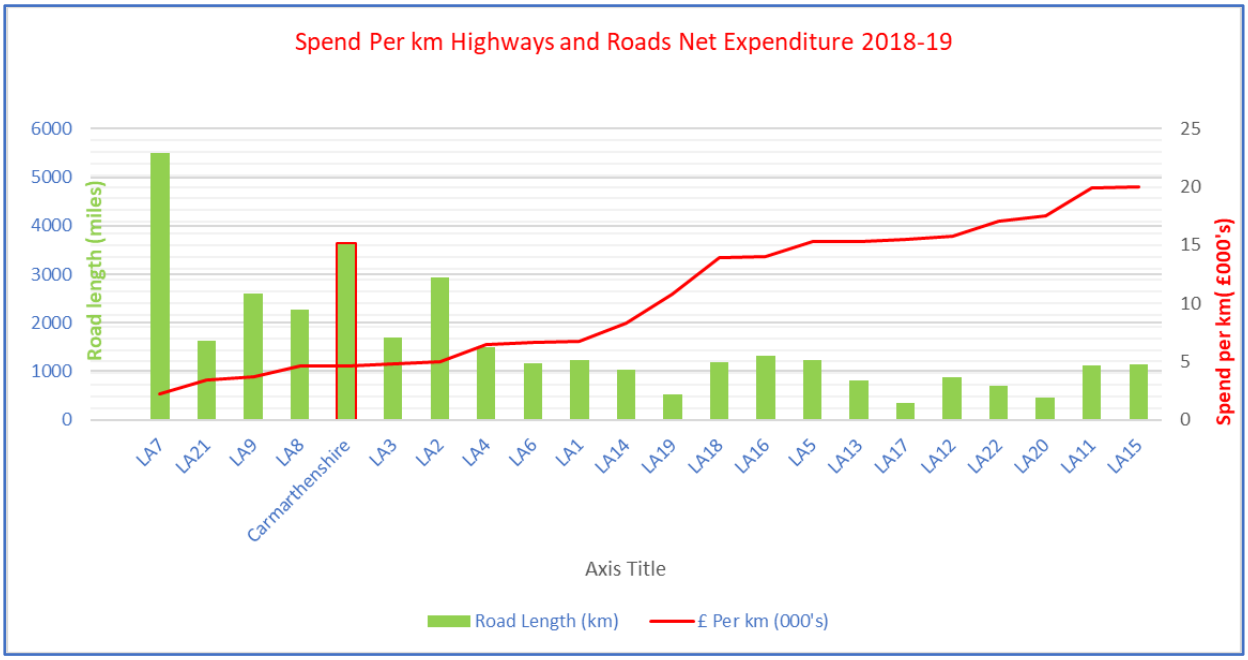
Carmarthenshire successfully hosted stage 6 of the Women's Tour of Britain in June 2019.

Our 3500km highway network is subject to many external influences which cause the asset to deteriorate such as weather impacts and traffic loading. There is a backlog of carriageway maintenance works in Carmarthenshire equating to £36M. It is currently estimated that £6M/year needs to be invested in our roads to maintain the current condition level. Our current investment consists of £0.6M of County Council funding which has been bolstered through grants of £5.2M over a 3-year period from Welsh Government. The impact of current investment levels and investment options are set out within this report.

The latest available condition survey data for 2018-19 show that Carmarthenshire **remains in the lower quartile** for road condition.

Road Conditions: Percentage of A,B and C Roads in poor condition (18-19 data)		
A Roads	**5.2%**	**Ranked 20th (out of 22 authorities in Wales)**
B Roads	**4.2%**	**Ranked 10th (out of 22 authorities in Wales)**
C Roads	**12.5%**	**Ranked 17th (out of 22 authorities in Wales)**

These performance figures are directly related to investment levels in Carmarthenshire. The graph below shows an investment comparison with other local authorities in Wales.



The impacts of different investment levels are discussed in this report. The Welsh Government has provided additional grant funding in recent years amounting to £5.2M over the period 2018-21.

Table 1. Estimated carriageway maintenance need based on measured road condition

Road Class	A	B	C	U	Total	
Network Length (km)	249.6	331.5	1283.8	1617.1	**3482**	
Av. Width (m)	7.3	6	5	3		
Surfacing rate (£)	12	10	10	10		
Surface dressing Rate (£)	5	4	2.5	2.5		
% Red (>100) Resurfacing	5.4	4.7	12.5	10		Condition
% Amber 1 (80-100) Resurfacing	5.5	5.4	9.3	3.8		
% Amber 2 (40-80) Surface treatment	26.5	23.5	28.8	21.5		
Total	**37.4**	**33.6**	**50.6**	**35.3**		
Area Red	98392.32	93483	802375	485130		One off costs
£ (resurfacing cost)	£1,180,708	£934,830	£8,023,750	£4,851,300	**£14,990,588**	
Area Amber 1	100214.4	107406	596967	184349.4		
£ (Resurfacing cost)	£1,202,573	£1,074,060	£5,969,670	£1,843,494	**£10,089,797**	
Area Amber 2	482851.2	467415	1848672	1043029.5		
£ (Surface treatment cost)	£2,414,256	£1,869,660	£4,621,680	£2,607,574	**£11,513,170**	
Sum Total	£4,797,537	£3,878,550	£18,615,100	£9,302,368	**£36,593,554**	

The above table indicates that to rectify all areas of highway requiring remedial surfacing works would cost £36,593,554.

2.2 Ash Die-back

Ash trees across Europe are under attack by a pathogen that significantly affects the structural strength of ash trees. The authority has established a management plan to respond to this and the Transportation and Highways Division has taken on a key role in managing trees on and alongside the highway. In 2019 highway inspection teams undertook surveys of all A and B roads across the county (581km) and identified 2512 Highway trees and 10326 private trees requiring immediate attention due to the level of the disease. Works packages have been developed using specialist contractors to remove hazardous trees on the public highway. Trees on private land are subject to notice and appropriate action by the landowner.

Despite the COVID pandemic we have continued with surveys on our C Class network and surveyed 1155 km (90%) of C roads, identifying 218 highway trees and 14386 private trees.

This programme is an on-going risk for the authority and is likely to require continued survey and funding as the impact of the disease is understood. Whilst the majority of the trees are on private land, as the highway authority we have a duty to identify potential risks affecting the safe use of the highway, and we work with landowners to reduce these risks.

2.3 Drainage surveys

A pilot survey was undertaken early in 2020 by a specialist survey team using Quickcam survey techniques in order to record detailed location information of our drainage assets above and below ground and also provide a condition rating. The survey records the service level (ability to carry water) and its structural condition. In total we surveyed around 15km of the A484 north of Carmarthen. The results are being assessed however initial findings indicate some significant issues. Further surveys are planned for this year and this information will be used to develop funding bids to establish a pro-active programme of survey and repair.

Investment will be required to maintain serviceability and efficient functioning of our drainage assets.

Of the 15km surveyed, we recorded almost 22km of linear drainage (mainly pipes) and 1081 point items (gullies and manholes). The survey provides a detailed map along with video and photo information.
The surveys identified:

- 450m of pipe as not fit for purpose.
- 1126m of pipe blocked or in an unsafe condition

Examples of blocked pipes

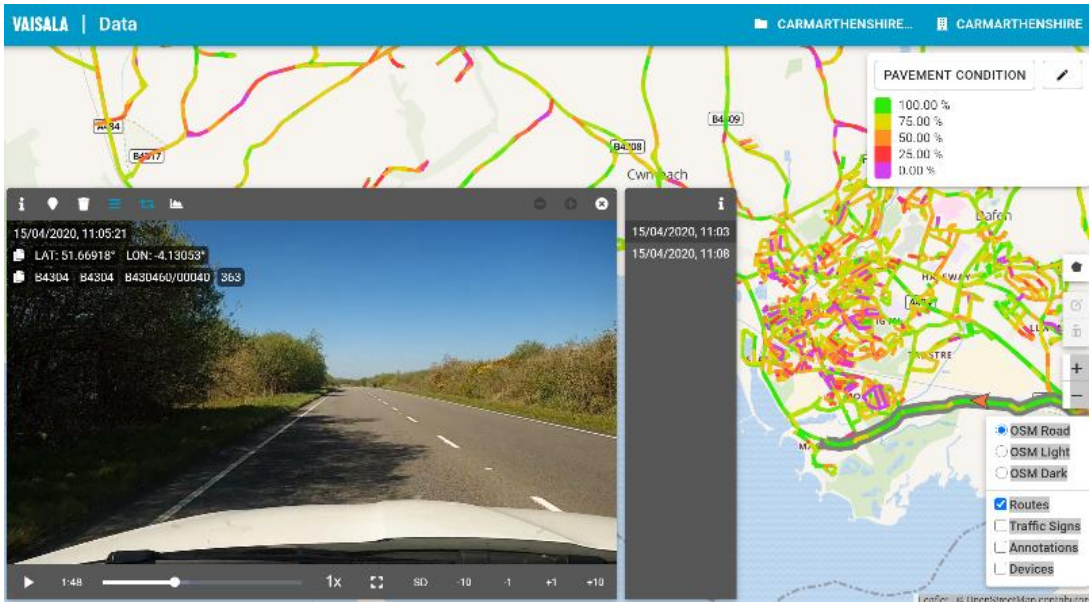
Using the data from these surveys to extrapolate condition it could be estimated that there are the following lengths of drainage systems requiring investment on the A&B network alone.

- **Estimated 17.4km of pipe not fit for purpose.**
- **Estimated 43.6km of pipe blocked or in an unsafe condition**

Further surveys will provide a more accurate estimate however it is clear that funding needs to be identified to carry out programmed cleansing of drainage systems in addition to traditional gully emptying.

2.4 New Technology – Condition and inventory surveys

In March 2020, we commissioned a new technology system which enabled us to undertake surveys of the highway network using an adapted smartphone. This was part of a project to improve our inventory and asset data. The project was supported by a growth bid fund.



During the lockdown period and throughout the summer we have redeployed staff that were unable to undertake their day job and also taken advantage of quieter roads to undertake these surveys. To date we have surveyed 96% of our network, a staggering 3407km. This information provides us with an up to date video which is map based. The artificial intelligence in the system carries out a condition analysis of the highway network to produce a coarse visual assessment (CVI). In addition the system recognises and categories highway signs which can assist us with managing our assets. To date over 22,000 signs have been recorded and categorised.

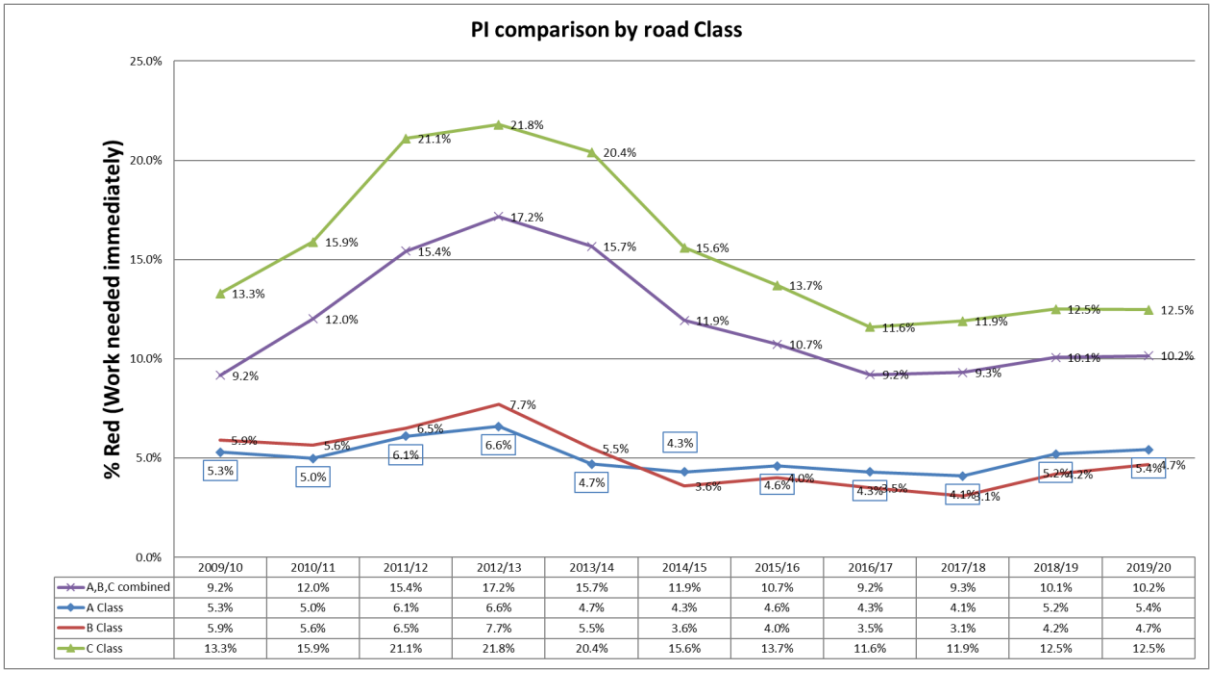
As a result, we have been able to review and assess issues and projects on the highway network by having access to current information. This has been very helpful with the travel restrictions and going forward provides opportunities for efficient ways of working.

2.5 Highways Condition

This section sets out the condition trend and provides commentary on the asset performance and investment levels.
The current Welsh Government refurbishment grant (2018-20) has funded a number of surfacing schemes around the County which were prioritised to target areas of greatest risk.
In 2019 we resurfaced 34km of an estimated 350km which is in a poor condition (Red)
The condition of the County road network over the 10-year period of analysis is one of minor deterioration overall. The condition of A and B Class roads has remained relatively stable over the period although there is a continued trend of decline despite recent investment. Compared across Wales our road condition is in the lower quartile.

Asset Group: Carriageways (Roads)

Measured road condition (PI – Performance Indicator)



	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
A,B,C combined	9.2%	12.0%	15.4%	17.2%	15.7%	11.9%	10.7%	9.2%	9.3%	10.1%	10.2%
A Class	5.3%	5.0%	6.1%	6.6%	4.7%	4.3%	4.6%	4.3%	4.1%	5.2%	5.4%
B Class	5.9%	5.6%	6.5%	7.7%	5.5%	3.6%	4.0%	3.5%	3.1%	4.2%	4.7%
C Class	13.3%	15.9%	21.1%	21.8%	20.4%	15.6%	13.7%	11.6%	11.9%	12.5%	12.5%

The sharply changing condition indicators between 2009-2015 illustrate the impact of a period of significant flooding and successive harsh winters followed by increased investment in road maintenance in 2012-15 (Local Government Borrowing Initiative).

Commentary

Our carriageways are maintained through a combination of corrective and preventative treatments and we use the network hierarchy to prioritise investment within budget resources. Early investment in preventative treatments provides a more cost-effective approach and decreases the need for more expensive reactive maintenance. We require additional investment to fund a pro-active approach so that road treatments can be carried out road surfaces deteriorate beyond an economic threshold.

Expenditure Summary by category 2019-20

Cost Category	£	Output
Planned Maintenance - Corrective	£2,085757	• 40 resurfacing schemes provided. • 25km of new surface along with carriageway patching works.
Planned Maintenance - Preventative	£1,764,454	• 57 surface dressing schemes provided. • 57km of new surface treatment.
Routine Cyclic Maintenance	£4,069,218	• Cyclic gangs & routine works, drainage, sign cleaning, grass cutting
Routine – Reactive Repairs (emergency)	£540,557	• Pothole repairs etc.
Routine – Reactive Repairs (non-emergency)	£401,953	• Drainage and surface repairs, sign repairs
Routine – Inspection & Survey	£276,079	• Asset management & condition surveys
Operating Costs	£903,769	• Includes Winter Maintenance

- The above cost categories are based on groupings developed in accordance with national reporting requirements and to inform budget planning.

- The overall length of road treated in 2019-20 was 82 km, which is 2.3% of the highway network. This equates to a treatment period of over 42 years on average per section of road.

Drainage

The lifespan of our highway network is greatly influenced by having a good system of drainage to take surface water off the road and this also has important highway safety benefits.

In 2019 we maintained our electronic recording system to capture details of each gully cleaned, the levels of silt in the gully and any defects found. This helps inform decisions regarding the

	In the urban areas there will normally be a system of road gullies with connecting carrier pipes taking surface water to the nearest available watercourse. In the rural areas the drainage system will be a combination of road gullies and grips (channels through the highway verge) which are often connected to roadside ditches and again normally discharge to the nearest available watercourse. Around the highway network we currently have over 55,000 road gullies which we clean annually on a scheduled basis. Similarly, our aim is to recut grips on an annual basis prior to the winter season.	cleaning operation to target areas of greatest need. In common with other local highway authorities the inventory of the interconnecting drainage pipes lacks detail. Recent growth funding has provided a pilot survey carried out early 2020. and cleaning works prioritised towards high risk areas of the network and known flooding areas. The data is summarised in this report. The data will provide a better understanding of the drainage network, the identification of problems and minor improvements, all of which will help reduce further flood risk.

Highway at Pontweli during Storm Callum

2.6 Highways Investment Options

Road assets deteriorate slowly over time and consequently a long-term view needs to be taken. This report includes 20-year forecasts to enable decisions to be taken with an understanding of their long-term impact. The investments analysis for 2020-40 includes the recent Welsh Government grant which is in its final year (2020) and proposed PBB reductions.

A number of budget scenarios showing the effect of investment on the carriageway condition performance indicator have been carried out.

Condition forecasting methodology
This has been carried out using a forecast model developed by the County Surveyors Society Wales CSSW Road Asset management project. The tool is intended for use by Welsh authorities to assist in Asset Management and budget planning. The results are considered realistic and demonstrate the impact of a continued reduction in real terms investment in the highway network, against a backdrop of increasing traffic volumes and user expectation. Reductions in preventative maintenance are leading to higher levels of reactive repair placing further pressure on the reducing revenue resources. Unplanned works are by nature less economical and increase safety risk for road users and increased risks to the authority due to and are less environmentally friendly due to wasted resources. The calculations are based on depreciation of the existing highway network and using known treatment costs and current condition values from SCANNER data. The condition indicator used in the examples is a combined indicator across all road classes and provides an indication of the likely effect of current budget levels on actual carriageway condition across the County.

The following options show the predicted levels of road condition related to each funding scenario. There are 3 investment options that have been considered for comparison:

Road condition indicators

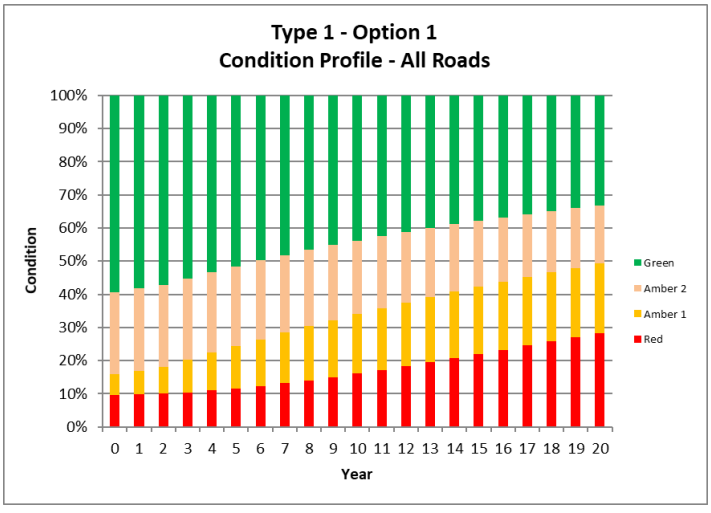
A description of the condition indicators and potential maintenance treatments are as follows:

- **Green** – Good condition - No planned works are anticipated in the next 3 years
- **Amber 2** – Preventative maintenance, typically surface dressing on the 3-5 year programme
- **Amber 1** – (Imminent Red) Works should be planned by Year 3 – part Preventative/Corrective maintenance i.e. Resurfacing/Surface dressing/patching
- **Red** – Maintenance work needed now – Corrective maintenance i.e. Road Resurfacing

Options summary

Option 1 - Existing budget – funding including WG Grant of £1.5M in 19/20 and £2.1m 20/21, County Capital £600k/annum and Revenue £1300k/annum, reducing in 21/22 by £1.5M (end of WG Grant) and 300k PBB revenue reduction.

Funding/Year	**19/20**	**20/21**	**21/22 onwards**
Welsh Government	1.5	1.5	0
CCC	1.9	1.9	1.6
Total invested	**3.4**	**3.4**	**1.6**



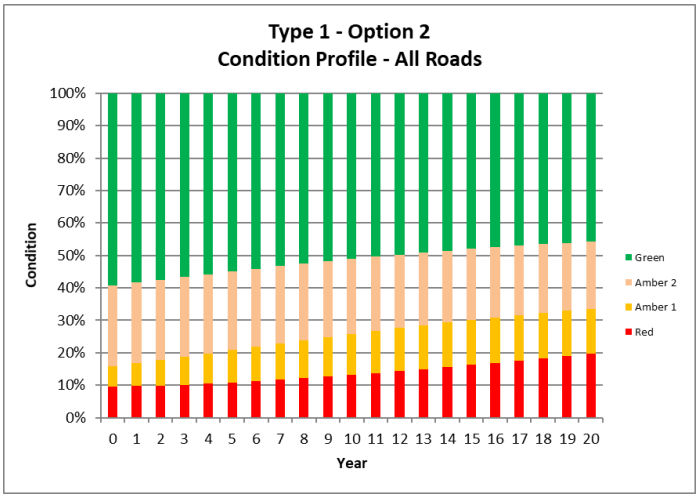
The percentage of road in poor condition (Red) increases from 9% (313km) to 16% (556km) at 10 years and 28% (974km) at 20 yrs.

The percentage of road in good condition (Green) falls from 59% to 43% at 10 years and to 33% at 20 years.

Option 2 – Modest option - Modelled investment of £3.4M/annum

This maintains funding at current levels including the additional £1.5M grant, £600k County Capital & Revenue £1300k (assumes WG grant continuing).

Funding/Year	19/20	20/21	21/22 onwards
Welsh Government	1.5	1.5	1.5
CCC	1.9	1.9	1.9
Total invested	**3.4**	**3.4**	**3.4**



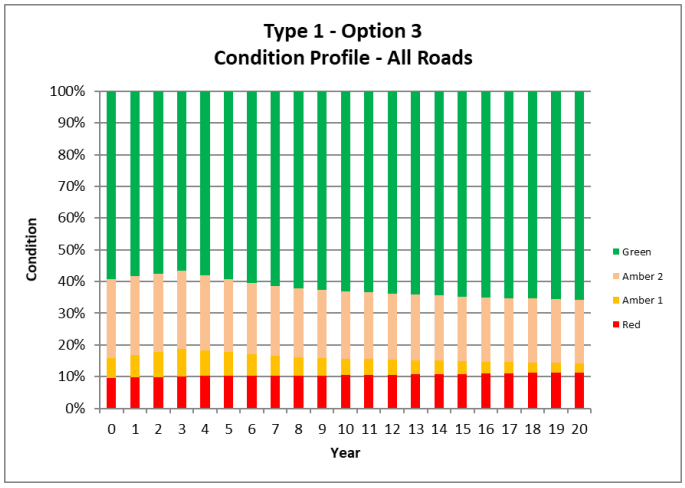
The percentage of Red increases from 9% (313km) to 13% (452km) at 10 years and to 20% (696km) at 20 yrs.

The percentage of Green falls from 59% to 51% at 10 years and to 45% at 20 years. This represents a reduction of 557km of highway in a good condition.

Option 3 – Steady-state Option -. Modelled investment of £6M/annum.

This option maintains the asset in a steady state condition with a gradual improvement. This requires an increase to the existing budgets in year 4 to **£6M.** This is most likely to be funded by Capital £5m and Revenue £1m.

Funding/Year	19/20	20/21	21/22	22/23 onwards
Welsh Government	1.5	1.5	1.5	1.5
CCC	1.9	1.9	1.9	4.5
Total invested (£m)	**3.4**	**3.4**	**3.4**	**6.0**



The percentage of Red increases marginally from 9% to 10% at 10 years and 11% in 20 yrs.

The percentage of Green increases from 59% to 63% at 10 years and to 66% at 20 years.

This provides for an almost steady state. A modest improvement is predicted in the percentage of highway in good condition with the length of roads in poor condition remaining stable.

2.7 Highways Summary

The management of our highway network is a key component in delivering many of our corporate objectives. There is an adage that a 'stitch in time saves nine' and this has relevance to highway maintenance.

Initial capital investment in preventative surface treatments provide a very cost-effective way of prolonging the life of the carriageway. This reduces the necessity for more expensive resurfacing treatments at a later stage. It also decreases reactive carriageway repairs such as pothole repairs and relieves pressure on revenue budgets and resources. However, such an approach does require initial capital funding.

The County Council currently invests £1.6M in surfacing and surface dressing work and this has been bolstered by Welsh Government Grant of £5.2M (2018-2020) which has significantly improved our rate of investment. The carriageway condition data does confirm a long-standing backlog of highway maintenance and demonstrates the necessity to invest in our highway network to prevent future deterioration. Potential PPB savings of £300k will have a further impact on road conditions unless grant funding is available to offset this budget reduction.

2.8 Footways and Cycleways

<table>
<tr><th colspan="3">Asset Group: Footways and Cycleways</th></tr>
<tr><th></th><th>Statistics</th><th>Commentary</th></tr>
<tr><td>Footways</td><td>
Footway Length by Material (km)
<table>
<tr><th></th><th>Bituminous</th><th>PCC Slabs</th><th>Precast blocks</th><th>Concrete</th><th>Total</th></tr>
<tr><td>Total</td><td>869</td><td>48</td><td>6.5</td><td>12.8</td><td>936</td></tr>
</table>
The predominant material for our footways is bituminous macadam.

Our footway resurfacing programmes are based on local priorities with budgets allocated in line with the extent of footway.
Reactive repairs to footways in 2019-20 cost £22,062 and were funded through revenue budgets.

In addition to reactive repairs, in 2019-20 we invested £200,000 of Capital funding into a programme of footway refurbishment works, with an additional £100k in 2020. Additional linkages with Active Travel funding and Safer Routes in Communities is also being utilised to improve routes for pedestrians and cyclists.
</td><td>
• Carmarthenshire’s footway/cycleway network is extensive at over 1000km.
• CSS Wales is developing a National Code of Practice for a footway hierarchy.
• We will develop a programme of headline condition data in line with the CSS Wales HAMP procedure.
• Footway inspections are currently carried out at regular frequencies alongside road inspections.
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<tr><td>Cycleways</td><td>
• On road cycle-lanes – 2.6km
• Dedicated cycle-tracks/shared use paths – 23.3km
• On road cycle routes (e.g. National Cycle Network) – 126km

These lengths are estimated based on current confirmed responsibilities for the highways service.
Increasing cycling numbers and networks will require continued investment.
</td><td>
• The cycleway network is currently being formulated and formal inspection regimes introduced. This will support the County Council’s cycling ambitions
• Repair and service level targets will be established in line with National recommendations
</td></tr>
</table>

Asset Group: Footways and Cycleways		
	Statistics	**Commentary**
Key Issues	**Corporate funding has been provided to support off-road cycleways which will help to maintain these routes. Funding for on-road cycle routes remains a challenge.**	
Current Strategies	The council's current strategy is to keep the footway asset in a condition which is safe and does not hinder the customer's journey. We do this by means of regular safety inspections and a prioritised reactive repair system. A more pro-active programme of preventative maintenance and refurbishment will be developed, subject to approval, as part of our maintenance manual (Part 4 of the HAMP).	

2.9 Footways and Cycleways Summary

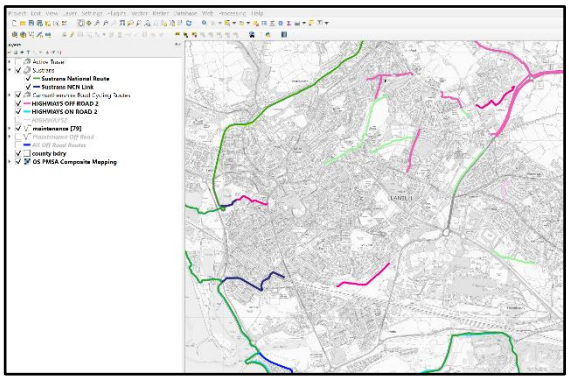
Our footway and cycleway networks play an important role in facilitating sustainable modes of travel and directly support the Active Travel agenda. The County Council has set out its ambition of being the cycling hub of Wales and the HAMP has an important role in supporting our adopted cycling strategy.

Footways are currently inspected on a regular basis alongside carriageway inspections and a methodology is being developed for cycleway inspections.

A wide review of known cycle routes is underway and proposals are being developed to develop a hierarchy led management plan and to improve consistency in the inspection and maintenance across the cycle network.

A programme of work is underway on a number of key routes across the county and around 170k will be invested in maintenance of cycle routes.

In 2019/20 we were able to introduce a £200k investment into footway maintenance and an additional £100k in 2020. This is important to continue and build on investment in footways, and in cycleways, to realise our corporate objectives. Current Capital budgets do not support this. A pro-active capital investment in preventative treatments can reduce the demand for less economical reactive maintenance which pressurises our revenue budgets.



Section 3 – Bridges and Structures

3.1 Bridges and Structures Introduction

Carmarthenshire has an extensive highway network, the second largest in Wales, and providing vital support to that network there are some 1872 structures. Whilst our 799 highway bridges and 49 footbridges may be easily appreciated there are also 560 retaining walls with a cumulative length of around 19Km, 459 culverts and 5 subways which all provide a largely unseen but nevertheless key role in supporting the highway network. These structures have been built over a wide timespan and vary considerably in the materials and construction methods. 55 of the structures are listed.

These structures are relied upon to remain in service year after year and accommodate changes in traffic and vehicle loadings. All structures are inspected and assessed on a scheduled basis in accordance with National standards to ensure that the inspection regime provides timely, accurate and appropriately detailed information on asset condition and performance. Safety defects are identified and addressed in a prioritised manner, and the data informs effective maintenance management and planning of our highway structures.

There are currently 54 bridges which have been assessed as sub-standard (reduced to 54 from 56 in 2019 following further assessment of 2 structures) in terms of carrying capacity, of which 9 are weight restricted for some classes of heavy vehicles. Where required, regular monitoring inspections are being carried out and all bridges are managed in accordance with strict technical standards to keep these structures in service and maintain their safe operation. It is estimated that the cost of strengthening these sub-standard structures is of the order of £8.8 million. It is also estimated that the maintenance backlog on highway structures is circa £5.5 million.

As part of our review of practices to comply with recommendations of the 2018 Code of Practice, CSS Wales are developing accreditation for Structures inspections. Our inspection team are in the process of under-going a competency assessment to ensure our inspections are carried out to the required standards.

Revenue funding in 2019 has remained steady and allows reactive and routine maintenance works to be undertaken. There is however a significant backlog or repair and preventative works which should be considered for funding. Planned PBB reductions of £24k in 2021 will not support improvements to maintenance regimes, which are largely reactive.

Capital funding of £834k in 2019 enabled the following output:

- New Footbridge at Pontyates
- Highway support retaining wall A484 near Pante, Bronwydd
- Completion of Pantyglyn retaining wall, Llanybydder
- Design work and land charges for strengthening programme schemes

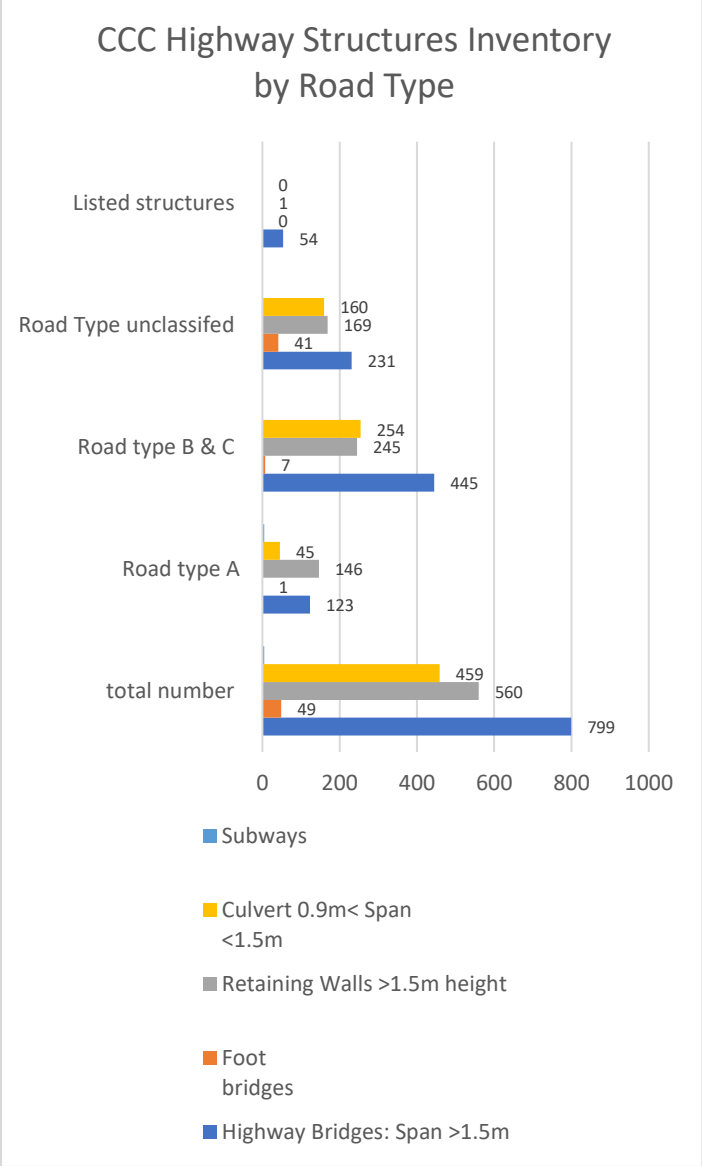
A484 Pante Retaining Wall

A programme of design and construction is underway aiming to reduce the number of sub-standard structures. Notable schemes commencing in 2020 include:

- Railway Inn Llanpumsaint - Bridge strengthening
- Doethie Bridge, Rhandirmwyn – Bridge replacement
- Mynyddygarreg Bridge – Bridge replacement
- Berem Bridge, Pontyberem – Bridge replacement
- Sawdde Culvert, Llangadog – Upgrade works

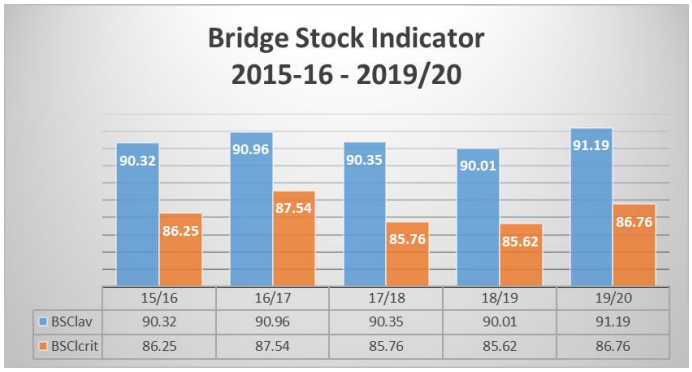
The following section provides detail on the status of our structure's assets, their condition and investment options for their continued maintenance.

3.2 Bridges and Structures Status

Asset Group: Highway Structures		
	Statistics	**Commentary**
The Asset		• Bridge inventory is stored in the WDM Asset Management System (WDM) • There is a high confidence in the core structural inventory data and additional data is updated as part of the routine General Inspection regime of structures. • Growth in the structures' asset has been minimal in the last five years. The increase in numbers is related to new highway retaining structures to address highway support issues coupled with the construction of new structures
Inspections		• 42 structures have been identified that require a Principal Inspection. The remainder of the structures are fully inspected through General Inspections. • Principal inspections suspended in 2020 due to COVID restrictions

Inspection Statistics	No.
Number of bridges requiring principal inspections – 6 years	42
Number of principal inspections scheduled to be undertaken in 19/20	7
Number of principal inspections on time	7
Number of structures requiring general inspections – 2 years	1872
Number of planned general inspections	936
Number of general inspections on time	778

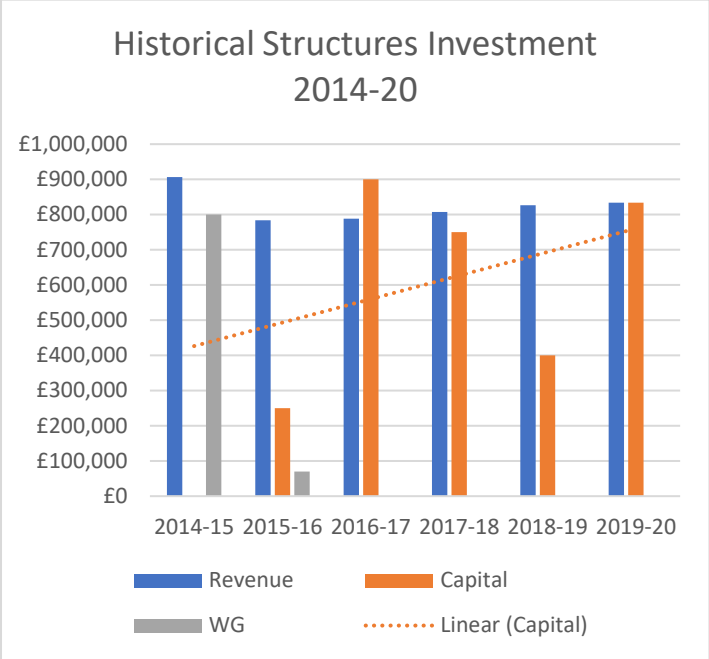
Asset Group: Highway Structures

	Statistics	Commentary
Structural Condition	<table><tr><th>Assessment Statistics</th><th>No.</th></tr><tr><td>Number of council owned / maintained bridges that failed assessment</td><td>126</td></tr><tr><td>Number of privately owned bridges within council's road network that failed assessment</td><td>5</td></tr><tr><td>Number of council owned / maintained bridges subject to monitoring / special inspection regimes</td><td>54</td></tr></table>	• The 5 privately owned bridges are owned by Network Rail (3no.) and Sustrans (2no.). Two of these have since been strengthened to 40 tonne live loading standard and discussions are on-going on the remaining structures.
Weight Restrictions	<table><tr><th>Weight Restrictions</th><th>No.</th></tr><tr><td>Number of council owned / maintained weight restricted bridges (excluding acceptance weight restriction)</td><td>9</td></tr><tr><td>Number of council owned / maintained height / width restricted bridges</td><td>1</td></tr></table>	• Of the 9 weight restricted bridges, three are programmed for upgrading in 2020/21.
Bridge Condition Indicators	 **Definition:** **BCIAv** is the average BCI for a bridge evaluated taking into account the condition of all structural elements in a bridge. **BCICrit** is the critical BCI for a bridge evaluated taking into account the condition of those elements deemed to be of very high importance to the bridge.	• The 2019-20 BSCIave of 91.19 and BSCIcrit of 86.76 indicate that the highway structures are in a good to very good condition (score of 80-100 in accordance with CSS Wales performance indicators. As a consequence of sustaining the current level of revenue funding, the overall condition performance indicator values have remained fairly constant.

Asset Group: Highway Structures		
	Statistics	**Commentary**
	BSCIAv and BSCCrit are the average and critical condition index for a bridge stock evaluated using the BCIAv and BCICrit values for all bridges in the stock.	

Performance Indicators

Description	2019/20 Result	Comments
% of Principal Inspections carried out on time	100%	
% of General Inspections carried out on time (frequent highway safety inspections mitigate safety risks where structural inspections are overdue)	83%	Staffing levels restricted output
Bridge Stock Condition Indicator – average $BSCI_{av}$	91.19	
Bridge Stock Condition Indicator – average $BSCI_{crit}$	86.76	
No. of Council owned bridges failing European standards	126	Figures to 31.03.20
No. of Council road bridges with weight or width or height restriction	10	9 weight restrictions and 1 height restriction

Asset Group: Highway Structures		
	Statistics	**Commentary**
Historical Investment		• Planned works comprise of maintenance programmes which target renewing the asset. • Reactive works are smaller scale defects which require repair to reduce safety issues. Budgets are based on historical costs. Such works are funded from the revenue budget.

Prioritisation of Overall Funding Needs

Using the structures priority matrix which takes into account the following:

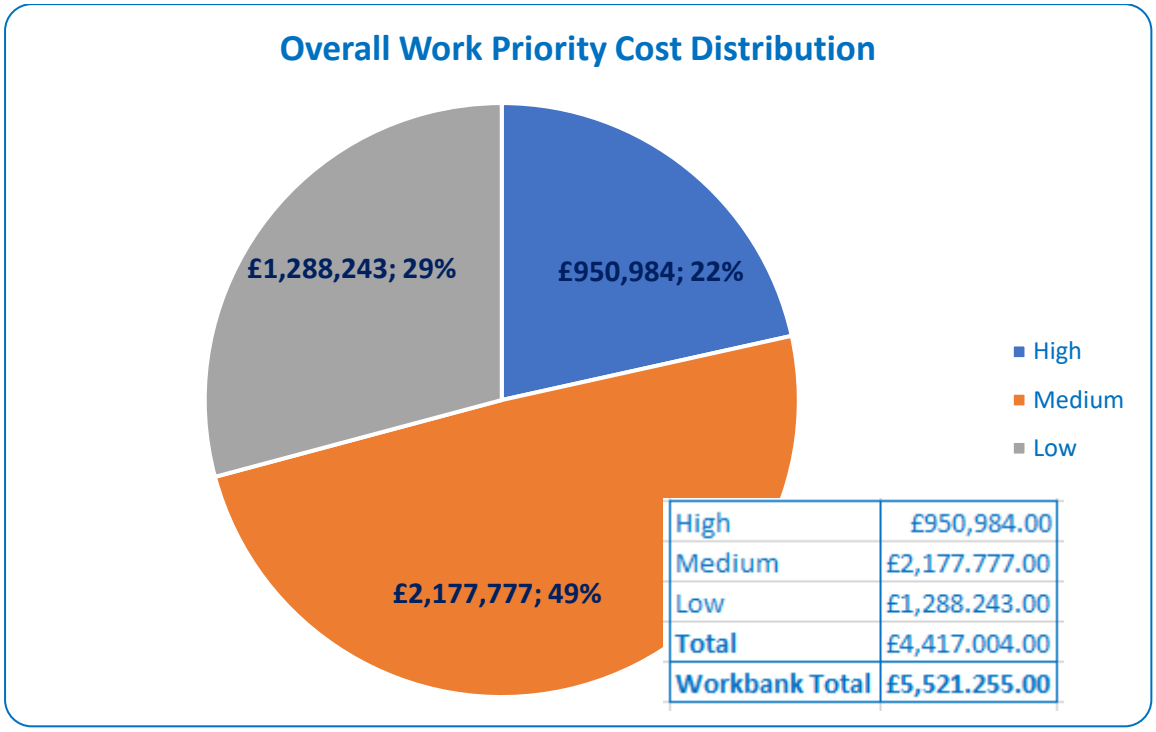
- Road Hierarchy
- Structural condition
- Access/community impact
- Network issues
- Traffic management impact

Strengthening / Replacement

There are currently 54 structures located on the highway network that whilst in safe operation, are considered sub-standard in terms of their load carrying capacity. There are also a number of structures, due to their overall poor condition, which have been included for replacement. Detailed design is currently being carried out on 15 structures, with a high priority being assigned to structures with a high scoring derived from the priority matrix.

Maintenance Needs

The following figures are derived from the Department's Bridge Management System and relates to the estimated cost of addressing defects identified by the Bridge Inspectors as part of biennial General Inspections. The work is categorised as high, medium and low priority in a scoring matrix which uses factors including extent, severity and defect type. The overall cost is termed the work bank total.



High	£950,984.00
Medium	£2,177.777.00
Low	£1,288.243.00
Total	£4,417.004.00
Workbank Total	£5,521.255.00

3.3 Bridges and Structures Summary

The bridge stock has displayed a slight upwards trend in terms of the Condition Performance Indicators since 2015/16 – the limited amount of inspection data available prior to this date, primarily in relation to retaining walls, gave figures which were not truly representative and have not been included. It is considered that the overall condition performance indicators will not improve in the short term, however by sustaining the current level of revenue funding, it is considered that the overall condition performance indicators will remain between 80 and 90 which represents 'Good' to 'Very Good' condition in accordance with the County Surveyors Society (Wales) classification of structures condition Performance Indicators (see table below).

Bridge Stock Indicator	**15/16**	**16/17**	**17/18**	**18/19**	**19/20**
BSCIav	90.32	90.96	90.35	90.01	91.19
BSCIcrit	86.25	87.54	85.76	85.62	86.76

Continued investment in our bridges and structures is essential to maintain continuity of our highway network. Current funding levels are maintaining our asset stock in a steady state condition, although if in-roads are to be made into the current maintenance backlog and to upgrade our sub-standard structures then further investment will be required.

Section 4 – Lighting

4.1 Lighting Introduction

Carmarthenshire has an extensive highway network and associated with this we have a large system of highway lighting. There are over 20,000 individual lighting units owned by the County Council and maintained by our Public Lighting Team. The Team also manage around 5000 community lights for Town and Community Councils. In addition, the Public Lighting Team also manage our stock of illuminated traffic signs and our permanent traffic signals.

Since the last Annual Statement, the Public Lighting Team have worked in partnership with Town and Community Councils to introduce LED lighting units in Community Lights. This project was developed on an invest to save basis to reduce carbon emissions, lowered energy costs and improved light quality. The project was completed in summer 2020.

The Public Lighting Team have also introduced new technology to enable mobile working so that lighting surveys, checks and works can be recorded electronically in place of the previous paper-based system

There are two key areas of concern which need to be addressed:

- A large number of older steel lighting columns are life-expired and risk structural failure if they are not replaced which is a safety risk.

- There are 304Km of underground electric cables which are deteriorating and resulting in an increasing number of cable faults which result in power failures and a safety risk.

4.2 Street Lighting Asset.

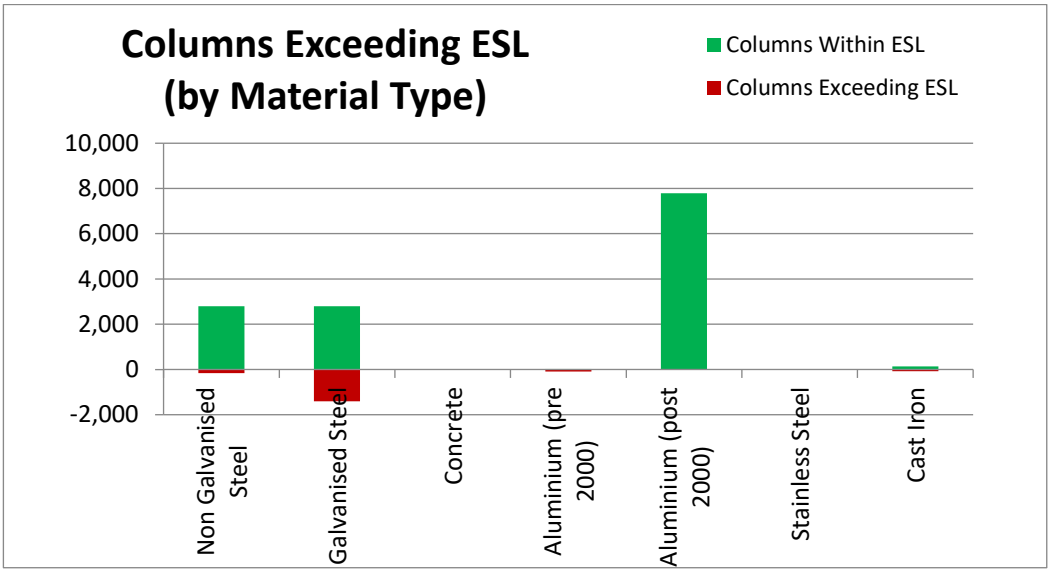
The street lighting asset can be considered in three main areas:

- Lighting columns
- Luminary units
- Electric supply cabling

Lighting Columns

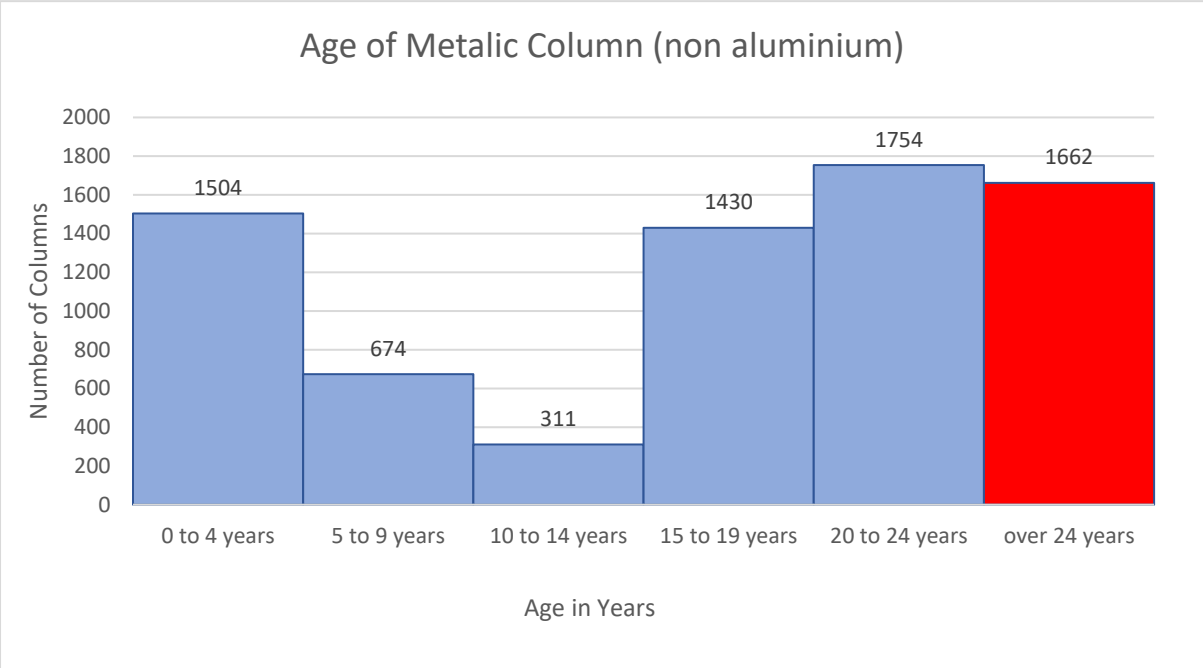
There are currently 20,229 street lighting columns which includes bracketed units on third party wooden poles. This figure has grown through new lighting or development by 768 (3.9%) over the past 5 years.

The age of a street lighting column and its material can be used to provide a broad assessment of structural condition and Expected Service Life (ESL). This is represented for the range of lighting columns in use throughout the County in the graph below.



A key concern are the existing steel columns which are considered to have an ESL of up to 25 years before replacement. Based on current data 22.6% (1662 out of 7335) of our metallic lighting columns/brackets exceed their expected service life. Whilst these are subject to a management regime with regular inspections and the removal of columns deemed to be unsafe, a programmed for replacement is required.

The graph below shows the age profile of these metal columns and identifies the number currently beyond their Expected Service Life.



Luminary Units

A successful replacement programme has introduced LED units to the streetlights we own and to those we manage for our Town and Community Councils. These units provide energy savings and reduce carbon emissions and also require less maintenance.

Supply Cable

The majority of our existing 304km supply network is of a significant age and in many cases accurate records are not available with regards to the exact age and cable type. A prioritised survey and testing programme are required in order to establish the future life expectancy of the cable network and develop a programme of renewal.

4.3 Illuminated Signs and Traffic Signals Asset

Carmarthenshire has over 3,400 illuminated signs and bollards on the highway network. All new installations are specified to be LED sign lights and solar bollards.

There are 72 Traffic signal installations on the Highway network. These are made up of 52 pedestrian crossings and 20 Traffic Signal junctions

4.4 Lighting Summary

Significant progress has been made in improving the highway lighting asset in recent years through the LED replacement programme in our own lighting stock and on behalf of Town and Community Councils. This has provided a considerable energy saving and contributes towards our corporate carbon reduction targets. Using new technology to enable mobile working is also leading to improved record keeping, a more efficient way of working and less reliance on paper-based systems.

The condition of our street lighting columns does require careful management with investment and a risk-based approach introduced. Similarly the aging condition of our electric supply cabling requires an investment programme to reduce the increasing number of cable faults and power outages being experienced.