

Strategic Flood Risk Assessment Technical Specification

Strategic Flood Risk Assessment Level 1

Castle Point Borough Council is seeking to appoint specialist consultants to undertake a Strategic Flood Risk Assessment (SFRA) for Castle Point, updating the information and assessment for the borough set out in the South Essex Level 1 Strategic Flood Risk Assessment (April 2018).

This work should be undertaken in accordance with national guidance set out in 'How to prepare a strategic flood risk assessment' and the ADEPT/EA Strategic Flood Risk Assessment Good Practice Guide, as well as any local requirements identified in this specification.

The SFRA will be used to inform the Castle Point Plan, the new local plan currently being prepared for Castle Point Borough. It will also be used to inform planning for flood risk infrastructure in Castle Point.

Castle Point is an area which experiences flood risk from a variety of sources. Being located adjacent to the Thames Estuary, Canvey Island and parts of South Benfleet are at risk of tidal flooding. Canvey is heavily defended from tidal flooding by substantial sea defences. However, these act as a barrier to the discharge of surface water, which must be pumped. Many outlets are tide locked at high tide. South Benfleet meanwhile is at the bottom of a hill and consequently there are areas of surface water pooling and flow paths that present a risk in this area also.

In the northern part of the borough, again the topography creates surface water pooling and flow path challenges which have resulted in homes being inundated during heavy rainfall events in recent years. There is also the Prittle Brook which is a stream with its source in Thundersley which flows into Southend Borough before entering into the River Crouch. This is a local source of flood risk in Thundersley and Hadleigh.

It is expected that the SFRA will assess the risk posed by all sources of flooding, and as necessary consider the cumulative impacts of flooding from different sources.

There is not a need to start from scratch in terms of modelling for the SFRA. It is expected that the assessment will update and make use of as far as is possible, reflecting on updates needed, existing tidal flood model and breach modelling developed to inform SFRA work in South Essex. These should be updated as appropriate to reflect current guidance and data available. Regarding surface water meanwhile, there is an existing surface water model for South Essex available from Essex County Council. Additionally, there is an Integrated Urban Drainage Model for Canvey Island specifically which should be used in the assessment for that area of the borough, which is also available for the assessment. In relation to fluvial flood risk

there is a model of the Prittle Brook available dated 2017, and a separate model of the South Benfleet Sewer dated 2015.

It is expected that as far as possible existing models are updated and used to provide an updated SFRA for Castle Point which:

- a) Reflects updates to the National Planning Policy Framework and national Planning Practice Guidance since 2018;
- b) Reflects the DEFRA Flood and Coastal Erosion Risk Management Policy Statement 2020 and the Environment Agency Flood and Coastal Erosion Risk Management Strategy 2020;
- c) Reflects the Anglian and Thames Flood Risk Management Plans last updated in 2021;
- d) Reflects the most up to date advice from the Environment Agency with regard to the sea level climate change allowances that should be applied for projections of flood risk in future years;
- e) Reflect updated Breach Modelling Guidance issued by the Environment Agency in 2021;
- f) Takes into account the TE2100 Extreme Estuary Water Level Modelling and the update to the TE2100 Plan published in November 2022;
- g) Takes account of and assesses the implications of the Canvey Island southern shoreline revetment works for tidal flood risk;
- h) Reflects the latest Essex Local Flood Risk Management Strategy;
- i) Reflects the most up to date advice from the Environment Agency on the climate change allowances that are applied to peak flows in rivers and peak rainfall;
- j) Takes account of works that have been undertaken to deliver the six point plan for Canvey Island, and the ongoing need for those interventions not yet delivered;
- k) Takes account of other surface water or drainage improvements that have been delivered since 2018;
- l) Takes account of the Anglian Water Drainage and Waste Water Management Plan and assesses its implications for Castle Point;
- m) Takes into account the findings and recommendations of Flood & Water Management Act Section 19 Reports prepared since 2018;
- n) Undertake an assessment of the cumulative impact of flooding from surface water at high tide on Canvey Island;
- o) Identifies and assesses other cumulative flood risk scenarios as appropriate, following discussion and agreement with the Council and relevant stakeholder organisations;
- p) Undertakes scenario testing around urban greening to determine the potential for greater levels of green infrastructure to mitigate flood risk in Castle Point;
- q) Make recommendations in respect of flood risk management interventions that could be delivered in Castle Point to mitigate flood risk, providing high level indicative costs, identifying risks, roles and responsibility in respect of delivery, and potential timescales; and

- r) Provide advice and a model for securing developer contributions for those interventions which do not fall to the private sector for delivery.

Within the proposal for this work appropriate allowances should be made for data processing to access the existing models and data need for the level 1 SFRA.

To ensure that the work is robust and meets the expectations of all relevant stakeholder organisations, the Council expects the appointed consultants to undertake engagement with the Environment Agency, the Lead Local Flood Authority and Anglian Water during the preparation of the assessment, and to seek their sign off for any modelling assumptions prior to work being undertaken.

Broader engagement with blue light responders, the emergency planning team and those involved in local flood resilience should also be engaged as part of the process, consistent with the requirements of national guidance on this matter.

In terms of outputs, it is expected that this work will give rise to the following outputs:

- 1) Updates to the models, which are to be provided to the Council in a format compatible with QGIS;
- 2) Updated model outputs for depth, time to inundation and hazard mapping for each source of flooding, for each scenario tested, and in relation to tidal flood risk, for each breach location are to be provided to the Council in ESRI Shape File format;
- 3) A technical report which is to be provided to the Council in MS Word and PDF format. This should include depth, time to inundation and hazard mapping for each source of flooding, for each scenario tested, and in relation to tidal flood risk, for each breach location;
- 4) A note, which details the engagement undertaken with the relevant stakeholder organisations and evidences their input and for the main stakeholders, their approval of assumptions used during the modelling process.
- 5) A separate MS Excel Schedule detailing the recommended flood risk management interventions to enable this to be integrated with ease into wider infrastructure planning work; and
- 6) A visually interesting and informative, short non-technical summary capable of being read and digested by residents and other non-expert stakeholders.
- 7) An online storyboard that enables residents and other non-expert stakeholders to explore the maps with ease. This should be accompanied by a simple user guide.

In terms of timescales, the Council seeks for this work to be completed in Quarter 1 of 2024 i.e. January to March 2024.

Please scope an option for a presentation to Members on the outcomes of the work.

Strategic Flood Risk Assessment Level 2

Due to the extent of flood risk from various sources in Castle Point, it is most likely that an SFRA Level 2 will be required to assist in the identification of sites and to enable the sequential test to be applied.

The level 2 SFRA should be prepared in accordance with the national guidance on the preparation of Strategic Flood Risk Assessments and the ADEPT/EA Strategic Flood Risk Assessment Good Practice Guide. Additionally, it should also:

- a) Make recommendations as to how urban greening should be used to reduce and mitigate any flood risk arising on potential development sites;
- b) Make recommendations as to other mitigation measures that may be appropriate and necessary to ensure that developments remain safe in the event of a flood;
- c) Identify the scale to which the developments would benefit from flood risk management interventions identified in the Level 1 SFRA, and the level of contribution that should be secured from development towards them.

At this time, it is not possible to specify the number of sites that will be subject to the Level 2 SFRA. It should be assumed that there is the potential for around 20 major sites to be included within this assessment, along with a sample of 15 smaller sites which represent the windfall likely to arise across the different parts of the borough.

It is anticipated that this work will be required in September 2024, and the Council will provide a definitive list of sites at that time for assessment.

The required outputs of this work are:

- 1) A short technical note that sets out the methodology
- 2) Visually informative 2-to-4-page assessments for each site showing the relevant maps, the assessment outcomes, and the appropriate recommendations around urban greening, mitigation and infrastructure funding.
- 3) A GIS Overlay in ESRI Shape File format which details the assessment of each site.
- 4) An update to the online storyboard with this additional level of information.

In terms of timescales, Council seeks for this work to be completed by the end of November 2024.

Please scope an option for a presentation to Members on the outcomes of this work.

Examination

It is expected that the work undertaken at Level 1 and Level 2 will be sufficiently robustness to withstand examination in public. The Council seeks for the supplier to provide suitably qualified individuals to undertake the work and to then represent the Council regarding the SFRA and its findings at the examination in public for the Castle Point Plan.

It is anticipated that the examination will take place in later in 2025, and the supplier is asked at this time to provide day rates to enable them to be appointed without additional procurement at that time.