

## **AGENDA ITEM 5**

### **RHONDDA CYNON TAF COUNTY BOROUGH COUNCIL**

#### **CABINET**

**8<sup>TH</sup> SEPTEMBER 2016**

#### **LANDSLIP AT A4233 MAERDY MOUNTAIN ROAD, ABERDARE**

**REPORT OF THE DIRECTOR, HIGHWAYS AND STREETCARE IN DISCUSSION WITH THE LEADER OF THE COUNCIL, COUNCILLOR A. MORGAN.**

**AUTHOR(s): Roger Waters, Service Director Highways and Streetcare Services (01443 494702)**

#### **1. PURPOSE OF THE REPORT**

- 1.1 The purpose of the report is to update Cabinet on the current situation with regard to the Landslip on the A4233 Maerdy Mountain Road.

#### **2. RECOMMENDATIONS**

It is recommended that the Cabinet:

- 2.1 Notes the proposal to stabilise the affected carriageway by constructing an anchored reinforced concrete edge beam and safety barrier along the outer edge of carriageway.
- 2.2 Notes the ongoing investigatory work to identify an appropriate drainage solution.
- 2.3 Considers the potential to utilise any necessary road closures to implement a comprehensive scheme of improvements along the A4233 Maerdy Mountain Road between the Rhondda Fach and Cynon Valley.
- 2.4 Notes the requirement for a further grant application to support the cost of the work and that the 2017/18 Capital Programme will include for Members consideration, further funding requirements for the scheme.

#### **3 REASONS FOR RECOMMENDATIONS**

- 3.1 The A4233 Maerdy Mountain Road is a key transport corridor within RCT linking the Cynon and Rhondda Fach Valleys and providing a

conduit from the Rhondda Fach towards the A465 Heads of the Valleys Trunk Road.

- 3.2 It is imperative that the route is safeguarded and that a holistic approach is applied to any proposals so that a comprehensive solution is implemented that has regard for long-term stability as opposed to a narrow focus on a quick fix. Consideration of the opportunity to add value to the project by aligning other necessary maintenance works required along the route would also be prudent at this time.

#### **4. BACKGROUND**

- 4.1 The A4233 Maerdy Mountain Road comprises a side long single two lane carriageway, 5.5m wide situated on a steep mountainside linking the Cynon and Rhondda Fach Valleys. The road climbs the hillside in a number of steep inclines with intermittent hairpin bends. As is common with mountain routes the carriageway has been constructed using “cut and fill” construction techniques i.e. cutting into the upper slope and filling on the downhill slope, creating a level bench for the carriageway.
- 4.2 Following a period of prolonged and intense rainfall, on the morning of 31<sup>st</sup> December 2015, highway officers attended a reported landslip on a section of the A4233 between two of the aforementioned ‘hairpin bends’ above Aberdare.
- 4.3 The initial ‘slip’ was observed to be localised over a 20m length on the down slope edge of the carriageway and was made safe by erecting barriers around the slip area and installing temporary traffic signals to provide effective traffic control.
- 4.4 Continued wet weather through the early part of January 2016 resulted in the slip area extending over a 45metre length of carriageway, with the potential overall carriageway length at risk being 150metres. A recently installed vehicle restraint system (safety barrier) was clearly observed to be out of alignment and the ground downhill of the kerb line had also failed.
- 4.5. An application was made to Welsh Government with regard to securing funding, thus enabling the Authority to undertake the necessary work to identify a solution to stabilise the road. The application was successful and a grant of £40,000 was awarded for the 2015/16 financial year.
- 4.6 A site and ground investigation study (GI) together with a geotechnical report including recommendations for a carriageway remediation scheme were commissioned.

- 4.7 As part of the GI, 5 boreholes were drilled to establish the composition of the underlying ground and groundwater monitoring equipment was installed.
- 4.8 The results of the ground investigation confirmed that the road is constructed on unconsolidated material overlying a weak bedrock stratum (layers of mudstone, siltstone and sandstone). Groundwater levels at the time of the investigation were within 1.5m of the surface, although it was evident that levels had been higher at the time of the failure. All of the highway drainage identified on the site discharges onto the hillside below the road, scouring the hillside and further softening the underlying soils.
- 4.9 Following appraisal of the GI, a range of remediation solutions were considered including gabion basket retaining wall, various piling options, soil nailing and an anchored edge beam.
- 4.10 Given the location of the failure on a steep hillside, and the necessity to incorporate a vehicle restraint system (barrier) in the design, the most appropriate option is considered to be an anchored reinforced concrete edge beam. (A typical cross-section of such an arrangement is included at Appendix A).
- 4.11 Whilst the anchored reinforced concrete edge beam will provide a solution to reinstating and stabilising the carriageway in the affected area, it is clear that the underlying issue in maintaining a stable environment for the carriageway to function relates to managing the ground and surface water on the mountain.
- 4.12 Current drainage systems simply collect water from the carriageway and discharge the water onto the bank immediately adjacent to and below the road. This water then flows down the bank to be dealt with in the same manner on the road below.
- 4.13 Investigations are currently progressing to identify how a scheme of localised land-drainage measures could be implemented in conjunction with positive carriageway drainage to mitigate the impact of water levels on the stability of the land above and below the highway.
- 4.14 Any positive drainage measures will need to be attenuated to avoid surcharging existing culverts and combined sewers downstream. Attenuation works and stabilisation works could be most efficiently undertaken under a temporary road closure.
- 4.15 Given the extensive but necessary nature of these works, it is anticipated that detailed design and procurement processes would lead to a programme with scheme implementation taking place during the summer of 2017.

- 4.16 It is therefore suggested that consideration is given to the merits of closing the Mountain Road for a limited period during the school summer holidays and implementing a more comprehensive package of measures along the road, such as; carriageway resurfacing, rebuilding dry-stone retaining walls, re-marking the carriageway, etc.
- 4.17 This approach would follow a similar strategy and build on the success of the works undertaken at A4061 Rhigos Mountain Road during the summer of 2016.

## **5 PROPOSED WAY FORWARD**

- 5.1 There is the need to further assess the potential options for the provision of an effective drainage system. This will be initially looked at by our 'in-house' engineers.
- 5.2 A Contractor should then be procured for design and build of the project with optioneering as first stage, detailed design following and then construction.
- 5.3 Subject to agreement a package of works for comprehensive improvements to the route will also be prepared.

## **6 EQUALITY AND DIVERSITY IMPLICATIONS**

- 6.1 An Equality Impact Assessment (EqIA) screening form has been prepared for the purpose of this report. It has been found that a full report is not required at this time. The screening form can be accessed by contacting the author of the report or the Cabinet Business officer.

## **7 CONSULTATION**

- 7.1 There has been no consultation at this time. Any Traffic Regulation Orders will undergo statutory consultation and noticing processes.

## **8 FINANCIAL IMPLICATION(S)**

- 8.1 The Council successfully obtained £40,000 grant from Welsh Government during the 2015/16 financial year to undertake investigations. A further grant application will be made when indicative costs and programmes are firmed up. Subject to Member approval, funding will also be required from the Council's Capital programme and this will be factored into the capital budget strategy proposals for 2017/18.

## **9 LEGAL IMPLICATIONS OR LEGISLATION CONSIDERED**

9.1 The Council has a statutory duty under the Highways Act 1980 to ensure the safety of the highway. Other legislation which is applicable to the undertaking of works covered in this report includes:

- Traffic Management Act 2004
- Land Drainage Act 1991
- New Roads and Street Works Act 1991
- Road Traffic Act 1991
- The Disability Discrimination Act (DDA) 1995

## **10 LINKS TO THE COUNCILS CORPORATE PLAN / OTHER CORPORATE PRIORITIES/ SIP.**

10.1 This proposal will make a positive contribution towards the Corporate Priorities "Building a Strong Economy" and "Improving our Communities" by safeguarding a key transport artery.

## **11. CONCLUSION**

11.1 Whilst the initial focus has been to identify a technical process whereby the carriageway in the vicinity of the slip can be reinstated, it is clear that the long-term stability of the road depends on a comprehensive strategy to manage surface and ground water in the vicinity of the road.

11.2 Positive drainage will increase the intensity of water discharging from the mountain and will require attenuation measures to prevent detrimental impacts on culverts and watercourses downstream.

11.3 The scale and timing of these works means that there is an opportunity to enhance the value of these works by aligning other key maintenance works required along the route for efficient delivery under summer road closure conditions.

**Other Information:-**

***Relevant Scrutiny Committee***

***Background Papers***

***Contact Officer***

Roger Waters 01443 494702

**LOCAL GOVERNMENT ACT 1972**

**AS AMENDED BY**

**THE LOCAL GOVERNMENT (ACCESS TO INFORMATION) ACT 1985**

**RHONDDA CYNON TAF COUNTY BOROUGH COUNCIL**

**CABINET**

**DATE**

**REPORT OF (DIRECTORATE) IN DISCUSSIONS WITH THE RELEVANT  
PORTFOLIO HOLDER (CLLRS)**

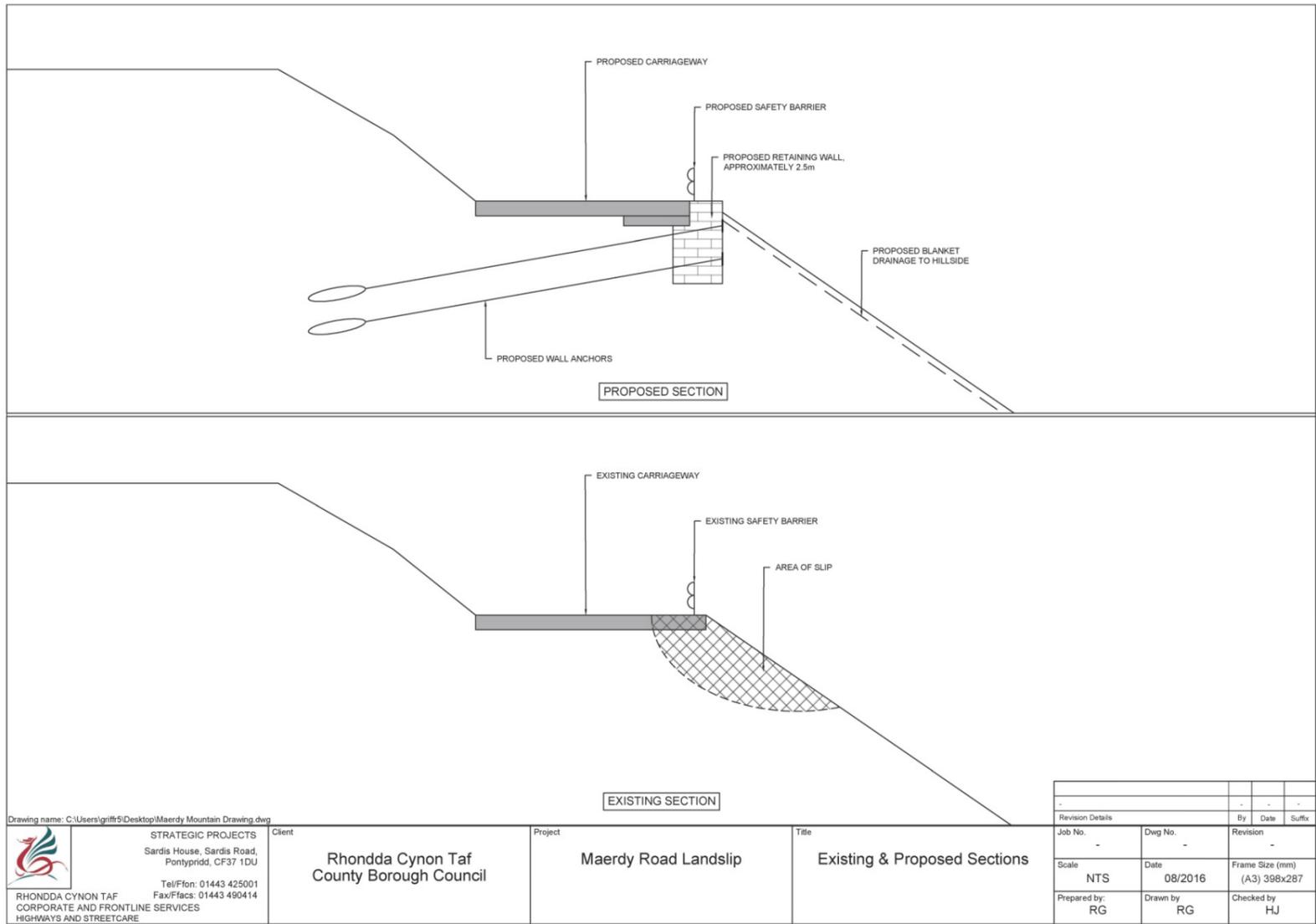
**Item:**

**Background Papers**



**This page is left Blank**

**Appendix A**



**This page is left Blank.**