

Report of the Flood Risk Manager

Report to the Chief Officer (Highways and Transportation)

Date: 30th July 2019

Subject: Construction of Phases 2 and 3 of a Flood Alleviation Scheme at Hawthorn Terrace, near Garforth.

Are specific electoral wards affected?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
If yes, name(s) of ward(s): Garforth and Swillington		
Has consultation been carried out?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Are there implications for equality and diversity and cohesion and integration?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Will the decision be open for call-in?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Does the report contain confidential or exempt information?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
If relevant, access to information procedure rule number:		
Appendix number:		

Summary

1. Main issues

- Hawthorn Terrace is a row of 10 terraced properties located adjacent to the A63 near Garforth and within close proximity to a number of open channel and culverted watercourses which convey water downstream towards Lin Dyke (Main River). This scheme is identified as a high priority in the List of Measures in the Leeds Local Flood Risk Management Strategy.
- The 10 residential properties at Hawthorn Terrace, the Royal Mail sorting centre, A63 roundabout and a number of other commercial properties nearby have a history of flooding from the upstream watercourses.
- Following a successful application to the Environment Agency for a Regional Flood and Coastal Committee (RFCC) Local Levy grant of £80k a scheme to alleviate flooding at this location was undertaken in February 2016. Whilst it has been partially successful it did not prevent two flood events in March 2016 when many of the properties referred to above were affected again. The source of flooding at the site and defects in the existing infrastructure have become more evident and a number of additional measures are now proposed.

- Minor maintenance works have also been undertaken upstream to reduce the risk of flooding but a substantial flood risk still remains. It is now proposed to undertake further work (Phase 2) to address the issues still outstanding from the work carried out in 2016.
- The A63 is of strategic importance as a motorway diversion route and, following consultation with Highways England (HE) and their interest in reducing the risk of highway flooding, they have offered a grant of £158k for LCC to amend and increase the scale of the scheme (for clarity we will refer to this additional work as Phase 3) subject to the terms of a formal agreement.

2. Best Council Plan Implications (click [here](#) for the latest version of the Best Council Plan)

- The proposed scheme will have positive implications for “safe and strong communities” and “health and wellbeing” because it will reduce the risk of flooding for residents of Hawthorn Terrace and for employees and users of commercial premises nearby.
- The proposed scheme will have positive implications for “inclusive growth” because it will reduce the risk of flooding of commercial premises and the A63 thus enabling access to the highway network to transport goods and travel to places of employment.

3. Resource Implications

- The total estimated cost of Phase 2 and Phase 3 of the scheme is £220k. This comprises £165k for the works, £10k for direct staff costs, £35k for design and ground investigation costs and £10k for landowner compensation (this includes for compensation still outstanding from Phase 1).
- Phases 2 and 3 of the scheme will be funded by the balance of £23.5k of the Local Levy grant from Phase 1, the Highways England grant of £158k and the balance of £38.5k from LCC capital programme FRM Minor Works Scheme budget. A condition of the grant agreement with Highways England is that the grant is payable in arrears of the costs being incurred. Refer to “Risks” in 4.8 for a summary of the grant conditions pertinent to potential LCC capital finding liabilities.
- The proposed flood alleviation works will be the responsibility of LCC and will need to be maintained over the anticipated 75 year design life. Post construction there will be a requirement for routine maintenance involving grass cutting, debris and silt clearance and minor repair works. It is estimated that these costs will be up to £500 per annum over the design life of the scheme; this equates to a Present Value (PV) whole life cost of £14,100. This will be met from the FRM annual watercourse maintenance budget.

Recommendations

- i) approve the implementation of Phase 2 works at Hawthorn Terrace, Garforth, as shown on the site layout drawing in Appendix A,
- ii) give authority to the Flood Risk Manager to enter into an agreement with Highways England to receive their grant of up to £158k and also to inject this grant into the capital programme,

- iii) subject to i) and ii) above, authorise the expenditure of £220k to carry out Phases 2 and 3 of the flood alleviation works funded from the balance remaining from RFCC Local Levy grant; £23.5k, the Highways England grant of £158k (subject to the conditions set out in the agreement) and the balance from LCC capital programme FRM Minor Works Scheme budget; £38.5k and,
- iv) authorise entry onto land and to undertake these works using powers conferred onto Leeds City Council by Sections 14, 14A, 15 & 64 of the Land Drainage Act 1991 (amended by the Flood and Water Management Act 2010).

1. Purpose of this report

- 1.1 To note the issues with the watercourses upstream of Hawthorn Terrace and the resulting flooding to the 10 residential properties at Hawthorn Terrace, adjacent commercial property, the Royal mail sorting office and the A63.
- 1.2 To give authority to incur expenditure on the proposed flood alleviation works Phase 2, including entering into an agreement with Highways England to include Phase 3 of the scheme and carry out work to reduce flood risk on the A63.

2. Background information

- 2.1 In September 2015 approval was given to undertake work to design and construct a flood alleviation scheme at Hawthorn Terrace, fully funded from £80k RFCC Local Levy grant. The work was completed in February 2016 and in March 2016 the Royal Mail sorting centre and several commercial premises were flooded internally, the A63 roundabout was inaccessible from all directions and several residential properties in Hawthorn Terrace were either flooded or very close to being flooded internally. £23.5k of this grant was not required and remains in our budget.
- 2.2 On four other separate occasions, in 2002, 2003, 2004 and 2006 residential properties at Hawthorn Terrace were also flooded internally. In 2012 one residential property at Hawthorn Terrace and also the adjacent sorting centre were flooded internally from the adjacent watercourse with the gardens of the remaining 9 residential properties also flooded and the properties close to being flooded internally.
- 2.3 Flooding incident reports and investigations indicated that the flooding is principally due to water coming out of channel upstream at two existing culvert headwalls and then combined with field run off to flow overland to properties at Hawthorn Terrace and beyond.
- 2.4 The flood risk to properties can be mitigated through further flood alleviation works in the field immediately upstream of Hawthorn Terrace. The works comprise land profiling, provision of a defensive bund to protect property and the installation of a "cattle grid" type gully which to drain the impounded area. The properties at risk and key site features are shown on Figure 1. Whilst the key benefit of the proposed scheme will be a significant reduction in the risk of flooding from 1 in 10 years to 1 in 100 years for the 10 residential properties at Hawthorn Terrace other properties will also benefit from Phase 2, in particular the commercial properties adjacent to Hawthorn Terrace including the Royal Mail sorting office.

2.5 At a late stage in the preparation for Phase 2 we became aware of an opportunity to apply for a contribution from Highways England (HE). They have a budget to carry out work to reduce flood risk where it has an impact on their strategic network. The A63 provides a key diversion route for planned and unplanned motorway closures. Closure of the A63 at the roundabout junction with the A642 has occurred on several occasions and this can also cause congestion on the motorway exit slip roads. Following discussions with HE they have approved in principle a contribution of £158k to increase the scale and extent of our proposals in order to deliver further benefits for the management of flood risk on the A63 subject to the formal signing of a grant agreement. These additional works to reduce flood risk on the A63 will be referred to as Phase 3 in order to help define/separate the costs associated with the HE grant funded elements.

3. Main issues

- 3.1 Phase 1; The scheme carried out in 2016 (now referred to as Phase 1) was intended to reduce flood risk from a 1 in 10 to a 1 in 100 year return period and involved the construction of two culvert headwalls, land profiling and provision of a gravel filter drain. Up to 31st March 2019 £56.5k of the Local Levy grant has been spent from the initial grant of £80k. The gravel filter drain provided some flood alleviation but this has been shown to be less effective than expected and was overwhelmed by the run off from the field to the North West during the heavy rainfall in March 2016. Phase 1 also included a realignment of watercourse 2 shown in figure 1. Unfortunately the associated ground profiling failed to direct all of the overland flows from the south fields into the new channel.
- 3.2 Phase 2; The proposed flood alleviation scheme in Phase 2 will be designed to achieve a 1 in 100 year level of protection. It will be undertaken mainly on the field adjacent to 10 Hawthorn Terrace and is shown in figure 2. These residential properties have been identified as being at very significant risk of flooding (at risk up to the 1 in 10 year return period). The works to protect these properties include formation of a defensive bund, alteration of a watercourse to intercept overland flow from the south field and construction of a cattle grid/gulley combination to provide drainage to the area behind the bund. Whilst the main aim of the Phase 2 scheme is to provide protection to the residential properties it will also provide additional benefits for other property and infrastructure including the A63. The grant from HE will therefore be used to partly fund Phase 2 of the work to reflect the benefit this work will have for reducing the flood risk on the A63. The estimated cost of Phase 2 is £62k.
- 3.3 Phase 3; The design work for Phase 3 is currently in progress and involves proposals for the installation of a bund across the watercourse that runs parallel with the A63 to increase the capacity of a naturally occurring storage area above an existing culvert headwall. It will also include repairs to the culverted section of that watercourse. This phase of the work will provide additional flood risk management benefits to the A63. The estimated cost of Phase 3 is £158k.
- 3.4 A full planning application is not required for the works but the connection to the highway drain may require a street works permit.
- 3.5 Officers have met with the landowner's representative (the registered title holder is deceased) and provisional approval has been given for the works to be undertaken (see item 4.1 below).

- 3.6 There are no buried or overhead utility services known to conflict with the proposed works, however the contractor will carry out pre commencement precautionary checks as a matter of routine. A preparatory ecological survey will be undertaken.
- 3.7 The ground conditions on site are typically topsoil and “made ground” overlying mudstone, sandstone and siltstone bedrock and are expected to be suitable for the proposed construction works. However, further investigations will be undertaken as required and advised by LCC Geotechnical Team.
- 3.8 It is intended to undertake the site works in the 2019/20 financial year using the £23.5k balance remaining from the RFCC Local Levy, a grant of £158k from Highways England and the balance of £38.5k from LCC capital programme.
- 3.9 It is proposed to carry out Phase 2 and Phase 3 as one work package if the design and agreement are completed in time and the work is provisionally programmed for completion during the current financial year.

4. Corporate considerations

4.1 Consultation and engagement

- 4.1.1 Consultation was undertaken with Ward members and residents during Phase 1 and they supported the implementation of a flood alleviation scheme.
- 4.1.2 The Environment Agency have been notified and are supportive of the proposed works. Local residents and Ward Councillors will be notified nearer to the commencement date.
- 4.1.3 Owing to possible sensitivities relating to the first phase only being partially successful, it is proposed that consultation with residents and owner/occupiers of the commercial premises should take place when the necessary approvals and funding arrangements have been confirmed. Project updates will be distributed as required to relevant stakeholders as the scheme progresses.
- 4.1.4 Negotiations with affected landowners on compensation will be undertaken in conjunction with LCC’s property team. The main land owner’s representative has already been contacted and a meeting on site has taken place to provide advance notification.
- 4.1.5 It is intended to utilise the Council’s powers under S64 of the Land Drainage Act to enter onto the land to carry out these works, compensation will then be paid on the actual damages arising from the impact of the works.
- 4.1.6 The proposed scheme was included in the updated Local Flood Risk Management Strategy approved by full Council in February this year.

4.2 Equality and diversity / cohesion and integration

- 4.2.1 An EDCI screening has been completed and is attached as Appendix B. This indicated that an Equality Impact Assessment is not required for what is being proposed.

- 4.2.2 It should be noted that by carrying out these works the Council will be ensuring the safety of the local community and in particular more vulnerable residents such as those who are elderly or have a disability and may struggle to get to safety if flooding occurred.

4.3 Council policies and the Best Council Plan

- 4.3.1 This scheme is in accordance with the Councils Local Flood Risk Management Strategy and is contained as one of the highest priority schemes within the measures to be taken.

4.3.2

Climate Emergency

The scheme will mitigate against the effects of climate change by attenuating excess run off from overland sheet flows and from out of channel flows during severe rainfall events. The work will incorporate measures to re-use existing naturally occurring materials as far as possible and thus minimise the need for imported materials.

- 4.3.3 The proposed scheme will have positive implications for “safe and strong communities” and “health and well being” because it will reduce the risk of flooding for residents of Hawthorn Terrace and for employees and users of commercial premises nearby.
- 4.3.4 The proposed scheme will have positive implications for “inclusive growth” because it will reduce the risk of flooding of commercial premises and the A63 thus enabling access to the highway network to transport goods and travel to places of employment.

4.4 Resources, procurement and value for money

- 4.4.1 The total estimated cost of Phase 2 and Phase 3 of the scheme is £220k. This comprises £165k for the works, £10k for direct staff costs, £35k for design and ground investigation costs and £10k for landowner compensation (this includes for compensation still outstanding from Phase 1). This scheme will help protect 10 residential properties that, if flooded, would avoid potential damages costs to owners typically in the region of £250k at £25k per property. It also reduces the risk of flooding of commercial property including the Royal Mail Sorting Office.
- 4.4.2 Phases 2 and 3 of the scheme will be funded by the balance of £23.5k remaining of the Local Levy grant, the Highways England grant of £158k and the balance of £38.5k from LCC capital programme FRM Minor Works Scheme budget. A condition of the grant agreement with Highways England is that the grant is payable in arrears of the costs being incurred. Refer to “Risks” in 4.8 for a summary of the grant conditions pertinent to potential LCC capital finding liabilities.
- 4.4.3 The proposed flood alleviation works will be the responsibility of LCC and will need to be maintained over the anticipated 75 year design life. Post construction there will be a requirement for routine maintenance involving grass cutting, debris and silt clearance and minor repair works. It is estimated that these costs will be up to £500 per annum over the design life of the scheme; this equates to a Present Value (PV)

4.5 Legal implications, access to information, and call-in

4.5.4 The proposed works will mitigate the flood risk at Hawthorn Terrace, this is listed as a high priority scheme in the Local Flood Risk Management Strategy approved by full Council, and the content of the report is not therefore subject to Call In.

4.6 Risk management

4.6.1 There is the usual risk of potential overspend due to encountering unforeseen conditions during the construction works. However this risk has been mitigated substantially through the design and survey works.

4.6.2 Highways England grant is capped to £158k, any expenditure above this cap is a LCC risk and any shortfall in budget will need to be found from LCC capital funds.

4.6.3 The grant period is time limited to 31st March 2020. The work will need to be completed and claimed by that date otherwise all of the related costs incurred in Phases 2 and 3 will need to be met by LCC and found from the LCC capital funds.

5 Conclusions

5.1 The benefits of the scheme will be a significant reduction in flood risk to at least 10 residential properties at Hawthorn Terrace, the Royal Mail sorting centre, various commercial premises and with potential reciprocal benefits to the highway through the improved management of surface water reaching Lin Dyke at the A63 Old George roundabout. The reduction of flood risk on the highway provides further benefits with the grant from Highways England.

5.2 Environment Agency Grant in Aid funding and a contribution from the FRM Minor Works capital budget provides an opportunity to proceed and implement the works

6 Recommendations

6.1 The Chief Officer (Highways and Transportation) is requested to:

- i) approve the implementation of Phase 2 works at Hawthorn Terrace, Garforth, as shown on the site layout drawing in Appendix A,
- ii) give authority to the Flood Risk Manager to enter into an agreement with Highways England to receive their grant of up to £158k and also inject this grant into the capital programme,
- iii) subject to i) and ii) above, authorise the expenditure of £220k to carry out Phases 2 and 3 of the flood alleviation works funded from the balance remaining from RFCC Local Levy grant; £23.5k, the Highways England grant of £158k (subject to the conditions set out in the agreement) and the balance from LCC capital programme FRM Minor Works Schemes budget; £38.5k
- iv) authorise entry onto land and to undertake these works using powers conferred onto Leeds City Council by Sections 14, 14A, 15 & 64 of the Land Drainage Act 1991 (amended by the Flood and Water Management Act 2010).

v) **Background documents¹**

- a. Appendix A – General Arrangement of Works
- b. Appendix B – Equality Impact Assessment

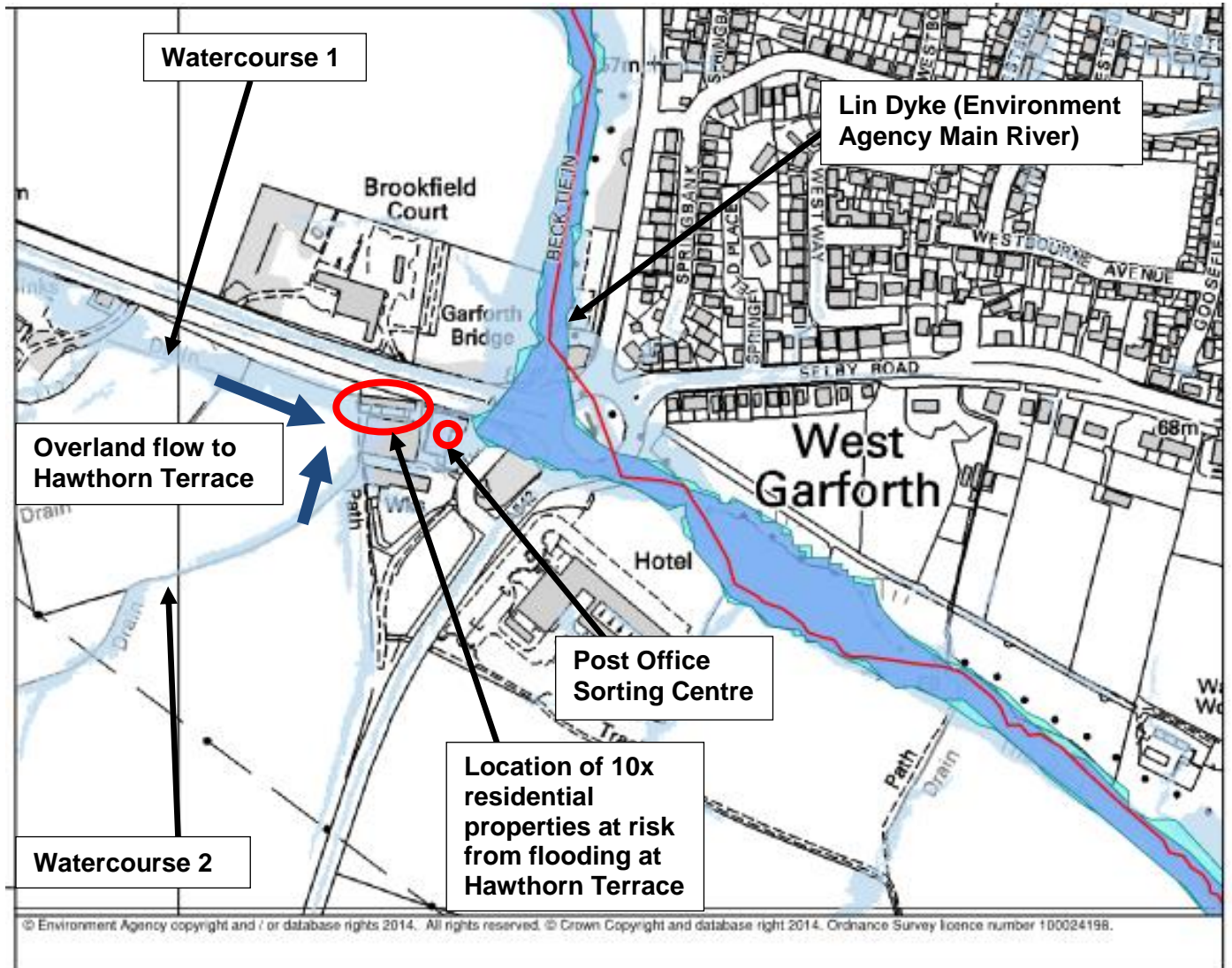


Figure 1 – Properties at risk and key site features

¹ The background documents listed in this section are available to download from the council's website, unless they contain confidential or exempt information. The list of background documents does not include published works.

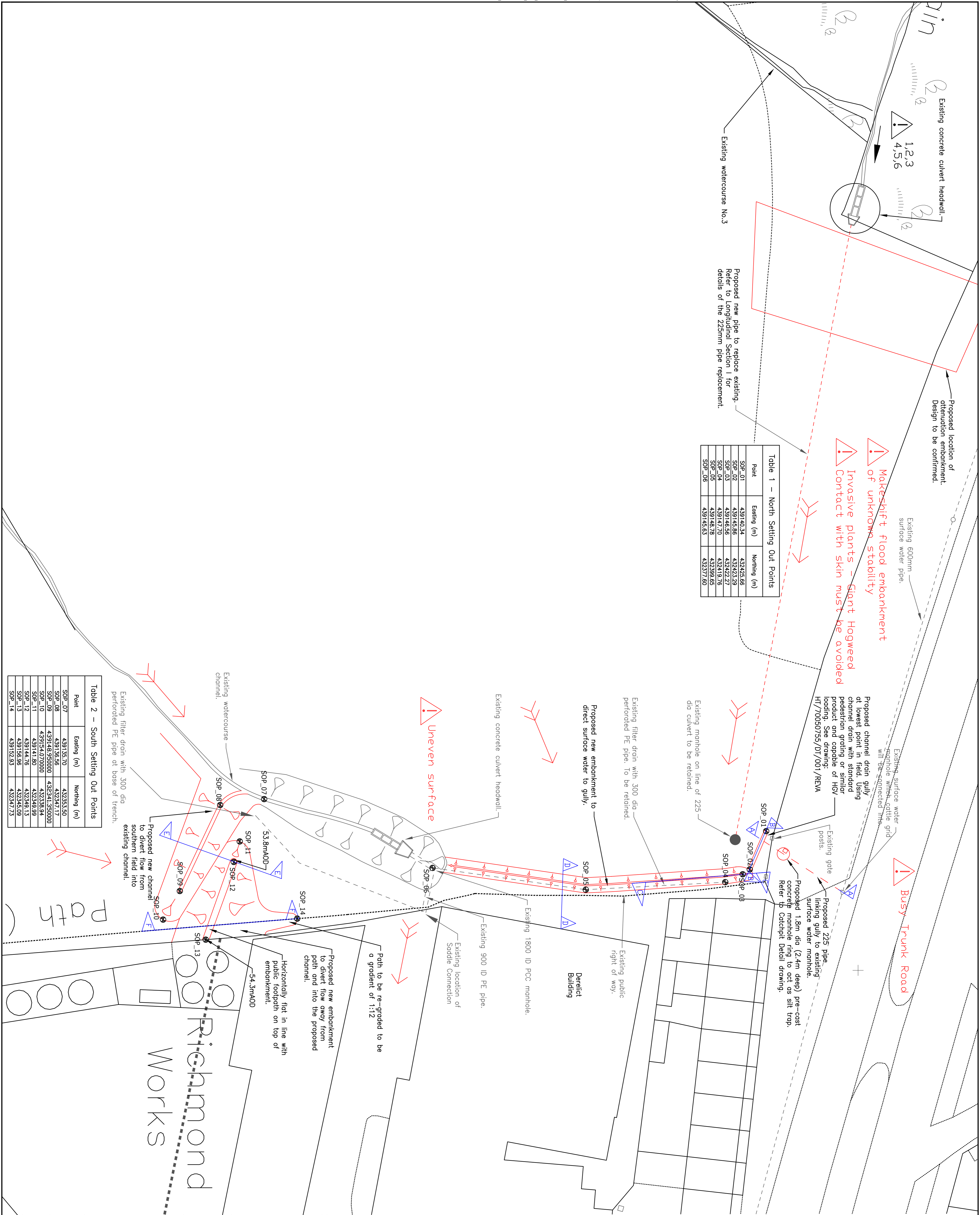


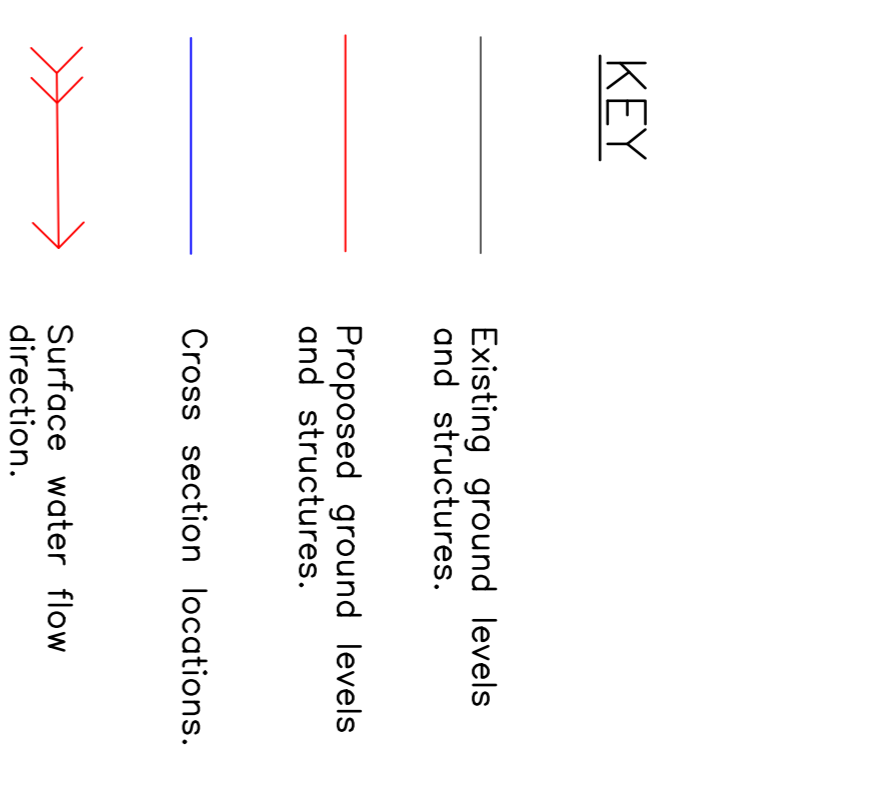
Table 1 - North Setting Out Points

Point	Easting (m)	Northing (m)
SOP_01	439140.34	432425.66
SOP_02	439145.86	432423.29
SOP_03	439146.56	432422.27
SOP_04	439147.70	432419.76
SOP_05	439146.78	432399.65
SOP_06	439145.63	432377.60

Table 2 - South Setting Out Points

Point	Easting (m)	Northing (m)
SOP_07	439135.70	432353.50
SOP_08	439136.56	432347.17
SOP_09	439148.950000	432341.350000
SOP_10	439154.070000	432338.94
SOP_11	439141.80	432349.99
SOP_12	439144.76	432349.13
SOP_13	439156.96	432345.09
SOP_14	439152.93	432347.73

- NOTES**
1. All dimensions are in millimeters unless otherwise stated.
 2. All levels are in meters above ordnance datum.
 3. Do not scale from this drawing.
 4. New embankments shall be cohesive material with min permeability of 10⁻⁸ m/s and compacted to a CBR of 3% or greater.



SAFETY HEALTH AND ENVIRONMENTAL INFORMATION

IN ADDITION TO THE HAZARDS/RISKS NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING, NOTE THE FOLLOWING SIGNIFICANT RESIDUAL RISKS:-

CONSTRUCTION

- ▲ 1 - WORKING IN CLOSE PROXIMITY TO PUBLIC & LANDOWNERS
- ▲ 2 - UNDERGROUND (BURIED) SERVICES
- ▲ 3 - HAZARDOUS AND INVASIVE PLANT SPECIES REQUIRING CONTROL AND/OR REMOVAL
- ▲ 4 - POSSIBLE CONTAMINATED LAND
- ▲ 5 - SITE AT RISK OF FLOODING
- ▲ 6 - SITE AT RISK OF FLOODING

MAINTENANCE/CLEANING/OPERATION

- WORKING IN CLOSE PROXIMITY TO PUBLIC & LANDOWNERS
- UNDERGROUND (BURIED) SERVICES
- HAZARDOUS AND INVASIVE PLANT SPECIES REQUIRING CONTROL AND/OR REMOVAL
- POSSIBLE CONTAMINATED LAND
- WORKING IN WATERCOURSES
- SITE AT RISK OF FLOODING

DECOMMISSIONING/DEMOLITION

- WORKING IN CLOSE PROXIMITY TO PUBLIC & LANDOWNERS
- UNDERGROUND (BURIED) SERVICES
- HAZARDOUS AND INVASIVE PLANT SPECIES REQUIRING CONTROL AND/OR REMOVAL
- POSSIBLE CONTAMINATED LAND
- WORKING IN WATERCOURSES
- SITE AT RISK OF FLOODING

D1 - FOR COSTING

DRAWING STATUS

CLIENT: LEEDS CITY COUNCIL

PROJECT: HAWTHORN TERRACE

THREE WHITE ROSE OFFICE PARK, MILLSHAW PARK LANE, LEEDS, LS11 0DL, UK
T+44 (0) 113 386 6200, F+44 (0) 113 395 6201
www.wsp.com

wsp

SCALE	CHECKED	APPROVED
4:1	TJ	

PROJECT NO	DESIGNED	DRAWN	DATE
	BB	BB	June 19

DRAWING NO	REV
Z000756.WSP-01-XXX-09-DE-001_011	P01

© WSP UK Ltd

Appendix B

Equality, Diversity, Cohesion and Integration Screening

As a public authority we need to ensure that all our strategies, policies, service and functions, both current and proposed have given proper consideration to equality, diversity, cohesion and integration.

A **screening** process can help judge relevance and provides a record of both the **process** and **decision**. Screening should be a short, sharp exercise that determines relevance for all new and revised strategies, policies, services and functions. Completed at the earliest opportunity it will help to determine:

- the relevance of proposals and decisions to equality, diversity, cohesion and integration.
- whether or not equality, diversity, cohesion and integration is being/has already been considered, and
- whether or not it is necessary to carry out an impact assessment.

Directorate: City Development	Service area: Flood Risk Management
Lead person: David Parish	Contact number: 0113 535 1904

1. Title: Hawthorn Terrace Flood Alleviation Scheme, Garforth
Is this a:
<input type="checkbox"/> Strategy / Policy <input checked="" type="checkbox"/> Service / Function <input type="checkbox"/> Other
If other, please specify

2. Please provide a brief description of what you are screening
This EIA screening assessment is for the proposed flood alleviation works at Hawthorn Terrace in Garforth. The works involve the construction of Flood Alleviation infrastructure which will reduce the risk of flooding to residential properties at Hawthorn Terrace in Garforth.

The works comprise small scale landscaping to support the temporary storage of surface water during high intensity rainfall. The works also include associated headwall structures and piped culverts in conjunction with the earthworks.

3. Relevance to equality, diversity, cohesion and integration

All the council's strategies/policies, services/functions affect service users, employees or the wider community – city wide or more local. These will also have a greater/lesser relevance to equality, diversity, cohesion and integration.

The following questions will help you to identify how relevant your proposals are.

When considering these questions think about age, carers, disability, gender reassignment, race, religion or belief, sex, sexual orientation and any other relevant characteristics (for example socio-economic status, social class, income, unemployment, residential location or family background and education or skills levels).

Questions	Yes	No
Is there an existing or likely differential impact for the different equality characteristics?		x
Have there been or likely to be any public concerns about the policy or proposal?		x
Could the proposal affect how our services, commissioning or procurement activities are organised, provided, located and by whom?		x
Could the proposal affect our workforce or employment practices?		x
Does the proposal involve or will it have an impact on <ul style="list-style-type: none"> • Eliminating unlawful discrimination, victimisation and harassment • Advancing equality of opportunity • Fostering good relations 		x

If you have answered **no** to the questions above please complete **sections 6 and 7**

If you have answered **yes** to any of the above and;

- Believe you have already considered the impact on equality, diversity, cohesion and integration within your proposal please go to **section 4**.
- Are not already considering the impact on equality, diversity, cohesion and integration within your proposal please go to **section 5**.

4. Considering the impact on equality, diversity, cohesion and integration

If you can demonstrate you have considered how your proposals impact on equality, diversity, cohesion and integration you have carried out an impact assessment.

Please provide specific details for all three areas below (use the prompts for guidance).

- **How have you considered equality, diversity, cohesion and integration?**

(**think about** the scope of the proposal, who is likely to be affected, equality related information, gaps in information and plans to address, consultation and engagement activities (taken place or planned) with those likely to be affected)

- **Key findings**

(**think about** any potential positive and negative impact on different equality characteristics, potential to promote strong and positive relationships between groups, potential to bring groups/communities into increased contact with each other, perception that the proposal could benefit one group at the expense of another)

- **Actions**

(**think about** how you will promote positive impact and remove/ reduce negative impact)

5. If you are **not** already considering the impact on equality, diversity, cohesion and integration you **will need to carry out an impact assessment**.

Date to scope and plan your impact assessment:	
Date to complete your impact assessment	
Lead person for your impact assessment (Include name and job title)	

6. Governance, ownership and approval

Please state here who has approved the actions and outcomes of the screening

Name	Job title	Date
David Parish	Principal FRM Officer	31/05/2019

7. Publishing

This screening document will act as evidence that due regard to equality and diversity has been given. If you are not carrying out an independent impact assessment the screening document will need to be published.

Please send a copy to the Equality Team for publishing

Date screening completed	31/05/2019
If relates to a Key Decision send to Corporate Governance	
Any other decision please send to Equality Team (equalityteam@leeds.gov.uk)	