

REPORT FOR INFORMATION

REPORT TO:	All Members
REPORT NO:	COET/28/24
DATE:	25 July 2024
LEAD MEMBER:	Councillor Terry Evans, Lead Member for Environment Councillor David A Bithell, Lead Member for Housing and Climate Change with responsibility for Strategic Transport
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SUBJECT:	B5605 Newbridge Landslide
WARD:	Cefn, Chirk North and Llangollen Rural

1 PURPOSE OF THE REPORT

To present Members with an update and information on the progress of the Design and Build Contract awarded for the repair to the B5605 Gelli Wood landslide at Newbridge.

2 BACKGROUND

The significant storm event 'Storm Christoph' early in 2021 resulted in a major landslide at Gelli Wood, Newbridge. During the storm, the supporting embankment failed and the B5605 suffered critical failure with a section of wall collapsing down the embankment. Full detail of the event and subsequent immediate actions were included in Information Reports from September 2021 (COET/19/21), June 2022 (COET/13/22), December 2022 (COET/21/22), and April 2024 (COET/04/24)

Progress since the previous Information Report

Since the last information report the phase one (Design stage) Design and Build Contractor has continued, with particular emphasis on developing a

suitable detailed design that will satisfy design standards whilst keeping within the allocated grant funded budget, and achieving the optimum programme for the stage two construction phase.

The design remains a particularly complex one managing a number of critical issues including; protecting against any further movement in the slip site, protection against any risk of scour at the toe of the embankment, satisfying design standards and lifetime cycles for the structure.

The design sequence to date has been an iterative one searching for optimum solutions, mindful of the engineering complexity, available budgets and programming challenges.

Scheme Design

Initial iterations considered a design that reduced the need for a specialised permanent structure. It did however call for a resource intensive and complex construction approach whereby the reconstruction and stabilisation process involved a sequenced series of vertical strips. This approach offered some advantages, but the need for a sequential build, negatively impacted on the programme delivery with associated cost implications.

Throughout the contract, commercial discussions have continued to explore all options for early completion of the works to time and budgetary constraints. Matters considered have included revisiting options such as realignment of the carriageway into the northern highway verge, and/or reducing the final carriageway width. However, these options have proved unlikely to be palatable and have been eliminated from the design scope.

Subsequent iterations have considered the scour risk at the toe of the embankment and concluded that a structure would also be necessary to achieve the design life required and to gain engineering approval in principle.

Early designs considered treatment at the river margin. Unfortunately, this solution was considered too disruptive to the River Dee. Hydraulic modelling to eradicate scour risk confirmed that flow velocity and upstream flood risk would increase as a result of this design and, therefore, it was proved to be impractical and unbuildable, confirmed during ongoing discussions with Natural Resources Wales (the regulatory body for main rivers in Wales).

A further redesign has considered substituting the structure at the toe of the embankment with a margin of rock armour. Following the design modelling process, necessary accommodation and temporary works have also been required. Given the restricted access and difficult working conditions, temporary structures will be required to allow the successful delivery of the permanent design.

Design work has been progressed further for the access track, which is required to reach the section of slope from the B5605 and to facilitate the stage two works. Subsequent changes in the design have resulted in modifications due to the revised access position, and different choice of plant and machinery needed to undertake the works.

The successful Design and Build Contractor, Atkins Realis, delayed their shadow planning application in anticipation of greater confidence in the design solution, but by April it had narrowed the design scope sufficiently to submit an application.

The current and proposed preferred design option builds on previous iterations. This design option meets engineering standards and life cycle performance targets and in addition, further modelling has confirmed that time and cost savings would be achieved by reducing the number of stages in the earthworks sequencing. The result was a more satisfactory solution in methodology and engineering terms, but still failed to achieve an acceptable target cost for stage two.

'Value Engineering'

Every effort continues to provide a final scheme design that meets the challenges of timescale and budget. Further value engineering review was undertaken with a number of acceptable options muted:

- Reduce speed from 50 to 40 thereby removing the need for Vehicle restraint system.
- Minimise footway and carriageway reinstatement extents.
- Review of existing and proposed boundary edge treatments.
- Earth work operational efficiency improved.

Approvals and Work with Regulators

Planning approval process continues as does negotiations and discussions with regulators on works near the river margin and necessary Habitat Risk Assessment (HRA) work and consents.

Routine commercial contract discussions have continued with the successful contractor including our supporting commercial advisors. Regular and routine updates have continued with the respective landowners pointing out their duties and responsibilities as 'riparian' landowners. A site compound is now present with security arrangements in place to protect the integrity and safety at the site.

Other Progress achieved up to the end of June include

CCTV Welsh Water Survey of foul sewer carried out in May
BT diversion completed in June.

Track design amended in response to slope redesign

Discussions with WCBC Ecology Officer and NRW ongoing in relation to the HRA and shadow HRA.

Next Steps

The following provides an overview of ongoing progress in July and what is expected to be achieved.

July

- Consent was issued by NRW on 7 July for the temporary access track work to proceed, and WCBC have confirmed that there are no obstructions to commencing these enabling works and anticipate a stage two target cost ahead of the final design by the end of July. The detailed scour protection requirements including the geometrical design details will have been finalised this month.
- Work will continue to address the challenges of cost and buildability.
- Design and Build contractor liaison with Wrexham Council representatives and the landowner continues, however it is recognised that this has needed to be limited by the current contractual sensitivities.
- A design “freeze” has been set for the end of July, when the costings will be fully calculated and submitted for approval in early August to proceed.
- Consultation has also commenced to reduce the speed limit from 50 to 40 mph.

Due in August

- Works programmed to commence w/c 12 August.
- Consents are expected from WCBC Ecology Officer for soil nailing element of the preparatory/enabling works.
- All working methods to be agreed.
- Complete Risk Assessment and Method Statement to be produced.
- Quality plans and Inspection Test plans to be completed.

Due in September

- Complete costings and agree target price.
- Complete upper level soil nailing.
- Addendum to the planning application to be complete.
- Complete access track.
- Excavation and removal of upstream overburden in 1st reconstruction area.
- Form the required profiles and platform for the piling rigs etc.

Risks

Having regard for the significant design challenges and design delays, and compounded inflation during the stage one phase, it is unlikely that the scheme can be delivered within the budget available.

The current programme indicates a scheme completion date in the first few weeks of the next financial period.

This impact strongly suggests that a RRF submission will be required to meet the shortfall as the scheme approaches completion. WCBC officers are already in discussion with Welsh Government to manage any subsequent future grant bid submissions.

NRW consents – the scour protection strategy has raised concerns by NRW who would not support or consent works within the River Dee margin. The current piled solution removes most or all of these issues and there is confidence now that the design will not frustrate NRW consents.

Planning consent – There have been no objections or issues received during the consultation process other than from NRW as detailed above.

Next Steps

Whilst this project is exceptional in its engineering complexity, the Council are engaged in a commercial contract arrangement with a successful tenderer. The form of contract is slightly unusual, but necessary given the scope and complexities of associated risk. Progress and commercial contract management are critical and necessarily 'in confidence' discussions to ensure no party is exposed to unnecessary risk. Regular and routine updates will continue to be provided at suitable milestone stages in line with contract and commercial progression.

In order for WCBC to issue the instruction for the Design and Build contractor to commence stage two, a satisfactory and standards compliant design is required which meets an acceptable programme and target cost. As part of the above a detailed programme of works through to the end of the contract will be provided. Until then any programme time and cost will not be confirmed and will remain indicative. However the current programme anticipates a start date on site of w/c 12 August and an indicative target completion date of May 2025.