

1. Introduction

1.1. Background

On behalf of the Somerset Rivers Authority (SRA), we are proposing to reduce the flood risk from the River Parrett to people and properties in the Somerset Levels and Moors downstream of Langport.

The Sowy and King's Sedgemoor Drain (KSD) Enhancements Scheme has been identified as a priority in the Somerset Levels and Moors 20 Year Flood Action Plan¹ prepared subsequent to the extensive flooding of the Somerset Levels and Moors in the winter of 2013-14.

In 2016 we consulted with interested parties regarding early stage proposals to increase the capacity of the Sowy and KSD through a combination of methods including bank raising, channel widening and dredging. At this time, the extents of the scheme consulted upon covered from Dunball Sluice to Monk's Leaze Clyce, and involved the River Parrett, River Sowy and the KSD. The scheme described in 2016 was found to be unaffordable in its entirety, and therefore we now propose to take forward the first phase of works between Parchey Bridge and Monk's Leaze Clyce (see Figure 1.1, Appendix A) as Phase 1 of the River Sowy and King's Sedgemoor Drain Enhancements Scheme (referred to as the 'Proposed Scheme'). As further funding becomes available, additional capacity enhancement works will be undertaken as future phases of the full River Sowy and King's Sedgemoor Drain Enhancements Scheme.

1.1.1. Proposed scheme location

The Sowy and King's Sedgemoor Drain (KSD) corridor is in the Somerset Levels and Moors, part of the coastal plain and wetland area which contains the Parrett catchment (Figure 1.2, p2). The Sowy and KSD are man-made embanked flood relief channels, which carry excess water from the Parrett.

The Somerset Levels and Moors are the largest area of lowland wet grassland and associated wetland habitat remaining in Britain, covering about 60,000 hectares in the floodplains of the rivers Axe, Brue, Parrett, Tone and their tributaries. The majority of the area is only a few metres above mean sea level. This is a landscape of rivers and wetlands, artificially drained, irrigated and modified to allow productive farming.

The Sowy/KSD corridor is approximately 21km long, mostly comprising agricultural land with a relatively low density of residential properties, and several access roads across the associated river corridor. Land towards the western (downstream) end of the Sowy system and its confluence with the KSD has a number of international nature conservation designations, principally due to wetland habitat value and overwintering birds.

¹ <https://somersetnewsroom.files.wordpress.com/2014/03/20yearactionplanfull3.pdf>



Figure 1.2 Extent of the full River Sowy and King's Sedgemoor Drain Enhancements Scheme

1.2. The problem and need for the Scheme

In the Somerset Levels and Moors, flooding can be caused by long duration storms or a series of storms of low intensity over a wide area. The embanked channels overflow and flood water is stored in the moors before it can reach the estuary. The capacity of these channels to contain flood water can be significantly reduced by high tidal conditions backing up the Parrett.

The Parrett and its main tributary rivers start in the steep uplands, then flows through flat lower moors, where they are embanked and in some places perched above the surrounding floodplain. The lower reaches of the rivers Tone and Parrett are tidal for some 30km inland from the Severn Estuary. The steepness of the uplands, coupled with the geology and soil conditions, generates quick run-off from rainfall.

The Sowy was constructed in the 1960s to function as a flood relief channel which diverts water from the Parrett to the sea at Dunball, via the King's Sedgemoor Drain (KSD). This creates space in the Parrett so that more flood water can be pumped out from the moors, reducing the extent and duration of flooding across a wide area.

Under normal operations, when the Parrett reaches a pre-determined operational level, water flows over spillways near Langport (Aller Moor and Beazley Spillways) and into the Sowy. When water levels in the Parrett are below the levels of the spillways, water can also be managed by diverting water into the Sowy via the Monk's Leaze Clyce. However, to avoid passing too much water into the Sowy flood relief channel, the Monk's Leaze Clyce is closed when the spillways are operational.

During the period from mid-December 2013 to mid-February 2014 at least 12 major winter storms hit south-west England and, when considered overall, this was the stormiest period of weather the UK has experienced for at least 20 years. The resultant flooding experienced on the Somerset Levels and Moors was caused by insufficient discharge capacity to the sea, made worse by high tides preventing flow

through the sluice at Dunball. Based on appraisal of the flooding from mid-December 2013 to February 2014 the following is estimated based on modelling:

- 455 million m³ of floodwater entered the Parrett/Tone system
- 380 million m³ of floodwater discharged by the Parrett River and Dunball sluice by gravity
- balance of 75+ million m³ (possibly 100 million m³) stored as flooding throughout the moors

During this flooding, we diverted additional water by opening Monk's Leaze Clyce when the spillways were running through the Sowey and KSD to evacuate flood water from the levels and moors more quickly. The Somerset Levels and Moors 20 Year Flood Action Plan published in 2014 subsequently identified that we should investigate opportunities to improve this system so that it could be used as an option in the future to reduce the duration and/or frequency of flooding.

1.3. Regulatory context

1.3.1. Planning

A Certificate of Proposed Lawful Use or Development (CLOPUD) for the full River Sowey and King's Sedgemoor Drain Enhancements Scheme was obtained from Sedgemoor District Council in February 2017 (see Appendix B), confirming that the Proposed Scheme constitutes permitted development under Schedule 2, Part 13, Class D Parts D.1. (b) and (f) of the Town and Country Planning (General Permitted Development) (England) Order 2015 (as amended). The Proposed Scheme therefore does not require planning consent.

1.3.2. Environmental Impact Assessment

Environmental Impact Assessment (EIA) procedures in European Commission (EC) countries are based on the European Community Directive 'The Assessment of the Effects of Certain Public and Private Projects on the Environment' (85/337/EEC) as amended by the Council Directive 97/11/EC and Council Directive 2014/52/EC.

The Directive is transposed into UK law in various EIA Regulations. The Proposed Scheme meets the definition of improvement works under the Environmental Impact Assessment (Land Drainage Improvement Works) (Amendment) Regulations 2017 (the EIA Regulations), meaning that we are both the proponent and the determining authority of the Proposed Scheme.

Under the EIA Regulations we must consider whether a development is likely to have significant effects on the environment taking into account the criteria set out in Schedule 2 which includes the characteristics and location of the improvement works and the characteristics of the potential impact.

A Preliminary Environmental Information Report (PEIR) for the Proposed Scheme was prepared and consulted upon in March 2020 (see Chapter 3.3 for further information regarding the consultation process for the Proposed Scheme). The PEIR identified potential significant effects on the environment (see Chapter 5 for further information) and therefore an Environmental Statement (ES) has been prepared for the Proposed Scheme. This report is the ES for the Proposed Scheme.

1.3.3. Habitat Regulations Assessment

The basis for Habitats Regulations Assessments (HRA) in England is the EU Directive 92/43/EEC on the conservation of habitats and of wild flora and fauna (known as the 'Habitats Directive'). This Directive, together with Directive 2009/147/EC on the conservation of wild birds (the 'Birds Directive') establishes a network of internationally important sites designated for their ecological status. The Conservation of Habitats and Species Regulations 2017 (the 'Habitats Regulations') implement the Habitats Directive and the Birds Directive in the UK.

The Habitats Regulations incorporate all SACs and SPAs into the definition of 'European Sites' and, consequently, the protection afforded to European Sites under the Habitats Directive apply to SPAs designated under the Birds Directive.

The HRA for the Proposed Scheme will be considered through two separate but interdependent processes. These are as follows:

- Strategic HRA focussing on the operational impacts of the full River Sowy and King's Sedgemoor Drain Enhancements Scheme (as described in section 3.1, including Phase 1)
- Project level HRA focussing mainly on the construction level impacts associated specifically with the Proposed Scheme (as described in section 3.2).

The strategic level HRA screening (Stage 1) and Appropriate Assessment (AA) (Stage 2) reports for the full River Sowy and King's Sedgemoor Drain Enhancements Scheme are provided in Appendix C.

The project level HRA screening (Stage 1) and Appropriate Assessment (AA) (Stage 2) reports for the Proposed Scheme are provided in Appendix D.

The assessment of impacts on flora and fauna provided in Chapter 7 of this report has been informed by the strategic and project level HRA assessments undertaken.

1.3.4. Water Framework Directive

The EU Water Framework Directive (WFD) (Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for the Community action in the field of water policy), is transposed into law in England through Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 (SI 2017/407), requiring that all natural water bodies must achieve both good chemical status and good ecological status. For each River Basin District, a River Basin Management Plan (RBMP) outlines the actions required to enable natural water bodies to achieve this. Water bodies that are designated in the RBMP as 'Heavily Modified Water Bodies' or 'Artificial Water Bodies' may be prevented from reaching good ecological status by the physical modifications for which they are designated or purpose for which they were constructed (e.g. navigation, flood defence, urbanisation). Instead they are required to achieve good ecological potential, through implementation of a series of mitigation measures outlined in the applicable RBMP (and in some cases updated since the publication of the RBMP).

A Preliminary WFD Compliance Assessment (screening) was undertaken and consulted on during April 2020. The Preliminary WFD Compliance Assessment identified that the Proposed Scheme has potential to cause deterioration to the King's Sedgemoor Drain -Henley Sluice to Mouth WFD waterbody and recommended that a detailed assessment be undertaken.

The Preliminary WFD Compliance Assessment (screening) and Detailed WFD Compliance Assessment (detailed assessment) for the Proposed Scheme are provided within Appendix E of this report.

The assessment of impacts on the water environment provided in Chapter 6 of this report has been informed by the Detailed WFD Compliance Assessment for the Proposed Scheme (see Appendix E).

1.3.5. Other consenting pathways

Protected species licensing

Water vole surveys undertaken during spring and autumn 2019 (see Chapter 7 and Appendix F) identified the presence of water vole along the majority of the KSD and Sowy between Parchey Bridge and Monk's Leaze Clyce. Water vole are a nationally protected species that will be displaced from several locations along the length of the scheme under our organisational licence (WML-OR23) prior to commencement of construction and during the appropriate seasonal timescales. Further details regarding impacts on water vole and proposed mitigation are provided in Chapter 7.

Requirements for protected species licences will be reviewed and confirmed following completion of further ecological survey work that will be undertaken in the weeks immediately preceding commencement of construction works September (see Chapter 7 and Appendix K for further information).

Site of Special Scientific Interest (SSSI) assent

Under Section 28H of the Countryside and Rights of Way Act 2000, public bodies must obtain assent from Natural England for works that are likely to damage the condition or special features of a SSSI. The Proposed Scheme falls within the King's Sedgemoor SSSI and a SSSI assent for the Proposed Scheme will be obtained from Natural England before construction of the Proposed Scheme commences.

Scheduled Monument Consent (SMC)

Under the Ancient Monuments and Archaeological Areas Act 1979 (as amended), Scheduled Monument Consent (SMC) must be obtained for works likely to affect a Scheduled Monument. Consent is granted by the Secretary of State (SoS) following recommendation from Historic England. A SMC is required for the SM located on the east bank of the KSD, immediately south of Parchey Bridge (Prehistoric timber trackways, 670m SSE of Parchey Bridge). Further detail is provided in Chapter 8.

Landowner consent

The temporary and permanent works areas for the Proposed Scheme fall mainly within land that we own. However, consent from other landowners who are directly affected by the Proposed Scheme will be required before the works commence, and we will continue to liaise with the affected parties until the Proposed Scheme is completed.

Environmental permits

A Flood Risk Activity Permit (FRAP) is required for any flood risk activities if work is carried out:

- in, under, over or near a main river (including where the river is in a culvert)
- on or near a flood defence on a main river
- in the flood plain of a main river
- on or near a sea defence
- or activities carried out within 8 metres of the bank of a non-tidal main river (or within 8 metres of a culvert or flood defence structure on that river) or within 16 metres of the bank of a tidal main river (or within 16 metres of any flood defence structure or culvert on that river)

We will apply to the Environment Agency for a FRAP for the Proposed Scheme.