

# Transport Asset Management Plan

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## Foreword

This Transport Asset Management Plans (TAMP) sets out the County Council's proposed 15 year strategy to maintain and improve the transport asset network in Lancashire during the period 2015/16 to 2029/30.

Lancashire is the fourth largest authority in England and as a consequence has a large, diverse and demanding transport network. The impact of high traffic levels and unprecedented weather events of recent years have taken their toll, not just on our highway network but on highway assets across the country. In addition we are facing increased expectations from residents and businesses alike who are demanding a well maintained and efficient highway network in order that they can go about their everyday lives. This, combined with the climate of financial austerity, has presented us with severe challenges as to how we can maintain our highway assets with significantly less money.

The TAMP has been drawn up in response to these challenges and provides a sound 15 year plan which addresses the needs of our highway assets in the most efficient and effective manner and is based on intervening at the right time with the right treatment. This is a significant departure from a traditional 'worst first' approach in that we will be intervening more frequently at an earlier stage in an assets life-cycle. This will enable us to use more cost effective treatments and allow our money to go further.

The plan also acknowledges that we can't do everything all at once. In the first 5 years we will concentrate on improving the strategic road network to help boost the economy of Lancashire and the footway network to try and reduce the occurrence of trips and falls. Our main focus will be on making extensive use of surface dressing to seal surfaces against water ingress to reduce the occurrence of potholes.

The TAMP will allow the condition of the network in its entirety to be understood and to demonstrate a clear, defensible strategy for the 15 year life of the plan. In order that other parts of the network do not suffer, we will maintain the investment in other asset areas at levels as close to their 2013/2014 level as possible



The plan is consistent with the national drives for efficiency in highways maintenance and is intended to provide a legacy of a network in improved condition and greater sustainability.

A handwritten signature in black ink, appearing to be a stylized name, possibly 'John Smith'.

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# Transport Asset Management Plan

## Executive Summary

This Transport Asset Management Plan (TAMP) identifies the key strategic priorities of Lancashire County Council, as the highway authority for Lancashire, during the period 2015/16 to 2029/30.

It concludes that £35m would be required each year to maintain all of our transport assets at their 2013 condition. Given that only £25m is likely to be made available this funding shortfall has the potential to cause us significant problems in the future. In order to address this we intend to change the way we manage our transport assets in future.

This strategy is based on managing our assets on a holistic basis and recognises that as we can't do everything all at once, we need to prioritise between our assets based on the relative importance that each asset group contributes towards our goal of delivering an effective transport system, which is crucial if we are to help the businesses of Lancashire and achieve our broader economic, social and environmental goals.

In order that we can meet these goals we have developed a 15-year plan that is comprised of three discrete 5 year phases. The plan identifies the appropriate strategies we will use to reduce the maintenance backlogs associated with those assets targeted in each phase. While the plan initially identifies a 5-year target period for each delivery phase, we have retained sufficient

flexibility so that any of the phases can run concurrently should additional resources become available.

We anticipate that from 2015/16 the level of available resources will allow us to address only two asset groupings in each phase. As a result the TAMP identifies that our main priorities, if resources are limited to £25m per annum, should be the A, B and C road and the footway networks. As cycle ways and cycle tracks are often an integral part of these networks we will also take the opportunity to improve conditions for cyclists where possible.

Whilst we will be concentrating on the A, B and C road and footway networks in the early part of this plan, we still intend to maintain our other transport assets as close to their 2013 condition as resources will allow.

The TAMP also identifies our secondary and tertiary priorities, which themselves are in pressing need of attention, but cannot be fully dealt with immediately within a likely resource allocation of £25m. In respect of those assets scheduled for later phases, our primary focus will be to slow down their rate of deterioration as far as possible. As a result it is unlikely that the maintenance backlogs associated with these assets will be fully addressed until the appropriate phase starts. However, should additional resources become available during the course of this plan, then accelerated progress in reducing both the maintenance backlogs

and our predicted annual maintenance needs of the targeted assets will be possible.

This TAMP makes a fundamental commitment to increase the efficiency of our highway maintenance activities over the period 2015/16 to 2029/30. This target will be supported by equally challenging performance indicators and a fundamental business process review that will help us to significantly reduce our annual capital requirements.

We will only increase the efficiency of our highway maintenance programmes if we invest the planned resources for at least a 5-year period, so we can make significant inroads into the existing maintenance backlogs and address the natural annual deterioration associated with each asset grouping.

It is anticipated that as maintenance backlogs are reduced, the financial resources required to maintain our assets at their improved condition each year will also reduce from the current estimated level of £35m to a more balanced position, whereby the level of available funding broadly matches the amount we need to maintain all our assets.

During this process it is our ambition to become a centre of excellence for highway maintenance and be more transparent and responsive in dealing with routine maintenance operations.

Appendix 3 outlines our priorities should additional funding become available during the life of this TAMP. Multiple options are presented and are dependent on the level of funding received and the duration over which the additional resources are available.

This plan is, of course, subject to disruption in the face of prolonged or repeated severe weather events. Irrespective of such events this plan will maximise the effects of the available investments over the life of this strategy. The plan will be subject to regular performance management and scrutiny by elected members and senior management teams. All estimates of costs etc are based upon the 2014 equivalents

Finally the TAMP links closely with the area Highway and Transport Masterplans that set the long term strategic direction of the highway network and integrate all parts of the highway asset infrastructure needed to provide a coherent network which supports the competing needs of motorists, pedestrians, cyclists and business.

The TAMP also has strong links to the Highways Management Plan (HMP) which sets out how and when assets are to be maintained. The HMP will be reviewed to ensure that it supports the TAMP and maintains our assets in a condition that supports Masterplan delivery.

## **1) Introduction**

Lancashire's transport infrastructure assets are the most valuable publicly owned resource managed by the county council, with a combined estimated value of £9 billion. These assets are fundamental in helping the citizens of Lancashire to not only access a range of county council services, but also take advantage of the wide range of economic, health, social and recreational opportunities that are available to them. Without this infrastructure Lancashire would not function as a place to live, work or visit.

Given the importance that our transport infrastructure plays in our everyday lives, it is vital there are plans in place to maintain and manage this asset so that these benefits and opportunities are maximised.

As the local highway authority for Lancashire, we are responsible for a vast range of transport assets that produces a complex maintenance demand. From our assessment it is clear that in order for us to maintain the condition of all our assets at 2013 levels we require approximately £35m each year. As the direct allocation from central government, via the Department for Transport (DfT), is unlikely to exceed £25m per annum in the foreseeable future, this funding gap provides us with a real challenge as to how we can do more, or even the same, with less.

The strategies developed as part of this plan to address this funding gap are based upon an assumed level of resource being

available and a three phased investment approach which retains sufficient flexibility so that phases two and three are capable of concurrent delivery with phase one should additional resources become available.

The objective of this TAMP is to reduce key maintenance backlogs over a period of ten to fifteen years through the adoption of a more preventative approach to maintenance which will lead to a reduction in the annual investment required to maintain our assets in an improved condition. It is anticipated that this strategy will enable us to reduce the capital investment required to manage the annual rate of deterioration from the current level of £35m per annum to approximately £28m by 2025.

The reduction of maintenance backlogs is based on improving the efficiency of highway maintenance delivery by at least 30% over the life of this plan through preventative maintenance strategies.

This TAMP is supported by an objective and detailed assessment of the current condition of each of the transport asset groupings for which we have responsibility. Key information from that assessment has been extracted and is summarised in the following pages. This TAMP uses that data and evidence to propose a strategy which attempts to address the funding gap.

### **Scope**

The asset groupings included within this first TAMP include A, B and C roads, residential roads, rural unclassified roads, footways,

bridges and similar structures, street lighting and traffic signals. The scope of this TAMP will be expanded to include other asset groupings such as trees, drainage, flood risk, slopes and retaining walls once we have completed our detailed assessments of these assets.

## **2) Service Standards**

Service standards have been derived using, where possible, condition data collected by engineering analysis. These standards will be used to monitor the overall condition of assets, set performance targets and guide investment levels.

Whilst we have a statutory duty to maintain our highways as outlined in the Highways Act 1980, there is no definition in the Act as to the standard of maintenance we are required to provide. In order to promote consistency of provision across the country, the UK Roads Liaison Group produced a number of national codes of practice entitled 'Well Maintained Highways', 'Well-lit Highways', 'Management of Electronic Traffic Equipment' and 'Management of Highway Structures' which provide guidance on a range of highway maintenance activities.

The UK Roads Liaison Group recommends that local authorities follow these documents as they contain best practice and will enable organisations to better defend against claims. Whilst we generally follow the guidance contained in the codes of practice, our evidence base sets out and justifies where our current working practices deviate from these documents.

In defining our service standards there are a number of instances where engineering data is not available. Where data still needs to be collected, asset condition has been assessed, in the interim, using alternative data sources deemed to be most appropriate.

In order that we can fill these gaps and use engineering data so as to provide a degree of consistency across all asset groups, a data gathering strategy has been devised that will enable us to collect the right information at the right time.

This strategy identifies where the data gaps are, discusses alternative data sources and specifies our preferred method of data collection. In order that data can be collected easily and then recorded and interrogated, the strategy proposes a staggered approach so that existing staff resources are more able to manage this data. Similarly, the strategy specifies a phased approach to refreshing the data so that the resulting condition data can easily be handled and assessed.

As more condition data becomes available for more asset groupings the performance targets in this initial TAMP will be amended as appropriate so that they offer a more refined assessment of the overall condition of the asset. Where indicators are changed we will clearly explain why such changes are necessary.



In this TAMP we have identified 5 service standards of POOR, ACCEPTABLE, FAIR, GOOD and EXCELLENT, against which the benefits to the users of the asset can be measured. Details of the generic levels of service that the transport asset groups are likely to provide to users at each service standard are shown in Appendix 1.

Setting service standards is required to:-

- Support planned maintenance of the network;
- Achieve a reduction in maintenance backlogs;
- Reduce the year on year investment required to deal with natural annual deterioration of the asset;
- Make best use of available resources;
- Ensure transparency and accountability.

Initial service standards have been set for each asset grouping for the period 2015/16-2019/20. We have also set an overall indicative service standard target of GOOD to be achieved at the end of period 2020/21-2024/25, which would indicate amongst other things that the asset has manageable maintenance backlogs that allow the annual deterioration of the asset to be addressed in a timely manner.

In setting an overall indicative service standard target of GOOD it is recognised that it is not possible or affordable to maintain all asset groups to the same level. The targets for individual asset

groups have, therefore, been set according to county council priorities, risk and affordability.

### **Maintenance Backlogs**

The initial service standards we have developed are in the main determined by the current condition of the asset, which in turn is heavily influenced by the level of deterioration and maintenance backlog within the asset base.

All transport infrastructure assets are liable to deterioration through damage, wear and tear, ageing, increasing traffic and severe weather events, all of which can cause additional maintenance requirements for each group of assets. As all highway authorities have maintenance backlogs, we are no different to any other authority in this respect.

When maintenance backlogs reach critical levels due to a protracted lack of resources or severe weather events, the annual rate of deterioration may be greater than the annual programme of affordable works. This causes the backlog to grow year on year.

If the maintenance backlog can be reduced to a level broadly consistent with the annual rate of deterioration, then the resources available should ensure no deterioration or only marginal deterioration occurs. At this point a 'steady state' has been achieved.

The following table details those assets covered in this TAMP and shows the service standard currently being provided by each asset grouping, together with the service standard we would like each asset grouping to provide in 5 years, 10 years and 15 years time. Whilst not directly mentioned, cycleways and cycling facilities by their nature are integral to, or enhanced by, the assets included in these asset groups

In order that we can address this performance gap and move from our current position to the desired position, this TAMP sets challenging service standard targets, details of which are shown in Appendix 2. These targets are designed to allow maintenance backlogs to be reduced to a level where deterioration is managed quickly and efficiently at the optimal time and minimal cost.

The investment strategy later in this document details how we propose to achieve our challenging 15 year programme to reduce priority maintenance backlogs, by providing resources at an appropriate level to allow year on year improvement in the condition of the network.

From the following table it can be seen that the condition of some asset groups will improve, whilst some will remain the same. Where an assets overall average condition is expected to reduce this will be done in a managed and controlled manner so as to maintain public safety.

	Now	Target	Target	Target
<b>A, B and C Roads</b> (% RED & AMBER)	A = 25%	A = 10%	A = 10%	A = 10%
	B = 40%	B = 15%	B = 15%	B = 15%
	C = 50%	C = 20%	C = 20%	C = 20%
<b>Residential Unclassified Roads</b> (% RED & AMBER)	28-40%	28-40%	14-18%	14-18%
<b>Rural Unclassified Roads</b> (% RED & AMBER)	28-40%	28-40%	14-18%	14-18%
<b>Footways</b> (Number of defects)	50,000-60,000	<15,000	<15,000	<15,000
<b>Bridges and Similar Structures</b> Bridge Condition Index (Ave.)	80-90	80-90	80-90	80-90
<b>Street Lighting</b> (% of high risk installations)	20-25%	25-35%	25-35%	25-35%
<b>Traffic Signals</b> (% of units beyond design life)	15-20%	30-40%	20-30%	<10%

### 3) Current Condition of the Asset

Given the range of assets covered by this TAMP, there will inevitably be differences in the condition of each asset grouping. To some extent this is determined not only by the intervention intervals but also treatment and remediation options.

The overall condition of the transport infrastructure asset has been determined by assigning scores to each service standard. A weighted score has been produced by multiplying each score by the asset valuation. A weighted average is calculated by dividing

Asset Category	Condition	5 Year	10 Year	15 Year
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the total weighted scoring by the total value of the asset, as detailed below.

Scores per Service Standard				
POOR	ACCEPTABLE	FAIR	GOOD	EXCELLENT
1	2	3	4	5

### Current Asset Condition Summary

Asset Group	Valuation £ Million	Service Standard	Score	Weighted Score
A, B and C Roads	2,717	ACCEPTABLE	2	5,434
Residential Unclassified Roads	3,593	ACCEPTABLE	2	7,186
Rural Unclassified Roads	1,126	ACCEPTABLE	2	2,252
Footway & Cycleways	805	ACCEPTABLE	2	1,610
Bridges and Similar Structures	1,135	GOOD	4	4,540
Street Lighting	187	FAIR	3	561
Traffic Signals	60	ACCEPTABLE	2	120
<b>Weighted Average Score = 2.26</b>				

Overall grade boundaries have been determined as follows:-

Overall Service Standard – Grade Boundaries				
POOR	ACCEPTABLE	FAIR	GOOD	EXCELLENT
1 to 1.9	2 to 2.9	3 to 3.9	4 to 4.9	5

From this it can be seen that our stewardship of the transport asset has resulted in an asset which, overall, is considered to be in an ACCEPTABLE condition. Whilst it is generally free from critical safety defects, considerable maintenance backlogs have been identified which have accumulated, in general, due to insufficient resources being made available over a period of time to maintain the whole asset base.

If this situation is allowed to continue, maintenance backlogs will continue to increase until we reach a position whereby a significant proportion of our resources are directed towards addressing those assets in an increasingly critical condition. Such a 'worst first' only approach will ultimately result in very little being spent on preventative maintenance treatments and will be insufficient to stop the condition of the overall asset eventually deteriorating to a POOR standard.

At the present time we require £35m each year to maintain all our asset groups at their current standard, which is still insufficient to deal with the accumulated maintenance backlogs.

Strategically, it is recognised that if maintenance backlogs can be eliminated, then the cost of maintaining the asset in future will be significantly reduced. By implementing new ways of working we intend to reduce our maintenance backlogs to more manageable levels, so that our future capital requirements will fall to approximately £28m per annum.

The condition of each asset grouping will be reviewed on an annual basis and the scope of assets included in the overall condition assessment will be expanded to incorporate other asset groups once their condition has been determined.

It is recognised that in respect of a number of asset groupings our initial priority will be gathering objective evidence to support development and refinement of the maintenance strategy for those assets which, nationally, are traditionally not well defined in the codes of practice.

The current climate of austerity makes it more important than ever that the strategic plans contained within this TAMP seek to focus resources where they can achieve the best overall long term value.

The TAMP recognises a tension between the visible areas of deterioration and the unseen but critical parts of the network, which if not addressed will give rise to a future liability which far exceeds the cost of optimal intervention at the correct point in time.

This TAMP is therefore focussed on supporting intervention at the optimal time with the optimal treatment to maximise the effect on the condition and life of our assets.

A further tension faced by every highway authority is how to prioritise resources across different classes of highway asset. Each asset group clearly has its own needs and its own risks

which require addressing and traditionally we have tried to maintain or improve the condition of each asset grouping in isolation. This approach can only ever be effective in times of plentiful resources.

### **Estimated Available Resources**

The resources available for highway maintenance are derived from two sources i.e. revenue and capital. Revenue expenditure is allocated by the county council, whilst capital block grants are allocated to local government authorities by central government.

Overall revenue funding is likely to fall in the next five years by at least 25%, which will inevitably have an effect on the level of revenue funded routine maintenance programmes that we can undertake.

Revenue spending in the main does not improve the fabric of the asset, and is largely used to ensure assets remain in a safe and serviceable condition until capital improvements are needed to replace worn out infrastructure. Revenue funding is used to repair potholes in accordance with our highway maintenance policies and the capital programme is invested to prevent the occurrence of potholes in the first instance.

Historically capital programmes have been funded from two block grants received from the Department for Transport (DfT). These have been used to fund local transport plans and highway maintenance works.

From 2015/16, part of the local transport block grant which has previously been allocated directly to us will instead be allocated to the Local Enterprise Partnership. This will reduce the flexibility we have as local highway authority to enhance the highway maintenance block grant allocation received from the DfT to fund highway capital improvement works.

The table below shows the total capital resources that have been made available for highway maintenance over the period 2011/12 to 2014/15.

<b>Capital Allocated to Highways Maintenance (£m)</b>					
<b>Source</b>	<b>2011/12</b>	<b>2012/13</b>	<b>2013/14</b>	<b>2014/15</b>	<b>Totals</b>
Base DfT Highway Maintenance Allocation	21.360	19.899	23.758	20.445*	<b>85.462</b>
Resources made available by LCC.	10.477	12.031	1.575	7.955*	<b>32.038</b>
<b>Total</b>	<b>31.837</b>	<b>31.930</b>	<b>25.333</b>	<b>28.400*</b>	<b>117.500</b>

(\* = estimated figures)

From this it can be seen that the county council has, between 2011/12 and 2014/15, given highway maintenance additional priority, which has resulted in the county council spending £32m in excess of the predicted level of expenditure, as funded by the DfT from the highway maintenance block.

Due to changes in the way that central government is to allocate capital resources in future it is unlikely that the level of resources

available between 2015/16 and 2024/2025 will exceed £25m at 2014 values. It is speculated that in the period between 2025/26 and 2029/2030 a modest increase may occur to a level of £26m at 2014 values. From this, it is clear that the annual level of resources likely to be available from 2015/16 onwards will fall short of the level of funds that have been available in recent years.

The period between 2009 and 2013 included three severe weather events that caused significant deterioration across the network. Increased capital resources were made available to deal with the worst cases of deterioration. Whilst this approach quickly restores parts of the network to a more acceptable state, it is resource hungry and doesn't allow the broad underlying condition of the network to be adequately addressed.

It is against this financial background that the following investment strategy is based. The proposed investment strategy will be reviewed in response to any variation in the actual level of resources made available, which may result in our delivery programmes and delivery timescales being adjusted as appropriate.

#### **4) Overall Investment Strategy between 2015/16 and 2029/30**

A fundamental principle of this TAMP is to move away from the philosophy of tackling 'worst first only' and adopting a new approach whereby the underlying condition of the network is addressed as we believe this will enable us to make more efficient use of our resources.

The TAMP adopts a flexible approach, to addressing maintenance backlogs and comprises of three separate five year delivery programmes running from 2015/16 to 2029/30 in which each 5 year period clearly identifies not only our main delivery priorities for that period, but also our secondary and tertiary priorities.

For the purposes of clarity, each of these 5 year programmes will be referred to as phases. Phase 1 will cover the period 2015/16 to 2019/20, Phase 2 will cover 2020/21 to 2024/25 and Phase 3 will run from 2025/26 to 2029/30.

Each of these phases has been designed to deliver a range of affordable works within the level of resources that are likely to be available during the lifetime of this plan. However, should additional resources be made available at any point in time, this will enable our secondary and tertiary priorities, as set out in Appendix 3 to be addressed.

By setting our primary, secondary and tertiary priorities this enables us to adopt a flexible approach to operational delivery programmes should future funding levels change.

Given that it is unlikely that the available capital resources received directly from the DfT will exceed £25m per annum, the broad outline capital expenditure on highways maintenance over the next 15 years is given in the table below.

Outline Capital Allocations 2015/16 to 2029/30 at 2014 Values				
Asset Group	Allocations 2014/15	Phase 1 2015/16 to 2019/20	Phase 2 2020/21 to 2024/25	Phase 3 2025/26 to 2029/30
A, B and C Roads	£4.8m	<b>£8m</b>	£3m	£3m
Footways	£2.1m	<b>£3m</b>	£1m	£1m
Rural Unclassified Roads	£1.3m	£2.2m	<b>£5.5m</b>	£2m
Moss Roads	Nil	£0.5m	£0.7m	£1m
Residential Unclassified Rds	£1.9m	£2m	<b>£5.5m</b>	£2m
Bridges	£5.7m	£3m	£3m	<b>£6m</b>
Retaining Walls	£0.9m	£0.5m	£0.5m	£0.5m
Street Lighting	£1.7m	£2m	£2m	<b>£4m</b>
Drainage	£1.2m	£2m	£2m	£3m
Structural Defects	£1.5m	£1.5m	£1.5m	£1.5m
Traffic Signals	£0.3m	£0.3	£0.3	£0.3
<b>Estimated Capital Programme</b>	<b>£21.4</b>	<b>£25m</b>	<b>£25m</b>	<b>£24.3 m</b>

The figures in bold show when and where we propose to enhance our allocations, so as to reduce the maintenance backlogs associated with the targeted asset group.

Whilst the above table doesn't contain a specific asset type for cycling, provision for cyclists is integrated into other assets such as roads and footways via cycle lanes and shared use footways. As a result the opportunity to improve conditions for cyclists will be taken as and when we undertake works on road and footway assets as considered appropriate.

These allocations may be subject to variance in response to emergency or unusually severe weather events. However the first call on the capital programme in each five year block is detailed in the sections below.

This TAMP identifies that the only practical way of addressing the funding gap mentioned in the Introduction, reducing the accumulating maintenance backlogs and improving the overall condition of the transport asset is by adopting new ways of working, including driving increased efficiencies and innovation in the maintenance of our assets.

A conclusion of this TAMP is that the traditional approach of 'worst first only' in asset management will inevitably result in spiralling maintenance backlogs and a rapid deterioration of the transport asset network.

In recent years severe weather events have given impetus to the deterioration of the asset and we are at a critical point if the future of the transport assets in Lancashire is to be safeguarded and successful stewardship to be continued.

If we were to simultaneously reduce the maintenance backlog associated with all asset groupings over the next 5 years, it is estimated that we would need an additional £10m per annum over and above the likely funding levels we will receive from the DfT.

The TAMP recognises that this is not realistic and proposes a more flexible and affordable investment strategy that is broadly in line with the resources that are likely to be made directly available by the DfT. If our funding levels increase, this approach will enable us to bring one of the investment phases forward so that we could run phase 1 and 2 or phase 2 and 3 concurrently dependent upon the level of extra funds made available. Whilst this would be challenging from an operational perspective, it is considered achievable subject to us significantly changing our methods of service delivery.

In order to reduce our maintenance backlogs we propose to focus predominantly on preventative intervention works. Such works involve treatments that are generally carried out at an earlier critical stage in an asset's life-cycle and are usually less expensive and less invasive. It is anticipated that such an approach will significantly reduce the rate of deterioration across the network.

Taking the A, B and C road network as an example, the average annual capital investment between 2009 and 2013 was approximately £4m-£5m. Over the same period a maintenance backlog (i.e. road condition classed as either RED or AMBER) of about 450km occurred. The conclusion from this is that an investment of £4m-£5m per year, over five years, results in the deterioration of approximately 450km of A, B and C roads. At 2014 rates, the likely cost of repairing this backlog is in the order of £15m - £18m dependent upon treatment type.



Traditionally, we have adopted a largely 'worst first' approach to our assets and as at 2013, the maintenance backlog associated with the A, B and C road network was approximately 1,059km, meaning that the backlog has doubled in just five years. It is likely to double again in the next five years if we continue treating the network in the same manner.

Clearly 'worst first' is not sustainable and we need to do something different if we are to break this cycle. If we change our approach and concentrate instead on using preventative treatments of lower unit cost, we can 'purchase' an extra 8-10 years life and slow down the rate of deterioration. However those assets currently in poor condition cannot be deferred indefinitely and for that reason part of the available resources will be used to fund appropriate remedial treatments until more permanent solutions can be afforded.

In 2013 we spent in the region of £5m on the A, B and C road network which enabled us to resurface approximately 40km of road, at a cost of £4m, and surface dress around 50km of road at a cost of £1m.

If we increased the A, B and C road allocation by £3m and directed this extra allocation into surface dressing activities we could treat approximately 200km of the network at a cost of £4m, which would seal the road surface against water ingress and restore surface texture, and extend service life by up to 10 years.

**Therefore a mix of resurfacing, patching and surface dressing works over a 5 year period, would at this rate, enable a total 1,250km of road to be treated and remove the current maintenance backlog of 1,059km and most of the additional backlog that occurred during this 5 year period, leaving a residual backlog of 150km, provided we intervene at the right time with the right treatments. A backlog of 150km of surface dressing would require an investment of approximately £3m at 2014 prices.**

A key message from this is that if we invest in more preventative maintenance treatments across the A, B and C road network for a 5 year period, at the end of this period we will have:

- Treated or repaired in the order of 1,250km (48%) of the A, B and C road network.
- Reduced the overall maintenance expenditure of this asset group from £5m to £3m.
- Improved the condition of the asset from FAIR to GOOD.

If these savings are subsequently re-invested into other asset groups for a further 5 year period, allowing additional preventative treatments to be carried out, this will enable us to further reduce our maintenance requirements across a greater range of asset groups.

Nationally we face severe pressure on resources and change is considered vital in the current climate of austerity in which the



county council has to operate. In order to succeed we will need the understanding and co-operation of the public as we cannot do everything at once, or as quickly as we would like.

We propose wherever possible to focus predominantly on preventative intervention works across all asset groupings as a way of reducing maintenance backlogs and maintaining the asset in future.

#### **5) Phase One - Investment Period 2015/16 to 2019/20**

We will initially target the reduction of the maintenance backlogs, prioritising the A, B and C road network and the footway network over this five year period. Careful management of the other asset categories will continue as we aim to maintain the condition of those assets at the best possible level that available funding will allow.

Whilst we recognise that further condition data will be required to refine the assessments made in this TAMP, we have concluded that the A, B and C road network and the footway network should be our main priority over phase 1. Maintenance activities for all other asset groupings, with the exception of Bridges and Similar Structures, should also be maintained at or as close as possible to the 2013 funding levels.

In order that we can achieve the challenging performance targets relating to the condition of the A, B and C road and footway networks, increased investment in these asset groups will be

required during phase 1. Our reasoning behind this is detailed below:

- The A, B and C road network supports the economic vitality of Lancashire and in recent years has shown sustained deterioration following several severe winters. According to the latest SCANNER surveys approximately 1,059km of the network is categorised as being RED or AMBER. It is estimated that an investment of £8m per annum for at least 5 years is required to reduce the maintenance backlog to manageable proportions. The average investment in the A, B and C road network over the last 5 years has been £4-5m per annum.
- The footway network is an important and highly visible asset. It includes approximately 8,500km of footway which currently has in the region of 51,000 defects across the network. Whilst the most serious defects are repaired quickly, we still receive a large number of claims for personal injury. In the next five years capital investment at a level of £3m per annum would be required to achieve the challenging performance targets set for this asset, and also reduce the number of successful claims made against the county council. Investment over the previous five years has averaged £2m per annum.
- The integration of cycling provision into the network of assets as a whole is a priority and as a result cycling needs will be considered in conjunction with major road schemes.

- As the current condition of the Bridges and Similar Structures is in the upper end of GOOD and very close to being EXCELLENT we propose to divert £3m capital funding from this asset grouping into the A, B and C road network. Whilst this will result in the overall condition of the Bridges and Similar Structures asset grouping falling slowly year on year, it will still be regarded as being GOOD at the end of the 5 year period. Structures will continue to be inspected and the most critical ones prioritised for attention so that public safety is maintained at all times

Following the 5 year investment in phase 1, it is anticipated that improvements in the overall condition of the A, B and C road and footway networks would from 2020/21 onwards, release approximately £7m per annum at current funding levels to support reduction of the maintenance backlogs accrued in other asset groupings.

It is anticipated that from 2020/21 onwards up to 150km of the A, B and C road network will be classed as either RED or AMBER each year following the annual SCANNER survey. At 2014 rates, adjusted for inflation, it is estimated that an annual investment of £3m would be sufficient to manage and address this deterioration within the available funding. This would be achieved through

ongoing surface dressing programmes as parts of the network reach the optimal point for such treatments.

Once we are able to deal with the normal and expected deterioration of the network without the need for additional resources, a level referred to as 'steady state' will be achieved. At this point the overall condition of the network neither improves nor deteriorates.

It is anticipated that a steady state would also be reached with the footway asset whereby an annual investment of £1m would, from 2020/21, enable any expected deterioration to be managed from within the available resources.

We anticipate at the end of the 5 year period in 2019/20 that the condition of the A, B and C road network will be GOOD and the condition of the footway network will be EXCELLENT.

However, should we experience severe weather events during this 5 year period it is acknowledged that these targets may not be achieved. In such an event, then a sixth year may be required. Equally, if the rate of deterioration is much less than predicted then more rapid progress may be made. Details of Phase One are shown below:

#### Phase One 2015/16 to 2019/20 Highest Priority Areas

Asset Category	2014 Condition & Backlog	2015/16 to 2019/20 Investment	Anticipated 2019/20 Condition & Backlog	Estimated 2020/21 to 2024/25 Investment @ 2014 rate	2024/25 Condition Target
<b>A, B and C Roads</b>	<b>Condition :</b> overall ACCEPTABLE <b>Backlog:</b> 1,059km RED or AMBER at the 25-40-50 standard (A roads 25%, B roads 40% and C roads 50%)	£8m per year	<b>Condition :</b> overall GOOD <b>Backlog:</b> Reduced by at least 85% and down to 150km RED or AMBER at the 10-15-20 standard (A roads 10%, B roads 15% and C roads 20%)	£3m	<b>Condition :</b> overall GOOD <b>Backlog:</b> maintained at or slightly below 2019 levels - 150km RED or AMBER at the 10-15-20 standard (A roads 10%, B roads 15% and C roads 20%)
<b>Footways</b>	<b>Condition :</b> ACCEPTABLE <b>Backlog:</b> 51,000 defects and claims costing approx £3m per year	£3m per year	<b>Condition :</b> EXCELLENT <b>Backlog:</b> 95% of claims rebutted and cost < £0.5m per year. Defects reduced by 71% and < 15,000 reported per annum	£1m	<b>Condition :</b> EXCELLENT <b>Backlog:</b> maintained at or slightly below 2019 levels. Defects <15,000 reported per annum

## 6) Phase Two - Investment Period 2020/21 to 2024/25

During the next investment phase we intend to prioritise the rural unclassified network and the residential unclassified road network using the additional resources released from the reduction in the amount of capital money required to maintain the A, B and C road and footway networks.

It is anticipated that an allocation equivalent in value to £5m (at 2013 rates) is made available for each of those asset groups for each year of phase 2. This funding will be directed predominantly at preventative works as a way of maintaining the asset, supported by a smaller programme of more extensive remediation works. It is anticipated that such an approach will significantly reduce the maintenance backlogs associated with these asset groups over

the 5 year period, to a point where a steady state is reached where annual rate of deterioration is manageable within normal resources.

Investment in the rural unclassified and residential unclassified networks during phase 1 will be funded at levels consistent with the budget allocations during 2011 to 2013. Whilst the condition of these asset groups will be maintained broadly at 2013 levels, some deterioration may occur across these networks, particularly on rural unclassified roads. The principle focus will be on preventative maintenance with key safety defects being addressed so that the network can be maintained to the best condition possible.

Investment in other asset groups will continue. Lighting columns will be replaced at a rate of approximately 2,000 columns per annum with a focus on those columns exceeding their 'Action Age' as defined in the Institute of Lighting Professionals Technical Report 22 (TR22) 'Managing a Vital Asset: Lighting Supports' and assessed as having no residual life and are in high risk locations.

Traffic signals and similar installations will be supported by a replacement programme during the period 2015/16 to 2024/25. By the end of 2019/20 it is anticipated that the most critical installations exceeding their design life will have been replaced and that the backlog of obsolete units will have reduced to approximately half of the 2013 level. By the end of 2024/25 it is anticipated that continued investment will have further reduced the remaining backlog of installations that are no longer supported by the manufacturer, to a level not exceeding 25% of the 2013 level.

The Bridges and Similar Structures asset group will experience a slight decline in condition, as measured by the average bridge condition index. This is currently calculated at 89.3 and classified at the upper end of GOOD and very close to being EXCELLENT.

It is anticipated that by the end of 2019/20 the average bridge condition index will have fallen, but will be not less than 85, which is classified nationally as GOOD.

In 2019/2020 the condition of the bridge and structures stock will be reviewed to assess optimal funding profiles for the period 2020/21 to 2024/25. In the event of resources being maintained at the level of 2015/16 to 2019/20, there will be a further managed decline in the average bridge condition index to a level of not less than 80, which is still classified nationally as being GOOD.

In respect of the drainage asset group, we will in the first 5 years of this strategy simultaneously manage the asset at the best possible level and collect information about the individual items that make up this asset grouping. From 2020/21, we will use the data gathered between 2015/16 and 2019/20 to proactively manage the network based on a sound condition assessment.

Details of Phase 2 are shown below:

Phase Two 2020/21 to 2024/25 Highest Priority Areas					
Asset Category	2014 Condition & Backlog	2015/16 to 2019/20 Investment	Anticipated 2019/20 Condition & Backlog	Estimated 2020/21 to 2024/25 Investment @ 2014 rate	2024/25 Condition Target
Rural Unclassified Roads	<b>Condition</b> : ACCEPTABLE <b>Backlog</b> : 500km (estimated)	£1.25m to £1.7m per year	<b>Condition</b> : ACCEPTABLE <b>Backlog</b> : 600km (estimated)	£5m	<b>Condition</b> :GOOD <b>Backlog</b> : reduced by 90% of 2019 level

<b>Residential Unclassified Roads</b>	<b>Condition</b> : ACCEPTABLE <b>Backlog</b> : 500km (estimated)	£1.9m per year	<b>Condition</b> : ACCEPTABLE <b>Backlog</b> : RED – same as 2014 AMBER – increased to 800km	£5.5m	<b>Condition</b> :GOOD <b>Backlog</b> : reduced by 90% of 2019 level
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### 7) Phase Three - Investment Phase 2025/26 to 2029/30

It is anticipated that the focus of this phase will be on street lighting and bridges and similar structures which will receive increased investment to address maintenance backlogs.

The performance milestones for each asset group are set out below. It is anticipated these indicators will be refined as more condition data becomes available. Details of Phase 3 are shown below:-

Phase Three 2025/26 to 2029/30 Highest Priority Areas					
Asset Category	2014 Condition & Backlog	2015/16 to 2019/20 Investment	Anticipated 2015/16 to 2019/20 Condition & Backlog	Estimated 2025/26 to 2029/30 Investment @ 2014 rate	2029/30 Condition Target
Street Lighting	<b>Condition</b> : FAIR <b>Backlog</b> : 34,000 columns Medium to High Risk	£1.7m per year	<b>Condition</b> : ACCEPTABLE <b>Backlog</b> : Failure rate approx 50 per year and 40,000 columns beyond predicted life	£3m	<b>Condition</b> :ACCEPTABLE <b>Backlog</b> : reduced by 50% in 5 years.
Phase Three 2025/26 to 2029/30 Highest Priority Areas (cont)					
Asset Category	2014 Condition & Backlog	2015/16 to 2019/20 Investment	Anticipated 2015/16 to 2019/20 Condition & Backlog	Estimated 2025/26 to 2029/30 Investment @ 2014 rate	2029/30 Condition Target
Bridges and Similar Structures	<b>Condition</b> : GOOD – Bridge Condition Index (BCI) Average 89.3 (80≥ - <90)	£3m per year	<b>Condition</b> GOOD within range 80≥ - <90 and BCI (Average) not less than 85	£3m	<b>Condition</b> : GOOD within range 80≥ - <90 and BCI (Average) not less than 80
Traffic Signals	<b>Condition</b> : ACCEPTABLE <b>Backlog</b> : 204 units older than design life (33%)	£0.3m per annum	<b>Condition</b> : FAIR <b>Backlog</b> : Reduced to approx 150 units older than design life (24%)	£0.3m per annum	<b>Condition</b> : GOOD <b>Backlog</b> Reduced to <100 units older than design life (15%)

## 8) Future Changes to the Asset

As a result of new developments and network improvements, the asset base will continue to grow as new roads and bridges are constructed and new traffic signals and lighting columns erected.

It is unlikely that future maintenance resources will be sufficient to manage the increased demands from an ever expanding asset stock. Therefore our objective will be to attempt to maintain overall asset levels as close as is practical to 2013 levels by identifying opportunities to remove or rationalise existing assets as and when new assets are added to the network. We will also need to incorporate new material and treatment technologies into our design specifications so that these new assets have the lowest possible life cycle costs.

In addition, changes in weather patterns may impact on our ability to deliver our maintenance strategy over the next 10 years.

## 9) Key Recommendations

- Maintenance interventions should be carried out at the most cost effective point.
- A 'worst first always' strategy should not be adopted.
- Programmes of maintenance should largely be planned prevention works with a smaller proportion of more invasive treatments where unavoidable.
- The important A, B and C road network should be prioritised for maintenance to support the economy of Lancashire.
- The investment required in the A, B and C road network is £8m per annum and should be the first call on the maintenance capital allocations.
- The strategic importance of the bridge network is recognised as is their GOOD condition. It is therefore recommended in the short term that a capital reduction to bridge maintenance can be made provided that inspection and monitoring regimes are maintained.
- The age profile of the lighting stock gives rise to concerns, although the current annual failure rate is low. A strategic options report is required to consider all alternatives for future lighting provision over the period 2015/16 to 2025/26.
- The age profile of traffic signal installations and the strategic importance of those installations will result in a significant demand for replacement over the next five year period. It is recommended that a strategic replacement programme is funded in conjunction with the area Highways and Transport Masterplans.

- The opportunity to add or enhance cycling facilities should be taken wherever possible in the implementation of these maintenance programmes having due regard to the additional costs of any such improvements.
- Better condition data including trends of condition for each asset class will become increasingly important. It is vital that provision is made for the collection, management and analysis of that data on a regular basis.

## 10) Summary

The period covered by this plan follows a number of years of increased demand arising from severe weather events including the wettest summer on record and the coldest winters rivalling those in living memory. Despite prudent stewardship of the asset, significant maintenance backlogs are present.

The plan is built upon the sound asset management principle that we will intervene at the right time, in the right place and with the most cost effective solution. As a result we are moving away from a more traditional 'worst first' approach, which in the longer term is more costly and can only lead to an overall deterioration of the asset.

The objective of this TAMP is to drive forward a reduction of maintenance backlogs over a 15 year period and to achieve an asset network at the end of that period that costs less to maintain and is in far better condition than it is at present.

The plan will require the support of elected members, officers and the general public if we are to achieve a reduction in maintenance backlogs and a general phased improvement in the condition of the network over a ten year period.

Although the current economic situation is austere, in order to maximise the effective use of resources a planned prudent stewardship of the transport assets of Lancashire has never been more important.

The following pages provide a brief summary of the condition of each of the asset groups covered by this TAMP together with a summary of the main points arising out of our analysis of each group.

Each section follows a similar basic structure. A graph shows the relative condition of the asset on a district by district basis. A summary provides key bullet points which seek to outline briefly the key facts relating to the category of the asset. The information presented includes:

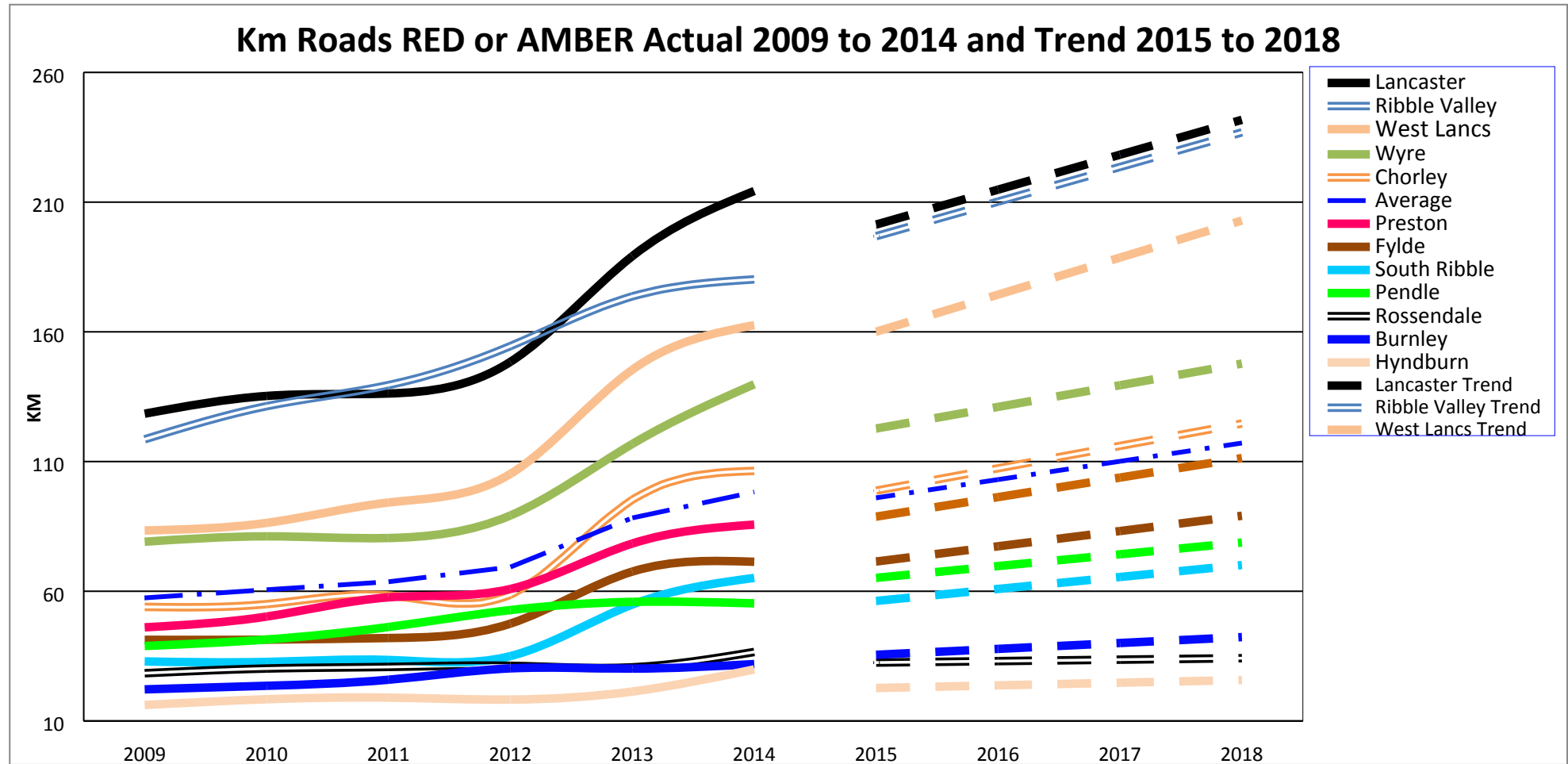
- How much of the asset are we responsible for,
- How the condition of the asset is assessed,
- If there any gaps in the information we currently hold,
- The average condition of the asset in 2013,
- The estimated investment required to maintain the current condition,

- How much financial resource has, on average, been available in recent years;
- How the risk to the integrity of the asset is assessed.

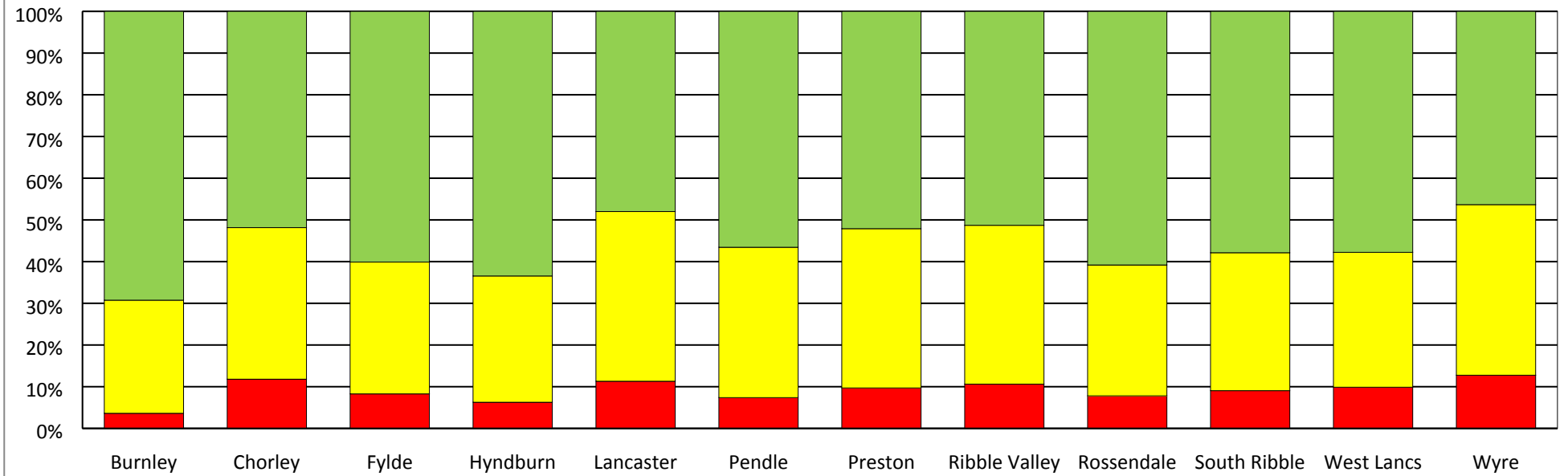


## A, B and C Roads (2014)

**Most Cost Effective Strategy:** Investment in preventative maintenance using appropriate surface treatments determined through deterioration modelling.



**A, B & C Roads - % RED, AMBER or GREEN (2014)**



### Summary

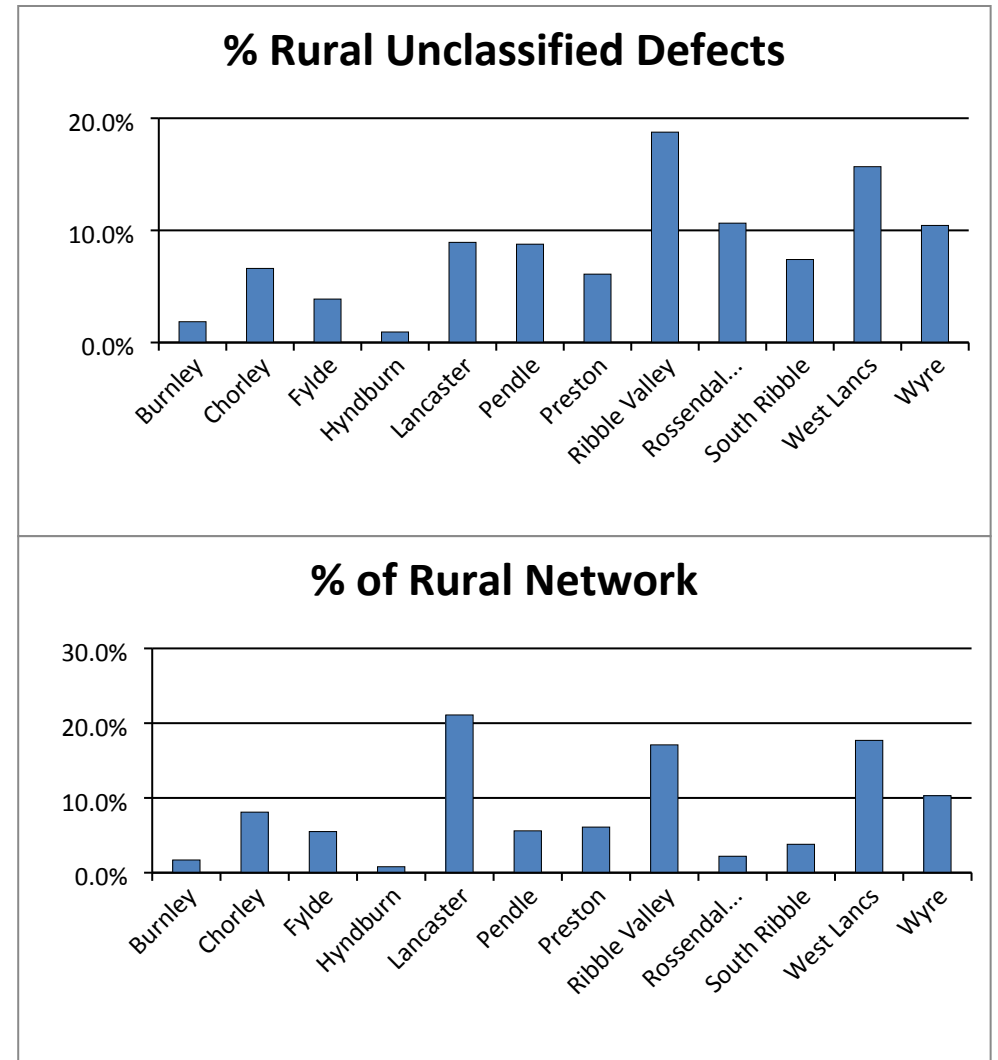
- The asset consists of a total of 2,567km of highway.
- The length of A, B and C roads classified as RED or AMBER in 2014 was 1,180 km.
- Proportion of the 1,180 km of roads RED, AMBER or GREEN is shown in the graph above.
- The proportion of RED or AMBER A, B and C roads varies across the district areas.
- A roads - Average % of 10m lengths RED or AMBER = 30.7%.
- B roads - Average % of 10m lengths RED or AMBER = 47.5.3%.
- C roads - Average % of 10m lengths RED or AMBER = 54.5%.
- The current condition of the asset is assessed as ACCEPTABLE.
- Investment strategy will firstly attempt to maintain the current condition in all district areas.
- Secondly it will allocate resources to those district areas with lengths of RED and AMBER A, B and C roads higher than compared to the county average.
- The predicted condition at the current rate of investment of £5m per annum shows a continued decline.
- It is estimated that an investment of £8m per annum is required to maintain/improve the condition of the asset.
- Risk of a major multiple fatalities as a result of failure to maintain the asset is considered to be remote.

## Rural Unclassified Roads

**Most Cost Effective Strategy:** Investment in preventative maintenance which is based on appropriate surface treatment in preference to more costly resurfacing of roads.

### Summary

- The asset consists of approximately 1,065km.
- A full coarse visual assessment will be completed in 2014.
- The current condition is indicated by the numbers of defects identified by highways inspections.
- The current condition of the asset is assessed as being ACCEPTABLE.
- The estimated investment required to maintain the current rate of deterioration would be £4m per annum.
- The district areas of Burnley, Pendle, Hyndburn, Preston Rossendale and South Ribble have a higher proportion of highways defects than would be expected solely on the length of the network in those areas.
- Investment is based firstly on maintaining the current condition of the network as far as is practical, and secondly, if investment levels are sufficient, to bring all district areas up to the same county standard.
- The average resources available for rural unclassified roads in the past five years have been £1.7m per annum.
- The asset is important to the rural economy and to rural communities.

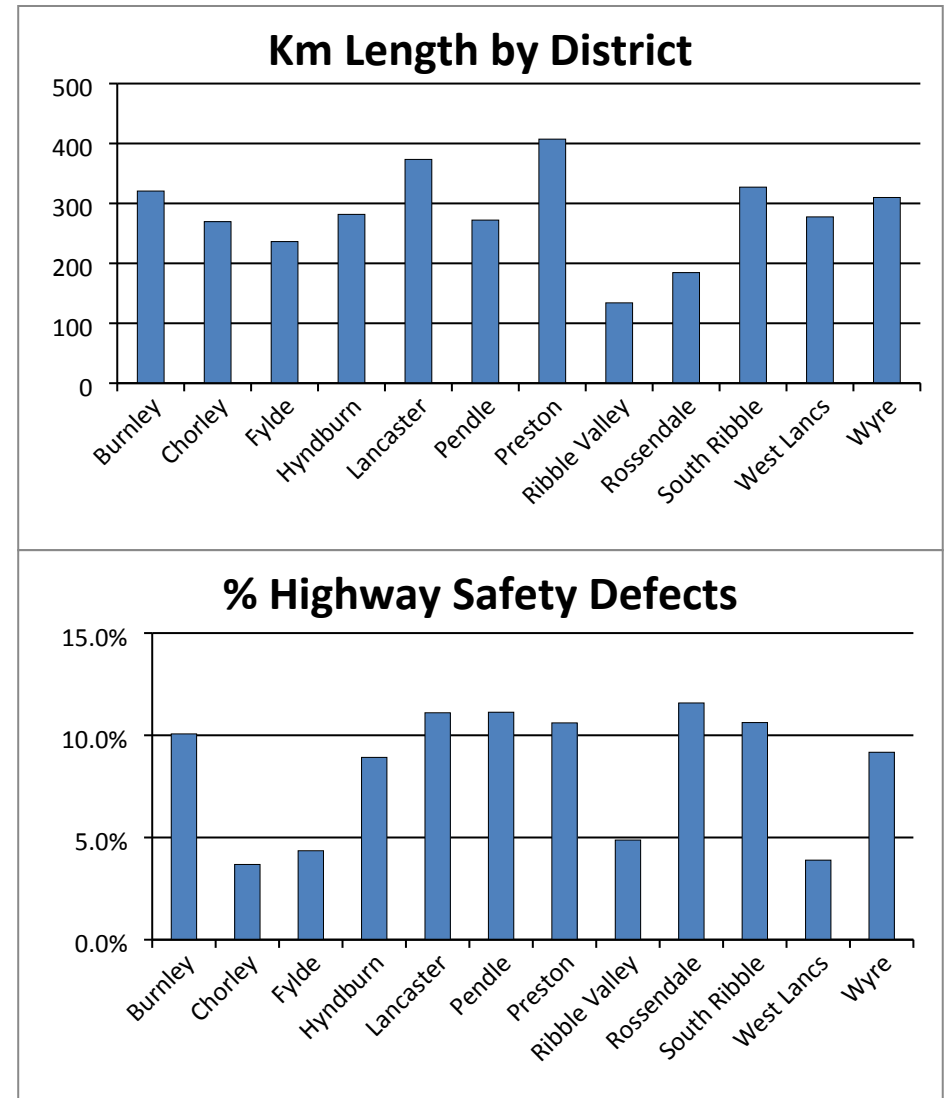


## Residential Roads

**Most Cost Effective Strategy:** Investment in preventative maintenance which is based on appropriate surface treatment in preference to more costly resurfacing of roads.

### Summary

- The asset includes approximately 3,400 km of residential roads.
- A full coarse visual assessment will be completed in 2014.
- The current condition is indicated by the numbers of defects identified by highways inspections.
- The current condition of the asset is assessed as being ACCEPTABLE.
- The estimated investment required to maintain the current rate of deterioration would be £5m per annum.
- Investment is based firstly on maintaining the current condition of the network as far as is practical.
- Secondly, if resources allow, investment will be based on bringing all districts to the county standard.
- The average resources available for residential roads in the past five years have been £2-3m per annum.

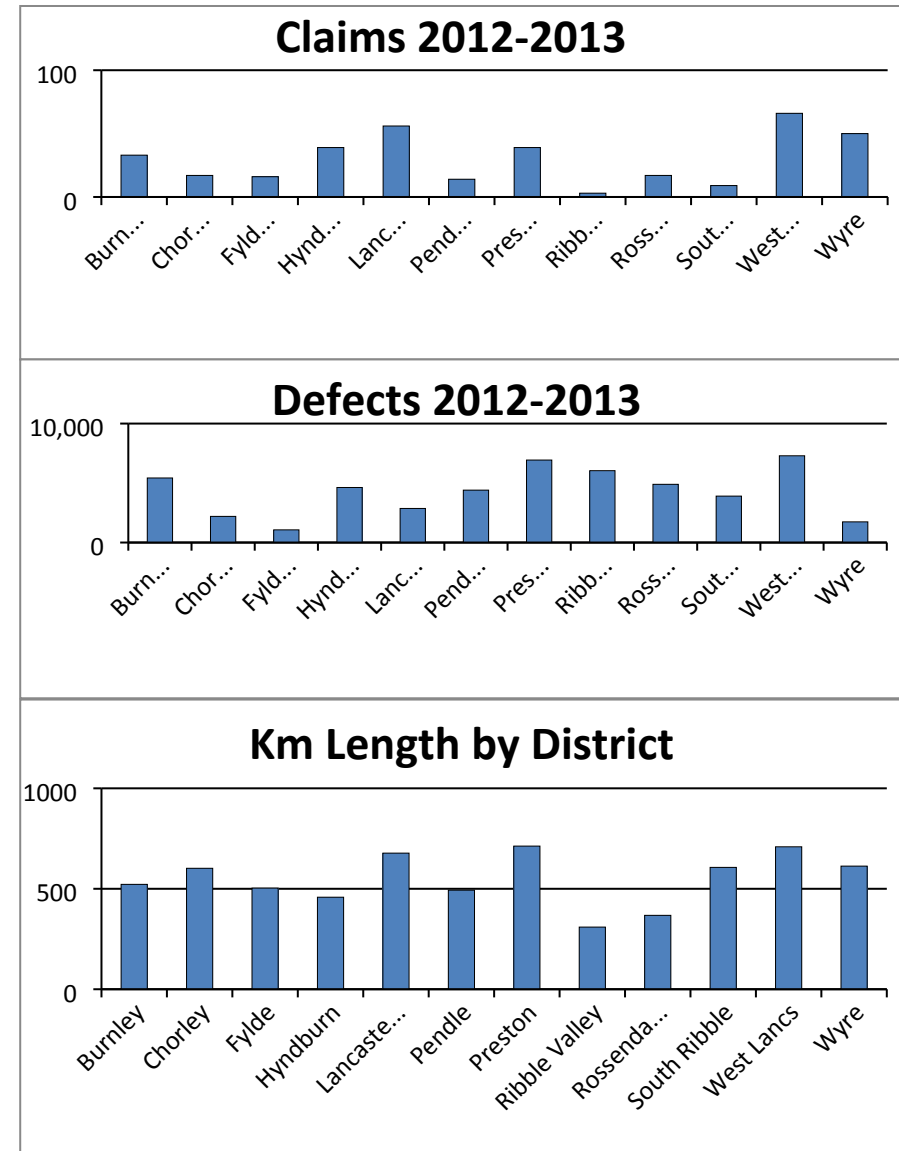


## Footways

**Most Cost Effective Strategy:** Investment in preventative maintenance which is based on appropriate surface treatment in preference to more costly resurfacing of footways.

### Summary

- There are over 8,500km of footways and urban footways in Lancashire.
- A full coarse visual assessment is to be completed in 2014.
- The current condition is indicated by the numbers of defects identified by highways inspections and the number of claims received.
- The current condition of the asset is assessed as being ACCETABLE.
- The estimated capital investment required to maintain the current rate of deterioration would be £2.5m per annum.
- Investment is based firstly on maintaining the current condition of the network as far as is practical and secondly, if resources allow, on bringing all district areas to the same county standard.
- The capital resources available for footways in the past five years have been £2m per annum.



## Bridges and Similar Structures

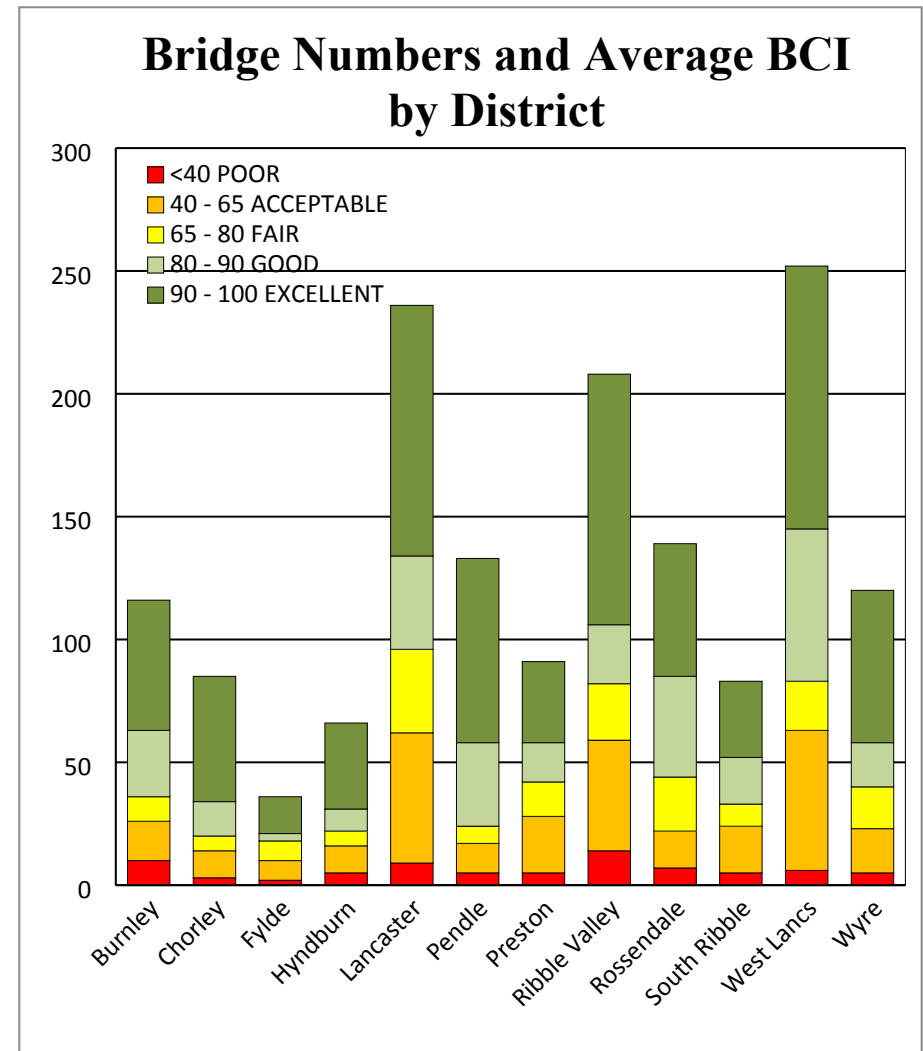
**Most Cost Effective Strategy:** Investment in preventative maintenance which is not based on reconstruction of bridges but is based on appropriate preventative treatment.

### Summary

- We are responsible for approximately 2,000 bridges and similar structures.
- We have good condition information relating to the condition of the asset.
- Our average bridge condition index is 89.3 which is the upper end of GOOD (and almost EXCELLENT).
- The estimated capital investment required to maintain the current rate of deterioration would be £3-4m per annum.\*
- The investment strategy is based upon identifying bridges and similar structures which have a bridge condition index (critical or adjusted) of < 40, and producing action plans for each such structure.\*\*
- The capital investment available in recent years has averaged £6m per annum.
- It is recommended that the capital allocation for bridges is reduced to £3m per annum and that major construction or refurbishment projects seek other funding sources.
- On the basis of the bridge condition data, resources are allocated on the basis of need as individual projects are unlikely to be included in any district based allocation.

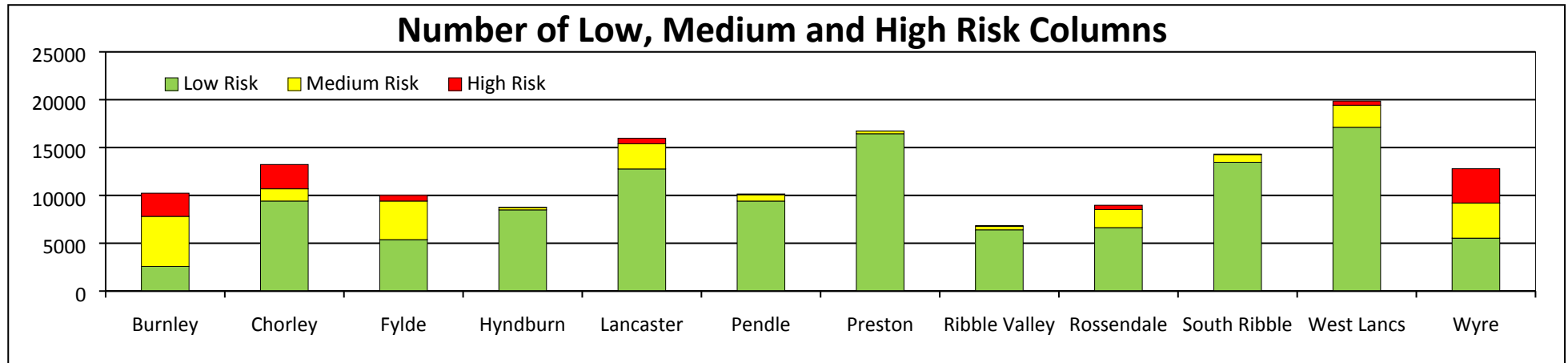
\*Does not include maintenance of Network Rail bridges, major new projects or major refurbishments.\*\*A bridge in poor condition does not

necessarily require urgent remedial action and is not automatically at risk of failure or subject to load restrictions.



## Street Lighting

**Most Cost Effective Strategy:** The risk to the public from a column falling over is generally low; however, half of our columns exceed the age when they should be regularly tested or considered for replacement or removal. The best strategy is to reduce the likelihood of columns falling over by either replacing or removing the highest risk columns or removal of columns without replacement.

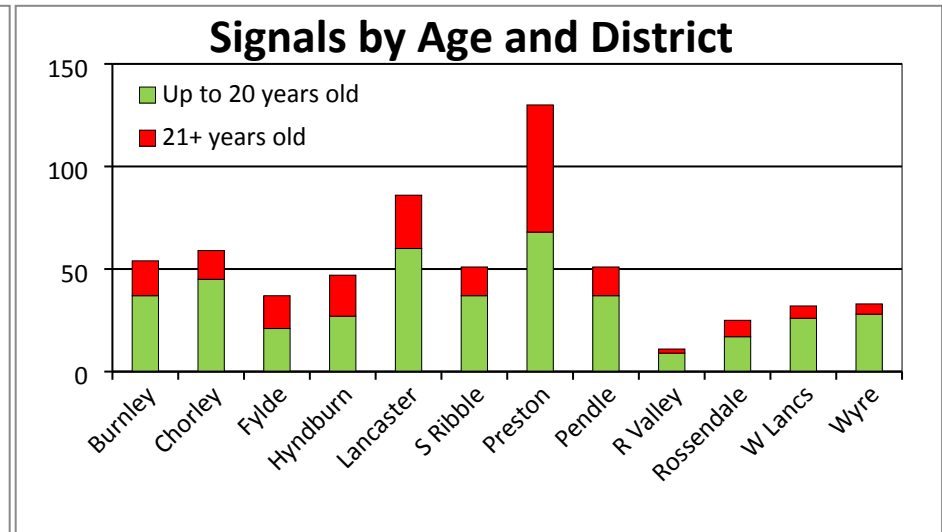
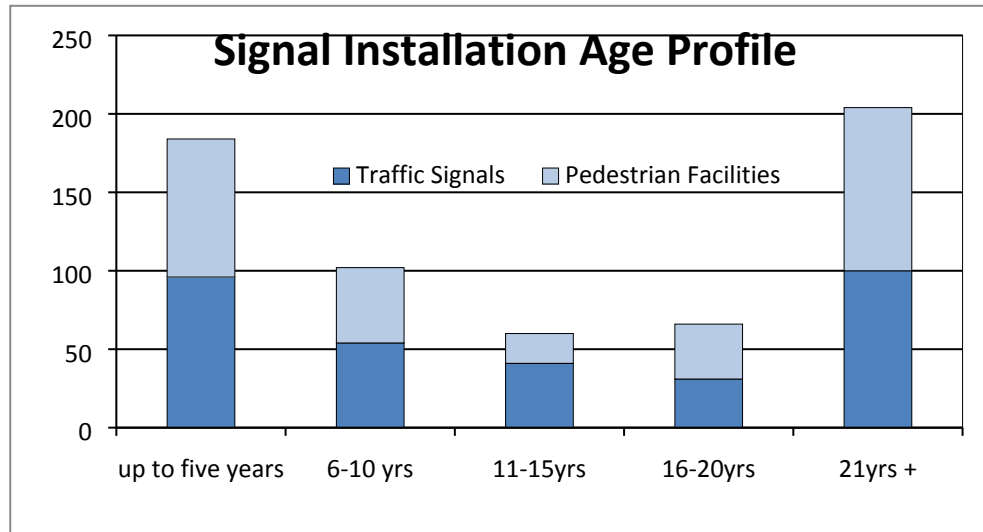


### Summary

- We are responsible for approximately 165,000 street lights, illuminated signs, bollards and similar installations.
- We spend in excess of £6m per year on electricity to run those lighting units.
- According to the risk assessment contained in the Institute of Lighting Professionals Technical Report 22 'Managing a Vital Asset' 51% of lighting columns have now exceeded their 'Action Age'.
- 34,200 columns are regarded as being of medium to high risk.
- 23,000 medium risk columns (in yellow) will score highly enough in the next five years to be included in the high priority bracket, currently having a score >100.
- 11,000 columns (in red) are the highest risk now having a score >150.
- The current condition of the stock is considered to be FAIR.
- In order to maintain the current rate of deterioration of the stock, it is estimated that a capital investment of the order of £6m per annum would be required.
- The likely capital investment available for 2014/15 is £1.7m.

## Traffic Signals

**Most Cost Effective Strategy:** Investment in preventative maintenance which is based on replacement of obsolete units at key junctions which will not be covered by Highways and Transport Masterplan activities.



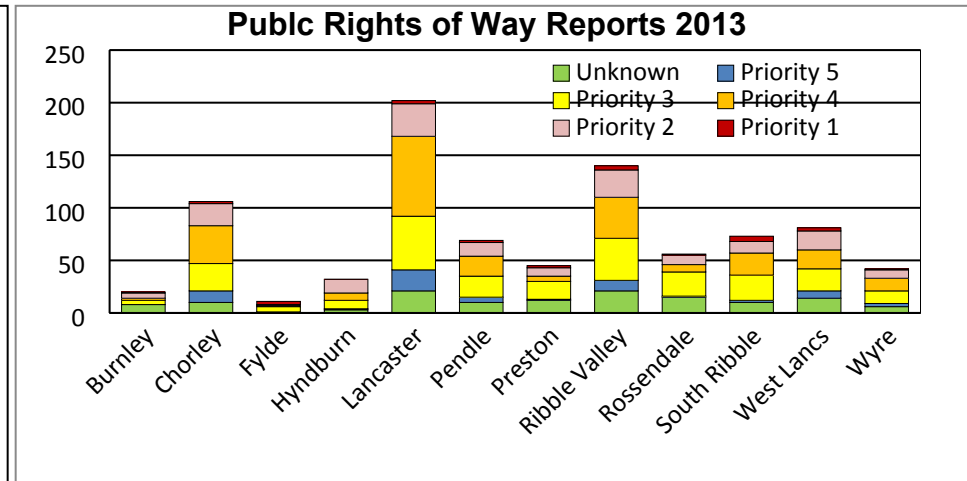
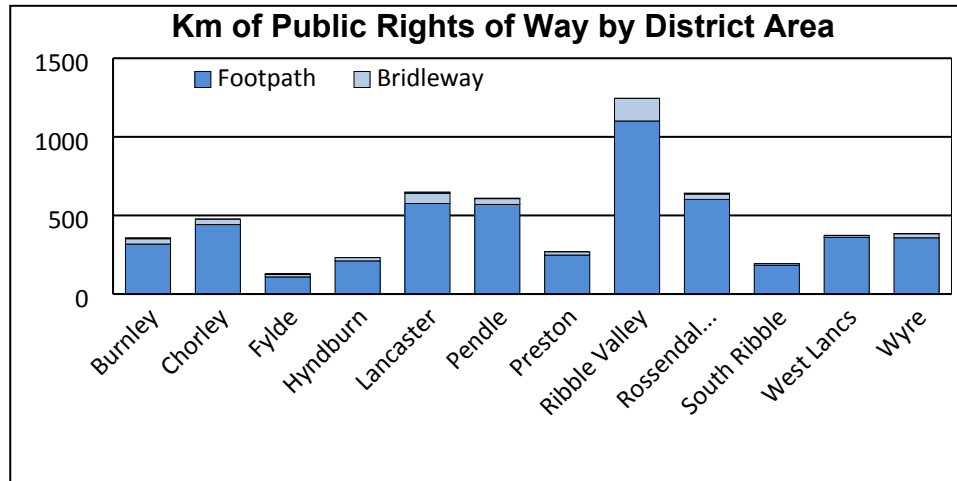
### Summary

- There are 331 sites in Lancashire which are controlled by a total of approximately 1,000 traffic signal / pelican crossing installations.
- The condition of the stock is measured in terms of the age of installations.
- Installations normally have a service life of 20 years before they reach a point where they are no longer supported by the manufacturer.
- We currently have a total of 204 installations (40% of the stock) more than 20 years old.
- It is estimated that a replacement programme at a value of £0.5m per year would be required to replace the stock that is no longer supported by the manufacturer.
- Over the past three years, less than £100,000 per annum has been available for traffic signal replacement.
- It is anticipated that from 2014, a capital programme to the value of £0.3m per annum will be used to support traffic signal replacement.
- A breakdown of traffic signal and pedestrian crossing equipment up to 20 years old (green) and age 21 years and over (red) and no longer supported is shown in the right hand graph above.



## Public Rights of Way

**Most Cost Effective Strategy:** Investment in preventative maintenance which is based on appropriate preventative treatment to key equipment and other actions aimed at ensuring the public are able to exercise their right to pass and re-pass across this network.



### Summary

- The asset consists of 5,560 Km of public rights of way (PROW) comprising public footpaths, public bridleways, public by-ways and byways open to all traffic.
- The condition of the asset is collected by an annual inspection of 5% (278km) of the network. Walked lengths are selected at random and are inspected by trained volunteers.
- The condition of the asset is considered to be broadly ACCEPTABLE.
- We have a statutory duty to ensure that every PROW is correctly recorded, signed and available for all legitimate users at all times.
- Approximately 3,000 defects are reported annually across the PROW network.

- We receive more defects across the PROW network each year than we can realistically resolve.
- The capital resources available for PROW in the past five years have been negligible. From 2015 onwards £0.25m will be made available annually.
- Investment is based firstly on maintaining the current condition of the network as far as is practical and secondly, if resources allow, on bringing all district areas to the same county standard.
- This asset contributes towards health and well-being initiatives and is used extensively used for health related leisure activities such as walking, cycling, running, horse riding etc.

## 11) Conclusion

### The above data indicates:

- The most effective investment strategy is one based on intervention at the optimal point in an asset's lifecycle.
- A general maintenance strategy of planned preventative maintenance at the correct time should be adopted.
- A 'worst first' approach can no longer be sustained.
- Continued deterioration of the A, B and C road network will occur if investment in the network is maintained at £5m per annum.
- An investment of £8m per annum is required to manage the condition of the A, B and C road network.
- The condition of the bridges network is assessed as being at the upper end of GOOD.
- It is recommended that investment in bridges and similar structures in the short term is reduced to a level of £3m per annum provided that major scheme funding is sought for strategic schemes.
- There are significant maintenance backlogs present particularly in respect of the A, B and C road network, rural unclassified roads, street lighting and traffic signals.
- A capital programme of the order of £25m will result in continuing deterioration of parts of the highways asset.
- The identification of strategically important subsets of the highways asset should be identified and prioritised to support the maintenance strategy.

## 12) Risk

### Relative Risk Rating of the Asset Groupings

Asset Class	Asset Volume or Size	Likelihood of Catastrophic Failure i.e., serious injury, loss of key asset, fatality.	Usage of Asset	History of critical safety defect
A, B and C Roads	2,567km	Possible	Very High and economically critical	Medium/ Low
Rural Unclassified Roads	1,065km	Possible	Medium but significant to rural tourist economies	Medium
Residential Unclassified Roads	3,400km	Possible	High visibility	Low
Bridges	2,000	Remote	High (many thousand transits per day)	Very low (once in 10 years)
Footways	8,518km	Remote	High and users are vulnerable	360 occasions each year i.e. 1 per day
Drainage	Approx 7,000km	Remote	High	Medium
Street Lighting	165,000	Remote	High	0.008% less than one per month
Traffic Signals best estimate	331 junctions or 1,000 installations	Possible	Hundreds of thousands of transits per day	Common failure of traffic signals (approximately 2 per week)
Crash Barriers	Report being prepared	Possible	Thousands of movements per day across the network	Limited failure. No history of total failure

## Generic Service Standards

Service Standard	Description of Level of Service
<b>POOR</b>	<p><b>Definition</b> Service delivery that is considered to fall below the minimum standard deemed necessary to maintain the asset in a safe manner. As a result only those essential and critical repairs that are affordable are undertaken. The risks and consequences associated with providing this service level are summarised below:</p> <p><b>a) Legal</b></p> <ul style="list-style-type: none"> <li>• Unable to ensure that we carry out all those duties that are incumbent on the authority through law, statutory duties or mandatory requirements;</li> <li>• Insufficient allocation to carry out works to recommendations contained in relevant codes of practice for which there is no approved derogation;</li> <li>• Authority is more exposed to legal action up to and including corporate manslaughter;</li> <li>• Degree of risk may be mitigated by a robust risk assessment which describes the reasons for deviation from the code of practice.</li> </ul> <p><b>b) Safety</b></p> <ul style="list-style-type: none"> <li>• In all cases <b>except</b> where the asset condition was formerly GOOD or EXCELLENT it is likely to result in a significant increase in the risks associated with safety or legal deficits;</li> <li>• Risks associated with the asset may be increased with attendant risks of legal exposure;</li> <li>• Likely to result in a significant increase in third party claims against LCC for personal injury and third party damage;</li> <li>• Heavy reliance on Safety Inspection regime to identify defects.</li> </ul> <p><b>c) Availability</b></p> <ul style="list-style-type: none"> <li>• Availability of entire network cannot be guaranteed;</li> </ul>

- Poor asset condition means parts of the asset may be withdrawn on a temporary or permanent basis to reduce the safety and legal exposure of the authority;
  - As no programmed maintenance work is undertaken assets may be withdrawn from service for some time.
- d) Condition**
- Condition of the asset will quickly deteriorate as investment is not keeping pace with the maintenance requirements. This standard is not sustainable over the long term;
  - It is assumed that the rate of deterioration exceeds the under investment required to maintain condition by a factor of at least 50% i.e. investment £10m less than required means a depreciation of £15m in asset value.
- e) Asset Value**
- Asset value is likely to be depreciating more rapidly as a result of minimal investment;
  - Maintenance heavily reliant on reactive activities which result in unpredictable financial management and highest whole life costs;
  - The cost of investment needed to return the stock to the minimum standard is growing rapidly and exceeds the resources available.
- f) Public Perception**
- Likely to be well aware that the asset is deteriorating and is becoming less available, safe or fit for purpose;
  - Members in particular will be facing pressure for improvement and will seek to react to local pressures potentially diluting the impact on overall asset condition;
  - Complaints and claims would be expected to be high.
- g) Service Delivery**
- The principle focus is likely to be reactive maintenance with minimum or no preventative maintenance intervention to prevent asset deterioration;
  - It will not be possible to address all issues rapidly and a prioritisation of service demands will be required;
  - It is likely that increasing portions of the asset are removed from service and that the trend accelerates with time

	<p>as the asset ages;</p> <ul style="list-style-type: none"> <li>• An increasing backlog of maintenance issues will exacerbate the service problems and lead to a further chain reaction of deterioration;</li> <li>• Depreciation in the asset value would be expected to exceed the under investment required to achieve a FAIR standard. It would be expected that initially deterioration would outstrip underinvestment by 50% with that proportion tending to increase year on year.</li> </ul>
<b>ACCEPTABLE</b>	<p><b>Definition</b></p> <p>The minimum level of service to meet most statutory requirements and compliance with minimum requirements detailed in national codes of practice. The risks and consequences associated with providing this service level are summarised below :</p> <p><b>a) Legal</b></p> <ul style="list-style-type: none"> <li>• The authority complies with the requirements of the relevant codes of practice in all key respects; any derogation is documented and supported by a robust risk assessment;</li> <li>• We know what is required and how we deliver the requirements.</li> </ul> <p><b>b) Safety</b></p> <ul style="list-style-type: none"> <li>• High reliance on Safety Inspection regime to identify defects;</li> <li>• In all cases <b>except</b> where the asset condition was formerly GOOD or EXCELLENT it is likely to result in an increase in the risks associated with safety or legal deficits;</li> <li>• Safety defects are well defined with performance standards for rectification of those defects. Systems are in place to ensure proper assessment prioritisation and rectification of defects or temporary arrangements to mitigate risk until a permanent repair is possible;</li> <li>• We have relevant information to support our delivery to required performance standards.</li> </ul> <p><b>c) Availability</b></p> <ul style="list-style-type: none"> <li>• The majority of the asset is available for normal reasonable use.</li> </ul> <p><b>d) Condition</b></p> <ul style="list-style-type: none"> <li>• The condition of the asset is deteriorating but at a reduced rate compared to POOR standard;</li> </ul>

	<ul style="list-style-type: none"> <li>• It is assumed that the rate of deterioration over under investment is of the order of 30% i.e. £10m underinvestment results in £13m of deterioration.</li> </ul> <p><b>e) Asset Value</b></p> <ul style="list-style-type: none"> <li>• The asset value is likely to be depreciating as a result of minimum investment.</li> </ul> <p><b>f) Public Perception</b></p> <ul style="list-style-type: none"> <li>• Likely to be well aware that the asset is deteriorating and is becoming less available, safe or fit for purpose;</li> <li>• Members in particular will be facing pressure for improvement and will seek to react to local pressures potentially diluting the impact on overall asset condition;</li> <li>• Complaints and claims would be expected to be high. It is highly likely that members or the public would easily distinguish between POOR and ACCEPTABLE standards in their localities.</li> </ul> <p><b>g) Service Delivery</b></p> <ul style="list-style-type: none"> <li>• The principle focus is likely to be reactive maintenance rather than preventative works undertaken at the optimal time;</li> <li>• It will not be possible to address all issues rapidly and a prioritisation of service demands will be required;</li> <li>• An increasing backlog of maintenance needs will exacerbate the service problems and lead to a further chain reaction of deterioration;</li> <li>• Depreciation in the asset value would be expected to exceed the under investment required to achieve a FAIR standard;</li> <li>• It would be expected that initially deterioration would outstrip underinvestment by 30% with that proportion tending to increase year on year.</li> </ul>
<b>FAIR</b>	<p><b>Definition</b></p> <p>A level of service that generally meets statutory needs and the requirements detailed in national codes of practice. The risks and consequences associated with providing this service level are summarised below:</p>

**a) Legal**

- The authority complies with the requirements of the relevant codes of practice in all respects and a robust risk assessment exists, except where it chooses not to carry one out. In all such instances any derogation is documented and supported by a robust risk assessment;
- We know what is required and how we deliver the requirements;
- The legal exposure of the authority is reasonably controlled and robust systems are in place to provide supporting evidence of compliance with the code of practice.

**b) Safety**

- Safety defects are well defined with performance standards for rectification of those defects;
- Systems are in place to ensure proper assessment prioritisation and rectification of defects or temporary arrangements to mitigate risk until a permanent repair is possible;
- We have relevant information to support our delivery to required performance standards. We are proactive in the identification and rectification of those defects;
- In all cases **except** where the asset condition was formerly GOOD or EXCELLENT it is unlikely to result in an increase in the risks associated with safety or legal deficits.

**c) Availability**

- The majority of the asset is available for normal reasonable use;
- Restrictions of the asset are largely planned maintenance activities rather than emergency repairs with the exception of emergency utility repairs.

**d) Condition**

- The condition of the asset is stabilised or with minor deterioration;
- It is assumed that the rate of deterioration is under 10%.

**e) Asset Value**

	<ul style="list-style-type: none"> <li>• The asset value is likely to be depreciating as a result of other external factors rather than under investment.</li> </ul> <p><b>f) Public Perception</b></p> <ul style="list-style-type: none"> <li>• It is likely that public opinion does not reflect the condition of the asset and the presence of any defects at all would be considered by members of the public to indicate that the asset was in poor condition.</li> </ul> <p><b>g) Service Delivery</b></p> <ul style="list-style-type: none"> <li>• A mixture of preventative maintenance undertaken at the optimal time and reactive maintenance will be delivered although it is possible that outside pressure focuses some investment in areas which do not serve to improve the condition of the asset;</li> <li>• The backlog of maintenance needs will probably be growing but at a reduced rate, due to any severe weather events and the reduction of our ability to focus on technically driven programmes.</li> </ul>
<b>GOOD</b>	<p><b>Definition</b></p> <p>A level of service that is above statutory needs and the requirements detailed in national codes of practice. The risks and consequences associated with providing this service level are summarised below:</p> <p><b>a) Legal</b></p> <ul style="list-style-type: none"> <li>• The authority generally exceeds the requirements of the relevant codes of practice in key respects; any derogation is minor and defensible, documented, and supported by a robust risk assessment;</li> <li>• We know what is required and how we deliver the requirements;</li> <li>• We are able to defend legal claims robustly and develop a strong due diligence defence.</li> </ul> <p><b>b) Safety</b></p> <ul style="list-style-type: none"> <li>• Safety defects are well defined with performance standards for rectification of those defects;</li> <li>• Systems are in place to ensure proper assessment prioritisation and rectification of defects or temporary arrangements to mitigate risk until a permanent repair is possible;</li> <li>• We have supporting information to ensure our delivery to required performance standards;</li> <li>• Should see a reduction in numbers of third party claims against LCC for personal injury and third party damage.</li> </ul>



	<p><b>c) Availability</b></p> <ul style="list-style-type: none"> <li>The vast majority of the asset is available for normal reasonable use.</li> </ul> <p><b>d) Condition</b></p> <ul style="list-style-type: none"> <li>The condition of the asset has been stabilised but significant improvements will take time It is assumed that the rate of deterioration is minimal.</li> </ul> <p><b>e) Asset Value</b></p> <ul style="list-style-type: none"> <li>The asset value is maintained as far as is reasonably practical;</li> <li>Relatively high costs in the short term as intervention measures are used to improve asset condition – results in lower whole life costs.</li> </ul> <p><b>f) Public Perception</b></p> <ul style="list-style-type: none"> <li>It is likely that public perception is still focused on the defects present and that it will take significant time before any improvement in perception of the asset is noted.</li> </ul> <p><b>g) Service Delivery</b></p> <ul style="list-style-type: none"> <li>A mixture of preventative and reactive service delivery models will be used as the backlog of maintenance issues will only be reduced slowly if at all;</li> <li>Increased capital budget enables preventative maintenance to be carried out. Such works are directed at intervening at the right point to restore the asset to an appropriate condition at minimum cost.</li> </ul>
<b>EXCELLENT</b>	<p><b>Definition</b></p> <p>A level of service that is well above statutory needs and the requirements detailed in national codes of practice. Service delivery aimed at maintaining the asset to a high standard. The risks and consequences associated with providing this service level are summarised below:</p> <p><b>a) Legal</b></p> <ul style="list-style-type: none"> <li>The authority complies with the requirements of the relevant codes of practice in all respects; any minor local</li> </ul>

derogations are documented and supported by a robust risk assessment;

- We know what is required and how we deliver the requirements;
- We further understand future needs and pressures and have a well developed strategic plan for the next five years.

**b) Safety**

- Significant reduction in claims against LCC for personal injury and third party damage;
- Safety defects are well defined with performance standards for rectification of those defects;
- Systems are in place to ensure proper assessment prioritisation and rectification of defects or temporary arrangements to mitigate risk until a permanent repair is possible;
- We have relevant information to support our delivery to required performance standards;
- Performance standards are challenging and reviewed regularly.

**c) Availability**

- The asset is available for normal reasonable use.

**d) Condition**

- The condition of the asset is improving strongly with asset value increasing;
- It is increasingly possible to flexibly assign resources to selected programmes each year as the relative deterioration is marginal year on year.

**e) Asset Value**

- The investment required to bring the asset to an as new condition is reducing;
- High costs in the short term as intervention measures are used to improve asset condition – results in lowest whole life costs.

**f) Public Perception**

- Generally public perception of the condition of the strategic and residential road network would be expected to be positive however the response to the few defects remaining will be disproportionate as expectations will steadily

increase;

- The majority of the asset improvements will be less visible and the general public and members would not be expected to notice improved drainage, improving lighting column condition or improving bridge condition.

**g) Service Delivery**

- The principle service delivery is focused on preventative maintenance at the optimal time in an assets life cycle which will effectively reduce the average cost per scheme, particularly in respect of roads, and in turn fuel more rapidly improving condition;
- Operating at a sustainable level using sustainable methods.

**Appendix 2**

**Service Standards**

Asset Category	Measured By	2013/14 Condition	SERVICE STANDARD			
			ACCEPTABLE CONDITION	FAIR CONDITION	GOOD CONDITION	EXCELLENT CONDITION
A Roads*	% Roads RED & AMBER	<b>A = 22.1%</b>	25%	15%	10%	5%
B Roads*		<b>B = 42.3%</b>	40%	20%	15%	5%

C Roads*		<b>C = 48.7%</b>	50%	30%	20%	<b>10%</b>
Residential Unclassified Roads **	% Roads RED & AMBER	<b>28-40%</b>	28-40%	18-28%	14-18%	<b>&lt;14%</b>
Rural Unclassified Roads**	% Roads RED & AMBER	<b>28-40%</b>	28-40%	18-28%	14-18%	<b>&lt;14%</b>
Footways	Number of Defects	<b>51,395</b>	50,000-60,000	25,000-50,000	15,000-25,000	<b>&lt;15,000</b>
Bridges and Similar Structures	Bridge Condition Index (Average)	<b>89.3</b>	40-60	60-79	80-90	<b>&gt;90</b>
Street Lighting	% of High Risk Installations	<b>23.15%</b>	25-35%	20-25%	10-20%	<b>5-10%</b>
Traffic Signals	% of Units Beyond Design Life	<b>33.11%</b>	30-40%	20-30	10-20	<b>&lt;10%</b>

\* The overall condition of the A, B and C road network is broadly considered to be ACCEPTABLE.

\*\* It has been assumed, in the absence of engineering data, that the condition of the unclassified road network is similar to that of the C road network.

### Appendix 3

#### Primary and secondary priorities if additional resources are received in Phases One, Two or Three

This TAMP defines a fifteen year operational plan designed to reduce the transport asset maintenance backlogs and future maintenance costs in Lancashire. It recognises that a key barrier to this is the availability of sufficient financial resources.

Whilst we would like to improve the condition of all of our assets, all at once, this TAMP recognises that the amount of money likely to be made available in future will not permit this. As a result we are required to prioritise those assets which contribute most

towards our goal of delivering an effective transport system, as this is considered crucial if we are to help the businesses of Lancashire and achieve our broader economic, social and environmental goals. If we are to succeed, this approach will require the understanding and support of elected members and the residents of Lancashire over the life of this plan.

Should additional resources be made available then more rapid progress can be made towards providing a network that is fit for purpose and maintainable at a good standard by enabling works contained in phases two and three to be brought forward.

Additional resources will also enable more rapid progress to be made in providing a transport asset network that is fit for purpose and maintainable at a good standard. It will also enable the

economic and other benefits such as health, well being and engagement with neighbourhoods etc to be realised earlier

The vision of this plan is a Lancashire in 2030 supported by a good roads network where available resources allow rapid rectification of maintenance needs and allow a rapid, clear and transparent response to problems while supporting preventative maintenance treatments designed to avoid future potential problems.

The information below has been compiled to set out how we would spend any additional money should the actual level of finance received increase over and above that assumed in the TAMP. Dependant on the actual level of additional finance received we will either enhance the defined programmes for priority areas or invest in the primary and secondary priorities. In all cases, the TAMP will be amended should additional resources be received.

<b>Phase One 2015/16 to 2019/20 - Main Priority Areas A, B and C Roads and Footways</b>		
<b>One-off additional allocation</b>	Primary Priority	Subject to level of finance received, bring forward a limited number of planned works on the most strategically important parts of the A, B & C road network.
	Preferred Treatment	Surface dressing, structural patching or resurfacing as appropriate.
	Secondary Priority	Footway network, concentrating on third party claims black spots.
	Preferred Treatment	Structural patching or resurfacing as appropriate.
	Outcome	Accelerate the completion of phase one, resulting in the A, B and C road and Footway networks being in better condition, having fewer defects and reduced on-going maintenance costs.
<b>£1m to £5m per year over</b>	Primary Priority	Potential to bring forward whole programmes of planned work, prioritised on strategically important parts of the A, B & C road network.
	Preferred Treatment	Surface dressing, structural patching or resurfacing as appropriate.

<b>a number of years</b>	Secondary Priority	Residential unclassified road network.
	Preferred Treatment	Structural patching or surface dressing.
	Outcome	Accelerate a reduction in backlogs and improve the condition of A, B and C and residential unclassified road networks particularly if surface dressing treatments are used. If roads need to be structurally patched, this will result in a much smaller area being remediated.
<b>In excess of &gt;£5m per year over a number of years</b>	Primary Priority	Residential unclassified and rural unclassified road networks to accelerate reduction in backlogs.
	Preferred Treatment	Creation of resurfacing and structural patching allocations and explore operational delivery to maximise economies of scale.
	Secondary Priority	Potential to resurfacing of those parts of the residential unclassified and rural unclassified road networks where surface dressing or structural patching is not considered appropriate.
	Outcome	Additional investment will allow phases one and two to be run concurrently and enable us to reduce maintenance backlogs in these networks. However our prime focus in the short term will be to concentrate on using the most cost effective treatments and addressing the proportion of the asset classified as RED.
<b>Added Value</b> - Accelerate the reduction of backlogs particularly on the strategically important parts of the network as this supports the economy of Lancashire and is vital if we are to increase the economic prosperity of the county. This is reflected in the county council's Highways and Transport Master Planning process which is supported by central government delivering the Preston, South Ribble and Lancashire City Deal and Heysham M6 Link projects. Additional funding of £5m per annum will allow concurrent improvement of the residential unclassified and rural unclassified road networks in support of the county council Priority Neighbourhoods initiative which seeks to improve the most deprived areas of Lancashire.		
<b>Phase Two 2020/21 to 2024/25 - Main Priority Areas Rural Unclassified Roads and Residential Unclassified Roads</b>		
<b>One-off additional allocation</b>	Primary Priority	Subject to level of finance received, bring forward a limited number of planned works on the residential unclassified road network.
	Preferred Treatment	Surface dressing, structural patching or resurfacing as appropriate.
	Secondary Priority	Subject to level of finance received, bring forward a limited number of planned works on the most strategically important parts of the rural unclassified road network.
	Preferred Treatment	Structural patching or resurfacing as appropriate.
	Outcome	Will accelerate the completion of phase two, resulting in the rural unclassified and residential unclassified road networks being in better condition, having fewer defects and reduced on-going maintenance costs.
<b>£1m to £5m per year over a number of years</b>	Primary Priorities	Increased investment in lighting column replacements.
	Preferred Treatment	Replacement of highest risk columns.
	Secondary Priorities	Increase investment in street lighting equipment. Removing those columns that are no longer needed. Where columns are still needed, replacing with new and fitting with energy efficiency lanterns.
	Preferred Treatment	Removal of columns coupled with more energy efficient technology deployment.

	Tertiary Priorities	Replacing ineffective drainage systems with modern equivalents, prioritising work to flood risk areas. Increase investment in those bridges and similar structures which have a bridge critical score close to 40.
	Outcome	Will enable works from phase 3 to be brought forward and for real progress to be made in respect of asset groupings not currently included in any phase. Will result in lower future maintenance costs.
<b>In excess of &gt;£5m per year over a number of years</b>	Primary Priority	Increased Investment in residential unclassified and rural unclassified road networks to accelerate a reduction in maintenance backlogs.
	Preferred Treatment	We will create resurfacing and structural patching allocations for the residential unclassified and rural unclassified road networks and explore operational delivery mechanisms to maximise economies of scale
	Secondary Priority	Increased surface dressing across the entire network to enable AMBER areas to be addressed earlier.
	Outcome	Additional investment at this level will allow phases one and two to run concurrently enabling us to accelerate progress in reducing the maintenance backlogs in the residential unclassified and rural unclassified road networks. However our prime focus in the short term will be to concentrate on using the most cost effective treatments and addressing the proportion of the asset classified as RED.
<b>Added Value</b> Will allow more rapid progress to be made particularly in the residential unclassified and rural unclassified road networks. The rural unclassified road network is particularly important given the outstanding natural beauty of the county. In spite of its relative importance anticipated funding levels will not allow progress until phase two.		

<b>Phase Three 2025/26 to 2029/30 - Main Priority Areas Bridges and similar structures and Street Lighting</b>		
	Overall Priority	Review of condition of all assets following phases one and two.
<b>One-off additional allocation</b>	Primary Priority	Street Lighting
	Preferred Treatment	Replacement of highest risks columns
	Secondary Priority	Energy reduction initiatives.
	Preferred Treatment	
	Outcome	Replacement of highest risks columns and reduction in energy and costs
<b>£1m to £5m per year over a number of years</b>	Primary Priorities	Bridges and Structures
	Preferred Treatment	Addressing structures in poorest conditions.
	Secondary Priorities	Inspection programmes.
	Preferred Treatment	

	Tertiary Priorities	
	Outcome	Ensure that bridges remain in a safe condition
<b>In excess of &gt;£5m per year over a number of years</b>	Primary Priority	Production of the next ten year plans.
	Preferred Treatment	Preventative maintenance intervention at the optimal time
	Secondary Priority	Reduction of proportions of poor condition assets.
	Outcome	Ensure that all assets are maintained in their optimum condition and that maintenance backlogs are very much reduced so that they can be easily addressed within the level of funds that are available.



