ARGYLL & BUTE COUNCIL **EXECUTIVE**

OPERATIONAL SERVICES **18 FEBRUARY 2010**

B842 Conie Glen Landslip

1. SUMMARY

The paper summarises the long-standing landslip issue on the B842 road between Campbeltown and Southend, the potential solutions considered to deal with it and recommends the option to be taken forward.

2. RECOMMENDATIONS

2.1 The Executive is recommended to agree that:-

2.1.1 Option 2 is implemented – provide a 2 lane road by implementing drainage work and constructing a new north bound lane adjacent to the existing road);

2.1.2 This new project is considered as an additional scheme within the Council's future deliberations on the Capital Programme and any necessary rephasing of Roads & Amenity's capital allocation is reported through the capital monitoring process;

2.1.3 The solution does not remove the entire risk of the ground below the road continuing to slip but does provide a reduced level of risk which can be better managed in future;

2.1.4 The costs incurred to date to stabilise the toe of the landslip, undertake boreholes, gain geotechnical advice and monitor movements be capitalised and added to the cost of the option chosen.

3. DETAILS

3.1 The B842 road is the main road between Campbeltown and Southend. There are two single track alternatives but both have extremely poor alignments, steep gradients, inadequate passing places and could not cope with the traffic levels experienced on the B842.

3.2 The road at Conie Glen is built on top of an area of ground that has experienced landslides both prior to its construction and since. In modern times, there were ground movements experienced about 40 years ago and again in 2009 although it is likely that small movements have been continually taking place in between. The main river of the valley runs along the toe of the landslip and has at least partially caused the current problem. The other likely causes are increased rainfall, lack of full function of the local drainage system and possibly increased embankment weight from widening the lower roadside verge.

3.3 Following the more recent pronounced landslip activity late in 2009, traffic has been confined to single way working under the control of traffic lights using the northbound lane. Scott Wilson were engaged to provide geotechnical advice to the Council. A series of boreholes have been undertaken to gain an understanding of the site's sub surface history and inform the choice of options open to the Council. Monitoring of soil movements has been taking place and will be supplemented by a remote digital system. These are given in more detail in the attached report (Appendix A) from Scott Wilson and summarised below. The risk level compares for each of the options, the potential of further ground movement taking place and traffic flow being interrupted to allow repairs to be undertaken.

Option	Description	Estimated costs	Risk level	Comments
Do nothing	Continue with existing single way working under traffic control	£20k p.a.	Very High	It is very likely that disruption to traffic will occur and the diversionary routes will have to be used at short notice whilst repairs are undertaken. These routes are unsuitable and considerable amounts of time/funds will have to be diverted to improve their ability to cope with the levels of traffic expected. The journey times will become unreliable leading to major issues with public transport, emergency services and general business/leisure/community life in the greater Southend area. The situation will continue to be monitored to manage the risk of further movement.
1 Do minimum – 1 lane	Formalise roadside & field drainage	£200k + £20k p.a.	High	Further ground movement will take place, but expected to be slow. Little scope to deal with traffic when remaining lane needs remedial works. Ongoing maintenance/monitoring costs
2 Do minimum – 2 lanes	Formalise roadside & field drainage. Construct new northbound lane uphill of existing road	£320k	High	Further ground movement will take place, but it is expected to be slow. Two lanes will give added scope to keep traffic moving in event of further movement requiring remedial works. Ongoing maintenance/monitoring costs.
3 Major drainage – 2 lanes	Formalise roadside & field drainage. Construct new northbound lane uphill of existing road. Install counterfort drains east of road	£1,200k	Medium to high	Still risk of further ground movement, but expected to be slow. Two lanes will give added scope to keep traffic moving in event of further movement requiring remedial works. Ongoing maintenance/monitoring costs. It will be a very difficult operation to install the drainage east of the road due to the unstable nature of the soil.
4 West realignment	500m of new road west of existing	£1,200k	Low to medium	Longer term to implement
5 Realignment to east	750m of new road east of existing on valley floor	£2,250k	Low	Longer term to implement
6 Reconstruct on existing alignment	Excavate existing poor ground and replace with granular material	£2,350k	Low	Major earthworks operation, diversion needed. Longer term to implement
7 Bridge type solutions	Piled wall, embankments or multi span bridge	£2.3m - £16.5m	Low	Longer term to implement. Not considered in detail because of costs

3.4 To reduce the risk of future disruption of the B842 at Conie Glen to low, will require either the road to be relocated away from the landslip area or the poor ground to be replaced with better material. The landslip process is expected to continue. Each of the remaining options has a risk of future disruption, but notes that the movements will be slow, particularly if the drainage is improved, and that these can be managed by an effective monitoring system.

3.5 The works undertaken to date to stabilise the toe of the landslip, undertake boreholes, gain geotechnical advice and monitor movements is £230,000. This is currently being met from Roads Maintenance Revenue. If approved, this figure would be capitalised and added to the cost of option chosen.

4. IMPLICATIONS

4.1	Policy	None
4.2	Financial	Existing approved capital schemes within Roads & Amenity Services will have to be rephased to accommodate the expenditure at Conie Glen if approved.
4.3	Personnel	Officer time required to implement.
4.4	Equalities Impact Assessment	Not required.
4.5	Legal	If the recommended option is approved, an agreement will be required to gain access to the necessary ground. Although co-operation from the landowner has been excellent so far, there is a risk that formal entry to construct the works may take some time to arrange.

Andrew Law
Director of Operational Services

For further information, please contact:

Name Arthur McCulloch
Job Title Principal Engineer
Date 9 February 2010

Appendix A – B842 Conie Glen Landslide - a report by Scott Wilson

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