Flood Mitigation and Community Flood Resilience in Waltham Forest
Submitted by London Borough of Waltham Forest

Awards category
Catchment based SuDS solutions

Lead or collaborating organisation(s)	Waltham Forest Climate Emergency Team, Waltham Forest Lead Local Flood Authority, Waltham Forest Service Store and the National Flood Forum
Location of SuDS	London Borough of Waltham Forest – various sites within Critical Drainage Areas (South Chingford, Fillebrook, Chestnut Showground, Sewardstone Corridor, Ching Corridor, Walthamstow Marshes, Leytonstone Corridor)

1. SuDS overview

SuDS components used (bullet list) (eg swales, detention basins, ponds, wetlands, raingardens, tree pits)	• Constructed wetlands, swales, basins • Transforming local roads with SuDS • Household direct action: Self-emptying water butts (specially adapted), rainwater planters, and water saving devices installed in homes
Size of the scheme and its local context	London Borough of Waltham Forest: area 38.82 km²
Approximate age of scheme (years)	4 years (2021 – 2027 6 year programme)
Benefits of the scheme	• Delivering natural flood mitigation projects to reduce flood risk to properties and commercial premises – Constructed wetlands, basins and swales provide wider benefits such as enhancing amenity space, improved water quality and increased biodiversity and ecology through habitat creation eg Chestnuts Field Flood mitigation comprising three interconnected wetland basins providing 2500 m3 of surface water attenuation to reduce flood risk (refer to borough-wide strategic flood mitigation schemes map) • Transforming local roads – susceptible to flooding to include Sustainable Drainage (SuDS) and storm water storage. Permeable paving and raingardens reduce drainage overflow during storm events. Also provides cycling opportunities. • Household level action: 960 water butts have been installed in total so far (866 200l and 192 100l) slowing 134,971L from entering the drainage network within three critical drainage areas) • Reduces quantity of storm water entering drainage network, reducing the likelihood of the sewer network exceeding during storm events • Improved local residents' awareness of flooding issues • Empowered individuals with information on why local flooding has occurred, and how individuals can take

	simple steps to help tackle flooding • Promote building community flood resilience on a catchment wide basis (also collaborating with Thames Water 'Project Capture') • Insights into behaviour change / what drives people's will to have a water butt and how best to encourage take up • Water saving in the home to conserve the resource (by installing internal water saving devices and encouraging use of rainwater from water butts to water gardens, instead of using potable water and therefore more environmentally friendly, reducing the use of highly processed main water supply)

Briefly describe the scheme (200 words max) The type of development, its setting, any unique features, the design rationale, and where it discharges to (infiltration, watercourse, sewer, other).	<u>Natural Flood mitigation projects</u> •The South Chingford Flood Mitigation Project is split over 3 open spaces in the South Chingford area and will completely remove 64 properties from flood risk. 893 properties will be afforded a reduction in flood risk. •The Chestnuts Field Flood Mitigation project will include the creation of a vibrant wetland ecosystem in Chestnuts Field. The scheme comprises three interconnected wetland basins providing 2750 m3 of surface water attenuation to reduce flood risk. •The proposed Fillebrook Flood Alleviation scheme provides flood mitigation over two sites Phase 1 at Leyton Sixth Form College and Phase 2 within the new Fillebrook Park at the Whipps Cross Hospital redevelopment site. <u>Transforming local roads</u> Esther Road, Wadley Road and Kings Passage scheme and Brooke Road, Oliver Road, Chestnut Avenue North and Chestnut Avenue South scheme improvements include permeable paving, raingardens and enhance walking and cycling opportunities in the area alongside a programme of SuDs projects introduced through the borough's 'Enjoy Waltham Forest' initiative. A community-led flood mitigation scheme at Greenway Avenue is being developed with the local flood action group including swales, detention basins, reprofiling and shaping of the existing drainage ditch to laneway, reprofiling of the laneway surfacing and the installation of rainplanter units to local properties and the Cricket Club. Residents in high flood risk areas were offered water saving devices and self-emptying water butts/ rain planters between September 2023 and April 2024.

2. SuDS details

No.	Question	Answer
1	What difference has this scheme made to the local community or area?	This scheme has worked directly with local Flood Action Groups supported by the National Flood Forum, strengthening the relationships between the community and the council, and supporting the work they are doing in their local areas to reduce flood risk. Using a community led approach to promote the Lower Floods scheme, borough wide strategic flood mitigation programme, and building community flood resilience through flood action groups and public engagement, has helped the community be better connected around flood action. Having a wide range of types of schemes in the highest flood risk areas is already positively impacting residents living in those areas.
2	What is exceptional about this scheme beyond a standard approach?	Clustering projects in area of high flood risk maximises impact and helps build resident support and involvement. Bringing together multiple, integrated schemes to tackle flooding across the borough. There was a focus on both an individual and collective approach to the issue of flooding, with installations in residents gardens across a local catchment area. The Council has learned that empowering individuals to tackle community flood risk can be effective in efforts to scale-up solutions across communities. Engaging with communities through flood action groups to build community flood resilience is an integral part of the programme.

3	How much work went into getting this scheme realised?	• Working within the Thames RFCC 6-year (2021-2027) programme to delivery flood mitigation projects. • Working with communities to form flood action groups and coordinating with the council's emergency planning team • Joint working between the LLFA, climate team highways and parks department • Working with the DFE's SuDS in schools programme to mitigate flood risk • Developing a borough wide community engagement strategy with the Thames RFCC's Community Engagement Specialist to build community flood resilience • Integrating flood mitigation with climate change benefits and combining resources to deliver shared goals which maximises outputs
4	Is this scheme part of a masterplan or integrated into other initiatives?	The Council is leading and supporting a range of other flood mitigation projects and initiatives, which includes a boroughwide surface water hydraulic modelling programme to identify strategic flood mitigation schemes, large scale SuDS in open spaces to reduce flood risk to homes and integrating SuDS into Highway projects. The Climate team has been working closely with the Lead Local Flood Authority team and realised an opportunity to install measures in homes that reduced the amount of water entering the drainage network, and at the same time driving momentum of collective climate action in the Borough. Alongside borough wide flood mitigation schemes, developing an integrated strategy between Lead Local Flood Authority and the Climate Change Team to build community flood resilience and manage flood risk in the borough.

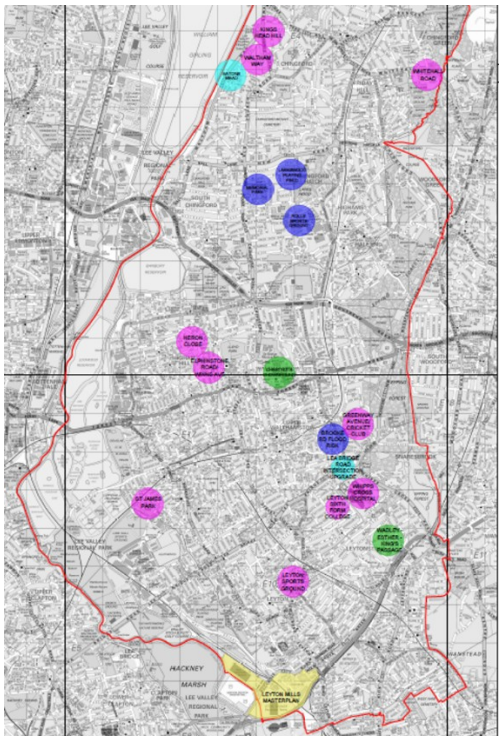
5	What value does this scheme provide to the local area and beyond?	Flooding events in 2021 caused damage in excess of £16.4m. This programme of projects will reduce the likelihood of surface water flooding. There is a known inequality with regards to social deprivation and people worst affected by flooding, and deprivation also constrains community preparedness. By helping build community resilience in the way this project has been delivered in collaboration with community and flood action groups, can support those who may be typically worst affected by flooding. Sharing findings and outcomes with other boroughs and RMA's, GLA, LoDEG, National Flood Forum, Thames RFCC, EA, and catchment partnership groups to promote best practice and encourage take up across the Thames Region.
6	What challenges/problems needed to be addressed to realise this scheme?	• Engaging with the community • Coordinating funding • Accessing funding and providing the necessary flood modelling information required to obtain FDGiA funding • Developing integrated ways of working across different council departments • Developing a specially adapted slow release water butt • Collaboration with external programmes such as Thames Water's 'Project Capture'
7	How does the scheme address related issues such as water scarcity, nutrient neutrality, or biodiversity net gain?	Wetlands, planted detention basins, raingardens, rainplanters and other SuDS features, all being delivered within the borough wide flood mitigation and community flood resilience programme, increase biodiversity, enhance amenity space, improve ecology, create habitat and improve water quality. The water saving devices installed in homes in the Lower Floods programme all reduce the quantity of water being used within the home. 6350L is saved per day on average, from the devices: tap aerators, cistern displacement, shower head aerator / flow regulator, as well as water saved using rain water for garden watering.

8	Is learning from the scheme continually captured and communicated? Please give examples.	Sharing lessons learned from the scheme with other boroughs and RMA's via EA and catchment partnerships, Thames RFCC, LoDEG, GLA, London Councils, National Flood Forum and Thames Water. We have had two reflection points in the Lower Floods project: after the pilot on two roads and then after the first area of installations (Fillebrook Catchment area) before we rolled out a second phase of the project. This led to some improvements in the delivery and communications, however we were constantly improving the processes as described above. The collaboration with Thames Water's 'Project Capture' that was running in parallel in the borough also provided insights and findings that helped shape the project, as lessons learned were shared between the teams at several points.
9	What approaches/measures are taken to ensure the scheme is properly managed and maintained?	Good project management for individual projects being delivered through regular design team meetings, project management boards, site meetings and close coordination with the councils term contractor and specialist sub-contractors. Regular multi-agency meetings with Flood Action Groups including community representatives, national flood forum, LLFA, EA and Thames Water. This empowers the community to help shape the flood mitigation solutions to be provided. For Lower Floods project: Weekly meetings with the various partners to update on progress, report any snags and make any adjustments as necessary Feedback from residents was gathered directly by email, WhatsApp and surveys

10	Have you collected any feedback on your scheme? What do people say about it? Can you provide any quotes?	A survey was circulated to those who participated in the Lower Floods project. The results showed that people were very pleased with the outcomes of the projects (124/132) reported they were satisfied (30) or very satisfied (95) with the information and (109/132) were very satisfied with the installation. We received very positive feedback from the Flood Action Groups that were involved which was communicated in person, by email and at group meetings. During the detailed design process to develop the strategic flood mitigation schemes public engagement is undertaken, including local drop in sessions, from which feedback has been positive.

3. **Supporting materials**

Image (low resolution)	**Caption**	**Image credit**
	Adapted water butt installed in a resident home	

	Planter unit installed in a resident home	
	borough-wide strategic flood mitigation schemes map	

	Rain garden SuDs on Brooke Road	
	South Chingford Flood Mitigation Schemes – After Construction	