

To: Dover Joint Transportation Board
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Subject: Highway Drainage
Classification: Information only

Summary: To update Members on the approach to maintaining and improving the highway drainage system whilst ensuring that the customer is provided with a quality service against a background of increasing severe weather events.

This paper was reported to the Kent County Council Environment and Transport Cabinet Committee on 5 December 2014

1. Introduction

- 1.1 The County Council is responsible for the maintenance of the 5,400 miles of public highway roads including 250,000 roadside drains (gullies) and associated drainage systems.
- 1.2 The primary objectives of the highway drainage system are:
 - a. Removal of surface water (from the carriageway) to maintain road safety and minimise nuisance,
 - b. Effective sub-surface drainage to prevent damage to the structural integrity of the highway and maximise its lifespan, and,
 - c. Minimise the impact of highway surface water on the adjacent environment including properties
- 1.3 In recent years, numbers of prolonged and heavy rainfall events have increased, notably the winter of 2013/14. As prolonged, heavy rainfall events have become more frequent, the number of customer enquiries has increased year on year. The volume of customer enquiries now stands at twice that of 2009. In the last 12 months, around 10,000 enquiries related to drainage and flooding have been received. Of these, 3,000 are related directly to highway flooding and 500 related to incidents of highway flooding that had resulted in damage to private properties.

- 1.4 The Highway Drainage service is split into two functions:
- Maintenance
 - Repairs, renewals and improvements
- 1.5 The approach taken to delivering the service has been outlined in a document called “Asset Management in Drainage”. In summary, this details the steps that we take to manage our drainage asset. The series of questions and answers emphasise the need to spend the right amount of money at the right time and explain our focus on sites where the risk to road users and residents is the highest. This document can be found at Appendix A.
- 1.6 This year, the County Council has increased capital investment in drainage infrastructure to £4.3m. This is enabling completion of an additional 120 drainage improvement schemes in 2014/15. Investment has been prioritised on the basis of the following risks:
- Highway Safety
 - Internal flooding of properties
 - Network disruption

2. Financial Implications

- 2.1 The allocated budget for highway drainage cleansing is £2,408,300. This a saving of £300,000 made as part of the wider Highway, Transportation and Waste efficiencies for 2014/15. The maintenance regime outlined in this report has been developed on the basis of the current budget allocation and feedback from stakeholders to ensure a balance between the needs of the asset and the demands of the County Council’s customers.
- 2.2 The approach outlined for capital investment in highway drainage infrastructure ensures that the allocated budget is spent effectively

3. Policy Framework

- 3.1 The approaches to service delivery outlined in this report fulfil the principle of achieving value for money.

4. The Report

Maintenance

- 4.1 In December 2010, a change of approach to cleaning highway drains was approved. There was a transition from providing a purely reactive service to delivering routine maintenance on a cyclical basis.

4.2 At the point of moving from a reactive to a planned approach information about the quantum and location of drainage assets was limited. An understanding of the quantum of assets and traffic management required to carry out maintenance activities has been developed. This data is being used to inform planning and programming and enhance service delivery at an operational and strategic level.

4.3 The departure from a predominantly reactive service combined with very wet weather throughout 2012 resulted in an initial decline in customer satisfaction. However this improved significantly and by April 2013 customer satisfaction had reached 87%.

4.4 In 2013, the annual Tracker Survey asked:

“How satisfied or dissatisfied are you that road drains/ gullies are kept clean and working in your local area?”

Comments and feedback indicated that blocked drains were continuing to be a hot topic for Members and Parish Councils, particularly in rural areas.

4.5 In response to the feedback from the Tracker Survey and in light of the need to make significant revenue savings, the way in which drainage maintenance is delivered was subject to a further review. The table below details cleansing activities undertaken from September 2011 and the frequencies currently being trialled.

Road Type/ Risk Category	Road Length (miles)	Number of Gullies	Cleansing Frequency 2011	Cleansing Frequency 2014
Hotspots (250 locations)	NA	NA	Every 3-6 months	Every 3-6 months
High Speed Roads	160	8820	Every 6 months	Every 12 months
Strategic and Locally Important Routes	1370	41,191	Every 12 months	Every 12 months
Minor Urban ¹ Roads	2190	112,776	Every 2 years	Targeted Cleansing
Minor Rural Roads	1650	85,078	Every 2 years	Targeted Cleansing
Totals	5370	247,865	-	-

- 4.6 The frequency of cyclical cleansing on high speed roads was reduced from six monthly to annually to be consistent with the frequency of maintenance on the County's other main roads. This was part of a service wide saving that came into effect on 1st April and applied to all routine maintenance on the high speed road network.
- 4.7 Drains on minor urban roads are generally less prone to becoming blocked due to protection by kerb lines, the nature of the traffic using the roads, street sweeping undertaken by District Council and self-cleansing capabilities of the carrier pipes. Examining the data collected from routine walked inspections undertaken by the Highway Inspectorate between April and September has emphasised this point. Blocked drains were reported on less than 10% of the roads inspected.
- 4.8 A targeted approach to cleansing is now being trialled on minor urban roads. Rather than a cleansing crew attending every road once every two years, each road is inspected at least annually and resources are focused where the need is highest.
- 4.9 Drains on minor rural roads are often more prone to becoming blocked. Gullies can become overgrown by verges and hedge rows and are particularly vulnerable during peaks in agricultural activities or when silt is washed off fields during prolonged or heavy rainfall. It is not financially viable to increase the cleansing frequency and therefore a community lead approach is being trialled.
- 4.10 The principle behind this approach is to utilise the good relationships that have been fostered by Highway Stewards with Members and Parish Councils. Over the past three years, the Highway Stewards have developed a detailed knowledge of issues in their area. The intention here is to use this local knowledge of community issues to inform our programmes of gully cleansing.
- 4.11 Cleansing is now being undertaken in response to enquiries from Members, Parish Councils and customers. Each site is inspected by a highway steward, assessed and prioritised on the basis of highest risk first. The assessment criteria include, risk to highway safety and risk of internal property flooding.

Repairs, renewals and improvements

- 4.12 Highway flooding causes significant level of disruption; it affects movement of people and goods, therefore adversely affecting the local economy. It also causes significant damage to the highway network; at surface level, flood water scours the surface of the carriageway and footway, which will allow ingress of water to the layer below. In the short term it will result in cracking and development of potholes. Flood water also penetrates the lower layers of road construction washing away fine materials and in time

results in large failures of the road structure which may require significant repairs or even reconstruction.

- 4.13 The weather last winter highlighted numerous pinch points in the drainage network. Some of these are being addressed by the implementation of an enhanced cleansing regime however in a large number of cases work is required to improve the functionality of the system.
- 4.14 The annual capital budget allocation in recent years has been around £2.7m. This has enabled the completion of around 800 priority minor repair and small improvements and a small number of larger improvement schemes each year. Nevertheless, there are many more sites that need attention and this has been demonstrated by the 3,500 enquiries received last winter.
- 4.15 Details of the schemes scheduled for completion by the 31 March 2015 can be found at Appendix B.

5. Conclusion

- 5.1 The regime adopted in September 2011 enabled us to develop a good knowledge of the drainage asset. Moving forward, we have taken on board feedback from stakeholders and tailored the service to respond to customer demand, asset need and the financial challenges.

Recommendations

It is recommended that Members note this report

Background documents:

Appendices

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Asset Management in Highways

What asset management means for drainage assets

Introduction

This short guide outlines the steps that we take to manage our 'drainage asset'. This includes roadside drains, soakaways, ponds, lagoons, pumping stations, highway ditches and thousands of kilometres of connecting pipe.

This guide is set out in a series of 12 questions and answers we have developed from discussing asset management with the Public, elected Members and Parish/Town Councils.

1. What is Asset Management?

Asset management is the term used to describe a common sense approach to maintenance and future investment decisions for all the parts that make up our highway. It is about spending the right amount of money at the right time to keep our assets working properly to meet the needs of our customers now and in the future.

For example, if we spend £1,000 cleaning a soakaway every two years it will keep working for up to 30 years. If we don't clean the soakaway, we may need to spend £30,000 replacing it after just 10 years.

2. What are drainage assets?

The drainage asset is made up of:

Asset	The amount we look after
Roadside drains	250,000
Ponds and Lagoons	250
Pumping Stations	15
Soakaways	8,500

3. Why do KCC need to know where all these assets are?

We continually collect information on all our new, replacement and improved drainage assets. This includes where they are as well as information about the asset itself such as the size of the drain and where it drains to.

We use the information that we collect to plan routine maintenance work, make decisions about where to invest our money and set the levels of service that our customers can expect from us.

The number of drainage assets in Kent is currently increasing each year due to new housing and business developments being built.

4. Why do KCC need to know what condition assets are in?

Once we know what our assets are and where they are located, we need to know what condition they are in. This information helps us to make informed decisions about how often to maintain them and where we need to invest our money to make improvements and keep the drainage system functioning as it should.

We regularly inspect our assets and use information from customers to help assess their condition and understand what needs to be done to keep them functioning correctly in the most cost effective way. This helps us manage our future budget needs and understand what could happen if, for example, the budget we need is not fully available.

5. How often do KCC check what condition assets are in?

There are two types of checks, planned inspections and reactive inspections.

Planned inspections include highway safety inspections and condition checks carried out as part of our cyclical maintenance regime:

- Our team of 12 highway inspectors carry out visual checks to make sure the highway assets are in a safe condition. This includes checking that drain covers are not broken or missing. We carry out this kind of check at least once every 12 months.
- Our drainage cleansing crews look at the condition of the drains on main roads and test each one by filling it with water and checking that it is able to flow away. We carry out these kind of checks at least once every 12 months.

Reactive inspections are carried out in response to enquiries and generate ad hoc and emergency works, for example cleaning blocked drains that are causing the road to flood and repairing collapsed road drains.

6. How do KCC decide how much to spend on each asset?

When we are prioritising drainage works we think about the risk that flooding poses to road users and residents:

- What do we need to do to make sure that the road doesn't flood?
- If the road floods, does it create a hazard to road users?
- If the road floods, does it cause a lot of disruption?
- If the road floods, are people's homes affected?

We use the information we have collected about our drainage assets to help us answer these questions and decide what we need to do to keep the drainage system working and keep road users and people's homes as safe as we can from flooding.

Sometimes the weather can create an increased need demand for maintenance and reactive works such as flood clearance. We ensure that budget is available to respond to these situations.

When we don't have the budget to do everything that is needed, we prioritise works with the budget that we have.

7. Are some assets more important than others and does the type of road affect how much KCC spends on it?

All assets are important and we have a statutory duty to ensure that the highway is safe to use but, we have to work within our overall budget. We decided what work is needed and when it should be done by thinking about where the risk to road users and residents is the highest.

Some of the things we think about include the following:

- The type of road, for example, whether it is a high speed road, a main road, an estate road or a country lane
- The amount of traffic that uses the road, for example is it a main route in and out of a town or is it a minor road only used by a handful of drivers each day
- The impact if the road is closed, for example, the road might only be used by a handful of people but it may also be the only route to get to their homes
- The impact on residential property, for example, when the drains are blocked do homes get flooded

8. How do KCC decide when repairs are needed?

Whilst we know we need to react and fix dangerous situations quickly, this is not a cost effective way of working as we have to send crews specifically to these locations and more time is spent travelling rather than fixing.

We can clearly get more done for our budget if we plan the work that need to be done. By planning ahead and maintaining the assets at the right time, it means we can do more with less and keep the asset at its required condition for longer.

9. How do KCC let customers know what service they can expect?

Our response to emergency or dangerous situations is the same across all our assets – we arrive on site within 2 hours.

For more routine enquiries we normally respond in 28 days

Other more complex requests will take us time to investigate and arrange remediation works.

The levels of service we can deliver is clearly linked to the 'need' of the assets, maintaining safety and the share of the budget it is allocated.

We aim to meet customer expectations wherever possible. We do however welcome support and help from community groups and parishes.

Our aim is to be clear to customers the levels of service they can expect from us for each asset.

10. Where do KCC publish the level of service?

We will publish on the KCC website the work we plan to do during the year so customers can see how drainage assets are looked after, the levels of service you can expect and when work will be carried out.

11. How can customers contact KCC to help look after assets?

If you see a drain that is causing a problem please report it to us using our online web form or if you are concerned about dangerous flooding call our contact centre which is available 24/7 on 03000 41 81 81. We have also put information on the website entitled "how you can help" if you want to look drains near you. We encourage local communities to help enhance the level of service we deliver and we have produced guidance which is also published on the KCC website.

It is helpful if you can give us as much information as possible when reporting a problem. We need:

- The number or name of the house the problem is outside or another landmark to help us locate it.
- The name of the road
- The name of the town or village
- What is wrong, for example " the drain is blocked and causing flooding across half the width of the road"

The more information we have when the fault is reported, the quicker we can deal with it.

12. How do KCC let customers know what has been done each year?

Each year we will report and publish on the main KCC information about how we have spent our budget. We want to be open, honest and clear about how we look after our assets in Kent, where we spend our budget and what levels of service customers can expect.