

Kent County Council

# Public Rights of Way

## Asset Management Plan

2019

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Essella Road

M20 Footbridge

North Downs Way

England Coast Path

Public Rights of Way Asset Value

**£107M**

Annual requirement to maintain the asset at a  
steady state

**£2.4M**

Performance Gap

**£4.097M**

# Introduction

Kent County Council maintains 6900Km (4312 miles) of Public Rights of Way (PRoW) network and associated assets. PRoW are, with few exceptions, publicly maintainable highways. They comprise 42% of the Kent highway network and are an integral element of the highways asset.

The asset comprises soft estate, tar-macadam paths, aggregate / Sealed paths, stiles, gates, barriers, fingerposts and direction markers, simple plank bridges, kit bridges, bridges and culverts. The value of the asset calculated on the basis of current replacement cost is £107M. The annual requirement to maintain this asset in line with the statutory minimum and in a steady state is £2.4M.

PROW are recorded on the Definitive Map and Statement (DMS). The DMS provides conclusive evidence of the existence alignment and status of PROW. The status of a PROW, footpath, bridleway, restricted byway and byway open to all traffic determines the minimum level of public use that may be made of the PROW and therefore the level of maintenance that may be required.

## Statutory Duties

The County Council has a number of statutory obligations in respect of its management of the network.

### **Highways Act 1980 :**

**Maintenance:** The County Council must maintain the PRoW network to a standard that enables use by the ordinary traffic of the area at all times of year taking into account the needs of the visually impaired and disabled.

The County Council is obliged to contribute a minimum of 25% of the cost of maintaining authorised stiles and gates.

The County Council has a duty to ensure that the rights of the public to use the network are protected and asserted, including securing the removal of any obstructions to the network. There is a significant overlap between maintenance and protection activity given joint liability for elements of the asset such as stiles, gates and many bridges.

### **Traffic Management Act 2004:**

The County Council is obliged to ensure the free movement of traffic through its area. PRoW fall within the definition of “road” for the purposes of the Act.

### **Climate Change Act 2008:**

The County Council must reduce emissions and adapt to longer term climate change.

## Benefit

The practical benefit in asset management planning is that in delivering a network that is maintained in line with the County Council’s statutory obligations the potential benefits in using the network such as those to health or supporting the rural economy are realised. The negative impacts of failure in terms of closures on the network, inconvenience, loss of income and third-party claims are avoided.

# Our Vision



*“To provide a high quality, well maintained network, that is well used and enjoyed. The use of the network will support the Kent economy, encourage active lifestyles and sustainable travel choices and contribute to making Kent a great place to live, work and visit “.*

## Our Strategic Outcomes

Our vision reflects the County Council’s strategic statement “Increasing Opportunities and Improving Outcomes”

The County Council is committed to achieving its vision through three strategic outcomes which provide a simple and effective focus for everything we do. The effective management of the PROW asset supports the delivery of the County Council’s three strategic outcomes:

- Children and young people in Kent get the best start in life.
- Kent communities feel the benefits of economic growth by being in work, healthy and enjoying a good quality life.
- Older and vulnerable residents are safe and supported with choices to live independently.



# The Rights of Way Improvement Plan

Kent County Council has a duty to prepare a Public Rights of Way Improvement Plan (ROWIP) under Section 60 of the Countryside and Rights of Way Act 2000 and to update the plan every 10 years.

The plan assesses the extent to which the PROW network meets the present and likely future need to the public in:

- contributing towards more sustainable development;
- delivering active travel options;
- providing opportunities for exercise, leisure and open-air recreation.

The plan articulates the positive outcomes that a well maintained, accessible PROW network can contribute to the delivery of, particularly:

- Public health, mental health and well-being.
- Sustainable travel choices – particularly on foot and cycle.
- Supporting the rural economy.

The PROW and Access Service is committed to delivering the positive outcomes identified in the plan and has looked for innovative ways to improve the PROW network in the face of financial challenges.

Key to the delivery of the positive outcomes set out in the ROWIP is the ability to take informed decisions about the PROW asset and where investment is best made to both comply with the County's statutory obligations and deliver the greatest return. The PROW and Access Service (PROWAS) developed a simple cost benefit analysis tool – The Intelligent Investment Tool - to facilitate informed decision making and to ensure that investment in the network delivers the greatest possible benefit.

# The Public Rights of Way Asset Management Plan

The County Council formally adopted asset management principles for the management of the Public Rights of Way (PRoW) network on the 8 February 2008.

This approach has been beneficial in establishing the resources required to meet the County Council's statutory obligations in respect of:

- i. maintaining the rights of way network,
- ii. identifying priorities for expenditure, and;
- iii. allowing procurement decisions and the standards adopted for the asset to be rigorously tested so as to achieve best value.

The adoption of asset management principles provides the framework for stronger, better-informed, strategic maintenance decisions. Our understanding of the asset continues to improve, new materials become available, costs fluctuate. The Asset Management Plan changes to reflect these advances and variations. Areas for further investigation, development and improvement are identified and evaluated, for instance the use of polymers in bridge construction or the availability of recycled plastics as a wood substitute.

# Asset Management Practice

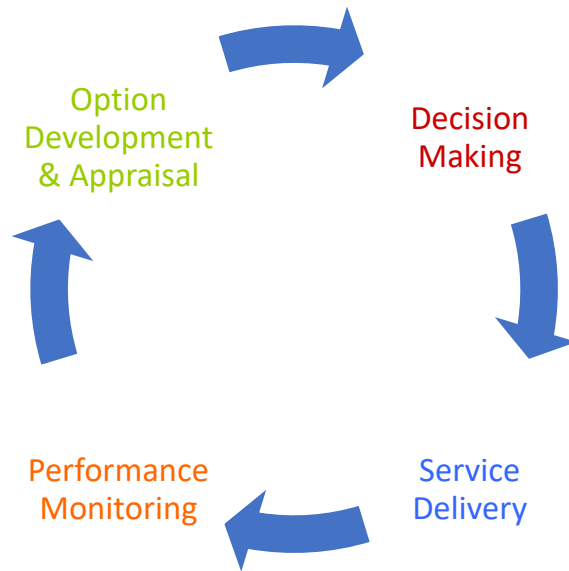
Reflecting the Local Transport Plan asset management practice there are four principal components in good asset management practice:

Option development and appraisal

Decision Making

Service Delivery

Performance monitoring



The process is cyclical and a powerful tool to drive service delivery.

# Asset data capture system – Countryside Access Management System (CAMS) and asset inventory

The PROWAS was in an advantageous position having completed a detailed survey of the entire PROW network 2004-7. This provided an extremely accurate picture of the county's PROW asset down to the precise location, construction and condition of individual structures and furniture items. The asset information is maintained in the Countryside Access Management System (CAMS) database. The PROWAS has, since 2007, with the exception of some elements of bridges and structures, been reliant on reports from the public, volunteer wardens and PROW officers to gather condition information on the network and to update the asset information. The assumptions made on the basis of such an approach are therefore reliant on a greater level of estimation/ approximation than would be the case if there were a systematic programmed asset inspection.

The asset management plan would be strengthened through establishing a regime of regular network inspection. An ongoing condition survey would provide invaluable information about the condition of asset items. This in turn allows the assumptions about deterioration, lifespan, whole life costs and the likely performance of the asset, to be refined. There are additional benefits in having a regular inspection regime not least the ability to identify and act on safety issues and the benefits this has in providing a defence in any action against the authority based on a failure to maintain the highway and third-party injury claims.

There are items of the asset that, as yet, have not been evaluated as they are small in number or complex, for instance drainage systems. A regular inspection regime would allow this information to be gathered over time.

In the current financial climate it is simply not viable to establish an inspection regime using employees. We consider the maximum time span for inspection

to provide valid asset information would be 24 months. It is calculated that to undertake a detailed inspection at this interval would require approximately 3 fte at an operational cost of approximately £120K p/a. Amendments are planned to the existing Countryside Access Warden scheme that could deliver a programme of inspection at little extra cost; should it prove possible to recruit and equip sufficient wardens to achieve comprehensive coverage of the network. Further development of technology/ software is also required before the Service will be in a position to implement such an inspection regime.

While there is no programmed inspection regime for the whole asset, volunteer Countryside Access Wardens have inspected 87% of the network in the last 6-7 years with 18.5% of the network inspected in the last 12 months. This does enable assumptions about asset condition and performance to be updated.

Improved decision-making would be likely to deliver efficiencies that would justify the cost of any inspection regime. Additional benefit would also be secured in providing a greater level of defence in respect of third-party injury claims. Settlements in respect of insurance claims would potentially be reduced as a result.

All information gathered on the whole network survey was captured in the Countryside Access Management System (CAMS). All customer reports, officer maintenance activity and volunteer warden activity are captured in the system.

There is an additional significant benefit delivered to the public of Kent through capturing and maintaining asset information. Those assets that may limit the use of the network are displayed on our interactive map. This enables the public to select routes in the knowledge that they are, for instance, free from steps or stiles: this is of benefit to people with disabilities, the young and old and those with young families.

# Asset Inventory

The PROW asset principally comprises:

Stiles

Kissing gates

Gates : Pedestrian, equestrian and field gates

Structured gaps and barriers

Waymark posts

Fingerposts

Sleeper bridges

Kit bridges (timber and steel)

Bridges and structures

Benches/ perches

Aggregate paths (formation and binding or running surface)

Sealed paths (formation and binding layer)

Soft estate including some trees, un-made path surfaces and path margins requiring vegetation control.

There are other elements of the asset that have not, as yet, been accurately recorded such as drainage systems and retaining walls. They are not commonplace items on the network but could carry a disproportionate financial risk should they fail. Clearly the establishment of a rolling systematic network survey would allow such items to be picked up over time and assumptions about their performance developed.

# Asset Growth

The PRow asset is not static. It continues to grow. This is for a number of reasons:

## Route Creation –

The development of new housing, the construction of associated infrastructure sees new highways (including PRow) created and adopted by the Highway Authority.

A small number of new rights of way are created or existing PRow upgraded to a higher status each year in line with the delivery of the County Council's objectives, articulated in the Rights of Way Improvement Plan.

The England Coast Path will be a continuous walking trail around the coast of England. Approximately 25% of the route in Kent (110 km – will be new provision)

## Diversion Orders –

Public Rights of Way may be diverted by order, either in the landowner of public interest. This can result in a greater length of path or an increase in assets.

## Definitive Map Modification Orders

Orders are frequently made to amend the Definitive Map and Statement on the basis that existing highways that should be recorded had been omitted or that new rights have been established through use. A proportion of those routes added on the basis of prior omission may be maintainable along with any associated infrastructure. Those added on the basis of use are generally not maintainable.

## Route improvement

It may be necessary to improve some routes beyond simple maintenance and repair in order to meet the needs of modern traffic in response, for instance, to an increase in the local population.

The impact of continued growth of the asset is an increased budget requirement, identified through the MTFP process.

# Asset standards and management practices

The PROWAS developed design standards for application across the PROW network (Appendix 2). The design standards principally provide dimensional detail for construction and access/ manoeuvring room for users in the vicinity of structures. They do not supply information about the materials to be used or suppliers of materials. The standards should, however, be read in conjunction with the British Standards 5709:2006 and 5709:2018 that do set down engineering standards for some asset components.

The picture is further complicated in respect of the PROW network in that for some elements of the asset there is a joint liability, and the level of that liability may vary between the parties, reflecting policy or historic agreement. This is particularly true of stiles and gates that exist for the purposes of land management. KCC liability may vary from a statutory minimum of 25% to a discretionary maximum of 100%. The County Council's policy of least restrictive access supports a greater contribution in the case of pedestrian and equestrian gates but is set at the minimum 25% contribution for stiles.

Most of the maintenance work on the network is undertaken by contractors operating under small engineering work contracts. This enables labour costs to be relatively accurately determined when calculating the modern replacement equivalent cost of assets. What is not factored in, but is a significant burden, is the cost in staff time in arranging maintenance. This is generally greater than for assets wholly owned by the County Council where there are fewer management or access constraints.



# Option development and appraisal.

The principal drivers for option appraisal are:

- the availability of new materials – for instance structural polymers and recycled plastics and glass,
- fluctuations in the cost and availability of materials,
- the need to deliver efficiency savings, and
- amendments to policy such as adopting a policy of least restrictive access.

New materials or designs are evaluated on the basis of the expected performance indicated by manufacturer's warranty or guarantee, modern replacement equivalent cost and then through field trial and longer-term monitoring.

# Programme development and scheme prioritisation.

Central to the establishment of work programmes is the identification of failed or failing assets as captured in CAMS, the identification of potential improvements to the network reflecting the Rights of Way Improvement Plan and the availability of funding or the potential to secure funding.

Potential schemes are prioritised using the Intelligent Investment Tool. This is a simple cost benefit analysis tool developed by the Service. It seeks to identify those schemes most closely aligned to meeting the County Council's statutory obligations and policies and that best manage risk. Asset management considerations are built into the tool as are other practical considerations around site constraints and vulnerability of the asset to severe weather events.

The tool has been found to be robust by Amey in assessing the business case for Local Enterprise Partnership schemes.

# Asset Management Calculations

**Asset Number:** The number of an asset type is taken as being that recorded in CAMS.

**Modern Replacement Equivalent (MRE) Cost:** MRE is based on the current cost to the Service of replacing assets with their modern equivalent, including labour.

**Asset value:** Asset value is based on the sum of the modern replacement equivalent cost of all asset types, adjusted to reflect the County Council's liability in the case of shared assets.

**Lifespan/ Performance:** Asset lifespan reflects either the expected performance based on manufactures guidance, warranty/ guarantee (where no field performance or long- term performance information is available) or the measured performance in field where this information has been gathered.

**Budget requirement:** This reflects the annual revenue and capital expenditure required to keep the asset in a safe condition and to maximise lifespan and to replace the asset at the optimum time. The figures reflect a steady state scenario where investment is assumed to have been at appropriate levels consistently for many years and there are therefore no structural peaks in demand. ( e.g. had all kit bridges been constructed in the same year the majority would require replacement in and around the same time creating an increased budget demand at that time).

**Depreciation;** Depreciation in line with the Chartered Institute of Public Finance and Accountancy (CIPFA) code is taken as being a straight line.

**Deterioration:** The deterioration assumptions are based upon the expected performance of the asset over the lifespan of the asset. The deterioration curves for the asset are amended based on realised performance on the network as opposed to what may be expected in ideal conditions. The assumptions on which deterioration has been plotted require considerable refinement.

**Steady state:** The figure required to maintain the network in its current condition. Were the network in a condition that meets the County Council's statutory obligations in full, it would maintain the asset at that level and

ensure that assets were maintained or replaced in a timely manner in line with asset management principles.

**Performance gap:** This is the investment required to bring the asset to a point where it is in good order and the County Council's statutory obligations are met in full. The figure is calculated from the number of assets reported as being out of repair in the last calendar year and existing backlog of programmed works.

**Statutory minimum:** The minimum level of service that fulfils our statutory duties. In the case of the PRow asset this also reflects the minimum level of service to fully meet the County Councils statutory obligations assuming that the asset is in optimum condition.

## Condition definition:

Condition is defined as:

**Optimum** – Assets are replaced or repaired before failure, having realised the expected, or greater than expected asset life. There has been a consistent level of investment and there are no structural peaks or troughs in the investment required. The number of an asset reported as out of repair reflects accidental/deliberate damage as opposed to the deterioration of the asset.

**Acceptable** – The % of the asset surveyed or reported as being out of repair each year is less than the number of asset type divided by the expected lifespan. Individual assets may however be in an unacceptable or failed condition. The statutory minimum level of service is being met.

**Poor** – The % of the asset surveyed or reported as out of repair is greater than the number of asset divided by the expected lifespan. Closures may be required to ensure public safety.

## Current performance by asset type:

Table 1 (below) provides the number of an asset, the expected lifespan of the asset and the expected replacement rate of the asset at a steady state. In ideal circumstances replacement would occur at the end of the serviceable life rather than at the point of failure.

Table 1

Asset type	Quantity	Expected performance - life span years	Replacement rate (if expected lifespan is achieved – steady state)	2018 % of reported as out of condition	2018 % of asset replaced
Stiles	7851	10	10%	2.65%	0.06%
Pedestrian gates	2099	35	2.86%	2.14%	4.95%
Kissing gates	3531	35	2.86%	1.67%	1.95%
Bridle gates	433	35	2.86%	1.39%	1.39%
Field gates	2313	20	5%	0.73%	0.35%
Structured gaps and barriers	1216	30	3.33%	3.29%	4.77%
Fingerposts	14476	20	5%	3.28%	2.25%
Waymark posts	2855	15	6.66%	0	0
Benches	28	25	4%	0	0
Sleeper bridges	1433	18	5.56%	4.12%	3.07%
Kit bridges	1034	30	3.33%	6.19%	3.67%
Bridges of other constructions	563	40			
Aggregate paths	411920m	40	4%		
Sealed paths	735202m	60	1.66%		
Soft estate	1758800m	N/A	N/A	5.57% (98Km)	N/A

The detailed picture in respect of each asset type is set out at appendix one along with detailed notes relating to policy and standards.

The general picture in respect of the high volume, low value assets such as gates and fingerposts is of an asset that is in an acceptable condition with asset replacement rates exceeding the reported failure rates in most cases. Low levels of replacement generally reflect policy decisions, for example in the case of stiles these are often replaced by more accessible structures or as a result of landowners undertaking work without seeking contribution from the County Council.

The key areas of underperformance relate to path surfaces: aggregate and sealed surfaced paths, the soft estate, and more complex structures where there is often a high cost along with shared liability.

Table 2 (below) sets out the current condition of each asset group, the direction of travel at current levels of funding and the estimated performance gap where a gap exists.

Table 2

<b>Asset type</b>	<b>Condition</b>	<b>Direction of travel</b>	<b>Performance Gap</b>
	Optimum. Acceptable Poor	Improving Steady state Declining	
Stiles	Acceptable	Declining	£17145
Pedestrian gates	Optimum	Improving	£2235
Kissing gates	Optimum	Steady state	£9425
Bridle gates	Acceptable	Steady state	£2838
Field gates	Acceptable	Steady state	£10,368
Structured gaps and barriers	Acceptable	Steady state	£4160
Fingerposts	Acceptable	Steady state	£7926
Waymark posts	Acceptable	Steady state	£800
Benches	Optimum	Steady state	£0
Sleeper bridges	Acceptable	Declining	£1980
Kit bridges	Acceptable	Declining	£38475
Bridges of other constructions	Acceptable	Steady state	£297000

Aggregate paths	Poor	Declining	£528918
Sealed paths	Acceptable	Declining	£1360000
Soft estate	Poor	Steady state	£145000*

\*represents an additional 729880m of vegetation clearance at an initial cost of 20p per linear metre.

Excluded from the table above are unmade paths that require repair or improvement to meet the needs of the ordinary traffic of the area at all times of year.

Value £2200963

## Investment

Table 3 below shows the approximate spend by asset group at the current budget level, the level of spend required to maintain a steady state, funding to the investment required to maintain the asset at a steady state (ie its current level of performance).

Asset Group	Investment values		
	Current	Steady state:	Investment required to close achieve a steady state
Furniture (stiles gates, fingerposts barriers)	£228K	£184K	£0
Bridge asset	£300K	£302K	£2K
Surfacing	£282K	£1780K	£1498K

## Closing the Performance Gap.

The closure of the performance gap is not simply a case of increasing investment; “throwing money at it”. Increased investment is clearly part of the solution but increased expenditure on the network requires greater resource in terms of staff to enable delivery – with some elements of the asset such as gates, stiles and kit bridges this can be particularly time intensive. This time is not factored into the MRE. It also should be considered that a sharp peak in investment, as was seen in the early 1990’s, in terms of stiles and kit bridges, will result in that part of the asset reaching obsolescence at around the same time and causing a high demand for investment or the performance gap to grow rapidly. Eg There are 1034 timber kit bridges the majority of which were installed using Parish Paths Programme/ Partnership funding between 1990 and 2000. While the majority of those bridges are currently sound, given their expected lifespan of 30 years, they will start to reach obsolescence in 2020.

Improved design and the use of durable materials have the potential to reduce maintenance cost, MRE cost or the whole life cost of the asset. All have the potential to close the performance gap or at least to arrest the decline of some assets. Management decisions are taken with a view to reducing long term expenditure and closing the performance gap in a sustainable way. The availability of new materials, particularly composites, recycled plastic and glass products all have the potential to improve lifespan and reduce financial demands.

In terms of existing policy, the reduction in the number of stiles and their replacement with more durable furniture such as pedestrian gates and kissing gates not only

results in a more accessible network to the benefit of the public but also over time will close the performance gap. The removal of stiles without replacement helps reduce the size of the asset and also helps close the gap. We are starting to see this in terms of reduced levels of reports from the public in respect to this element of the asset.

Some elements of the asset, particularly pedestrian gates and fingerposts exist in large numbers but are relatively low cost. Much can be done to close the performance gap by simply targeting expenditure. The position in terms of fingerposts is the more difficult to improve as there is a high rate of attrition as a result of deliberate and accidental damage in the early years.

External funding is sought where the opportunity arises to improve the network. This may be to support growth, such as through the SE Local Enterprise Partnership, or to address future demand and pressure relating to development where developer contributions are sought. There is the opportunity through external funding to bring existing assets up to standard and to “restart the clock”.

Underinvestment in surfaced paths (aggregate and sealed) is slow to manifest and far harder to resolve without significant investment. On the positive side increased expenditure on interventions to extend the life of sealed paths may slow decline, the growth of the performance gap and maintain a safe condition; although this fails to address the underlying decline in the asset other than in the short/ medium term. Underinvestment in this element of the PRow asset is least likely to prevent use of the network or significantly increase safety risk although routes may become unpleasant to use particularly during the winter months.

Investment in revenue work programmes such as brick-work pointing, painting metal-work and anti-scour work, particularly for longer life assets such as bridges have the potential to significantly increase asset life and reduce the performance gap in the longer term.

Underinvestment in the soft estate can be most easily recovered at least initially. The recovery cost grows rapidly at year 3 as heavier more powerful, often more labour intensive, equipment is required. Additionally, the requirement in respect of cost has always been based on having programmes of regular maintenance achieving economies of scale and maximum efficiency. The risk in terms of annual/seasonal variations in growth and their impact on costs have been borne equally by contractors and the County Council. In the absence of regular clearance, risk, and therefore cost, is transferred to the County Council. A reduction in clearance, while more readily recovered from given investment, more rapidly manifests itself as tracts of the network become unusable. The potential to adopt more ecologically beneficial cutting regimes will be trialled. For example, the removal of cut material may result in a reduction in soil fertility, greater biodiversity and a reduction in the long-term cutting frequency. However, this would have to be balanced against greater cost associated with the collection and disposal of cut material.



## Risk Management.

There are several obvious factors relating to the management of risk that should and, through the use of the Intelligent Investment Tool, do inform investment decisions. They are also factors common to risk assessment:

*The nature of the hazard:* in this case a failed asset. Some types of asset are inherently more hazardous than others even when in good condition, for instance stiles as opposed to a pedestrian gate.

*Likelihood:* What is the probability of an asset failing and an injury occurring if it does? For example a stile is more likely to fail when under load, i.e. when in use and therefore asset failure is more likely to result in injury than, for instance, an aggregate path that will fail over an extended period, to a degree irrespective of use and is likely to remain passable. Likelihood also increases with use, although given that those sections of the network most used are likely to be best maintained, given the priority accorded to them, the risk is somewhat mitigated.

*Impact:* Should the asset fail what is the most likely outcome? For instance, should a pedestrian gate fail when in use the most probable outcome is that it simply drops on its hinges, is difficult to operate and causes no injury. If a stile were to collapse when in use injury would be more likely to occur. If a bridge were to collapse when in use the potential outcome is clearly more serious.

## Risk assessment in the event of failure – by asset type

On the basis of the factors identified above the PRow asset has been risk assessed by asset type.

		Impact				
		1	2	3	4	5
Likelihood	1	1	2	3	4	5
	2	2	4	6	8	10
	3	3	6	9	12	15
	4	4	8	12	16	20
	5	5	10	15	20	25

Asset Type	Likelihood	Impact	Risk assessment
Stiles	4	3	12
Kissing gates	2	2	4
Pedestrian gates	2	2	4
Equestrian gates	3	3	9
Field gates	3	3	9
Barriers	2	2	4
Fingerposts	3	1	3
Fingerposts NDW	3	1	3
Sleeper bridges	3	3	9
Kit bridges	2	3	6
Bridges	3	4	12
Sealed paths	3	3	9
Aggregate paths	3	2	6
Soft estate	3	2	6

## Service provision & Network Prioritisation

The level of service provision has a direct impact on the management of assets and therefore the extent to which risk can be mitigated.

The asset management plan also assists in applying this model as those elements of the asset identified as carrying most risk can be targeted for investment at the expense of elements with lower associated risk. Or, where it is not possible to invest sufficiently to maintain the asset in an optimum condition and at a steady state appropriate mitigation can be put in place to reduce the risk to an acceptable level.

Network prioritisation also assists in respect of managing risk. The PRoW network is prioritised on the following basis:

### Network Priority Status A

- National Trails – North Downs Way – England Coast Path
- Paths used to access local amenities/ facilities (e.g. transport links, school, place of worship, tourist attraction, access land)
- Paths forming part of a continuous link around England’s coast.
- Multi- user routes with clear public benefit
- Paths used for daily leisure walking
- Paths identified by local communities as having significant potential to deliver benefit if improved.
- Paths promoted by Explore Kent.

### Network Priority Status B

- Paths not classified as priority A
- Access Land and coastal access margin

Further, issues reported by the public or identified through inspection are prioritised dependent on the nature of the report. Our stated operational priorities are:

Priority level	Issue	Initial inspection response time (normal working days)
1	Public safety issues with a high potential to result in accident, injury, loss of life or damage to property	1 day
2	Matters with legal deadlines. Emergency network protection	5 days
3	Proactive asset management	n/a
4	Time constrained offences and new obstructions to the network.	n/a
5	Natural obstructions – e.g. vegetation.	n/a
6	Waymarking of promoted paths. Eg National Trails	n/a
7	Waymarking of non-promoted paths	n/a

8	Long-term obstructions	n/a
9	Access land including coastal access	n/a

In prioritising both the network and our response to reports in this way those issues posing the greatest risk to users and the County Council are prioritised. By further targeting repair and maintenance programmes, on the basis of the likelihood of schemes to deliver positive outcomes for the public and address the operational priorities, risk is further mitigated.

## Service Standard and Risk Assessment

Public Rights of Way and Access – Service Standard Risk Assessment	
Asset Group : Public Rights of Way structures	
<b>Service Scope</b>	
<p><u>Service Provided</u></p> <p>6-12 yearly principal and specialist bridge inspections of 11 structures assessed as high risk to be high undertaken by suitably qualified staff</p> <p>2 yearly visual safety inspection by bridge inspectors of 200 higher risk structures. (KCC and privately owned)</p> <p>Ad-hoc inspections of low risk KCC structures by PRow staff with a target time frame of 2 years.</p> <p>Reactive inspections of structures following reports</p> <p>Programme of bridge repair and replacement identified through reports and inspection.</p> <p>A work bank of surfacing schemes is maintained and prioritised to establish future work programmes.</p> <p>Temporary works to close or make structures safe pending repair or replacement.</p>	<p><u>Service Not Provided</u></p> <p>6-12 yearly principal inspections of any structures other than those assessed as high risk.</p> <p>2 yearly visual safety inspections of all PROW structures</p> <p>Cyclical programmes of general and preventative maintenance</p> <p>A planned approach to the management and improvement of substandard structures in private control.</p>

Service Standard Risk Assessment: Public Rights of Way structures

**Defect type:** Deterioration or failure of a KCC owned structure

**Means of assessment:** Visual inspection and specialist inspection.

		Impact				
		1	2	3	4	5
Likelihood	1	1	2	3	4	5
	2	2	4	6	8	10
	3	3	6	9	12	15
	4	4	8	12	16	20
	5	5	10	15	20	25

Potential risks:

Reduced highway safety as a result of asset condition  
Prolonged inconvenience to public users as a result of closure (traffic).

Economic impact on businesses reliant on visitors using the structure for access.

Accelerating deterioration of the asset

Compulsion to act by the courts.

Risks rated as "high" will be deemed to have exceeded tolerance levels and will be subject to escalation to the divisional management team for review and action.

The target residual rating for a risk is expected to be medium or lower – The KCC Risk Management Policy and Strategy (2018-21)

**Scenario : Structural defect requiring route closure**

	Initial risk				Mitigation	Residual Risk			
	Safety	Traffic	Economic	Deterioration		Safety	Traffic	Economic	Deterioration
Priority A	9	12	9	12	Identified repairs to be added to the work programme with a high priority. Removal of structure on a temporary basis Route closure with the provision of an alternative where feasible.	1	9	6	9
Priority B	9	9	3	12		1	6	3	9

**Scenario : Non- structural defect shortening asset life**

	Initial risk				Mitigation	Residual Risk			
	Safety	Traffic	Economic	Deterioration		Safety	Traffic	Economic	Deterioration
Priority A	3	3	3	16	Identified repairs to be added to the work programme with a high priority. Removal of structure on a temporary basis Route closure with the provision of an alternative where feasible.	1	9	6	9
Priority B	3	3	3	16		1	6	3	9

Public Rights of Way and Access – Service Standard Risk Assessment

Asset Group : Public Rights of Way furniture (Stiles , gates, fingerposts, waymark posts, barriers)

**Service Scope**

Service Provided

Ad-hoc inspection by PRow Officers and volunteer Countryside Access Wardens.

Reactive inspection in response to public reports. Reports are prioritised and allocated as and when resource is available.

Programmes of repair and replacement as identified from ad-hoc inspections and public reports.

Targeted inspection and work programmes in respect of specific promoted routes or where intervention has been identified as beneficial for asset management purposes.

Temporary works to remove or make safe furniture.

Service Not Provided

Programmed asset condition and safety inspection

Cyclical programmes of general and preventative maintenance

A planned approach to the management and improvement of substandard furniture in KCC or private control.

Service Standard Risk Assessment: Public Rights of Way structures

**Defect type:** Deterioration or failure of KCC owned furniture or furniture with joint liability

**Means of assessment:** Visual inspection.

		Impact				
		1	2	3	4	5
Likelihood	1	1	2	3	4	5
	2	2	4	6	8	10
	3	3	6	9	12	15
	4	4	8	12	16	20
	5	5	10	15	20	25

Potential risks:

Reduced highway safety as a result of asset condition  
Prolonged inconvenience to public users as a result of closure (traffic).

Economic impact on businesses reliant on visitors using the structure for access.

Accelerating deterioration of the asset

Compulsion to act by the courts.

Risks rated as "high" will be deemed to have exceeded tolerance levels and will be subject to escalation to the divisional management team for review and action.

The target residual rating for a risk is expected to be medium or lower – The KCC Risk Management Policy and Strategy (2018-21)

**Scenario : Stile defect requiring removal or replacement**

	Initial risk				Mitigation	Residual Risk			
	Safety	Traffic	Economic	Deterioration		Safety	Traffic	Economic	Deterioration
Priority A	12	12	9	12	Removal of structure where unsafe. Priority repair, removal or replacement on well used routes. Replacement with a gap or gate- where agreed.	3	3	1	4
Priority B	9	12	3	12		3	3	1	4

**Scenario : Furniture defect shortening asset life**

	Initial risk				Mitigation	Residual Risk			
	Safety	Traffic	Economic	Deterioration		Safety	Traffic	Economic	Deterioration
Priority A	6	3	3	16	Identified repairs to be added to the work programme with a high priority. Removal of structure on a temporary basis Route closure with the provision of an alternative where feasible.	1	3	3	4
Priority B	4	3	3	16		1	6	3	4



Public Rights of Way and Access – Service Standard Risk Assessment

**Asset Group : Public Rights of Way surfacing**

**Service Scope**

Service Provided

Ad-hoc inspection by PRow Officers and volunteer Countryside Access Wardens

Reactive inspection in response to public reports.

Programmes of reactive repair as identified from ad-hoc inspections and public reports.

A work bank of surfacing schemes is maintained and prioritised to establish future work programmes.

Temporary closure of PRow to ensure public safety pending repair.

Service Not Provided

Programmed asset condition and safety inspection.

Cyclical programmes of general and preventative maintenance

**Service Standard Risk Assessment: Public Rights of Way surfacing**

**Defect type:** Surface deterioration, weakening of construction layers and reducing bearing capacity

**Means of assessment:** Visual inspection.

		Impact				
		1	2	3	4	5
Likelihood	1	1	2	3	4	5
	2	2	4	6	8	10
	3	3	6	9	12	15
	4	4	8	12	16	20
	5	5	10	15	20	25

**Potential risks:**

Reduced highway safety as a result of asset condition  
Prolonged inconvenience to public users as a result of closure (traffic).

Economic impact on businesses reliant on visitors using the highway for access.

Accelerating deterioration of the asset

Compulsion to act by the courts.

Risks rated as "high" will be deemed to have exceeded tolerance levels and will be subject to escalation to the divisional management team for review and action.

The target residual rating for a risk is expected to be medium or lower – The KCC Risk Management Policy and Strategy (2018-21)

**Scenario : Deterioration preventing year round use**

	Initial risk				Mitigation	Residual Risk			
	Safety	Traffic	Economic	Deterioration		Safety	Traffic	Economic	Deterioration
Priority A	12	16	12	12	Identified repairs to be added to the work programme. Prioritisation of repair using IIT Route closure with the provision of an alternative where feasible. Seasonal prohibition.	1	9	12	6
Priority B	9	12	4	12		1	6	3	6

Public Rights of Way and Access – Service Standard Risk Assessment

Asset Group : Public Rights of Way soft estate

**Service Scope**

Service Provided

Ad-hoc inspection by PRow Officers and volunteer Countryside Access Wardens

Reactive inspection in response to public reports.

Reactive inspection of highway trees and trees within falling distance of the highway in response to public reports.

Programmed clearance of 674400m of PRow annually by contractor. Most routes included in the clearance schedules are subject to 2 x cuts.

Additional reactive clearance by contractor on instruction.

Programmed clearance of heavier overgrowth identified from inspection and reports. This is undertaken during the winter months.

Ad-hoc vegetation clearance undertaken by volunteer Countryside Access Wardens and volunteer groups.

Felling of dying, diseased and damaged trees. (Either by KCC or the landowner following notice)

Service Not Provided

Ongoing programmed inspection of the network to identify those routes that require clearance.

Programmed clearance of all of the soft estate that would benefit from clearance to maintain year-round access.

A greater frequency of clearance cuts to maintain year-round access. 3 cuts April – September would maintain access.

Removal of arisings where vegetation is cleared.

**Service Standard Risk Assessment: Public Rights of Way soft estate**

**Defect type:** Overgrowth of PRow.

**Means of assessment:** Visual inspection

		Impact				
		1	2	3	4	5
Likelihood	1	1	2	3	4	5
	2	2	4	6	8	10
	3	3	6	9	12	15
	4	4	8	12	16	20
	5	5	10	15	20	25

Potential risks:

Reduced highway safety as a result of asset condition-slips, trips, cuts and stings.

Prolonged inconvenience to public users as a result of obstruction

Economic impact on businesses reliant on visitors using the structure for access.

Increase in the cost of restoring access where vegetation clearance is absent. (Recovery)

Risks rated as "high" will be deemed to have exceeded tolerance levels and will be subject to escalation to the divisional management team for review and action.

The target residual rating for a risk is expected to be medium or lower – The KCC Risk Management Policy and Strategy (2018-21)

**Scenario :** Route not subject to cutting before June 30th

	Initial risk				Mitigation	Residual Risk			
	Safety	Traffic	Economic	Recovery		Safety	Traffic	Economic	Recovery
Priority A	6	12	9	12	Programmed clearance. Additional clearance in response to reports. Winter clearance of heavy overgrowth	4	4	4	6
Priority B	8	16	3	12		4	4	3	6

**Service Standard Risk Assessment: Public Rights of Way soft estate**

**Defect type:** Diseased, dying and dangerous trees

**Means of assessment:** Visual inspection, specialist inspection

		Impact				
		1	2	3	4	5
Likelihood	1	1	2	3	4	5
	2	2	4	6	8	10
	3	3	6	9	12	15
	4	4	8	12	16	20
	5	5	10	15	20	25

Potential risks:

Safety risk to users of the highway from tree fall / falling branches.

Inconvenience to public users as a result of obstruction  
Impact / damage to adjacent properties

Risks rated as "high" will be deemed to have exceeded tolerance levels and will be subject to escalation to the divisional management team for review and action.

The target residual rating for a risk is expected to be medium or lower – The KCC Risk Management Policy and Strategy (2018-21)

**Scenario : Diseased ash tree within falling distance of the highway**

	Initial risk			Mitigation	Residual Risk		
	Safety	Traffic	Adjacent property		Safety	Traffic	Adjacent property
Priority A	5	12	12	Trees reported as being disease, dying or dangerous are subject to a visual safety inspection by PRow staff or specialist inspection where there is any doubt as to tree health or the impact of failure is significant. Timely action to address issue.	3	6	6
Priority B	3	8	12		3	3	6

## Risks to the authority

Two broad principal risks are identified to the authority relating to the carrying out of the maintenance function on PROW.

*Non-feasance:* A failure on the part of the authority to carry out its legal duties in terms of managing the maintenance of the PROW network in line with its statutory obligations.

*Mis-feasance:* A failure on the part of the authority to execute works to the appropriate standard.

Further subsidiary risks clearly exist:

*Compulsion to act:* Under the provisions set out in the Highways Act 1980, section 56, the County Council may be compelled to act to maintain a highway. Given the nature of the PROWAS user base this is seen as a likely risk as a number of user groups are familiar with the provisions, have the appropriate legal support to pursue an action and have done so in the past.

*Third party injury claims.* The number of claims is relatively low. In the period May 2016 to December 2018, 18 third party injury claims were received in respect of PROW. Of these 7 claims were settled at a cost of £45000. Accidents can and do occur on the network and the absence of a regular programmed regime of inspection impairs the prospects of third party claims being successfully defended.

*Corporate manslaughter.* "The Corporate mind" is exposed to greater risk in terms of Corporate Manslaughter dependent on where investment is reduced. This is a challenge in terms of the spreading of budget savings. It is incumbent on the PROWAS to identify those elements of maintenance expenditure critical to keeping the network safe within the strictures of the finance made available and the potential implications of savings required. Ultimately it is always possible to close PROW on a temporary basis to safeguard the public so this is not a risk that should arise.

*Failure to secure benefit from the asset.* The network delivers benefit in terms of health, wellbeing, travel and the rural economy. Closure as a result of asset failure, for instance MU59 the Weald Way at Tonbridge' deprives the public of use and the local economy of the value associated with that use. In the case of MU59 there are an estimated 55000 visits annually (Exeter University -Outdoor Recreation Valuation Tool).

Clearly much can be done to manage risk, the Asset Management Plan being just one element. Budget pressures clearly have an adverse impact on the management of the asset and expose the authority to further risk. What is important is that the authority continues to make informed decisions relating to the management of the PROW asset that are robust, stand up to scrutiny and manage the risks appropriately.

# Appendix 1

## Asset by type, detailed notes:

### Stiles

#### Policy considerations and notes.

- KCC has a policy of least restrictive access.
- Where possible as stiles fall out of repair their removal is negotiated.
- Where required for stock control replacement with a gate or kissing gate will be negotiated. Landowners can refuse to have a more accessible structure.
- KCC will not authorise new stiles on the PROW network.
- Where stiles are to be retained only 25 % of the repair- replacement cost will be met. This is provided in the form of materials.

#### Design standard and general notes

PROWAS design standard. Where it can be achieved British Standard 5709:2018 is applied

Currently stile kits are provided conforming to the British Standard 5709:2006. Pressure treated softwood kits are provided. This has been the case since around 2002. There are now issues around durability of the materials as the preservative treatments are more strictly regulated. This significantly reduces the lifespan of those elements of the stile in contact with the ground.

A significant proportion of the historic stile stock was constructed using sweet chestnut. This is a durable hardwood and readily available. It is however heavy and difficult to transport in larger diameters. Additionally, it was largely rejected for stile use as it tended to split along the xylem, when in the round, resulting in high wastage. There was also a significant tendency for steps to fail as nails worked loose when the step supports split.

#### Performance

The position of the stile asset performance is based upon the picture provided through reports recorded in CAMs for the last year. In 2018: 208 reported as out of repair (2.65%) stiles were reported as being out of repair during that

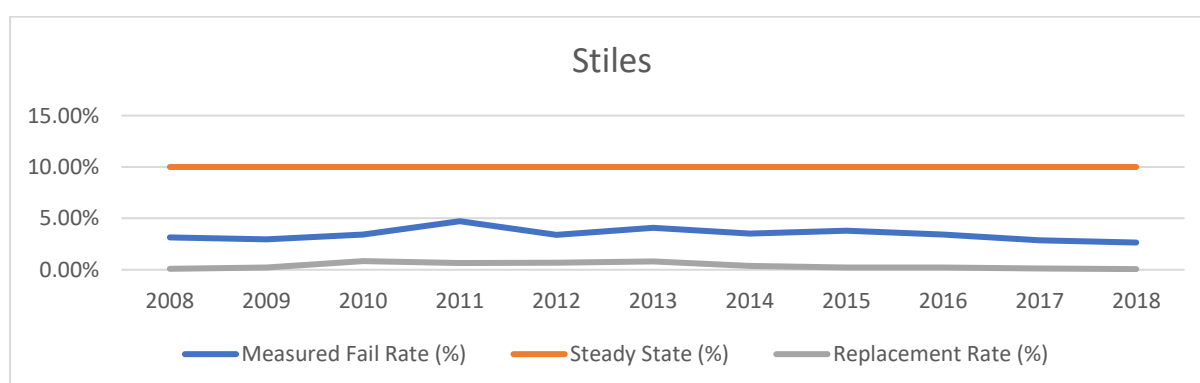
period. This compares with the position on completion of the 2007 survey. At that point 22% of the stile asset was considered out of repair.

The optimum position given a lifespan of 10 years is that 10% of the asset is replaced on an annual basis (steady state).

The figures for stile condition and performance require further interpretation as in pursuing a policy of least restrictive access many stiles are removed or replaced with more accessible structures. It is also the case that many stiles do not meet the British Standard, or our own design standards, but perform adequately. Therefore, this element of the asset is assessed as being acceptable. Reported levels of failure are below the expected levels.

The optimum intervention point reflects the point at which the asset is still safe and functioning to the required standard. In ideal circumstances the replacement and maintenance interventions would take place before the asset fails.

Stiles	Baseline from AMP	2013	2014	2015	2016	2017	2018
Measure Fail Rate (No.)	7851	321	277	299	269	225	208
Measured Fail Rate (%)		4.09%	3.53%	3.81%	3.43%	2.87%	2.65%
Steady State (%)		10%	10%	10%	10%	10%	10%
Replacement Rate (No.)		64	30	17	16	10	5
Replacement Rate (%)		0.82%	0.38%	0.22%	0.20%	0.13%	0.06%



## Assumptions

Asset Type	Number 2018	Lifespan (years)	Modern replacement equivalent cost	Current condition
Stiles	7851	10	£135	Acceptable*



# Kissing gates

## Policy considerations and notes

KCC has a policy of least restrictive access.

A significant proportion of those stiles being replaced, with the agreement of landowners, are being replaced with kissing gates as they are considered to provide greater security for livestock than pedestrian gates.

To secure improved access to the PROW network the County Council is meeting a greater proportion of the cost of gates and kissing gates – approximately 60%.

The improvement of accessibility to the network is seen as an incremental process and furniture design reflects this. The metal kissing gates provided are therefore of a design that allows for the subsequent removal of the gate compound with the agreement of the landowner.

## Design standard and general notes

PROWAS design standard. British Standard 5709:2006 and BS5709:2018 where this can be achieved.

A range of kissing gates are used on the network.

To meet the British Standard it must be possible to pass a 1 metre cylinder through the gate.

Conforming designs (BS5709:2006) :

Woodstock medium and large mobility gates

Parkland range

Oxford (timber) large and medium

Designs may be employed that do not meet the British Standard but wherever possible the gate element of the design should be a minimum of 1.2 metres in width.

The use of galvanised metal gates in a rural context and particularly within the Kent Downs AONB has been questioned. It is considered that they are visually intrusive and have an adverse impact on visual amenity. Black painted and black powder coated gates have been used in the past; black is considered to visually regress in the environment. The substantial additional cost of powder coated / painted gates, at £60K per annum (based on 2008 prices and numbers of gates), has ruled out their use. There is no evidence of this aesthetic measure increasing asset life.

The number of kissing gates on the network is the number taken from CAMS.  
2018 = 3531

The cost of a kissing gate is based on the provision of a galvanised steel kissing gate meeting BS 5709:2006 (Centrewire - Woodstock Medium accessibility gate).

A life span of 35 years is anticipated

## Performance

The position of the kissing gate asset reflects the fact that the majority of kissing gates on the network have been installed since 2005 and therefore the majority of this asset is in good condition and early in its anticipated lifespan. Continued investment in pedestrian gates and kissing gates over a 30-35 year period should see the performance gap narrow as stiles are replaced with an asset with a longer effective lifespan. The performance gap will stop closing at year 35 as the kissing gate asset starts to require replacement.

The minimum requirement, given a lifespan of 35 years is to replace 2.8% of the asset on an annual basis (steady state).

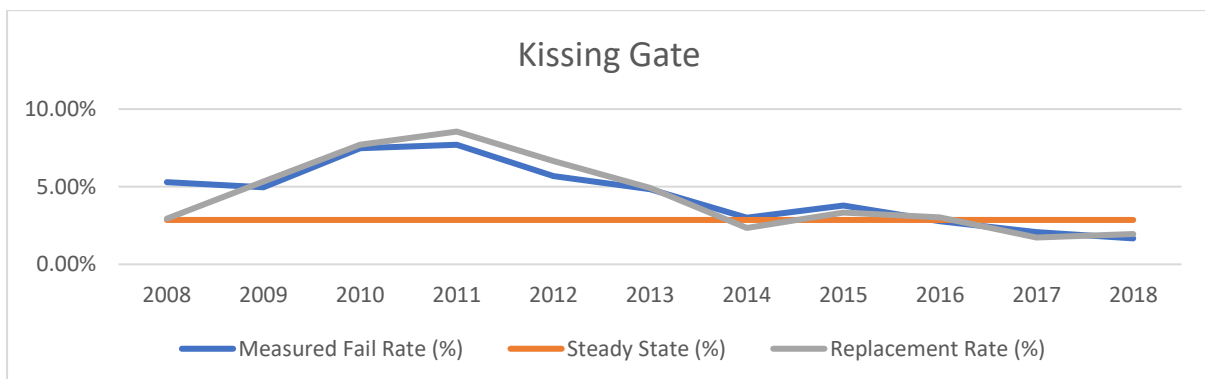
The optimum intervention point reflects the point at which the asset is still safe and functioning to the required standard. In ideal circumstances the replacement and maintenance interventions would take place before the asset fails.

2018 – there were 3531 kissing gates.

1.67% reported as out of repair or damaged. More detailed analysis of the reports indicates that those out of repair were overwhelmingly subject to accidental or deliberate damage.

The current replacement rate is lower than that expected to maintain the asset in a steady state reflecting a largely youthful asset. Replacement rate is greater than the fail rate reflecting the replacement of stiles with more accessible structures.

Kissing Gates	Baseline from AMP	2013	2014	2015	2016	2017	2018
Measured fail rate (No.)	3531	171	106	134	98	73	59
Measured Fail Rate (%)		4.84%	3.00%	3.79%	2.78%	2.07%	1.67%
Steady State (%)		2.86%	2.86%	2.86%	2.86%	2.86%	2.86%
Replacement Rate (No.)		174	83	118	107	61	69
Replacement Rate (%)		4.93%	2.35%	3.34%	3.03%	1.73%	1.95%



## Assumptions

Asset Type	Number 2018	Lifespan	Modern replacement equivalent cost	Current condition
Kissing gate	3531	35	£325	Optimum

# Pedestrian Gates

## Policy considerations and notes

KCC has a policy of least restrictive access.

The most accessible and cost-efficient replacement for a stile (assuming complete removal of the limitation cannot be achieved) is a simple pedestrian gate. Landowners will often exercise their power of veto in respect of authorised stiles preferring to either retain a stile or accept the greater stock security offered by a kissing gate.

In respect to new structures for stock control the default position should be the provision of simple self-closing metal pedestrian gates (absolute minimum width between posts 1000mm).

To secure improvements to the accessibility of the PROW network the County Council is meeting a greater proportion of the cost of gates – approximately 70%. (the landowner contribution is £25 plus their own labour; estimated value £50)

## Design standard and general notes

PROWAS design standard. British Standard 5709:2006

A range of pedestrian gates are used on the network. To meet the British Standard it must be possible to pass a 1 metre cylinder through the gate.

Conforming designs: Milton Keynes  
Ashton Gate 1 & 2 way  
Marlow  
Parkland range

Designs may be employed that do not meet the British Standard but wherever possible the gate element of the design should be 1200mm in width.

As with kissing gates the use of galvanised metal gates in a rural context and particularly within the Kent Downs AONB has been questioned and ruled out for the same reasons as identified with kissing gates.

## Performance

The position of the pedestrian gate asset reflects the fact that the majority of the pedestrian gates on the network have been installed since 2005 and therefore the majority of this asset is in good condition and early in its anticipated lifespan. Continued investment in pedestrian gates and kissing gates over a 30-35 year period should see the performance gap narrow as stiles are replaced with an asset with a longer effective lifespan.

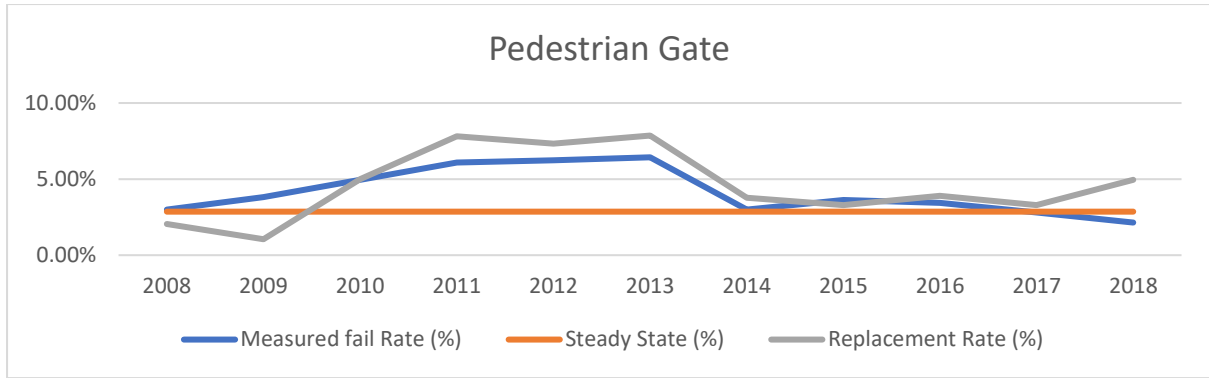
Early asset failure is most likely to occur due to theft or vehicle damage. In order to discourage theft hinges are reversed and washers or nuts welded to the hinges to prevent removal.

The minimum requirement, given a lifespan of 35 years is to replace 2.8% of the asset on an annual basis (steady state).

The optimum intervention point reflects the point at which the asset is still safe and functioning to the required standard. In ideal circumstances the replacement and maintenance interventions would take place before the asset fails.

2018 – there were 2099 pedestrian gates. 2.14 % were reported as being out of repair. The replacement rate was greater than the failure rate reflecting the replacement of stiles with more accessible structures and the policy of least restrictive access.

Pedestrian Gate	Baseline from AMP	2013	2014	2015	2016	2017	2018
Measured fail rate (No)	2099	135	63	76	72	59	45
Measured fail Rate (%)		6.43%	3.00%	3.62%	3.43%	2.81%	2.14%
Steady State (%)		2.86%	2.86%	2.86%	2.86%	2.86%	2.86%
Replacement Rate (No.)		165	79	69	82	69	104
Replacement Rate (%)		7.86%	3.76%	3.29%	3.91%	3.29%	4.95%



## Assumptions

Asset Type	Number 2018	Lifespan	Modern replacement equivalent cost	Current condition
Pedestrian Gate**	2099	35	150	Optimum

\*\* Includes 2 in 1 gate (a field gate with an integral pedestrian gate)

# Equestrian Gates

## Policy considerations and notes

In respect to new structures for stock control the default position should be the provision of simple self-closing metal equestrian gate (minimum width between posts 1524mm).

To secure improvements to the accessibility of the PROW network the County Council is meeting a greater proportion of the cost of gates – approximately 70%.

## Design standard and general notes

PROWAS design standard. British Standard 5709:2006 & 5709:2018

Gates can present a significant barrier to equestrian users. Where it is necessary to authorise a gate for the purposes of stock control care needs to be taken in siting them to ensure sufficient manoeuvring space particularly giving access to latches.

There has been a good deal of discussion with equestrian users about the most suitable design of self-closing gates and latches. This has been subject to research by Natural England and the British Horse Society in 2015 the results from which were published in 2016. The report concluded that:

- A 2 way opening – non-self-closing gate was safest and that in the event a self-closing gate was necessary for stock control purposes that:
  - The gate should be two way opening.
  - A force of no more than 18 Newtons is required to open a gate
  - The closing time is 8 seconds (or more)
  - There is a push plate at the height of a mobility vehicle front bumper or foot rest
  - The handle is angled towards the slam post
  - There is a d shape latch
  - A stock proof handle where cattle are present
  - Minimum width 1.7 metres.

Manoeuvring room is critical to the ability of users to access and operate gates. The bridleway gate asset is often in good condition but the gates poorly sited.

Bridleways may be particularly suitable for cyclists and those with mobility problems so gate and latch design should reflect the wider user base.

As with kissing gates the use of galvanised metal gates in a rural context and particularly within the Kent Downs AONB has been questioned but painting or substituting with less durable materials has been ruled out for the same reasons as identified with kissing gates.

## Performance

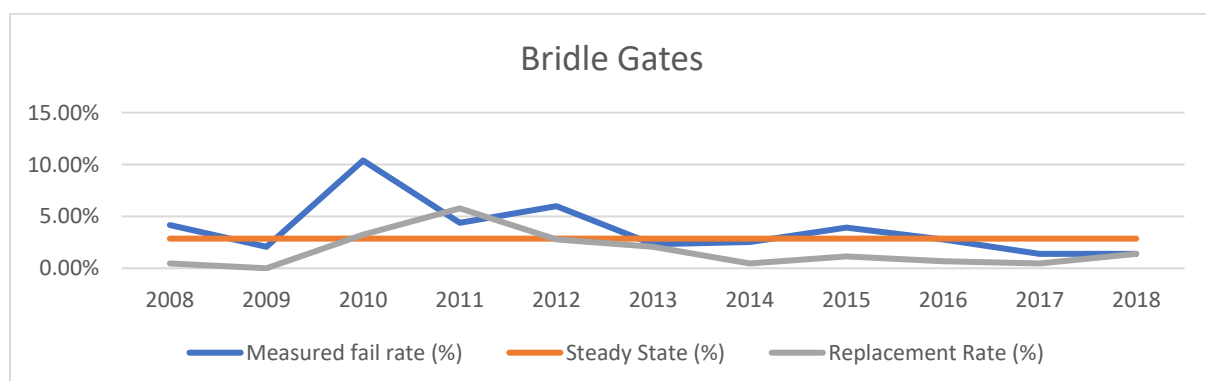
The position of the equestrian gate asset is based upon the picture on completion of the 2007 survey and the current picture from CAMS. In 2007 16% of the equestrian gate asset was considered out of repair.

The minimum requirement, given a lifespan of 35 years, is to replace 2.85% of the asset on an annual basis (steady state –steady state).

Targeted capital investment over the last three years has brought the asset performance back to an optimum level.

2018 – there were 441 equestrian gates. 1.39 % were reported as being out of repair. The replacement rate and failure rate were the same reflecting an asset in optimum condition and a steady state. However, the asset condition is not considered to be optimum as, while the gates are generally in a good condition, as poor siting, a lack manoeuvring room and latching mechanisms all hamper their ease of operation.

Bridle Gates	Baseline from AMP	2013	2014	2015	2016	2017	2018
Measured fail rate (No)	433	10	11	17	12	6	6
Measured fail rate (%)		2.31%	2.54%	3.93%	2.77%	1.39%	1.39%
Steady State (%)		2.86%	2.86%	2.86%	2.86%	2.86%	2.86%
Replacement Rate (No.)		9	2	5	3	2	6
Replacement Rate (%)		2.08%	0.46%	1.15%	0.69%	0.46%	1.39%





## Assumptions

Asset Type	Number 2018	Lifespan	Modern replacement equivalent cost	Current condition
Bridle gates	441	35	£258	Acceptable*

\*The level of failure of the asset is low but other factors apply.

# Field Gates

## Policy considerations and notes

Field gates are those gates that effectively exist for agricultural purposes, principally to enable livestock movements and the movement of large agricultural machinery. While accommodating agricultural use the gates also provide for use of the public right of way.

Where gates are lawful limitations on a footpath, bridleway or restricted byway a minimum of 25% of the maintenance costs of gates reasonably shown to have been incurred by the landowner may be reclaimed. Field gates are a part of the fabric of agricultural land holdings. A contribution from the County Council is generally not sought for the maintenance of gates for that reason. More accessible gates are provided through negotiation where appropriate. The minimum contribution at 25% is assumed.

In order to secure improvements to accessibility of the network KCC has provided gates of designs that facilitate easier public use or have provided easy to use latch mechanisms.

## Design standard and general notes

PROWAS design standard. British Standard 5709:2006

Given the width of field gates there should be no issue with compliance with the British Standard. The accessibility of gate latches and the suitability of the PROW surface in gate areas are more likely to be limiting factors.

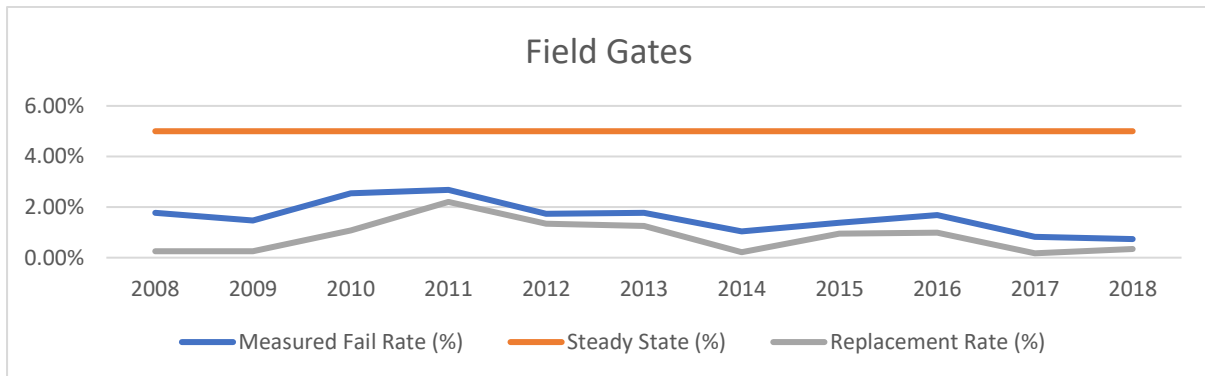
## Performance

The position of the field gate asset is based upon the picture on completion of the 2007 survey and the current picture from CAMS. In 2007, 23.84 % of the field gate asset was considered to require attention or urgent attention.

The minimum requirement, given a lifespan of 20 years, is to replace 5% of the asset on an annual basis (steady state).

In 2018 – there were 2313 field gates. 0.73 % were reported as being out of repair. The replacement rate of 0.35% was lower than the failure rate. This is believed to reflect general practice where landowners replace field gates but do not seek a contribution from the County Council.

Field Gates	Baseline from AMP	2013	2014	2015	2016	2017	2018
Measured Fail Rate (No.)	2313	41	24	32	39	19	17
Measured Fail Rate (%)		1.77%	1.04%	1.38%	1.69%	0.82%	0.73%
Steady State (%)		5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Replacement Rate (No.)		29	5	22	23	4	8
Replacement Rate (%)		1.25%	0.22%	0.95%	0.99%	0.17%	0.35%



## Assumptions

Asset Type	Number 2018	Lifespan	Modern replacement equivalent cost	Current condition
Field gates	2313	20	£384	Acceptable

# Structured gaps and barriers

## Policy considerations and notes

Barriers may be installed:

- for the purposes of safeguarding the users of the highway: Highways Act 1980 section 66.
- where required to enforce a prohibition or restriction in consequence of a Traffic Regulation Order.

Works to improve the amenity of the highway or provide facilities may be carried out under sec 115A-D Highways Act 1980.

The cost of barriers is high and therefore use should be limited to situations where:

- there is a known or demonstrable issue such as nuisance vehicle use, and
- where there is a reasonable expectation of a successful outcome, i.e. the barrier can't simply be bypassed; or
- in support of and to enforce traffic regulation orders.

## Design standard and general notes

PROWAS design standard. British Standard 5709:2006 & 5709:2018.

The installation of barriers, particularly to prevent vehicle use, potentially conflicts with the policy of least restrictive access. Equality Impact Assessments should be completed prior to installation.

Some forms of barrier, for instance lockable bollards, may be arranged to provide a minimum gap of 1000 -1200mm. Heavy duty vehicle barriers may not provide the same accessibility and bypasses or in extreme cases radar operated gates may be considered alongside the barriers.

Thought must be given to the likely vulnerability of some structures at remote sites and sites where there are high levels of criminal and antisocial activity.

The asset valuation placed against this item is relatively high as although in simple form a structured gap may have a low cost many sites have numbers of lockable bollards or higher value barriers

## Performance

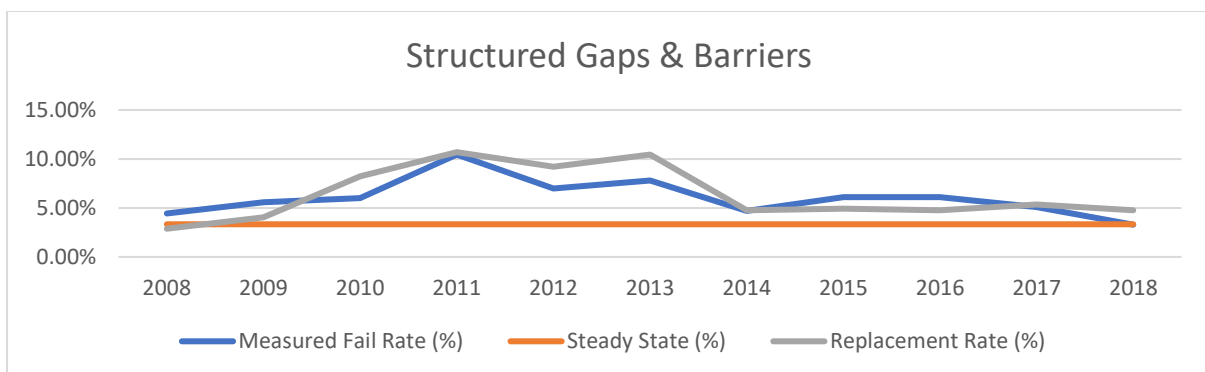
The position of the barrier asset is based upon the current picture from CAMS.

The minimum requirement given a lifespan of 30 years is to replace 3.3% of the asset on an annual basis (steady state).

High levels of repair are required where barriers are used to enforce restrictions to motor vehicles on BOATs. This is particularly the case in rural areas and in the absence of active policing or stewardship. Achieved performance reflects the high attrition rate.

2018 – there were 1216 structured gaps and barriers. 3.29 % were reported as being out of repair. The replacement rate of 4.77 % was greater than the failure rate. The asset condition is improving and the failure rate reflects a steady state and the expected level of performance.

Structured Gaps & Barriers	Baseline from AMP	2013	2014	2015	2016	2017	2018
Measured Fail Rate (No.)	1216	95	57	74	74	62	40
Measured Fail Rate (%)		7.81%	4.69%	6.09%	6.09%	5.10%	3.29%
Steady State (%)		3.33%	3.33%	3.33%	3.33%	3.33%	3.33%
Replacement Rate (No.)		127	58	60	58	65	58
Replacement Rate (%)		10.44%	4.77%	4.93%	4.77%	5.35%	4.77%



## Assumptions

Asset Type	Number 2018	Lifespan	Modern replacement equivalent cost	Current condition
Gaps and barriers	1216	30	520	Optimum

# Waymark Posts

## Policy considerations and notes

Waymark posts are used to indicate path junctions and points of uncertainty to assist those unfamiliar with the location to navigate.

The County Council has a power to install waymarks (Countryside Act 1968 sec 27) in the highway or in land adjacent to the highway following consultation. Consultation should be carried out to ensure that posts are sited where they will not interfere with land management activities but can still be seen.

Restrictions on timber treatments have reduced the expected lifespan. Recycled plastics have delivered good performance and should be trialled along with recycled glass and composite posts.

## Design standard and general notes

Waymarks arrows and discs are to be consistent with the Natural England guidance 2008.

The colours used are to be the following:

Footpath – Yellow – BS 08 E 51

Bridleway – Blue – BS 20 E 51

Restricted Byway – Plum -BS 02 C 39

Byways Open To All Traffic – Red – BS 06 E 55

Permissive route – White arrow – black outline with the words – Permissive Footpath or Permissive Bridleway.

KCC promoted route identifiers will be on a clear vinyl sticker mounted in the centre of the disc. Routes promoted by other organisations will not be specifically waymarked.

Where possible waymark disks will be mounted on existing PRow furniture.

Waymark posts will meet the dimensions as set out in the PRow design standards.

Fingerposts may be used in place of waymark posts where considered necessary to remove any ambiguity or to assert user rights.

## Performance

The position of the asset is based upon the current picture from CAMS.  
Currently 3.25 % of the asset is considered out of repair.  
The minimum requirement given a lifespan of 15 years is to replace 6.6% of the asset on an annual basis (steady state).

There is a high level of attrition due to poor location of posts. Limitations on timber treatments have reduced design life.

## Assumptions

Asset Type	Number 2018	Lifespan	Modern replacement equivalent cost	Current condition
Waymark Posts	2855	15 years	£80	Acceptable*

\*There are many more sites for which waymark posts have been requested.  
(333)

# Finger Posts

## Policy considerations and notes

There is a requirement to signpost all PROW where they meet public roads. Discretion may be exercised not to signpost routes at the request of a Parish Council. This discretion should not be exercised in rural locations but may be appropriate in an urban/ village centre context where there can be no doubt as to the fact that the route is public and its destination is obvious.

## Design standard and general notes

PROWAS design standard.

A number of designs of signposts have been used on the PROW network over the last 30+ years. Sign-stones were used up until the mid 1980's but were phased out as they were quickly concealed by low vegetation and generally didn't indicate the direction of routes.

Metal fingers and grey posts were used up until approximately 1994 at which time design was changed, following a report to the Environmental sub-committee. The replacement design was small metal fingers and black posts, the fingers indicating the status of the route but omitting the word public. A timber option (green oak) with rebated finger was also made available at this time and was widely used in some parishes. Since 2002 the PROWAS has used timber posts (4 way weathered top – pressure treated soft wood, or green oak) and UPVC fingers. Metal posts may be used where existing posts are still serviceable or at vulnerable locations.

Performance has consistently fallen short of what is expected in pure engineering terms. This is in part due to limitations as to siting and consequent damage by vehicles and agricultural operations such as hedge cutting. There is also a high attrition rate as a result of deliberate acts of vandalism and theft / removal.

Finger design has evolved to incorporate symbols and a coloured chevron corresponding to the path status.

The design of North Downs Way fingerposts in seasoned oak with a high-quality finish have a far higher cost and so are subject to a separate set of assumptions and calculation.

## Performance

The position of the fingerpost asset is based upon the current picture from CAMS.

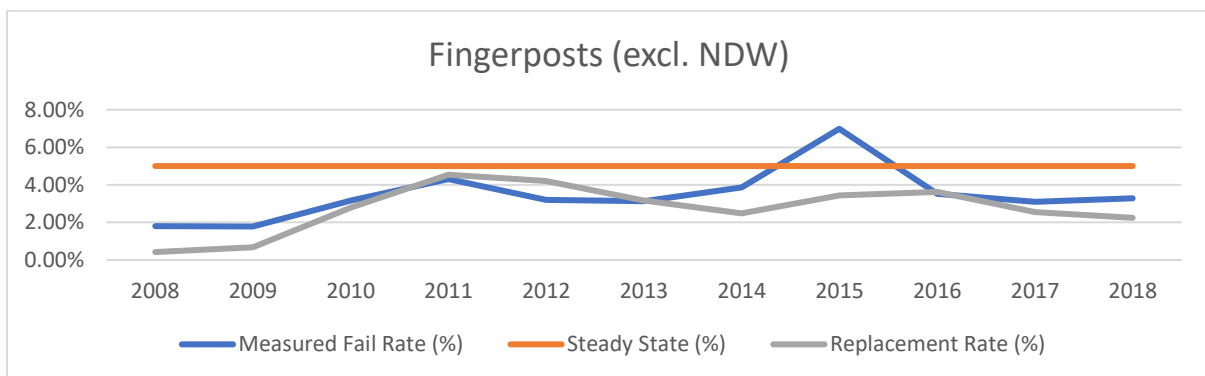


The minimum requirement given a lifespan of 20 years is to replace 5% of the asset on an annual basis (steady state).

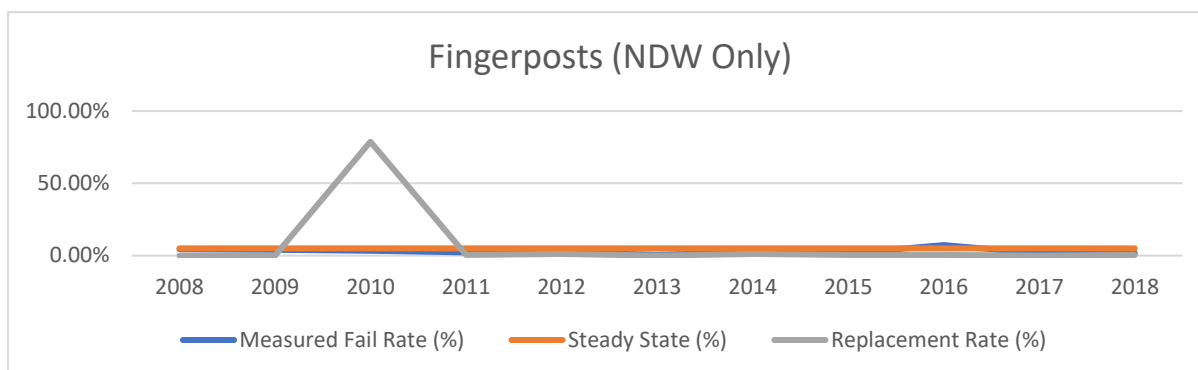
2018 – there were 14476 fingerposts. 3.28 % of fingerposts were reported as missing or being out of repair. The replacement rate of 2.25% was lower than the failure rate. Overall the asset appears to be achieving better than the expected lifespan reflecting earlier fingerpost designs. Where metal posts and fingers have avoided damage they do have a lifespan of significantly greater than 20 years. There also appears to be a degree of public tolerance of damaged fingerposts which is reflected in the levels of reporting.

The North Downs Way fingerpost asset is youthful, the majority having been installed in 2010. The measured failure rate of 1.68% reflecting damage rather than asset failure.

Fingerposts (exc. NDW)	Baseline from AMP	2013	2014	2015	2016	2017	2018
Measured Fail Rate (No.)	14476	454	559	1011	509	448	475
Measured Fail Rate (%)		3.14%	3.86%	6.98%	3.52%	3.09%	3.28%
Steady State (%)		5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Replacement Rate (No.)		457	359	497	524	368	325
Replacement Rate (%)		3.16%	2.48%	3.43%	3.62%	2.54%	2.25%



Fingerposts (NDW Only)	Baseline from AMP	2013	2014	2015	2016	2017	2018
Measured Fail Rate (No.)	179	1	4	3	13	3	3
Measured Fail Rate (%)		0.56%	2.23%	1.68%	7.26%	1.68%	1.68%
Steady State (%)		5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Replacement Rate (No.)		0	2	1	1	0	1
Replacement Rate (%)		0.00%	1.12%	0.56%	0.56%	0.00%	0.56%



## Assumptions

Asset Type	Number 2018	Lifespan	Modern replacement equivalent cost	Current condition
Fingerposts	14476	20	£96	Acceptable

## Assumptions -NDW

Asset Type	Number 2018	Lifespan	Modern replacement equivalent cost	Current condition
Fingerposts	179	20	£375	Optimum

# Bridges General Notes

## Introduction

The PROWAS bridge asset is complex ranging from simple sleeper bridge structures to a complex rail bridge requiring engineering expertise, costly inspections and interventions.

The general assumptions in respect of the bridge asset while considered accurate for sleeper bridges and simple shorter span kit bridges are less precise in terms of complex structures. The assumptions for complex structures are conservative and informed by the costs incurred in the maintenance of main river structures by the service over the last 10 years. It is important not to lose sight of the fact that in expressing asset management costs on an annual basis that one complex structure such as Estella Road Rail Bridge (pedestrian), were it to fail, would be beyond the means of the service to replace. There are significant risks attached to the bridge asset not all of which can be entirely mitigated despite the best endeavours of the service.

## Risk -

A risk-based approach has been implemented for the management of structures given that revenue budget levels are not sufficient to meet:

- the cost of bridge inspection in line with the established and recommended standard; the Management of Highway Structures Code of Practice 2005. Last updated May 2013.
- interventions that are designed to extend bridge life such as anti-scour works or painting (except when absolutely critical).

The principal risks in respect of a structure failing are: personal injury, loss of public and private access, financial cost in respect of the early replacement of structures that would otherwise last longer, and greater complexity in removing failed structures.

Risk in respect of bridges is a product of:

- span
- height
- construction
- crossing type (e.g. stream, river, rail).
- condition
- frequency of use
- type of use, including private use
- use by abnormal loads
- changing environment – particularly changes in river channels leading to erosion/ scour.
- vulnerability to severe weather events

- and, in respect of Public Rights of Way, the ability of the public to perceive that a structure is unsafe.

Public Rights of Way bridges fall into four broad categories:

- Simple timber bridges, typically used for short spans up to 3 metres.
- Kit bridges, generally timber but occasionally steel, typically used for spans of less than 12 metres.
- Bridges of up to 18 metres in span, carrying purely public traffic and of a standard design.
- Bridges of other constructions, typically concrete and steel, or brick, used for all spans, including greater than 12 metres and often accommodating higher rights users and private users (e.g. equestrian or vehicle use).  
Frequently there will be a joint liability for these bridges.

The approach taken broadly reflects the four categories although exceptions are frequent, particularly in respect of kit bridges and bridges of other constructions.

## Sleeper Bridges and board walks.

Number on network 1429: Publicly maintainable.

These structures are of low risk: they are short span, usually with a low drop height over ditches and small streams or boggy areas. They have a low replacement cost<sup>1</sup>.

There are no programmed inspections for sleeper bridges. When structures are found to be failing either as a result of public report or ad-hoc inspection they are replaced. Replacement is usually completed as part of the ongoing asset renewal programme the cost of which is met from the capital budget. The condition of the asset is generally improving as a result of capital investment. There are no significant revenue pressures relating to sleeper bridges.

## Kit bridges

Number on the network 1060 (including 15 bridleway bridges): Publicly maintainable.

These structures are generally of low risk although some of the longer bridges may span rivers such as the Teise and Medway.

Those kit bridges spanning principal watercourses, under the control of the Environment Agency, receive a biennial visual safety inspection.

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<sup>1</sup> Modern replacement equivalent cost £170 per structure (a product of materials and labour cost)

When first used on the network it was anticipated that kit bridges would have a lifespan of 30 years, they appear to be performing to this standard. A great proportion of the kit bridge stock was installed between 1990 and 2000, funded through the then Countryside Commission/ Countryside Agency through its Parish Paths Partnership Programme. A small number of kit bridges are reaching the point of failure and where this is identified they are replaced. As with sleeper bridges the cost of replacement/ provision is met through the asset management programme and capital funding.<sup>2</sup> The condition of the asset is generally good, however, an increasing level of failure can be anticipated in the coming decade as those bridges installed in the early 1990's reach the end of their expected lifespan. There are no significant revenue pressures associated with on- going maintenance if current funding levels are maintained.

### Bridges of other constructions:

Number on network 496. A mixture of publicly, privately and jointly maintainable structures.

Where structures are jointly maintainable, KCC liability is limited to the costs associated with the provision of a bridge suitable for the public use made of the route, unless otherwise stipulated.

As a result of an on-going shortfall in revenue funding that can be targeted to maximise asset life\*, this element of the bridge stock is declining in condition, as evidenced by the failure of a number of structures and the need to close and / or replace a significant number of structures that have reached the end of their serviceable life as part of an ongoing programme.

\*Revenue funded interventions may include, pointing brickwork, servicing of bridge bearings, painting, timber preservative application, deck sealing, anti- scour works.

### Concrete and Steel Bridges:

Included within the bridges of other constructions are concrete and steel bridges. Following the collapse of a concrete and steel construction bridge on Public Footpath WC2 at Horsmonden in March 2012 the inspection of a further 19 structures of a similar construction, identified from the County Council's bridges database, was commissioned.

A post collapse inspection of the Horsmonden structure had highlighted a number of fundamental issues with the bridge construction, particularly relating to the steel reinforcement within the structure and associated with the casting of the bridge in situ. As a direct result of the additional inspections a further two structures were identified that required replacement, one of which was closed immediately, and the other subject to temporary support work until replacement was possible.

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<sup>2</sup> Replacement costs are typically between £226 and £444 per linear metre depending on the type of use to be supported. The modern replacement equivalent cost for a 6 metre timber kit bridge is £2253 (bridge only) – materials plus labour.

In addition to the 19 structures identified from the County Council's structures database a further 168 structures of similar construction were identified by the PROW and Access Service from its own asset database.

Jacobs' Bridge Engineer provided some simple guidance for visual inspection of the additional 168 structures by PROW Officers.

All 476 bridges of other construction were visually inspected and where appropriate, based on the risks set out above, included in a repair and replacement programme. Inspection of these structures was undertaken during the winter of 2013/14. A £300k programme of urgent replacement work was completed during the 2015/16 financial year with a similar programme identified for subsequent financial years.

The repair and replacement programme now extends to 3 years at an investment of £100k per annum.

## Other structures

For the purposes of providing a complete picture it should be noted that in addition to bridges the County Council is also responsible for, or jointly liable for, a number of other substantial structures on the rights of way network, for instance the Maidstone East Station public footpath retaining wall and the Alder Stream bank at Capel. These structures, which could represent significant risk should they fail, all pose similar issues around maintenance and inspection.

Full replacement of such structures is less frequent and only occurs where they are failing and can't be economically repaired. Dependent on design and construction the replacement of specific elements may be feasible.

## Introduction of a risk-based inspection regime

In 2016 a risk-based regime for bridge inspection was introduced replacing the historic regime under which 279 bridges were subject to biennial visual safety inspection by a bridge inspector/ engineer (including a number of kit bridges). Further ad-hoc inspections were completed in response to specific reports or identified issues. The regime included only those structures crossing principal watercourses or where they had been identified as being of higher risk. The inspection regime was not comprehensive and omitted structures that should have been subject to regular programmed inspection.

Principal bridge inspections, where every element of the bridge is viewed within touching distance were extremely limited. The suggested interval for such inspections is 6 years<sup>3</sup>, although given the lower level of risk associated with most public rights of way bridges an interval of 12 years may be more appropriate.

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<sup>3</sup> Management of Highway Structures Code of Practice 2005

The risk-based inspection regime, reflecting the Management of Highways Structures – Code of Practice – risk assessment matrix (6.1) and risk assessment by the service supported the extended inspection period of 12 years for principal inspection of higher risk structures. Such inspections along with special inspections (underwater and confined spaces inspections) have been arranged through the Structures Team.

The risk-based approach to inspection identified:

278 structures to be subject to a general -visual- safety inspection by PRow officers (following training in December 2015). Limited to short span, simple construction bridges.

200 General inspections to be undertaken by the KHT Structures Team using competent bridge inspectors. 11 Principal inspections , 2 track side and 4 special inspections (confined spaces and underwater)

243 bridges were identified as already being inspected by competent bridge managers e.g. Network Rail and Highways England and were removed from the inspection regime.

2611 short span timber structures, simple pipe culverts and short span kit bridges are inspected on an ad-hoc basis (when inspecting a PRow) and reactively in response to reports.

A further 151 structures were identified for an initial inspection to further clarify their construction, span and responsibility for them.

The inspection programme identifies revenue and capital works required to replace elements of bridges, or indeed complete structures and work to maintain the integrity of structures and to extend their life.

Where structures fail the costs can be significant<sup>4</sup>, setting aside the potential risk to the public, the demolition and removal of failed structures is more complex. Potentially functioning elements, for instance abutments, may be lost as a result.

The current revenue allocation is insufficient to meet the cost of a more comprehensive and more regular inspection regime that fully meets the current code of practice. Potential interventions to maximise asset life are not being identified at an appropriate stage as a result.

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<sup>4</sup> KCC Bridge management's last valuation exercise placed the cost of a basic footbridge construction at £2200 per square metre of bridge deck and £5500 for vehicle bridges.

# Sleeper Bridges

## Policy considerations and notes

KCC has a policy of least restrictive access.

A three sleeper width bridge is specified for the asset to ensure that the deck width is sufficient for all public users including the ambulant disabled and those with problems with their balance.

Adaptation to climate change: This element of the bridge stock is particularly vulnerable at times of flooding. Bridge anchoring at those sites identified as affected in the Environment Agency 100 flooding event year event map is advocated.

## Design standard and general notes

PROWAS design standard.

Traditionally, railway sleepers have been used for the construction of sleeper bridges. They were of varying quality and of varying performance for that reason. Effective anchors were not used at many locations.

In recent times pressure treated softwood has been used, while more consistent in terms of quality, limitations with timber treatments may reduce the lifespan of the asset.

The performance of elements of the bridge and particularly the handrails varies significantly dependent upon soil types.

The full asset survey and fault reports indicated an asset that was in poor condition. Survey and the replacement of failed and end of life sleeper bridges was carried out 2010-13. (An early version of KHT find and fix.)

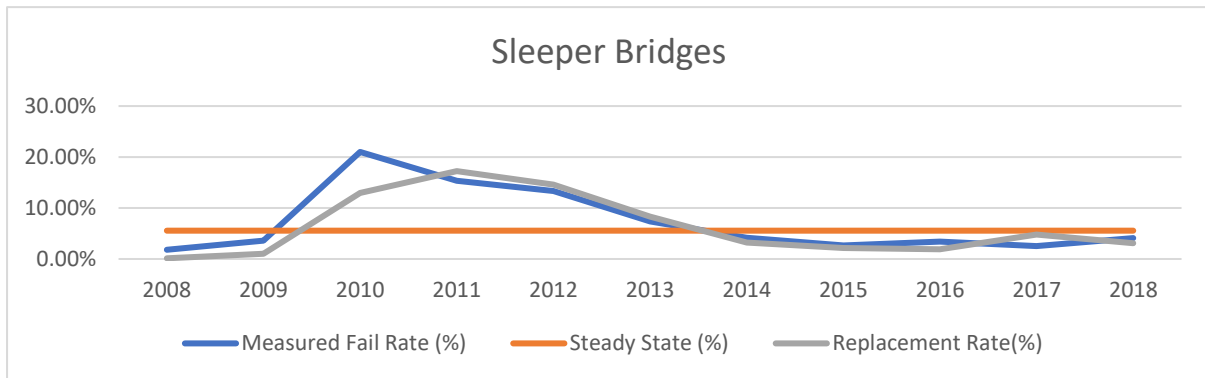
## Performance

The position of the sleeper bridge asset is based upon the current picture from CAMS. In 2018, 59 sleeper bridges were damaged, missing or out of repair 4.12 % The minimum requirement given a lifespan of 20 years is to replace 5% of the asset on an annual basis (steady state).

While there are still a small number of assets failing annually the overall condition following investment is optimum. If the asset performs as expected there will be a need to prioritise investment in sleeper bridges 2027 on.



Sleeper Bridges	Baseline from AMP	2013	2014	2015	2016	2017	2018
Measured Fail Rate (No.)	1433	106	60	38	49	36	59
Measured Fail Rate (%)		7.40%	4.19%	2.65%	3.42%	2.51%	4.12%
Steady State (%)		5.56%	5.56%	5.56%	5.56%	5.56%	5.56%
Replacement Rate (No.)		119	46	31	27	69	44
Replacement Rate (%)		8.30%	3.21%	2.16%	1.88%	4.82%	3.07%



## Assumptions

Asset Type	Number 2018	Lifespan	Modern replacement equivalent cost	Current condition
Sleeper bridge	1493	18	£220	Optimum

5.7% reported as being out of repair or missing

# Kit Bridges

## Policy considerations and notes

Kent County Council has a policy of least restrictive access. The implication in respect of bridge kits is that they are, as far as is achievable given the site-specific constraints, accessible to all. Bridge decks should be of sufficient width to accept the use of mobility vehicles. Where possible, bridge decks should be installed so that they are level with the path surface. If this can't be achieved and where use with wheelchairs and mobility vehicles is evident, or would be likely, then ramps should be installed.

Adaptation to climate change: Kit bridges are high value assets with a relatively long lifespan. They are potentially vulnerable to flooding and therefore should be anchored using ground anchors.

Environment Agency consents: Consent is required for main water courses. All other crossings should be installed bank top to bank top so as not to interfere with or adversely affect drainage.

## Design standard and general notes

PROWAS design standard. Euro code 5 - EN1995 passing and re-passing on a timber structure – 5 KN/ metre<sup>2</sup>.

The kit bridge asset is difficult to evaluate as construction varies dependent on length and use. For the purposes of asset management, the kit bridge stock is split as footbridges and equestrian bridges and different values are therefore placed on each.

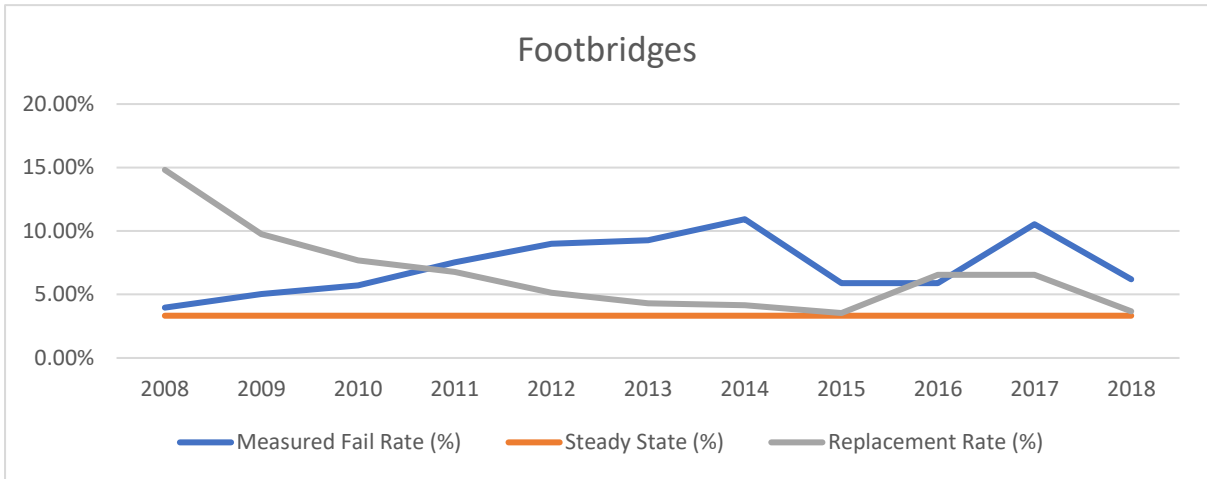
In the early 1990's the kits purchased had main beams of highly durable but environmentally questionable tropical hardwoods. Pressure treated softwoods have been used since that time. A 30year lifespan for kit bridges was anticipated when first used on the network. Although there is variation in performance they appear to be performing to or beyond that standard. Changes to timber treatments may shorten asset life in the future.

## Performance

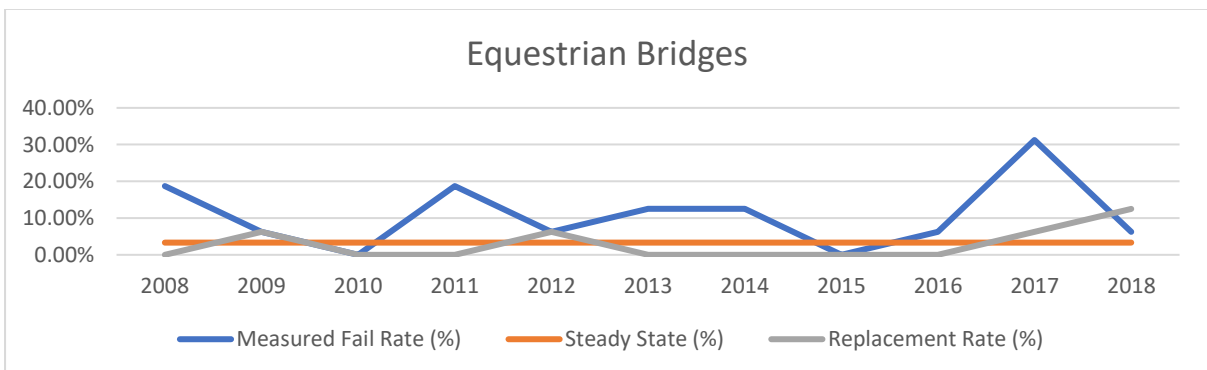
The position of the bridge asset is based upon the picture in CAMS on the 1 April 2019. 6.9% of the bridge asset was considered out of repair.

The minimum requirement, given a lifespan of 30 years, is to replace 3.3% of the asset on an annual basis (steady state –stand still).

Footbridges	Baseline from AMP	2013	2014	2015	2016	2017	2018
Measured Fail Rate (No.)	1034	96	113	61	61	109	64
Measured Fail Rate (%)		9.28%	10.93%	5.90%	5.90%	10.54%	6.19%
Steady State (%)		3.33%	3.33%	3.33%	3.33%	3.33%	3.33%
Replacement Rate (No.)		28	43	22	37	27	48
Replacement Rate (%)		4.30%	4.17%	3.54%	6.56%	6.56%	3.67%



Equestrian Bridges	Baseline from AMP	2013	2014	2015	2016	2017	2018
Measured Fail Rate (No.)	16	2	2	0	1	5	1
Measured Fail Rate (%)		12.50%	12.50%	0.00%	6.25%	31.25%	6.25%
Steady State (%)		3.33%	3.33%	3.33%	3.33%	3.33%	3.33%
Replacement Rate (No.)		0	0	0	0	1	2
Replacement Rate (%)		0.00%	0.00%	0.00%	0.00%	6.25%	12.50%



## Assumptions

Asset Type	Number 2018	Lifespan	Modern replacement equivalent cost	Current condition
Timber Kit Bridge Footpath	1024	30	2652	Sub - optimum
Timber Kit Bridge Bridleway	16	30	4065	Optimum

# Bridges Other Constructions

## Policy considerations and notes

Kent County Council has a policy of least restrictive access. The implication in respect of bridges is that they are, as far as is achievable, given site specific constraints, accessible to all. Bridge decks should be of sufficient width to accept the use of mobility vehicles. Where possible bridge decks should be installed so that they are level with the path surface. If this can't be achieved and where use with wheelchairs and mobility vehicles is evident, or would be likely, then ramps should be installed.

Adaptation to climate change: Bridges are high value assets with a relatively long-life span. They are potentially vulnerable to extreme weather events particularly flooding and therefore should be anchored using ground anchors.

Environment Agency consents. Consent is required for main water courses. On all other water courses bridges should be installed bank top to bank top so as not to interfere with or adversely affect drainage.

In many instances there is joint liability for bridges and contributions are sought from landowners etc towards maintenance costs, or contributions made towards landowner bridge maintenance costs. Where contributions are made these have been in line with the cost to the County Council of providing a kit bridge of the same span: IE the liability of the County Council to provide a bridge for only the public access should a new structure be required.

## Design standard and general notes

Designs will be bespoke to sites and will require engineering expertise and support.

Appropriate design capability is sought, where necessary through the County Council structures team, engineering partner or through the engineering services framework contracts. Design should meet the Euro codes (or equivalent) in operation at that time and reflect the expected traffic.

## Performance

The position of the bridge asset is based upon the picture in CAMS on the 5 November 2015. **1.9%** of the bridge asset was considered out of repair. The minimum requirement given a lifespan of 40 years is to replace/ restore 2.5% of the asset on an annual basis (steady state).

## Assumptions

The number of bridges on the network is the number taken from CAMS applying filters to separate all non- timber structures by status and by category of span.

The MRE cost of a bridge is calculated on the basis of Bridge Management's last valuation exercise that priced the cost of construction at £2200 per square metre of bridge deck for footbridges and £5500 for road bridges.

For the purposes of PROW constructions the lower figure £2200 is used irrespective of user type reflecting the generally lower performance requirements of PROW bridges, and the joint liability in respect of many vehicle bridges.

A width of 1 metre is applied for footbridges.

A width of 2 metres is applied for bridleway bridges

A width of 4 metres is applied for all other bridges reflecting vehicular use.

KCC liability is applied at:

0% where another responsible bridge owner has been identified and accepted liability.

80% for footbridges. This is on the basis that a greater proportion of the liability is liable to rest with KCC with many of the structures wholly maintainable by KCC.

50% for bridle bridges as there is a greater likelihood that these structures will carry additional private use.

20% for bridges carrying vehicles: This is on the basis that many of the more complex structures are of shared liability and, in many cases, the option exists not to replace like with like but to install simpler constructions.

A lifespan of 40 years is anticipated. Structures, or elements of them, will in many cases far exceed this lifespan. Their original design life may have been considerably longer, however, on the basis of inspection, many are already of considerable age. Although fully depreciated at this point there will be high residual value.

Revenue expenditure from year 1 to 40 is based on an assumption that approximately 50% of the asset will require repair at some point.

The cost of a repair is estimated at £1000 labour plus materials. The most likely repair being the reseating of a bridge or replacement of handrails and painting, pointing, anti- scour works etc.

Repairs and interventions given the potential lifespan of the asset are more likely to occur and may continue well beyond the initial design life. The interventions aimed at prolonging the life of the asset such as: painting, parapet reconstruction, anti-scour, re-decking are, invariably, expensive and can have high establishment costs e.g. scaffolding.

KCC liability is a 100% of this figure.

Culverts are valued at £3000 reflecting the installation of 1m diameter 3m length reinforced concrete pipe and the construction of simple lean-mix filled bags – headwalls.

No intervention is anticipated post construction.

KCC liability is assumed as being 20%.

# Benches and Perches

## Policy considerations and notes

To improve the amenity of some routes and, in some instances, to make them suitable for access for all, a number of benches and perches have been installed on the network.

Benches and perches are discretionary elements of the PRow asset but can add benefit in terms of the user experience. This element of the asset should be funded through voluntary contribution or external funding.

## Design standard and general notes

Benches on easy access trails should meet “access for all standards”.

Perches are of a simple design as defined in the Design Standards.

## Performance

Benches are expected to last 20 years (dependent on construction)

Perches are expected to last for 15 years.

These assets are performing at the expected level.

## Assumptions

Asset Type	Number 2018	Lifespan	Modern replacement equivalent cost	Current condition
Amenity Bench	19	20	200	No reported issues
Amenity Perch	9	15	150	No reported issues



# Aggregate Paths

## Policy considerations and notes

Aggregate paths comprise 8.5% of the PRow network.

With very few exceptions the public rights of way making up the 6900km network in Kent are publicly maintainable.

- The maintenance picture is complex
- Some routes are subject to private vehicular rights
- Substantial proportions of the network cross agricultural land, may be subject to cultivation, and effectively require no maintenance to their surfaces.

Adequate surfaces for public use exist across the majority of the network, many of them vegetated and demanding regular maintenance. The County Council's statutory obligation is to maintain the highway to a standard suitable for the use of the permitted and expected traffic, at all times of year, taking account of the needs of the visually impaired and disabled.

On the basis of case law the PRowAS will consider a right of way to be in repair if:

- It is safe and fit for ordinary traffic at all times of year.
- There is no unreasonable interference with the rights of the public using the right of way.
- It is adequately drained.
- The full width of the highway is available for the public to enjoy.
- It is free from trips (not necessarily free from shallow depressions, sometimes water filled) so far as this is possible reflecting local geology/ geography/land use e.g. there may well be exposed roots in woodland.
- The level of repair has adjusted over time to meet the needs of current use.
- It reflects the character of the area and the land use of the area.

Given the level of use of the network, particularly those routes carrying equestrian and vehicle rights, an increasing number of routes have been provided with more resilient surfaces in recent times. This often reflects difficulty in improving drainage in lower lying areas. It is also often reflects the fencing in of PRow to prevent the public from straying thus concentrating use.

Prior consents are required for schemes passing across or through SSSI or Scheduled Ancient Monuments. While highway maintenance and improvement enjoy permitted development rights there may be other planning constraints requiring prior liaison with the Planning Authority.

To reduce the environmental impact of schemes appropriate recycled materials are incorporated into specifications, particularly the use of recycled concrete as sub-grade and crushed road-planings as a surfacing medium.

Adaptation to climate change: A greater number of flooding events and a greater frequency of heavy rainfall may be expected. This combined with greater equestrian/ vehicle use of the bridleway / restricted byway and byway network appear to be resulting in increased levels of erosion, particularly where routes run down slope on chalk scarp. Routes with a gradient of less than 15% are prioritised over those that are steeper given that a resilient solution providing a reasonable lifespan that is compatible with public use has not been found for the steeper gullied routes.

All schemes are prioritised using the Intelligent Investment Tool a simple cost benefit analysis designed to ensure that the schemes prioritised in the maintenance programme are those that most closely meet the County Council's statutory obligations and wider objectives.

## Design standard and general notes

PROWAS design standard: PROWAS has adopted the guidance and specifications as set out in – “On the right track surfacing standards for shared use routes”.

Consideration should be given to the aesthetic impact of constructions with reference to the PROWAS Design Manual and particular focus on the use of blinding layers/ wearing courses that are appropriate to the setting.

Where routes are subject to private vehicular use a contribution to maintenance is sought (or demanded) from those exercising the private access. Any contribution made by the County Council is limited to that necessary to fulfil KCC's obligations and reflects that the wear and tear made to the path from the private use is likely to be the greater proportion.

## Performance

The position of the aggregate path asset is based upon the picture as recorded in CAMS on the 15 August 2019. 2.39 % of the surfaced path asset was recorded as out of repair.

The minimum requirement, given a lifespan of 20 years with high residual value, is to resurface a minimum of 2.5% of the asset on an annual basis (steady state).

## Assumptions

The length of PROW with aggregate surfaces is as extracted from CAMS and based on the surface type data from the original network survey; since which time the asset has grown.

A width of 2.5 metres is assumed for all aggregate paths.

A 20 year depreciation is assumed, with a high residual value.

A 20 year lifespan is assumed for the asset but with a high residual value it is also assumed that 40 years serviceable life will be achieved on routes that are level and well drained.

The modern replacement equivalent cost of an aggregate path is based upon the most recent pricing data from tenders at £15/m<sup>2</sup>.

KCC liability is 100% of this figure

Revenue expenditure from year 1 to 20 is based on an assumption that approximately 1% of the asset will require repair at some point.

The cost of a repair is estimated at £15m<sup>2</sup>.

KCC liability is a 100% of this figure.

Repair/ reconstruction beyond the 20 year horizon for years 20-40 is also calculated on the basis of 30% of the asset per annum requiring repair. IE 1.5% of the asset per annum.

Asset Type	Length 2018	Lifespan	Modern replacement equivalent cost	Current condition
Aggregate path	589,469m	20	£15m <sup>2</sup>	Acceptable

# Sealed Paths

## Policy considerations and notes

Sealed paths make up 11.5% of the path network in Kent .

Paths tend to be sealed where heavily used, primarily in urban areas and village centres. Higher levels of use and a reasonable expectation that Sealed paths should be in a fit condition and free from trips place a greater burden on the highway authority in terms of maintenance.

There are very clear standards, established through third party claims actions, for what constitutes a trip in the context of sealed routes. 20mm – 25mm is considered an appropriate intervention level although there is some leeway dependent on context.

## Design standard and general notes

PROWAS design standard : PROWAS has adopted the guidance and specifications as set out in “On the right track surfacing standards for shared use routes”.

Consideration should be given to the aesthetic impact of constructions, with reference to the PROWAS Design Manual, with particular focus on the use of blinding layers/ wearing courses that are appropriate to the setting.

The taking back of agency agreements for the urban areas of Kent in 2001 and the mapping of the previously excluded areas, which were all urban in nature, has resulted in significant growth in the length of the Sealed route asset. The condition of that asset when inherited was generally poor and towards or beyond the end of its serviceable life. This probably reflected low priority being given to such routes.

The use of thin surfacing treatments and particularly surface dressing has generally not proved effective in extending asset life many of the routes having reached a point at which reconstruction is the most effective approach.

## Performance

The position of the Sealed path asset is based on the current picture in CAMS on the 15 August 2019. 1.66% of the asset is reported as being out of repair.

The minimum requirement, given a lifespan of 60 years, is to replace 1.66% of the asset on an annual basis (steady state –stand still).

## Assumptions

The length of PROW with a Sealed surface is: **800399m**.

A width of 1.5 metres is assumed for all Sealed paths.

A 40 year depreciation is assumed with a high residual value.

A 60 year lifespan is assumed for the asset.

The modern replacement equivalent cost of an sealed surface is based upon the most recent pricing data from tenders at £55/ m<sup>2</sup> full construction including edging.

KCC liability is 100% of this figure.

Revenue expenditure from year 1 to 40 is based on an assumption that approximately 10% of the asset will require repair at some point. The repair is generally patching with a 10mm dbm overlay.

The cost of a repair is estimated at £25 m<sup>2</sup>.

KCC liability is a 100% of this figure.

Asset Type	Length 2018	Lifespan	Modern replacement equivalent cost	Current condition
Sealed paths	800,399m	60	£55m <sup>2</sup>	

# The Soft Estate

The soft estate is defined as all those elements of the PROW network not subject to agricultural production and not surfaced with an aggregate or bound surface. While the soft estate can't be approached in the same way as the rest of the asset, there is no capital investment, it still represents one of the greatest on-going liabilities for the PROWAS. It also includes the margins of some surfaced PRoW, where vegetation is rooted in the highway and the management of highway trees and potential intervention in respect of trees within falling distance of the highway.

## Policy considerations and notes

KCC has a duty to maintain the publicly maintainable highway as the highway authority.

Equalities Act 2010: Failure to carry out vegetation clearance on well used routes (free from stiles) including the soft margins of Sealed urban paths is likely to impact disproportionately on the elderly and ambulant disabled.

Adaptation to climate change: Unsurfaced routes have the potential to act as conduits for species migration in the face of climate change and management regimes should enable this.

The management of vegetation/ trees not rooted in the highway is in effect protection / enforcement activity and is not reflected in the Asset management Plan.

There are few rights of way trees; i.e. those rooted within the extent of the highway. There are however an estimated 200000+ trees rooted in boundaries and land adjacent to the highway that are within falling distance of PRoW or that can and do interfere with the use of the highway. The presence of trees can also diminish the drying effects of light and air.

Approximately 400 trees fall onto the PRoW network each year, usually during high winds / storms.

Chalara (ash die back) is well established and widely spread in the county. Trees weakened by the disease are susceptible to other diseases that further weaken them. There are concerns that the risk associated with felling diseased trees (brittle crowns) dictate that non-manual forms of felling are used. There is potentially the need to establish a risk-based regime of inspection, with associated remedial action to appropriately manage trees.

## Design standard and general notes

Where planting / restoration / landscaping is being considered, reference should be made to the PROWAS Design Guide.

The specification for vegetation clearance is as set out in the Vegetation Clearance term service contract.

It is recognised that stopping or reducing the frequency of vegetation clearance has an impact on the cost of recovery in future years although this tails off, to some extent, through years 3 -6 as the time and machinery costs associated with bringing vegetation back under control are broadly similar. Beyond year 6 more substantial machinery and greater labour costs are incurred.

## Performance

If the optimum 1758802m of vegetation clearance is undertaken at a cost of 12 p/m the required expenditure is: **£248291** per annum.

This assumes that efficiencies are gained from clearing greater lengths.

In 2015-16 1028922 metres were cleared at a rate of 13 p/m = £133759.

729880m were not cleared.

The recovery cost associated with then having to cut those lengths omitted from the clearance schedules is approximately:

Year 2 = £145976

Year 3 = £547410

## Assumptions

The length of soft estate requiring maintenance is as originally established in the vegetation term service contracts 2009 -13.

The metreage expressed is the optimum number of linear metres the PROWAS would cut in total, resources permitting. i.e. if a path requires two cuts to keep it in an appropriate condition then it is the total of two cuts.

The total length of network subject to vegetation clearance is 17% - this is not the total length cleared as established above.

The average cost of vegetation clearance is 12p/m. (2015 average rate).

There is a loss of economies of scale and contract efficiency if shorter lengths are cleared. Reduction in clearance lengths of 50% produced a saving of 30% (Compensation events 2011-12).

Recovery costs in year 2 following no clearance in year 1 is 20p/m (2015 rate)

Recovery costs years 3-6 reflect the increased labour required to cut heavier vegetation. This varies between 50p and £1.30/ m (2015 rates). A rate of 75p/m has been applied for recovery for years 3-6.

Recovery beyond year 6 is expected to equate to the higher £1.30 / m as tractor flails/ chainsaws will be required for heavier vegetation, saplings etc.

Clearance by contractors is supplemented by ad-hoc spot clearance by the 130+ active Countryside Access Wardens and 18 volunteer strimmer users. This work helps in both keeping the network open and reducing the volume of higher cost recovery work. It should also be noted that while increasing the number of volunteer strimmer users their efforts supplement and cannot meet the volumes completed by highly mechanised and organised contractors. There are also significant running and training costs to the PROWAS.



# Exceptional items

There are a number of assets that fall outside of the normal range in terms of value in the case of full replacement or the risks associated with failure. In the event of failure, or indeed substantial repair, it is unlikely that the costs could be met within current allocations.

Specifically identified as such exceptional items area:

## Essella Road Footbridge

Unusually for a bridge crossing a railway this bridge is the responsibility of Kent County Council. The costs of inspection are significant given the need for track possessions to inspect some elements. The most recent inspections identified the need for approximately £300k of repair and replacement of failing components – the bridge bearings and access stairs particularly. This work has been funded following a separate capital bid.

## M20 Footbridge

This bridge funded by developer contributions in the 1990s links two areas of Larkfield, severed by the M20 motorway. The bridge is KCC responsibility and there is a clause in the agreement under which the bridge is provided that should future reconstruction be required in consequence of widening the motorway that the cost of the reconstruction would be met by the highway authority. Fortunately, this wasn't necessary when the motorway was widened in 2018 -20.

## Medway Towpath , Aylesford – East Farleigh

Considerable improvements to the towpath were secured through the South East Local Enterprise Programme in 2017-18, delivering cycle access between East Farleigh and Aylesford, realigning the path at Aylesford to overcome the worst of the erosion problems that had seen the route closed for over 7 years. There are still areas that are

vulnerable to erosion in the medium to long term and where further protection works would be beneficial to avoid greater long- term cost.

### North Downs Way & The England Coast Path

Kent's two national trails are not exceptional in terms of asset management in that work to safeguard the trails and improve them attracts 75% support from Natural England. And in respect of the England Coast Path those elements such as erosion that would be potentially costly are managed through realignment of the route. They are however exceptional in respect of the expectation that they will be managed / maintained to a high standard and that the designs for route furniture reflect this. For example, routed oak fingerposts have been used to sign the North Downs Way. Their cost is significantly greater than the fingerposts used elsewhere on the network (3-4x) while not delivering improved performance.

