

6 July 2021		ITEM: 10
Planning, Transportation and Regeneration Overview and Scrutiny Committee		
Flooding in Thurrock – January 2021		
Wards and communities affected: All	Key Decision: Key	
Report of: Navtej Tung, Strategic Transport Manager		
Accountable Assistant Director: Leigh Nicholson, Assistant Director, Planning, Transport and Public Protection		
Accountable Director: Julie Rogers, Director of Public Realm		
This report is public		

Executive Summary

Thurrock, alongside much of the greater Essex county area experienced prolonged rainfall across 13 and 14 January 2021, and again on 27 to 28 January 2021. This rainfall, in combination with significantly wetter than average conditions in the preceding six months led to raised water levels in key watercourses within the Borough – predominately Stanford Brook and Mucking Creek in the Stanford-le-Hope area and the Mardyke in the west, alongside saturation of ground conditions. This resulted in flooding conditions which impacted a number of communities in both the east and west of the borough between 14-17 January and threat of further flooding on 28 January to levels not previously experienced within Thurrock in a generation. The events on 14 January resulted in three properties being internally flooded.

As a result of these events, officers are undertaking a review of actions and are implementing changes to help better prepare residents and the Council for any future events.

To support all parties, statutory responsibilities of key stakeholders has also been provided to help identify where the Council and or other bodies and stakeholders have a duty to act in regards to flooding and flood risk.

1. Recommendation(s)

- 1.1 Members of the committee are asked to note this report and endorse the action plan set out at 3.1.**

2. Introduction and Background

- 2.1 As a unitary authority, Thurrock Council is designated as a Lead Local Flood Authority, as set out in the Flood and Water Management Act 2010. As a result, the Council has the overarching responsibility for managing flood risk within the borough. As the Highway Authority, the Council has a responsibility to ensure the highway is free from flooding. Within its duties under the Civil Contingencies Act 2004, the Council must prepare emergency plans. There is not a statutory duty for the Council to resolve and rectify flooding incidents and clear watercourses.
- 2.2 Commencing on 14 January 2021, surface water and pluvial flooding events were seen in Bulphan, Horndon, and Stanford-le-Hope, with significant standing water also seen in fields and gardens across the borough. Within Bulphan, many fields were water logged, two properties suffered internal flooding on Dunnings Lane, Fen Lane became impassable and closed, and gardens of seven properties were significantly flooded in Church Lane - protected only by investment of home owners in submersible pumps due to previous events. In Horndon, flooding was seen in the area of Pump Street and South Hill, with concerns of the culvert and ditches leading towards the A13, as well as Robinson Road. In Stanford-le-Hope, significant surface water flooding was seen on Runnymede Road, with one property internally flooded, businesses flooded on Butts Road, and significant surface water flooding in Bell-Reeves Close and Victoria Road area, and flooding from a field affecting access and egress to the industrial site via the underpass on Wharf Road, alongside many others.
- 2.3 Approximately 20 to 25mm of rain fell across 13 and 14 January. Due to the nature of the catchment, water levels eventually accumulated in the Stanford Brook, where the capacity of the watercourse was exceeded by the volume of water flowing into the river. Numerous surface water outfalls also lead into this watercourse and other watercourses which feed into the brook and ultimately the demand exceeded capacity.
- 2.4 The reason why there was excessive demand on the watercourses is due to existing land across the area being saturated. The East of England region experienced a significantly wet winter, where rainfall levels in January have been nearly 40% wetter than average, and dating as far back as July 2020 the region having experienced 30% more rain than on average. Reports from Anglian Water have stated that the months of December and January are the wettest recorded in the region in over 100 years. This goes a long way to explain why the water levels were so high in the watercourse, and the alarm that it has caused.
- 2.5 The River Thames played a significant part on water levels in the local watercourses. Both the sluice in Mucking Creek and Purfleet are gravity fed structures and are not supported by pumps. These structures have been designed to typically not allow water to rush back upstream when the tide comes in. Under the scenario above, where water levels in the watercourses

were significantly greater than typical, this meant water was not able to outflow into the Thames when demand was at its peak. This attenuation of water flows is what exacerbated issues in the Stanford le Hope area.

- 2.6 On the day of 14 January, in discussion with the Environment Agency, the water levels seen further downstream at Mucking Sluice were at levels not previously recorded, however at 11am it was noted that water levels had begun receding, with a 50mm fall being stated to officers at that time. High tide was approximately 1300, and therefore tide levels started to increase shortly after 11am, and ultimately water was unable to escape from the sluice, causing it to become backed up in the watercourse. As water levels in the watercourse began to rise, this would have caused problems to those immediately next to the watercourse with it breaking its banks – such as Chantry Crescent and those whose surface water sewers feed into the channels, resulting in water surcharging the system, such as Bell-Reeves Close and Runnymede Road, all in Stanford-le-Hope. Once the tide in the Thames started to recede, the risk of flooding in Stanford also started to reduce, with rainfall by then having eased off.
- 2.7 Issues as the day closed off, and into the weekend then began to present themselves in Bulphan, as water increasingly pooled and ran off from fields, causing the closure of Fen Lane, and towards the west of the borough, with flooding of the Mardyke, and its impact near its outfall into the Thames in Purfleet. Ultimately the Mardyke flooding will have been caused by the same factors which caused issues in Stanford, however its catchment is significantly larger, hence problems being seen predominately later. Reporting of events at the time have also stated that Mardyke Sluice was not operating, and therefore closed causing the flooding. In discussion with the Environment Agency, they have confirmed that these reports are inaccurate. The sluice in Purfleet, like Mucking, is gravity fed, but due to its location is fitted with a Guillotine Gate, and is shut when the tide comes in. This is to usually stop water from the tide rushing backwards upstream. The Environment Agency has however stated that the gate was not able to be fully reopened, and emergency works were being undertaken. They do however insist water was still able to feed out from the sluice to help reduce water levels upstream, and an additional bypass channel was also utilised to aid the reduction in levels. Furthermore, the Environment Agency prioritises risk to residential dwellings over other assets, and determined that none were at risk as a result of the issues with the sluice gate.
- 2.8 In the two weeks that followed there was little let up in rain - ground conditions remained wet resulting in lesser rainfall events to cause similar increases in water levels in the rivers, creating additional risk of further flooding. A further 10-15mm rainfall event took place on 28 January, and a 9-13mm event took place 30 January. However rainfall levels in February eased off greatly and a general two to three week dry period helped to reduce saturation of water in the ground, thereby minimising the risk of a repeat event unless there were to have been significant and prolonged rainfall within a short period of time.

- 2.9 However, the fault in the Mardyke Sluice aside, there is very little evidence to say that other contributing factors such as a result of the lack of maintenance across the borough had a predominant or significant impact on the wider causation of flooding.
- 2.10 In terms of making enhancements to the two outfalls from the Mardyke and Mucking Sluices into the Thames, these events are unlikely to have provided the economic case to the Environment Agency, nor Treasury, to deliver the necessary funding. Emphasis is predominately placed on property numbers with internal flooding and flooding outside the dwelling cannot be included. The very small number of properties which were flooded will therefore unlikely be sufficient to justify additional expenditure of these assets. Currently, the EA is looking to replace the existing pumping station at Worlds End, Tilbury, which is costed at £19.5m.

3. Issues, Options and Analysis of Options

- 3.1 Following the flooding events in January 2021, an officer debrief was held on 29 January to review the responses by officers to the events as they unfolded and what actions should be implemented to improve the response in future. The session had representation from the Flood Risk team as Lead local Flood Authority, Highways Maintenance and Highways Operations, Emergency Planning, and the Communications team with external representation from the Environment Agency. The session recognised that over the course of the day, while officers and teams within the Council were able to react and support communities as events were called in, there was a sporadic distribution of information being reported to the Council, spread across different teams and departments. Whilst individual teams were able to deal with the issues swiftly and appropriately, it was recognised that some processes could be enhanced to improve the receipt of information and link the various activities across the organisation. The following Action Plan was created to improve the Council's response to future flooding events:

Action Plan

1. To enhance the Council's webpage to provide clear information on flooding, including responsibilities for services and organisations and information of use to residents and the community;
2. To identify a unified mechanism for flooding reports to be submitted, captured, and reviewed within the Council;
3. To determine responsibilities of the Council in relation to flood risk and promote these;
4. Identify a mechanism so that those affected by flooding are captured and recorded for records and evidence purposes – people are flooded and this may not be reported;
5. To build upon existing internal protocols to develop an appropriate mechanism for the contact centre to record and process reports of flooding;

6. To build upon existing internal protocols and processes within the Emergency Planning Team to manage flood incidents, and to enable incidents to be escalated within the Council – e.g. flow chart and officer distribution list;
 7. Where appropriate, engage with communities to develop community flood plans – e.g. Bulphan;
 8. Ensure greater integration of flood risk matters into the Local Plan and future development;
 9. Investigate and undertake enforcement action to prevent future flood risk.
- 3.2 Whilst positive feedback was received in relation to the operational reactive service that was delivered by the Council, by further investigating and implementing these measures and processes, operationally the Council will be able to adopt a more co-ordinated response to a future event of this nature.
- 3.3 To date, officers have commenced the process for implementing measures within the action plan and will look to have these completed during the summer period. Engagement has taken place with key partners within the Council to enable these steps to be progressed, including with the webmaster to review and refresh the website and to provide an internal portal to enable officers and support staff to monitor, record and escalate actions in any future flood event. Engagement with the contact centre team has also enabled a process to be identified where reporting of flood events can be centralised through the contact centre to minimise a future scattergun approach of reporting. Appendix A sets out an identification of the statutory and permissive roles and responsibilities of the Council, and other key stakeholders in relation to flooding, and these will be further promoted to the community.
- 3.4 Community flood plans are promoted on the Council's website, and these form part of the wider webpage review process and then actioned in the appropriate communities – best practise shows these are best placed in small communities, such as villages, rather than larger settlements such as towns. There has also been much greater representation of flooding related matters and considerations within the Local Plan process since the New Year, through involvement in the Design Charrette process, ensuring new development and communities are safer from flooding risks, and identification of threats from flooding to existing communities.
- 3.5 Additionally, officers are now engaging with the Council's legal team to determine a path forward to undertaking enforcement of ditch clearances across the borough. While the authority is empowered to undertake enforcement, the actual process to undertake enforcement action had not been clarified. Discussions with the legal service have identified a process to request and enforce land and riparian owners to undertake ditch clearances, with several test cases being progressed. These are all either large agricultural land owners or commercial organisations. It is envisioned that these test cases will be resolved by the end of summer 2021, using if required

court injunctions for works to be undertaken. Going forward, this will enable greater confidence in ditches and watercourses being clear, and other flood risk issues to be mitigated.

- 3.6 Going forward, the 9 key actions from the debrief session will be implemented to put the Council in a better position to co-ordinate flood events in the future.

Funding Award

- 3.7 Officers have been successful in securing an award of funding following a joint bid submission alongside Southend Borough Council to the Environment Agency and DEFRA for a value of £6.4m under the Innovative Resilience Fund. The primary function of this bid is to investigate and implement innovative measures and techniques, rather than hard infrastructure, to reduce the risk of flooding.
- 3.8 Within Thurrock, the project is split into three parts, the upper catchments of both the Mardyke, and watercourse systems in Stanford le Hope which feed into Mucking Creek – using “Natural Flood Management” techniques to hold water flows upstream so that capacity further downstream is extended. Within the mid-catchment – working with the community to store rainwater for communal uses or delay its flow through the surface water system by exploring concepts such as rainwater harvesting for use in toilets. Within the lower catchment towards the River Thames, working with historic landfill sites to protect them from coastal erosion through a range of techniques to reduce water speeds and wave action. The project will also look to explore providing a visual warning system within communities to warn of flood risk and provide residents with an opportunity to prepare.
- 3.9 The value to Thurrock and the Council is approximately £3m. The Expression of Interest was submitted in late January 2021 and officers were informed of the successful outcome on 29 March 2021. Officers are now asked to finalise a full business case – funded by the project – with full award in spring/summer 2022, dependant on submission of the full business case. The projects are to be delivered across a six year time period, and completed by March 2027. The Environment Agency had received 79 Expressions of Interest bids with 25 awards available.
- 3.10 Officers have also been feeding into the development of the latest Flood Risk Management Plan. This is a statutory duty for all areas where there is a designated Flood Risk Area. Within Thurrock, there are two flood risk areas, one which sits wholly within the borough and another which forms part of a much larger South Essex Flood Risk Area. Authorities may produce their own Flood Risk Management Plan, however the Environment Agency has provided a facility to develop plans based on the wider water catchment area. For Thurrock, as per the previous Flood Risk Management Plan, this will be captured under the Thames catchment. These documents will be consulted upon in the summer and autumn of 2021.

4. Impact on corporate policies, priorities, performance and community impact

4.1 The action within the report will aim to have a positive impact on the local community, through a range of measures to help improve dissemination of information, and improved efficiencies through reporting.

5. Implications

5.1 Financial

Implications verified by: **Laura Last**
Senior Management Accountant

No additional costs are anticipated, however any additional costs that are incurred will be funded from the Transport Development revenue budget.

5.2 Legal

Implications verified by: **Tim Hallam**
Deputy Head of Legal and Deputy Monitoring Officer

Given the nature of this report there are no legal implications as such directly arising from it. By way of background information, engagement has already taken place with the Legal service regarding the development and implementation of the enforcement strategy. Some legal implications may be aligned to statutory duties and powers within legislation – specifically Flood and Water Management Act 2010, Land Drainage Act 1991, Highways Act 1980, Public Health Act 1936 and Civil Contingencies Act 2004 (para 2.1 and Appendix A).

5.3 Diversity and Equality

Implications verified by: **Roxanne Scanlon**
Community Engagement and Project Monitoring Officer

As some of the actions within this report relate to a display and distribution of information via the internet there may be negative implications relating to these actions. Particularly in relation to access to information within certain rural areas of Thurrock that we know have limited internet access or within specific groups of people with protected characteristics. A CEqlA will be undertaken as these actions progress to identify and try to negate any identified impacts. Early engagement has been initiated with the web team to

ensure this information is distributed in line with Council policy and accessibility regulations as defined by law.

5.4 **Other implications** (where significant) – i.e. Staff, Health, Sustainability, Crime and Disorder)

None

6. **Background papers used in preparing the report** (including their location on the Council's website or identification whether any are exempt or protected by copyright):

- None

7. **Appendices to the report**

- Appendix 1 – Organisational Responsibilities

Report Author:

Navtej Tung

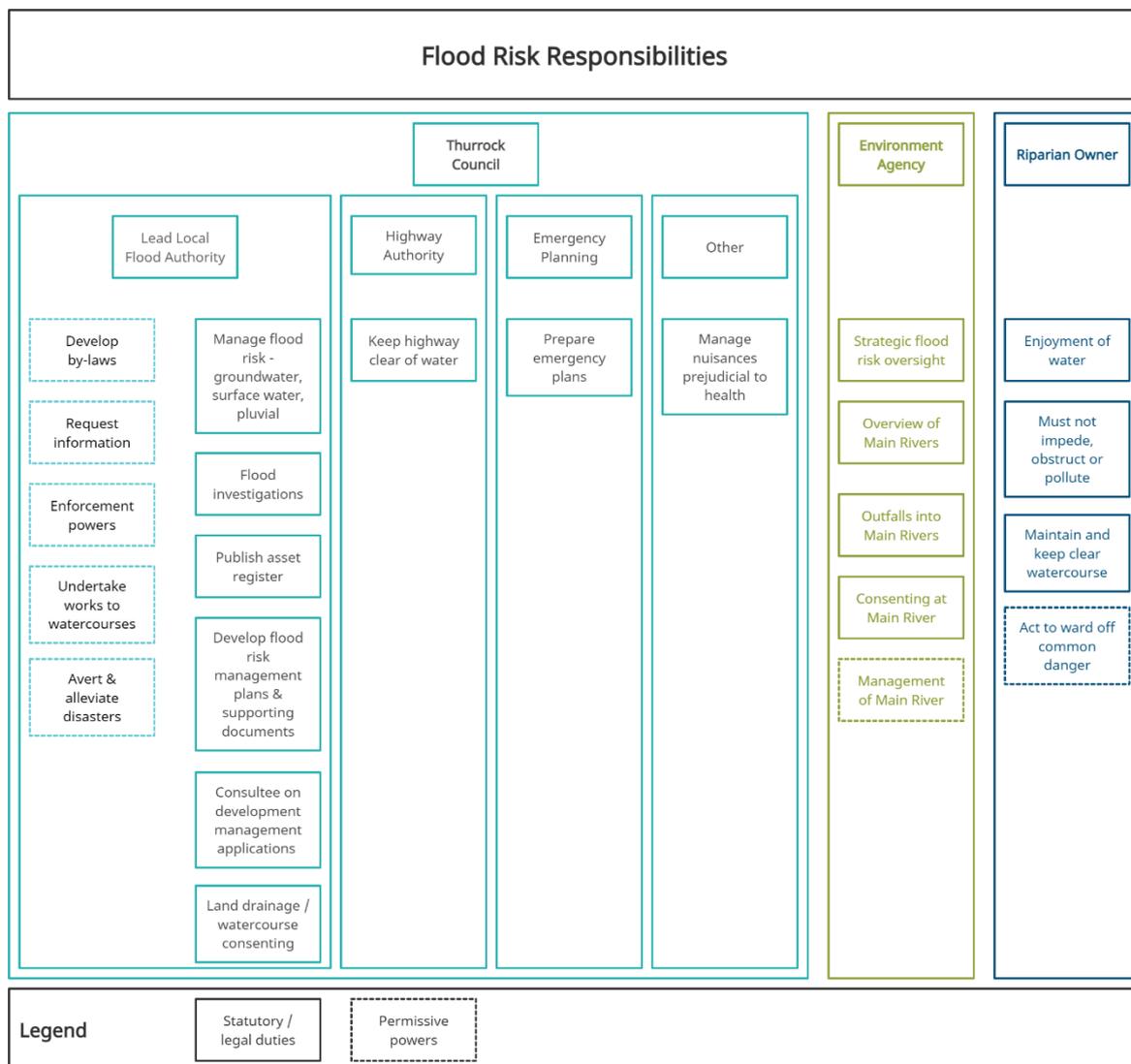
Strategic Transport Manager

Transport Development

Organisational Responsibilities

There are a number of parties who are identified as Risk Management Authorities (RMA) in respect to flood risk within legislation.

The most important of these are the Local Authority, the Environment Agency, the Highway Authority and the water and sewerage companies. Thurrock Council is the designated Risk Management Authority, the Lead Local Flood Authority (LLFA) and the Highway Authority. There are two water company as RMA's – Essex and Suffolk Water is the water provider, and Anglian Water as the sewerage provider. The following chart shows responsibilities of the main parties.



As a Risk Management Authority, Thurrock Council may:

- under permissive powers may undertake works to manage and improve watercourses that are not classified as “Main River” and carry out as necessary any drainage works which are required;

- to develop any by-laws to secure efficient working of the drainage system in the area;
- to manage nuisance watercourses and water bodies which are prejudicial to health; and
- at its own expense to avert and alleviate any emergency or disaster.

As a Unitary Authority, the Council is classified as the Lead Local Authority, where in addition to the above powers, it has a responsibility to:

- manage the risk of flooding from surface water, ground water, and pluvial flooding;
- to require and enforce land owners to undertake works for the maintaining of a watercourse;
- to enter any land to undertake land drainage duties;
- to make a request for information from any person to enable the Council to undertake its flood risk management functions;
- to consent any works undertaken by persons involving the obstruction of flow of a watercourse;
- to determine the criteria, and investigate any incident that meets these criteria involving a flood incident;
- to publish an asset register;
- to develop a flood risk management plan; and
- act as a statutory consultee on planning application in respect to Sustainable Urban Drainage Systems (SuDS).

As the Highway Authority, the Council should:

- ensure all roads, except trunk roads are free from flooding with provision for runoff and
- to drain and prevent water flowing onto the highway.

The Local Authority also has a duty under the Civil Contingencies Act 2004 to:

- Prepare emergency plans.

Ultimately, the Council has a duty to undertake actions to help minimise the risk of flooding and permissive powers to undertake actions, but does not have an obligation to resolve and rectify flooding incidents, or to clear watercourses. These responsibilities primarily sit with land owners and riparian owners to enable the drainage of their own land, and accepting and dealing with flows of water.

The Environment Agency is the body which is designated to have strategic oversight of flood risk management across England. The EA have powers for the management of watercourses classified as "Main River", but like local authorities, these powers are permissive, and they are not obliged to maintain them. Again, this responsibility sits with riparian owners. Main Rivers are designated by DEFRA, but the EA are not obliged to maintain these. The EA has a responsibility for managing flood risk on main rivers, and to manage their outfall into larger estuaries such as the

Thames (Mucking Sluice, Mardyke Sluice, Worlds End pumping Station, Tilbury Gravity Outfall, etc).

Many responsibilities and rights fall to Riparian owners – those who live or are located next to a natural and in some case artificial watercourse. Under common law, their right is the enjoyment of the water, but they must not impede, obstruct nor pollute the movement of water in the same way it must not be obstructed and impeded for their enjoyment. They must maintain the bed and banks of the watercourse, keeping it free of debris which may be washed into the watercourse or impact on any structure. They must not cause a nuisance, nor wilfully obstruct a watercourse, without consent. Riparian owners are not required under common law to clear any watercourse obstructed through natural causes, but can be required to do so under the Land Drainage Act 1991 and Public Health Act 1936 by the local authority and the EA. A Riparian owner may however turn over water in an extraordinary circumstance without consequence, if the action is to ward off a common danger, and not purely to protect their own property.