# APPENDIX B

**Proposed Natural Flood Management Schemes 2021-2**

**Medway Flood Action Plan – Maidstone Borough Council**

**Reducing the risk of harm from flooding & improving water resources in the River Beult catchment for people and wildlife**

| **Background** |
| --- |
| The Government's 25 Year Environment Plan (25YEP) highlights 'taking action to reduce the risk of harm from flooding, including greater use of natural flood solutions'. The Medway Flood Action Plan, published November 2017, identifies Natural Flood Management (NFM) as a key theme to manage or reduce the risk and impacts of flooding to benefit properties upstream of Allington Lock.<br><br>NFM is the alteration, restoration or use of landscape features to reduce flood risk to properties. There are a wide range of techniques used including small 'leaky dams', new hedgerows, river bank restoration, targeted tree planting and techniques to hold water temporarily on land to 'slow the flow', reduce and delay flood peaks and store more water away from homes. As well as helping to reduce flood risk, NFM techniques also provide wider social and environmental benefits by improving our environment and wildlife for people to enjoy.<br><br>The region is facing increasing challenges to its water resources. Population growth is increasing demand, while at the same time we are experiencing changes to weather patterns where summer droughts are becoming more common. This has serious long term consequences for domestic and agricultural supply as well as impacting on river ecology and wildlife, with knock on effects for human health and well-being.<br><br>Since 2018, the South East Rivers Trust (SERT) have been delivering a NFM project on the School (or Hogg) Stream, north of Headcorn with the aim of reducing the impacts of flooding in the village. This has been highly successful in engaging landowners to permit delivery of pilot projects on their land (see below). This work has been funded by EU Interreg FRAMES project, Environment Agency and Maidstone Borough Council.<br><br>SERT has also been working with landowners and fruit growers in the area on projects which aim to increase the water resource in aquifers and storage ponds in order to save winter rains to combat summer droughts. The proposal which follows aims to integrate these approaches in 2021-22 in order to cost-effectively combat flooding and water resource issues through innovative approaches to land management. This will provide a model which can be adopted by farmers across the Borough through the new Environmental Land Management Scheme (ELMS) to be phased in over the next seven years. The benefits of this are:<br><br>• Reduced flooding impact on homes and businesses through NFM;<br>• A more secure, clean water supply;<br>• An attractive, resilient landscape that supports sustainable agriculture, and flourishing wildlife;<br>• Improved river ecology with benefits for wildlife and recreational fishing. |

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The project will consist of three strands:

1. **Headcorn - School Stream NFM**
2. **A Climate Resilient River Beult Catchment for Water & Communities**
3. **Holistic Water Management around Polytunnel**

The projects identified here are proposed as matched investments during 2021 to March 2022 within the more rural parishes of Maidstone Borough Council. The aim is to reduce flood risk and improve water resources in the Beult catchment. The effects will be monitored to inform future investment, as part of a national programme of NFM projects across England. The NFM projects proposed complement the geography of the community resilience projects in Yalding and Collier Street, providing a balanced investment in flood risk reduction wand water resource across the Borough.

2021 – 2022 PROPOSED PROJECTS (UNDER £100K) £000's

| | MBC | Match | Total Cost |
|---|---|---|---|
| Maidstone NFM & Water Resources | 50 | 180 | 230 |

Match funding for the above project is provided from:

| | |
|---|---|
| Green Recovery Fund 2 (1) | £125,000 – applied for |
| PROWATER (2) | £25,000 – committed |
| Holistic Water for Horticulture (3) | £30,000 – committed |

(1) DEFRA have invested £300,000 over 4 years in this pilot project to implement and monitor a number of NFM projects in the Medway catchment. SERT are currently in discussions with the EA about the prospects of further funding. We have been invited to apply to a second round of the Green Recovery Fund for 2021-22 to implement further NFM in the Medway Catchment;
(2) PROWATER is SERT partnership project dedicated to improving water resources in the Beult catchment and funded by the EU and water companies amongst others;
(3) Holistic Water for Horticulture receives funding from water companies and the 'Courtauld Commitment' alliance of major retailers.

The projects listed above will all take place within Maidstone Borough. The costs at this stage are outline, however if necessary, the value of MBC's investment can be fixed.

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## 1. Headcorn - School Stream NFM

### Background

The School Stream starts as a small spring and flows from the Greensand ridge through the northern part of the village of Headcorn to join the River Beult SSSI. The stream drains a catchment which is dominated by heavy clays, which results in very sudden and dramatic rises in water level during heavy rainfall events, flooding parts of Headcorn including domestic properties and the primary school.

The existing project has been very successful in engaging six landowners in the key areas of the catchment. We have delivered projects on four of these holdings to date. SERT have created an off-line storage pond at Kingsnoad storing 600m$^3$ at peak flows and delivered approx. 60 large Leaky Woody Structures (LWS) (last few still in progress until April '21). The scheme is being monitored, and although it is too early to claim that it is successful in delivering its aims, initial results look promising and the interventions are operating as designed.

Headcorn Parish Council are already engaged in the project in a local flood partnership with the South East Rivers Trust, Kent County Council, Natural England, Southern Water, The National Flood Forum and others.

### Project Objectives

1. Continue mapping and scoping of the catchment (inc. use of 'SCALGO' software) to identify locations where further NFM will have the greatest impact;
2. Engage with the existing six landowners in the catchment to deliver further NFM interventions on their land, in order to fully exploit the available opportunities to minimise flood risk;
3. Develop new relationships with neighbouring landowners in order to expand the scope of the project
4. Work with the other strands of this project (see below) in order to develop integrated solutions to both flooding and water resource shortages;
5. Continue to deliver NFM interventions (such as LWS and water retention features) to provide sufficient storage and slow the flow options to make a difference to properties at risk of flooding in Headcorn, as well as contributing to reducing flood risk downstream to Yalding;
6. Report back to Defra and Maidstone Borough Council on the success of NFM through monitoring data;
7. Engage local communities in the work through talks, site visits and practical volunteer activities, as the lifting of Covid restrictions allows.

## 2. A Climate Resilient River Beult Catchment for Water & Communities

### Background

Climate Change will lead to wetter winters and hotter, drier summers, with extreme weather events becoming more likely, resulting in increased flooding as well as drought risks. Water is already scarce in the region with demand for water forecast to exceed supply by 2025. As a strategic water resource catchment for drinking water supply, improving the resilience of the Medway to climate change is crucial to provide a resilient water supply.

SERT has been delivering PROWATER, an EU Funded innovative partnership project with Kent County Council and South East Water, to develop an approach to increasing the resilience of catchments through the use of nature-based solutions that support multiple benefits, such as reduced flood risk, improved water quality, better habitats for wildlife and carbon storage. Using 'Ecosystem Based Adaptation Measures' like temporary water retention features, improving soil health (e.g. cover crops to increase root diversity and soil organic matter in a field to reduce surface runoff by increasing infiltration rates; see HERE) and headwater wetland restoration (to increase roughness and temporarily store more water in traditional headwater areas).

It is also testing the use of quantification tools and frameworks to build 'Payment for Ecosystem Services' (PES) schemes and a long-term vision for the implementation of Ecosystem Based Adaptation Measures, that would provide a future framework for delivery, bringing together public and private funders. This also links to Green Recovery, ELMS and the 25 YEP. This project is part funded through the European Regional Development Fund and MBC would provide match funding contribution.

**Project Objectives**

1. Identify priority areas for delivery of multiple benefits with a focus on water resources and flooding, linking to the NFM project;
2. Co-creation of a collaborative catchment-scale plan to deliver nature-based solutions, built on the evidence base developed through PROWATER, FRAMES and other projects;
3. Identifying potential 'buyers', 'brokers', and 'sellers' in a future PES scheme;
4. Quantification of the impact of delivery plans across the area on water resources, providing evidence for future investment and engagement;
5. Build a shared portfolio of opportunities through land owner engagement and working with the catchment partnership for delivery. The portfolio will be accessible to all partners in the catchment, promoting a "joined up" working approach;
6. Engage with landowners to provide resources and advice on the impact of their practices on runoff and retention of water, and the impacts this has downstream (flooding, water quality and water resources), through workshops and 1:1 visits;
7. Deliver community events (virtual or face to face) to increase levels of knowledge and support of the use of natural processes and best practice farming in addressing flood risk, water quality and water shortage issues related to climate change and land use.

**3. Holistic Water Management around Poly-tunnels**

**Background**

The cultivation of soft fruit through poly-tunnel based horticulture is a highly profitable and growing activity in the Maidstone area that brings significant socio-economic benefits; employment for the local population in sectors along the supply chain and benefits to local businesses.

Poly-tunnel based horticulture is now an established part of the local physical and social landscape and will probably expand further since climate change effects will drive change in the types of crops that can be grown in the area. Despite these

benefits, runoff from poly-tunnel structures can contribute to localised flooding and soil erosion. Runoff from 'fertigation' (irrigation water + added nutrients to optimise crop growth) can infiltrate soils and lead to the pollution of both surface and groundwater waterbodies.

SERT have been working with growers in the South East as part of the Holistic Water for Horticulture (HWH; see HERE) project, to deliver a collaborative approach to holistic water management around Maidstone's poly-tunnels. The project is delivered through positive engagement and collaboration with growers to manage runoff to:

1. Capture and store water on site in farm reservoirs for soft fruit crop precision irrigation and top fruit growers (this will reduce demand on mains supply and help to reduce the volume of runoff);
2. Reduce flood risk through strategically designed and installed NFM measures at poly-tunnel sites to control the return of excess runoff to the environment.

**Project Objectives**

1. Mapping - identify clusters of poly-tunnels potentially at risk in the Medway area (e.g. flooding, contributing to runoff or soil erosion);
2. Mapping - identify potential areas for soft fruit sector growth (planning permission applications);
3. Relations Development - establish and maintain communications with growers (tenants/landowners), producer organisations and landowners in the Maidstone area on the benefits of a holistic water management approach;
4. Relations Development - visit growers to discuss and outline suitable techniques for water capture, NFM and water quality on their site. Discuss and outline potential multiple benefits from the measures (recreation – public footpaths and bridleways, biodiversity, habitat creation, creating a more positive perception of poly-tunnel horticulture;
5. Agree design of project with growers / landowners with a view to deliver flood risk and water management measures;
6. Manage hand-over to deliver the detailed design / construction phases.