

ITEM 10

Somerset Rivers Authority Board Paper

Rode and Beckington Funding Request

RECOMMENDATION

The Somerset Rivers Authority (SRA) Board is asked to:

1. Approve the increase in funding allocated to Rode Flood Management Project (LAMDC06) and Beckington Drainage Works (LAMDC07), as outlined in the attached document.

Total Additional Budget sought: £248,326.86

Purpose of the item:

The Rode Flood Management project and Beckington Drainage Works have reached a key point in delivery and the project team now requests the Board to approve additional funding so that infrastructure improvement works can be completed in a cost-effective way this autumn.

Background and context

Rode and Beckington had been identified as high priority sites in Mendip District Council's flood risk management sub-catchment analysis project. This work was funded as part of the Somerset Rivers Authority (SRA) 2019/20 Enhanced Programme. Both villages had experienced property flooding and regular road flooding and both have ancient stone culverts conveying watercourses beneath roads and buildings, many of which were new discoveries during initial investigations of these systems. The project team has been working hard over the last year to develop the scope of improvement works for both villages, to finalise costings and to collaborate and coordinate on programme of works with other organisations. This scope of works is more extensive than we had anticipated at the start of this project and, together with rising costs of materials, the final costings have come in higher than expected. We are therefore bringing it to the board for consideration and approval.

By linking these projects together we are able to reduce costs and maximise the benefits of delivery for these two communities within a shorter time frame and with less disruption. The projects will ensure the future resilience of the water infrastructure to manage the impacts of climate change and reduce the risk and frequency of flooding.

Rode was identified as having complex infrastructure with multiple partner interests (*riparian owners, farmers, Somerset County Council Highways, Wessex Water, Lead Local*

Flood Authority, residents) and so further funding was approved as part of the 2020/21 Enhanced Programme to investigate and identify the scope of works required and to then deliver these improvement works within Rode .

There are known incidents of flooding to properties and roads in Rode. The residential development within the Old Brewery Lane area of Rode is especially vulnerable as it is immediately adjacent to an open section of the watercourse immediately upstream of the main culvert running beneath the village. Any blockages of the culvert downstream *could* therefore have a knock-on impact to these properties (approximately 25 homes) and the primary school which sits on the opposite bank.

The main risks to flooding in the village are associated with:

1. Culverted stream - route for delivery of upstream generated flow and sediment to the River Frome downstream of the village. Any blockages or collapses in the system will back up flow and potentially cause flooding to property and businesses either via the open sections of watercourse at the top of the village or surcharging of manholes.
2. Rapid runoff and sediment delivery during storm events – sediment loaded runoff from the large arable catchment and any paths/tracks/roads deposited in the culvert reduce the capacity of the system. Lack of attenuation and floodplain connection increases the risk of peak storms impacting the system.
3. Potential undersized or damaged drainage pipes within Rode itself and at downstream end of the stream.

This project was to identify the scope of works required to build resilience into the existing infrastructure within Rode to ensure that it could maintain capacity and conveyance of flow to the downstream catchment. It was also to identify areas upstream of Rode that could reduce the rapidity of runoff and sediment delivery during storm events through more natural flood management techniques. These identified works were then to be delivered under this same grant agreement.

In accordance with the grant agreement, the works would include:

- *CCTV survey of culverted watercourse to review capacity and condition*
- *Repair and remove blockages/ debris where necessary*
- *Assess the need for additional measures for reducing blockages in the future (i.e. trash screens)*
- *Consultation with landowners on land management practices*
- *Enhancements to existing upstream attenuation features and installation of a new pond upstream of the Old Brewery development*

- *Naturalisation of the existing watercourse (de culverting) including an online wetland area*
- *Tree planting upstream*

Beckington has had a surface water and foul flooding issue historically (6 properties impacted) and a full drainage assessment, including CCTV surveys, was carried out as part of the 2018/19 Enhanced Programme. During the survey works, we identified potential areas where misconnections to the foul sewer could be addressed to improve capacity of the foul sewer and we identified multiple culverted watercourses through the village which had previously been unmapped and that had varying degrees of condition. 'High Priority' improvement works to this infrastructure were identified and funding for delivery of these works was approved as part of the 2020/21 Enhanced Programme.

These works will provide improved resilience to surface water flooding including: repair to parts of the culverted system (those considered 'high risk' on the survey); improved access for maintenance (additional manholes along the system); some upstream measures to reduce sediment loaded runoff and debris entering the culverted system (through landowner negotiation and agreement); reduce the number of misconnections to the foul sewer (undertaken by Wessex Water). Wessex Water are separately investigating and funding the foul capacity improvements.

Current Status

CCTV surveys in Rode were completed in March 2021 to help identify the scope of the infrastructure improvements that would be required to ensure that the culverted system is resilient enough for future potential storm events. Unfortunately the need for additional road closures and traffic management meant that we had spent an additional £20k over our original budget for traffic management.

In September/ October 2021 we delivered some surface water drainage improvement works to Seymour Court Farm (upstream of Rode) including NFM measures such as sedimentation traps and buffer strips to deliver a reduction in sediment loaded runoff entering the watercourse upstream of the village (£15,000 delivery cost using local contractors).

Meanwhile, we progressed with developing the scope of works for the Rode and Beckington infrastructure packages following the completion of the Rode CCTV survey work.

Due to some of the repair works being in close proximity to listed buildings it was felt that an experienced specialist Contractor would be the best route to minimise risks. We identified a suitable Contractor in September 2021 to begin discussions around the proposed works and the ways in which we could approach delivery. It was agreed with all partners (Wessex Water, Highways) that combining the delivery of these works with

Beckington Drainage Works (LAMDC07) would save on mobilisation and set up costs and so this is the agreed approach for these two projects.

The Contractor provided us with initial budget costs for both works packages earlier this year (as indicated in the table below). This table provides a snapshot summary of our expenditure to date and the requirements for additional budget to complete the works on both projects:

<i>Project</i>	<i>Rode Flood Management Project</i>	<i>Beckington Drainage Works</i>
Up to end of Q4 2022		
SRA Grant Agreement (2020/21)	£ 180,000.00	£ 350,000.00
Budget remaining at end of Q4 2022	£ 82,980.39	£ 339,140.00
Forecast after end of Q4 2022		
<i>Contractors Budget Estimates (including 10% risk contingency)</i>	£ 245,500.00	£ 353,000.00
<i>Road Closures/ Traffic Management</i>	£ 10,000.00	£ 10,000.00
<i>Consultancy Fees/ Detailed Design/Modelling/ Contracts Management</i>	£ 41,745.00	£ 25,202.25
Required Delivery Budget (from end of Q4 2022)	£ 297,245.00	£ 388,202.25
<i>Wessex Water Funding</i>	£ 15,000.00	
Additional Funding Sought:	£ 199,264.61	£ 49,062.25

These are high level estimates (including a 10% risk contingency) and we have been reviewing these with the Contractor to finalise design elements, firm up on costs and split down the pricing so that we can review the options for delivery. The rising fuel prices and costs of materials are partly to blame as in some cases prices are up to 70% higher than a year ago. We also did not know at the time of the initial funding application for Rode what the CCTV surveys would find. Unfortunately the Rode culverted system requires some significant repairs to ensure that it is fit for purpose for the future flood risk management of the village. This was not anticipated to be so extensive at the time we put in the original

bid. Where we can we are mitigating risks and trying to reduce overall delivery costs and this is still in progress as we move towards construction.

For example, we have just completed some additional hydraulic modelling (£2,000) to test some design options for the partially collapsed section of the culvert in Rode which has meant that the Contractors suggestion of installing a pipe (rather than a like-for-like rebuild of the culvert) is feasible, will be less risk and save on costs. We are working closely with the Contractor to iron out these details to try to firm up on costs and reduce risks but we had not completed this process in time for this board paper. This design development and costing exercise is due to be completed by the w/e 22nd July 2022.

Our original budget for Beckington allowed for £30-50k for detailed design phase and £300k for delivery works. We have prioritised the works as much as possible. A risk-based approach was used to bring forward those works that are highest priority to maintain the system/ prevent collapse. We are still well within budget for the consultancy costs but the construction costs are coming back higher (20%) for the reasons outlined above.

We have a tight programme aiming to commence works in August/ September 2022 to coincide with Wessex Water works which are due to commence in Beckington in October 2022. This will enable us to save on costs and minimise disruption to both villages:

Estimate of Savings: for mobilisation and preliminary costs the budget quote we have for the preliminary/mobilisation costs for both sites together is £100,800 (15% of the budget cost - excl risk). For this size of project 30% is more typical of this type of multi-location, high risk work if not realising the saving of delivering both in tandem. This represents a saving of approximately £100,000.

We have also built a strong relationship with the local landowner and negotiated use of a hard standing area as the Contractors compound, which again saves on preliminary costs, but is only available until February 2022. We are also keen to avoid the wetter seasons and so a late summer start is crucial for delivery this year.

We have discussed with Wessex the works to be covered by them (Wessex owned infrastructure) and are working closely with them to determine the best means for delivery; either utilising our Contractor to complete these works with them providing the funding for this (£15,000) or their team co-ordinating with our programme to complete these works at the same time as our road closures.

We believe that it is crucial that these works are completed this year as the area of culvert in Rode that is most at risk has been coned off for almost a year now and the residents are very concerned about this, particularly the resident whose house is immediately adjacent to it. This culvert is beneath the footway but, due to the narrow road, vehicles often drive onto or park on this area of footway. Collapse of this culvert and the subsequent blockage to flow will pose safety risk to residents and a significant flood risk to the rest of the village. We have

been negotiating with Highways around monetary contributions to the project and we will continue to do so, but we did not want to delay in putting this to the Board for fear of losing our delivery window and co-ordinating with the Wessex Water delivery programmes.

Benefits:

Key Benefits of completing the **Rode Works**:

- 7 properties have been recorded as flooding in the past but the proposals for repair will reduce the flood risk to over 25 properties in the village. Repair and reconstruction of parts of the culverted system will prevent failure and/or blockage which could result in a potential major flood incident impacting properties in the vicinity of Long Street, High Street, The Brewery and the Primary School.
- Improvements to land management practices upstream will reduce the sediment transportation downstream and reduce the maintenance burden on the system. This has been partly delivered (as described above).
- We will not be able to deliver the re-naturalisation of the river in the vicinity of the school (as was originally planned) as this was deemed to be too costly for the benefits it would provide. However, we have incorporated proposals for better floodplain reconnection upstream of the A361 where the intervention required is less onerous and where the benefits for flood risk and other water quality benefits are greater. This will be delivered separately in consultation with the 3 landowners upstream to co-ordinate with their farming calendar and so will not form part of these delivery works.
- Attenuation of flood water upstream of Rode to protect the village in the larger order storm events, utilising the existing ponds and making them work harder by throttling the outlets to enable larger volumes of water to be stored. This provides more capacity resilience to the downstream culverted system and negates the need to provide additional pond storage elsewhere. Additionally, we have already delivered works at Seymour Court Farm upstream of the main culvert, as described earlier in this paper, and this provides a significant sediment reduction to the system and attenuates flow within two small sediment basins prior to discharge to the existing attenuation ponds.

Key Benefits of completing the **Beckington Works**:

- The proposed works will ensure that the whole village of Beckington is at a lesser risk of a failure of the system – causing widespread flooding. This would affect the whole of Goose Street and the properties at the bottom of Warminster Road/ Frome Road (more than 25 properties)

- Inform and educate residents about riparian responsibilities for maintenance and the issues around sewer blockages and how every resident can help reduce the risk of overflow.
- The identified works include improvements to land management, reduction in overall runoff, improvements to water quality into the open watercourse, improvements to capacity of historic drainage systems. By definition it is a multi-benefit project.

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Date: 15th July 2022

Author: Caroline Murray (on behalf of Mendip District Council)