

Surface Water Management Plan 2012

Executive Summary

This Surface Water Management Plan (SWMP) report, covering all phases of a SWMP, has been prepared on behalf of Slough Borough Council. It forms part of the evidence base that will inform the next round of the Preliminary Flood Risk Assessment investigating the mechanisms of surface water flooding in Slough.

A partnership was formed with the Environment Agency and Thames Water as part of the SWMP. Data was collected from the established partners and other stakeholders and assessed for its quality. A strategic risk assessment was undertaken for the Slough Borough area. The strategic risk assessment found the majority of historical flooding incidents and the estimated future flooding to be within the combined Chalvey Ditches catchment (Salt Hill Stream and Haymill Stream catchments). Therefore the Chalvey Ditches catchment was identified as the priority area requiring a more detailed assessment to understand the flood mechanisms.

The detailed risk assessment was undertaken using enhanced drainage modelling taking into consideration surface water sewers, sink holes within the Burnham Beeches area and the interaction between fluvial and surface water. The detailed risk assessment identified some key overland flow routes between buildings and established that there is generally low surface water flood hazard within Slough for the lower order events (1 in 2 to 1 in 10 annual probability of occurring). However, there are a few areas in the Chalvey Ditches catchment which are shown to have a significant hazard rating during the 10 year event and above.

The detailed assessment found that climate change (with a 30% increase in rainfall intensity to allow for climate change) would result in an 18% increase in estimated damages due to surface water flooding during a 100 year event.

Several measures to reduce surface water flooding ranging from technical, maintenance, awareness, resilience and resistance and change of agricultural land practice were analysed by the SWMP partners using a multi-criteria analysis type of approach and a few measures were shortlisted for detailed assessment.

Two technical options were assessed through modelling and one of those was taken forward to a detailed assessment including cost benefit analysis. The preferred option was found to reduce surface water flooding during the lower order events significantly whilst increasing the number of properties at flood risk for higher order events. However, due to the benefits during the lower order events the cost benefit ratio is higher than the minimum recommended for funding by the FCERM guidance making the scheme eligible for funding via the Grant in Aid funding stream.

The preferred option was also found to have moderate carbon costs, does not have significant environmental impact and can potentially provide environmental benefits. The SEA screening report established that a full SEA would not be required as part of the SWMP but would be undertaken as part of the local Flood Risk Management Strategy which will be undertaken in the next 6 – 12 months.

Although the benefit/cost ratio of preferred scheme is favourable, the increase in number of properties at flood risk for the higher order rainfall events is not considered acceptable. Therefore a revision of the scheme was undertaken resulting in a new Option 2a. The improved scheme includes two storage areas immediately north of Park Road (B416) within Farnham Park and north of Slough Cemetery (as proposed in Option 2). However, the improved scheme aims to increase the flood storage provided north of Park Road by introducing a new bund upstream of the proposed bund adjacent to Park Road.

The revised option was assessed on a smaller scale, higher resolution model and showed that the revised option would result in a decrease in flood risk south of Park Road for rainfall events up to the 1 in 100 (1%) event. Although an assessment covering the town was not undertaken to allow for quantification of the decrease in flood risk it is expected that the scheme would result in a decrease in the number of properties at risk of flooding for all events. As such, a favourable cost benefit ratio is assured.

It is therefore recommended that the revised Option 2a be adopted to alleviate surface water flood risk to the Salt Hill Stream catchment within Slough. It is also recommended that full assessment covering the town be undertaken to quantify the benefits offered by the revised scheme. The additional assessment should be undertaken before any detailed design of the scheme commences.

The SWMP Action Plan identifies the need for the established partnership to continue working together. The various departments in Slough BC such as Highways, Planning and Development Control also need to work together more closely in order to minimise the surface water flood risk impacts of new developments or extensions. Close collaboration between Council departments will ensure that surface water flood risk is given the same consideration as fluvial flood risk during planning. Slough planning policies should be updated to take into account findings of the SWMP ensuring that surface water flood risk is given greater weighting.

The Thames River Basin Management Plan (RBMP) found the Salt Hill Stream and the Chalvey Ditches to be in a 'poor' and 'moderate' ecological status respectively. The Thames RBMP objective for most of the watercourses is to achieve good ecological status by 2027 in order to meet the Water Framework Directive requirements. Therefore proposed re-development within Slough would need to take into account water quality and potential ecological improvements when developing the surface water management strategy for each development site. Improvements in water quality from the surface water drainage systems would contribute to achieving the Thames RBMP objectives for the watercourses within Slough.

The SWMP will inform the preparation of future maintenance programmes for surface water management assets within the borough and any necessary co-ordination of maintenance programmes of different partners to ensure their effective operation. As the surface water management plan identifies the locations at greatest risk of surface water flooding, this information can be used to target maintenance improvements in these areas. This can also be used to identify areas to apply for funding, support any funding applications that are made and to feed into planning policies.