

**Position in Relation to HMEP Guidance on the
Management of Highway Drainage Assets**

2016

Document Control

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Version	Status (Draft/Approved)	Date	Author/Editor	Details of changes
3	Draft	21/06/16	Ayesha Basit	Formatting
3.1	Draft	23/08/16	Ayesha Basit	Header & Footer changed

Contents

1. Introduction	2
1.1. Why the management of highways drainage assets is needed	2
1.2. Purpose	2
2. Defining the Asset.....	2
3. Service Delivery	5
4. People and Partnerships	7

1. Introduction

The Highways Maintenance Efficiency Programme (HMEP) has issued The Highways Drainage Assets Guidance, which showcases current good practice, tools and techniques to manage and maintain drainage assets to prevent localised flooding.

1.1 Why the management of highways drainage assets is needed

Severe flooding events in recent years are a reminder of the risks posed by flooding, not only to residential and commercial properties, but also to the strategic infrastructure managed by local highway authorities. The increasing impact and frequency of severe weather events, particularly flooding, causes major disruption and damage to the highway network.

The HMEP Management of Highways Drainage Assets Guidance aims to help local highway authorities to plan the most cost effective approach to managing and maintaining their drainage assets and highlights three main themes:

- Defining the asset - having better drainage inventory data
- Service delivery, based on the application of asset management principles to deliver a cost effective long term approach
- People and partnerships

1.2 Purpose

The purpose of this document is to outline Thurrock Council's current position in relation to the report and its recommendations and following this assess any future improvements required in order for Thurrock Council to comply in full.

Alongside each theme, HMEP has provided a number of recommendations, listed in order of priority. These recommendations are shown under each theme in bold, below which is Thurrock Council's current position in relation to it.

2. Defining the Asset

Understanding evolving duties and responsibilities - Recommendation 2

New regulations bring new obligations. These evolving responsibilities will have an effect on budgets and operations. Understand and adapt to these changes.

In 2013 Thurrock Council appointed a dedicated Flood Risk Manager within the Transportation service to deliver the responsibilities arising from the Flood and Water Management Act, 2010 (FWMA). Having an officer embedded in the Transportation and Highways Service has facilitated improvements to the management of the highways flooding and drainage responsibilities, such as closer partnership working with other risk management authorities; better management of asset data, and improved processes for responding to flooding incidents.

The Lead Local Flood Authority (LLFA) budget available to the Council to meet its new obligations has not only been used to develop processes and procedures for flood risk management, but also to investigate and tackle drainage and flooding problems shared by the risk management authorities. For example, through closer partnership working, the authority has been able to get a better understanding of flooding mechanisms affecting Tilbury town through the development of an integrated urban drainage model. This involved the sharing of asset data, flooding reports and local knowledge about drainage systems. The results of the modelling have identified improvements to the drainage network that will help reduce the risk of flooding in the town and funding bids are now being developed to implement the solutions identified.

Data Use - Recommendation 6

Use highway drainage asset data to focus, support and inform maintenance activities. These should be linked to the overall asset management objectives for local highways.

Significant progress has been made in improving drainage asset intelligence; data has been captured through both flood investigations and development of the flood asset register.

To determine the causes of flooding incidents asset data has been collected as part of Section 19 flood investigations. This information has been effective in targeting maintenance activities at known flooding hot-spots, so that resource can be targeted for preventative maintenance when storms have been forecast, such as the clearance of trash screens which are prone to blockage.

Further integration of the flood asset register with the highway's Symology system are underway with the aim to have all drainage assets uploaded. The Transport Development Control team are also ensuring that any records of adopted drainage infrastructure are included on the register and any major infrastructure projects are required to upload as-built drawings.

Fourteen Areas of Critical Drainage (AoCD) have been dedicated in the Council's Local Flood Risk Management Strategy as being either of highest risk of flooding or had a significant history of flooding incidents. In developing the Strategy a number of policies arose, including targeting of maintenance activities in local flood risk zones, opportunities for capital drainage measures as well as tightened drainage requirements for new developments in these areas. The service is currently working on implementing these policies and has been successful in negotiating betterment in local drainage through new development. For example in a recent development in Grays (Evolve, Gumley Road) the Council had an existing soakaway drainage system that was prone to siltation and blockage. In order to facilitate drainage of the development, the Department sought improvement to this system through the provision of a drainage pond providing habitat and amenity benefit to the local area, as well as reducing the ongoing maintenance burden through the removal of silts and pollutants before discharge to the existing soakaways. Additionally the Council has negotiated a 60 year commuted sum payment from the developer for its ongoing maintenance.



Figure 1: Drainage Pond at Gumley Road

Selection of highway drainage asset survey equipment - Recommendation 3

Before selecting equipment, have a detailed equipment requirement specification and evaluation check-list to ensure that equipment being trialled is done in an objective and consistent manner. Allow sufficient time for the trial. Ensure mobile GPS software complies with the latest National Marine Electronics Association (NMEA) protocols.

Thurrock Council currently employs the use of mobile GPS software used to record and provide works orders for highway defects, which includes blocked gullies etc. This hardware is fully compliant with NMEA protocols and has been rigorously trialled and tested to ensure the equipment can assist competent inspectors in the defect identification process. This software can also be used to update asset data upon inspection, but is not currently used as a viable method for a whole network survey.

All asset data collection is undertaken by competent surveying companies with relevant professional accreditation. Additionally, the surveyors selected are assessed according to their track record of delivering similar asset data collection schemes elsewhere for public bodies.

Involvement of colleagues in selecting technology - Recommendation 4

Understand your authority's information technology procurement processes, purchasing documentation requirements and get the appropriate council staff (finance, IT GIS etc.) involved early on.

We will ensure that all staff are fully conversant with Council procurement processes, through team meetings and training where appropriate.

3. Service Delivery

Understanding demand and service delivery requirements - Recommendation 9

Develop a clear understanding of the demand or service delivery level for the drainage asset, as this will clarify and focus activities and budgets to deliver efficient and effective service.

The Council currently tackle gully maintenance according to a schedule of roads, whereby the Borough is split into a number of areas with the aim of cleansing all gullies on an annual basis. The system currently works well in addressing any identified issues with the asset as any blockages or broken lines identified by the gully crew are fed back to the engineer through the 'daily whereabouts sheet' for subsequent further investigation and attention. Unfortunately however, with the availability of resource and prevalence of parking over pots it is unrealistic to be able to clean all the gullies across the Borough on an annual basis and is not necessarily making the best use of the limited resources. To address this, the Department is developing a more risk based approach to gully cleansing.

A requirement of the Flood Risk Regulations was the collation of all flooding reports across the Borough. This required receipt of flood incident reporting from Partners such as the Environment Agency, Anglian Water and Essex Fire and Rescue as well as internally from the Council's own customer record management systems (Housing, Highways and Public Protection teams). Through this process the Transportation and Highways Service could understand the frequency and spatial distribution of the flood reporting to determine 'hot spots'. This flood reporting was augmented by updated flood modelling outputs to determine where flooding was predicted to occur in a severe storm situation as well 'daily whereabouts' sheets from the gully emptier. These datasets are being used to inform an update to the drainage maintenance process with the intention to develop a more risk based approach to managing drainage in areas known to have flooded or are predicted to flood in the future.

Solutions - Recommendation 12

Do not let the management tool become more important than the job deliverables and recommend simple solutions that do not require a great deal of maintenance or administration.

Whilst the Council has been working hard to improve its knowledge of the Borough's drainage assets and develop a new policy for proactive maintenance it has not lost sight of the importance of addressing emergency situations swiftly and appropriately. For

example, in the winter of 2013 the Department responded to a flash flood affecting a number of properties. The Service was swift to react, and mobilised the gully tanker to assist in pumping out of water as well as the installation of a temporary flood wall to divert waters away from the affected properties. Actions arising from a subsequent flooding investigation saw the introduction of additional highway drainage and upsizing of a culvert. This was combined with collaboration with riparian owners to undertake ditch maintenance and also the installation of a permanent flood wall to protect properties in extreme storm situations.



Figure 2: Emergency pumping of flood water

Effective use of limited budgets - Recommendation 1

Adopt highway drainage asset management strategies based on information held.

Revised Thurrock Council processes will include a review of when gullies are cleaned, and high risk sites will be listed for attention to mitigate risk of flood.

Resourcing - Recommendation 11

Allocate resources and funds to routes, sections, or specific areas or assets where most needed. Monitor the maintenance of these assets and require contractors to provide details of the condition of assets; for example, gully cleansing records that details the location of the asset and amount of material removed.

Our process of routine gully maintenance is under review. A more robust process will be set and managed accordingly. This will include reports of problems and further works

needed. The information collated as a result of the feedback received will help form the capital programme for drainage repairs.

Data Integration - Recommendation 5

Link systems to maintenance activities, focus future activities and map 'hotspots'. Address the causes of problems as opposed to symptoms.

The Transportation and Highways Service is in the process of updating its drainage maintenance strategy to take a more risk based approach to its gulley cleansing programme. The Council has mapped information on flooding reports, gulley cleansing returns and predicted flood risk areas and will be using this information to determine a future programme.

4. People and Partnerships

Use peoples knowledge - Recommendation 10

In many cases the organisation's employees are the best source of asset management information. Ensure local knowledge of drainage assets held by long service experienced staff is captured and incorporated into data records.

The Council is fortunate to retain a number of long service experienced highway maintenance officers who hold a lot of knowledge of the Borough's drainage assets. In developing the Flood asset register the Department has sought to extract as much of this information as possible by involving these staff in the asset data collection and verification. This process is ongoing as further paper records are digitised and require validation.

Data Sharing - Recommendation 8

Drainage data must be transferable between owners and stakeholders who understand its value and make use of it.

The Council has entered a data sharing agreement with Anglian Water to share drainage asset data. Also through the development of integrated urban drainage models for Tilbury and Stanford le Hope the authority has signed up to sharing the outputs of modelling to improve collective understanding of flood risk in these areas. The Council's flood asset register is also publically available to enable riparian owners and the public to understand responsibilities for drainage infrastructure across the Borough.

The importance of timely data sharing was exemplified recently when a diesel spill occurred on the A13 Manorway Roundabout. The incident was initially responded to by Essex Fire and Rescue who subsequently notified the Environment Agency of the risk of contamination to the Hassen Brook. The EA contacted the Council's highway department for information on the drainage system on the roundabout to determine where the system could be isolated to reduce the risk of further pollution. The

information was readily available through the flood asset register and was supplied by return.

Partnerships - Recommendation 7

Form partnerships with all relevant bodies, such as the Environment Agency and water companies, to address water management issues and to cooperate in service delivery and information sharing.

The Thurrock Flood Partnership was set up in 2014, as a central point where flood risk issues in Thurrock are reviewed and appropriate action agreed. The Partnership is made up of representatives from Council departments as well as key stakeholders such as the Environment Agency, Essex Fire and Rescue, Anglian Water and neighbouring LLFAs. The Partnership meets twice a year with the aim of ensuring a long-term sustainable approach to flood management in Thurrock, ensuring appropriate accountability and co-ordination between relevant stakeholders.

The Council has representation on the Essex County Council Flood Board as well as the Regional Flood and Coastal Committee and so has excellent oversight of all flood risk matters in and beyond the Borough.