MUNICIPAL YEAR 2016/2017 REPORT NO.

ACTION TO BE TAKEN UNDER DELEGATED AUTHORITY

Part: 1	KD Num:
Subject: Gough Park Flood Alleviation Scheme / EEFAS extension	
Wards: Chase & Town	

PORTFOLIO DECISION OF:
Cabinet Member for Environment

REPORT OF:
Director – Regeneration & Environment

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1. EXECUTIVE SUMMARY

1.1 The Surface Water Management Plan (SWMP) 2011 included modelling of surface water flooding hotspots across the borough, with actions and opportunities developed as a result.

1.2 Further modelling and analysis of historic flooding as part of a Flood Risk and Mitigation Study of the area included a cost / benefit analysis of developing a scheme at Gough Park to divert surface water flows through the park, removing a maximum of 37 properties from flooding for a 1 in 100-year event as the main benefit. This achieved securing funding from the Environment Agency.

1.3 The location of the scheme is at a roundabout 2km north of Enfield Town at the junction of Clay Hill, Baker Street and Myddelton Avenue, it also includes a pedestrianised link to Forty Hill. It is the physical characteristic of being at the base of a hill which increases the surface water flood risk. Gough Park sits to the north of the roundabout effectively providing a pedestrian link to Forty Hall and Estate, both of these facilities are owned and run by Enfield Council.

1.4 Actions include altering the footway, gullies and a wall to divert surface water into a new swale to run through the park and feed the New River Loop (Old Course). Thereby offering flood alleviation to the area plus additional benefits.

2. RECOMMENDATIONS

2.1 To consider and approve the scheme which includes alterations to the environment of the park and small area of adjacent highway (total estimated cost £70k) in order to provide flood alleviation through surface water diversion. (Final design to be guided by consultation.)

2.2 To invite and evaluate tenders / quotation and, where suitable tenders / quotations are received, to award a contract for the works to realise the scheme.

3. BACKGROUND

3.1 The Surface Water Management Plan (SWMP) 2011 included modelling of flooding across the whole Borough in order to identify surface water flood risk and opportunities. Subsequently areas sensitive to flooding were compiled and termed Critical Drainage Areas (CDA's) which were determined based on hydraulic catchments.

3.2 The exercise was developed under the Drain London initiative and resulted in an action plan and opportunities for further investigation and modelling under Tier 3 of Drain London. As such the Forty Hall study area was interrogated for options in a Flood Risk and Mitigation Study.

3.3 The Flood Risk and Mitigation Study found that the surface water runoff at this location contributed to flooding of up to 104 properties on a flow path along Myddleton Avenue and at the downstream Orchard Crescent area, which is a residential area half a kilometre to the south-east of the proposed project site. The raised embankment of the New River effectively holds back surface water flow at this point. The wider area has experienced flooding in the past. (See attached plan in Appendix 1).

3.4 In order to alleviate the flood risk a scheme is planned which would involve the diversion of everyday surface water flows from the Clay Hill roundabout area. Through diverting gullies and lowering the footway in order to feed a new swale in Gough Park, surface water flows from Clay Hill to the New River Loop Old Course will be linked. Thereby removing a maximum of 37 properties from flooding and avoiding £431k of potential damages (based on Environment Agency calculation methods). It should however be noted that there are no records of these properties flooding since 1981.

3.5 The works proposed include:

- Creating a new swale connection from the south end of the park adjacent to the roundabout running to the New River (Old Course)
- Redirecting a small length of path around the new feature
- Removing a small part of the brick wall along the park boundary adapting it sensitively to allow conveyance of flows to the new features in the park.
- Lowering the footway and capping off gullies in the area to divert highway runoff into the park
- Providing fin drainage to alleviate water logged area around list gates

A concept plan is provided in Appendix 2.

3.6 A Project Appraisal Report was completed to secure Flood Defence Grant in Aid (FDGiA) funding from the Environment Agency to the effect of £50k which will form the major contribution to the scheme. LBE are contributing £20k of capital to fund the rest of the works (including fees).

3.7 Initial detailed designs have been guided by aborcultural, heritage, archaeological, biodiversity and hydraulic considerations and are due to be presented to interested parties through consultation.

4. ALTERNATIVE OPTIONS CONSIDERED

4.1 Do nothing: The option of doing nothing would maintain the current situation of 104 flooded properties (1 in 100-year event), 32 flooded properties (1 in 30-year event). This has been calculated as resulting in a potential £1,685k of damages.

4.2 Other areas of public highway boundary and park areas were identified for flood flow storage in the immediate area such as:

- The south side of Clay Hill / Forty Hill roundabout
- Areas alongside Myddleton Avenue

4.3 These options were dismissed due to reasons which made them impractical such as utilities / tree conflicts and lack of space.

5. REASONS FOR RECOMMENDATIONS

5.1 Anticipated benefits of the scheme include:

- Removing an expected 37 properties from surface water flood risk for a 1 in 100-year flood event across the Forty Hall study area.

- Improved public access and use of the park through thinning of the trees, refining internal paths and seating areas.

- Improved drainage measures in the park including the allowance to drain an area around the main entrance gates which suffer from a long-standing issue of subsidence due to damp conditions and require structural attention, the project will aim to facilitate this though providing drainage to the area.

- Improved biodiversity in the park in the form of a wetland system.

- Improved interaction of public and interested parties with heritage and cultural features in the area.

6. COMMENTS OF THE DIRECTOR OF FINANCE, RESOURCES AND CUSTOMER SERVICES AND OTHER DEPARTMENTS

6.1 Financial Implications

The estimated cost of the project "Gough Park Flood Alleviation Scheme / EEFAS extension" is £70k (including fees); this is to be funded from:

External	Flood Defence Grant in Aid (FDGiA) funding from the Environment Agency	£50k
Internal	Capital (Structures, watercourses & drainage)	£20k
Total		£70k

6.2 Legal Implications

6.2.1 The Flood and Water Management Act 2010 and Flood Risk Regulations 2009 have designated Unitary Authorities and County Councils as Lead Local Flood Authority (LLFA). LLFAs have responsibility for leading the co-ordination of local flood risk management in their respective administrative areas, ensuring that flood risk from all sources, including from surface runoff, groundwater and ordinary watercourses, is identified and managed as part of locally agreed plans and strategies.

6.2.2 A Surface Water Management Plan (SWMP) assesses the surface water flood risk across an area using both historical information and undertaking pluvial modelling to determine the future flood risk for a range of rainfall events. These identify the areas of significant surface water and groundwater risk and options to address the risk of flooding.

6.2.3 The proposals set out in this report are designed to alleviate an identified flood risk and are in accordance with the Council powers and duties as Lead Local Flood Authority

6.2.4 The value of the contract to realise the scheme, is of a value that enables quotes and requests for tender submissions to be called for in accordance with the Council's Contract Procedure Rules ("CPR"), which in this case, requires at least three written quotations to be sought for the works. The evaluation and award of the contract must be in accordance with the principles of transparency, equal treatment, and non- discrimination.

6.2.5 The form of contract used to contract with the contractor, must be in accordance with that approved by the Assistant Director – Legal Services, Finance, Resources and Customer Services.

6.3 Property Implications

6.3.1 The proposals for Gough Park create a sustainable drainage solution that will bring benefits to the wider area, and will reduce flood risk for both Council properties and privately owned homes and premises. In addition, the diversion of surface water into a new swale has the potential to create a feature of environmental and ecological benefit within the Forty Hall estate.

6.4 Public health

None

7. KEY RISKS

7.1 Making alterations to the brick wall will require authorisation from Historic England. Due to the fact that the council cannot provide approval for in-house works relating to their own heritage assets, the application will be submitted to the Secretary of State for Department of Community and Local Government for listed building consent. If required authorisation is not received from Historic England, then this part of the work may be delayed. The risk is mitigated by the fact that majority of ground works can be carried out prior to the connection being made at the wall.

7.2 Working within the necessary seasonal requirements in parks, giving consideration to nesting birds and great crested newts. If seasonal issues affect the works, then the objective may not be realised by the deadline. This will be mitigated by the fact that the work is being programmed to be carried out in the appropriate seasonal window.

7.3 Altering the highway and footway and working within any constraints provided by utilities and buried services

7.4 All works carried out will be subject to designers' risk assessments under Construction Design and Management Regulations 2015.

8. IMPACT ON COUNCIL PRIORITIES

8.1 Fairness for All

8.1.1 The main purpose of the scheme is to address those at risk of surface water flooding in the downstream area of the catchment. The aim is to reduce the risk of flooding to as many as is practicably possible, as part of an overall objective to reduce flood risk to all residents and businesses across the borough.

8.1.2 The proposal will improve the environment of the park for the local residents.

8.2 Growth and Sustainability

8.2.1 The project manages flood risk is a sustainable way by using natural processes and diverting flow from an over capacity sewer system. The creation of an above ground watercourse to feed a historical water body will be an example of an integrated environment.

8.2.2 An active local study group for the area will be engaged throughout and beyond the process.

8.2.3 Further improvements to the general heritage, cultural and ecological environment will be realised.

8.3 Strong Communities

8.3.1 The site is currently underused and considered neglected by local residents due to its overgrown nature. The site is mainly used as a pedestrian link between Forty Hill and Whitewebbs. The proposals will aim to improve the quality of the link and provide a more user friendly area for people to gather and enjoy the environment.

8.3.2 The local community and interested parties will guide the final design from a range of options as part of engaging local residents in decisions.

9. EQUALITIES IMPACT IMPLICATIONS

An EQIA will be undertaken and will inform the design and access for the proposed renewed area.

10. PERFORMANCE MANAGEMENT IMPLICATIONS

The development of the scheme will satisfy actions derived from the Surface Water Management Action Plan (SWMP) and the Local Flood Risk Management Strategy (LFRMS) by alleviating surface water flows to reduce run-off rates (LFRMS objective 4) and protect existing properties from flooding (LFRMS objective 5).

11. HEALTH AND SAFETY IMPLICATIONS

11.1 The scheme will be designed in accordance with the Construction Design and Management Regulations 2015, and industry good-practice standards, to be safe for members of the public. For example, open water features are surrounded by vegetated margins and slopes are designed to be shallow to reduce the risk of accidental entry into the water.

11.2 As the scheme reduces flood risk to over 30 residential properties, the scheme will have a significant positive impact on health and safety during flood events.

12. PUBLIC HEALTH IMPLICATIONS

12.1 Improvements to the open space and footpath will promote physical activity including walking, cycling and volunteer work.

12.2 An already interested local study group and parks friends group take an active interest in the area which helps to encourage healthy lifestyles and improve social cohesion.

12.3 Listed gates at the boundary of the park are currently at risk of degradation and a possible public health risk, the enhanced drainage provided will aim to secure this asset for future improvement works.

Background Papers
None

RE 16.058

Appendix 1 – Catchment Plans Modelled Flood Extents

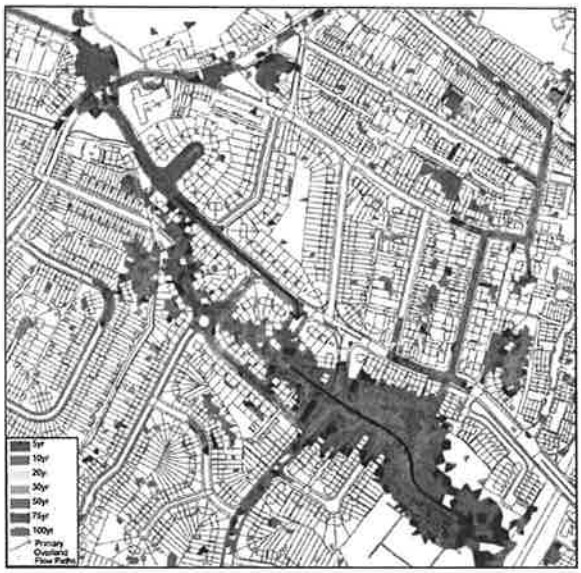


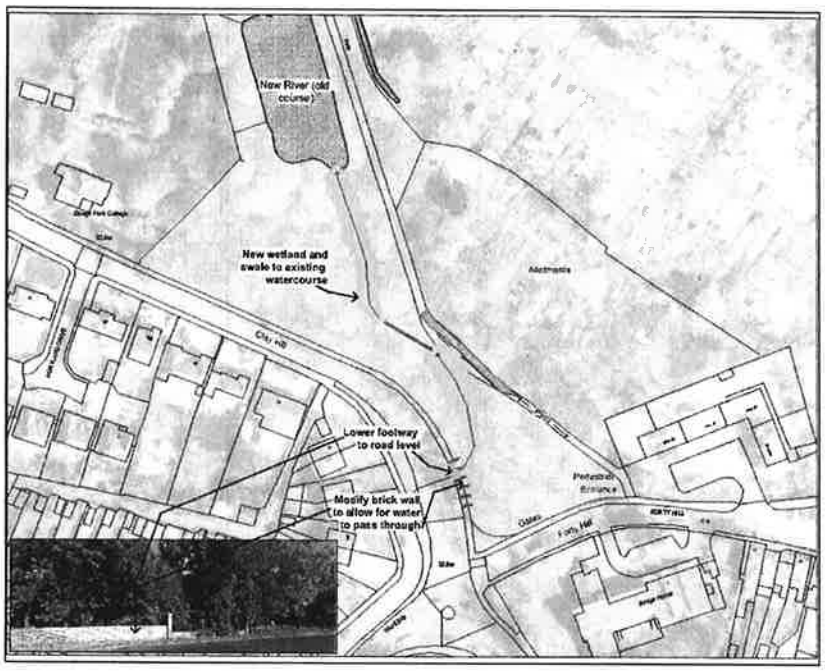
Figure 1 - **Existing** Flood Extents for All Events up to the 1 in 100 Event (Depths > 0.05m) in the Forty Hill catchment study area

Figure 2 - **Proposed Option** Flood Extents for All Events up to the 1 in 100 Event (Depths > 0.05m) in the Forty Hall catchment study area

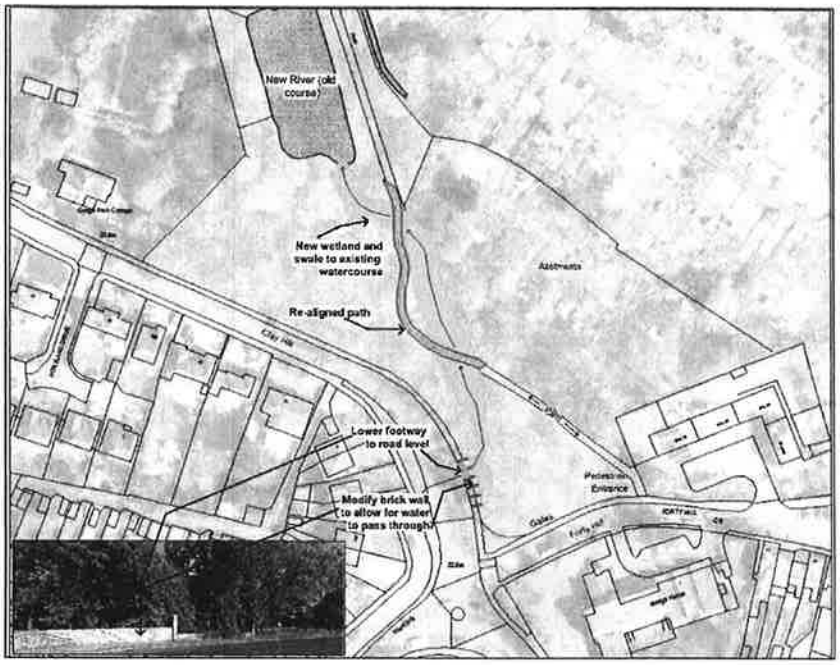
Taken from Drain London - London Bough of Enfield—Surface Water Flood Risk and Mitigation Study— EEFAS CDA

Appendix 2 – Concept Plans

Option A



Option B


New River (old course)
New wetland and swale to existing watercourse
Re-aligned path
Lower footway to road level
Modify brick wall to allow for water to pass through
Allotments
Pedestrian Entrance

Appendix 3 – Site Photos

Wall at the base of Clay Hill for modification of wall and footway – Gough Park on the other side of the wall

Typical un-managed vegetation through Gough Park

Pedestrian entrance to Gough Park from Forty Hill

Grade II listed gates currently experiencing ground saturation issues to be remediated

Public footpath through Gough Park - new swale to be to the left of this path

New River Loop Old Course - Swale to link to this drainage feature