

POLICY AND RESOURCES COMMITTEE

26 APRIL 2017

Is the final decision on the recommendations in this report to be made at this meeting?

Yes

RIVERS MEDWAY, TEISE AND BEULT FLOOD ALLEVIATION

Final Decision-Maker	Policy & Resources Committee
Lead Director	Director of Finance & Business Improvement
Lead Officer and Report Author	Property & Procurement Manager
Classification	Public
Wards affected	High Street, Coxheath & Hunton, Headcorn, Marden & Yalding, Staplehurst

This report makes the following recommendations to this Committee:

1. To note the contents and conclusions of the Arcadis report on Medway, Beult and Teise Flood Alleviation Options.
2. To continue to work with the Environment Agency, other organisations and the local community as part of the Medway Flood Partnership to develop and implement a range of flood alleviation measures in the Medway confluence area.
3. To note the progress of schemes relating to flood alleviation in Maidstone Town Centre.

This report relates to the following corporate priorities:

Improving flood resilience impacts upon the character of the borough and supports making the borough an attractive place for all.

Timetable

Meeting	Date
Policy & Resources Committee	26 April 2017

RIVERS MEDWAY, TEISE AND BEULT FLOOD ALLEVIATION

1. PURPOSE OF REPORT AND EXECUTIVE SUMMARY

- 1.1 This report updates the Committee on developments in relation to flood alleviation in the Medway confluence area and on the progress of schemes to alleviate flooding in Maidstone Town Centre.
 - 1.2 Following the Environment Agency's initial assessment of the options for the Medway confluence area, the Council has commissioned independent consultants to review the position and investigate further options. This work is now complete, and whilst it does not identify any single scheme that will provide a significant level of protection for all communities at risk, it supports the development of local initiatives. It is proposed now to work with the Environment Agency and other partners to develop and deliver these.
 - 1.3 In the Town Centre, the Maidstone Bridges Gyratory Scheme has provided the opportunity to implement flood protection schemes as described in this report.
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2. INTRODUCTION AND BACKGROUND

Medway Confluence

- 2.1 The Council has engaged with the Environment Agency (EA), Kent County Council (KCC), Tonbridge & Malling Borough Council (TMBC) and a number of affected parishes represented by the Joint Parishes Flood Group (JPFPG) to investigate and consider a range of options to protect communities at risk of flooding along the Rivers Medway, Beult and Teise (the Medway confluence area).
- 2.2 The EA's initial assessment in 2016 recommended proceeding with increasing the capacity of the Leigh Flood Storage Area to reduce flood risk to Tonbridge and to a lesser extent other communities downstream, but that construction of flood storage on the Rivers Beult and Teise was not viable, and that communities in the Medway confluence would be better served by more localised flood defences and property and community level resilience improvements which can be targeted to the properties at greater risk.
- 2.3 The Environment Agency's conclusions were not supported by members of the communities in the Medway confluence area: Tonbridge was seen as the main beneficiary from funding for the Leigh Flood Storage Area; they did not agree with the Environment Agency's conclusions about the Beult and Teise flood storage areas; ideas put forward by the local community had not been considered seriously; and there was scepticism about what property and community level resilience would mean in practice.

- 2.4 The Council appointed Arcadis, which is a highly reputable design, engineering and management consultancy company with an international practice around flood risk management, to:
- Review the EA's initial assessment
 - Investigate and assess a list of 52 suggestions for flood alleviation put forward by the JPF
 - Consider and review other options which may be viable.
- 2.5 Arcadis were given access to the EA's hydraulic model of the Medway, Beult and Teise catchments, which simulates 5,000 years of synthetic flood history based on data collected from river and rainfall gauges throughout the catchment area. They have liaised with the EA, the EA's consultants JBA, Southern Water, representatives of the local community and Maidstone Council and have conducted a site visit. Their work has included extensive modelling of potential options.
- 2.6 Arcadis' report runs to 124 pages and is highly technical in nature. Accordingly, it has not been attached to this report. However, in the interests of transparency it has been published on Maidstone Council's website.
- 2.7 Arcadis concluded that:
- The EA's assessment was correct in that flood storage schemes on the Beult and Teise were neither technically feasible nor economically viable.
 - Amongst the options proposed by the JPF, most were neither technically feasible nor economically viable, but there were some that would produce minor improvements in flood risk. However, even if taken together, they would still not produce a significant reduction in the number of properties being affected by flooding.
 - The only option modelled by Arcadis that provided a technically viable solution consisted of a combination of upstream embankments and walls in Yalding. Whilst the option is technically feasible and effective in reducing flood risk to a significant number of properties, there would also be a number of properties affected adversely by the proposals. The economic analysis of the proposal also found that the low benefit/cost ratio would only attract DEFRA funding of £750,161, leaving in excess of £13 million to be found by partners.
- 2.8 The 52 suggestions put forward by the local community covered a wide range of approaches to flood alleviation. They were each considered by Arcadis and described in their report together with an assessment of each one.
- 2.9 The suggestions can be categorised as:

- Large scale capital schemes including a submerged pipeline between the Beult and Allington,
- Natural flood management, such as afforestation of upland areas,
- Maintenance, for example, improved dredging and de-silting,
- Downstream conveyance, such as operating the sluices downstream to reduce water levels; and
- Community actions, such as river monitoring wardens.

2.10 While it did not identify a single scheme that would provide a significant level of protection for all communities at risk, the Arcadis report has been able to verify the EA's findings and has provided an independent assessment of suggestions put forward by the local community. It supports the development of more localised flood defence schemes, including environmentally-friendly flood alleviation measures. This is consistent with the EA's proposed approach of property and community level resilience schemes in combination with localised flood defences.

Next Steps

2.11 In order to make progress, the EA has put in place two overarching groups. These are the Medway Flood Partnership Strategy Group and the Medway Flood Partnership Practitioners Group. Both comprise representatives from the EA, from the five local authorities with a significant geography within the Medway catchment, from other relevant government agencies including Natural England and the Forestry Commission, from other risk management authorities including the Internal Drainage Boards, KCC and Southern Water, from non-governmental organisations including the South East Rivers Trust, from the National Farmers Union and from local communities including Kent Association of Local Councils and JPPG.

2.12 The objectives of the groups are:

- Develop a shared understanding of the strategic challenges and opportunities within the catchment and the need for collaboration to address them.
- Develop a shared action plan for the next 5-10 years, and a 25 year vision for the future. The plan will focus on working in partnership and implementing actions that will address the key flood risk management issues in the catchment.
- Improve communications and engagement by adopting a joined up approach to engagement with communities, government and MPs.
- The strategy group will provide high level direction and broker strategic solutions to problems identified by the Practitioners Group.

- The Practitioners Group will provide a strategic overview of activity across the catchment, identifying inter-relationships and ensuring coordination between the various projects.
- The groups will share plans and programmes to inform investment decisions and identify opportunities to deliver work in collaboration.

2.13 The Practitioners Group will cover three themes:

- Capital Investment and Maintenance – which includes property level resilience and relates to measures that are taken to individual or small groups of properties to reduce the risk of water entry from river flooding.
- Natural Flood Management – which includes the alteration, restoration or use of landscape features to reduce flood risk such as flood doors and air brick covers.
- Community Resilience – includes localised walls and embankments and measures that help to mitigate the effects of flooding to enable the community to function better during and after a flood. These include adapting power and water supplies and foul and surface water drainage systems to withstand flooding and implementing road closures to prevent flooding through road wash.

2.14 It is envisaged that work in the Medway Confluence area will be delivered in two phases.

2.15 Phase 1 - Property level resilience. The EA will begin by surveying the estimated 326 properties at greatest risk to assess their suitability for measures such as flood doors and airbrick covers. These measures will be fully funded through government grants, up to £7,500 per property. It is envisaged that the survey work will take place during Summer 2017.

2.16 Phase 2 - The EA's surveys will identify where property level measures are unsuitable, for example, by virtue of flood depth or type of construction, or where flood protection can be delivered more cost-effectively through localised flood defences (ie with a scope broader than that of individual properties). Such work would be likely to include low embankments / walls around groups of properties and natural flood defence measures. There remains work to do to develop localised flood defence schemes as part of phase 2.

2.17 It is anticipated that Phase 2 will be delivered on a partnership basis. KCC has offered up to £1.5 million and the Council has committed £1 million of funding as part of its five year capital programme, agreed on 1st March 2017. DEFRA offers grant in aid for partnership funding of Flood and Coastal Erosion Risk Management and we would be looking for the government to top this up by matching local partners' contributions.

2.18 It is recommended that Maidstone Council engages actively with this work, working closely with local communities and helping to ensure that their views are represented as part of the partnership.

Town Centre

- 2.19 Work relating to the Maidstone Bridges Gyratory scheme has included measures to reduce the flood risk in the Town Centre, the need for which was highlighted by the floods of Christmas/New Year 2013/14.
- 2.20 Modelling work undertaken by the Environment Agency indicated that the flooding of properties at the Lower High Street in 2013/14 was as a result of flow through the subways. As a consequence the two subways either side of the High Street have been blocked up and filled with foam concrete to remove this risk and the area re-designed to enhance the public realm. The cost for this work was £119,000.
- 2.21 In a similar fashion, the Medway Street subway also acts as a conduit for flood water to reach the lower High Street area. Members were keen to retain access to the river side through this subway and therefore a flood door was identified as a solution which would allow access to the river during normal conditions, but could be closed during periods of flood. However, as the design was developed, this option proved too costly due to its impact on the structural integrity of the subway itself. An alternative solution has been identified which is more cost effective. In September this year, glass flood barriers are scheduled to be fitted to the existing pedestrian barrier opposite Drakes, with additional returns constructed to contain flood water. This will protect the immediate vicinity against a 75 year flood event, when used in conjunction with demountable barriers at the entrance of Old Fairmeadow with Medway Street. The cost of this work will be £126,640.
- 2.22 Locations of the subways are shown on the attached Appendix A.
- 2.23 The above schemes are being funded through the Maidstone Bridges Gyratory Scheme budget including £1.14m of Maidstone New Homes Bonus contribution and £4.6m of LGF funding.
- 2.24 However, the area requires further protection. The River Medway floods over the A229 carriageway opposite the end of Earl Street under a 75 year flood event, as well as opposite St Faith's Street. Once this floodwater fills up the A229 outside the Fremlin Walk car park, it then flows south towards the lower end of Earl Street and Medway Street. Initial discussions with the EA have indicated that a glass barrier mechanism mounted to the existing walling and spanning a 300m stretch of Fairmeadow may resolve this. Alternatively a series of demountable defences could be deployed at key points. A comprehensive assessment of the condition of existing outfalls is also required to confirm that they do not provide an additional flow route.
- 2.25 The next step will be to appoint a suitably qualified Consultant to investigate the options and undertake the necessary surveys. As there is no residual budget from the Maidstone Bridges Gyratory scheme that can be used to finance the cost of this additional work, it will be necessary to identify, in due course, further funding from the capital programme and to seek contributions from the EA and KCC .

3. AVAILABLE OPTIONS

Medway Confluence

- 3.1 **Option 1:** To continue to work with the EA and other partners as part of the Medway Flood Group to develop property and community level resilience in the Medway, Beult and Teise confluence area, and use the Council's budget of £1 million, in conjunction with funding from KCC and EA, to implement viable projects for localised flood defences where property level resilience is not suitable.
- 3.2 **Option 2:** To continue as Option 1 but increase the level of funding to £13 million to develop and implement the construction of upstream embankments and walls in Yalding. The estimated cost of £13 million excludes potential property purchase and landowner compensation needed to implement the scheme.

Town Centre

- 3.3 **Option 1:** To continue to work with the EA and KCC to develop a viable option to supplement the schemes being funded under the Bridges Gyrotory scheme.
- 3.4 **Option 2:** To do nothing, other than complete the planned glass barriers adjacent to the subway.
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4. PREFERRED OPTION AND REASONS FOR RECOMMENDATIONS

Medway Confluence

- 4.1 The preferred option is Option 1 as this is the most likely option to deliver increased flood resilience to those at highest risk and is affordable in the context of the Council's medium term financial strategy.

Town Centre

- 4.2 The preferred option is Option 1 as this will increase the level of flood protection along Fairmeadow to withstand up to a 1 in 75 year flood event.
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5. CONSULTATION RESULTS AND PREVIOUS COMMITTEE FEEDBACK

- 5.1 The Council has not undertaken any specific consultation. However, it has maintained regular contact with representatives of the local community, including the JPPG. Council representatives attended the EA's consultation events in October/November 2016 where the EA set out its proposals for developing property and community level resilience in preference to flood storage areas. There was disappointment within the local community that the EA would not be proceeding with flood storage areas and did not appear

to have explored all potential flood alleviation options. This has informed the brief for the work carried out by Arcadis described in this report.

6. NEXT STEPS: COMMUNICATION AND IMPLEMENTATION OF THE DECISION

- 6.1 The EA will undertake surveys of properties at the highest risk and submit a business case for approval to DEFRA, which if approved will permit detailed design and construction beginning in late 2017.
- 6.2 The Council will work with KCC and the local community to develop and implement localised flood defences in conjunction with the EA's proposals for property level resilience.

7. CROSS-CUTTING ISSUES AND IMPLICATIONS

Issue	Implications	Sign-off
Impact on Corporate Priorities	<p>The decision will impact upon the protection of the character of the borough as there will be implications for the villages and homes within the flood area.</p> <p>Resilience against flooding supports making the borough an attractive place for all.</p>	Director of Finance & Business Improvement
Risk Management	<p>Matching resources to priorities in the context of the significant pressure on the Council's resources is a major strategic risk</p> <p>It is essential that the Council works with other funding partners if schemes are to be delivered effectively.</p>	Director of Finance & Business Improvement
Financial	These are covered in the report.	Director of Finance & Business Improvement
Staffing	Staff resources will be required for ongoing liaison with partners until completion of the project.	Director of Finance & Business Improvement

Legal	There may be a requirement for a bi-partite funding agreement.	Legal Team
Equality Impact Needs Assessment	The proposed solution could be delivered flexibly, while adjustments are possible to ensure equality. In some cases the level of benefit is dependent upon the type of property and not the resident's circumstances	Director of Finance & Business Improvement
Environmental/Sustainable Development	The proposed solution contributes to sustainable communities.	Director of Finance & Business Improvement
Community Safety	The flooding risk has an impact on community safety. Part of the proposed solution is increased community resilience and reducing the risk to health and safety during incidences of flooding.	Director of Finance & Business Improvement
Human Rights Act	No specific impact	n/a
Procurement	No specific impact	n/a
Asset Management	No specific impact	n/a

8. REPORT APPENDICES

The following documents are to be published with this report and form part of the report:

None

9. BACKGROUND PAPERS

Arcadis report – Medway, Beult and Teise Additional Flood Alleviation Options – Initial Assessment, April 2017.