

EAST AYRSHIRE COUNCIL

CABINET – 23 JUNE 2010

2010-11 BRIDGE AND CULVERT STRENGTHENING PROGRAMME

Report by the Depute Chief Executive/Executive Director of Neighbourhood Services

1. PURPOSE OF REPORT

- 1.1 The purpose of the report is to seek approval of Cabinet for the proposed 2010-11 Bridge and Culvert Strengthening Programme and the proposed programme for the construction of the replacement B741 Muck Water Bridge.

2. BACKGROUND

- 2.1 At its meeting on 22 April 2009 the Cabinet approved a ten year bridges investment programme taking account of priorities and affordability. The structures in the report included bridges, culverts, retaining walls and footbridges, which are maintained by the Roads Division. A sum of £8.96M was approved for bridge and culvert strengthening works over ten years from 2009/10 to 2018/19 and a further sum of £1M was allocated for the construction of a bridge over the Kilmarnock Water at Dean Road to replace the existing ford and footbridge.
- 2.2 The report to Cabinet on 22 April, 2009 described the programmes of bridge assessments and bridge inspections that are being carried out and outlined how the information being collected is used to prepare prioritised bridge strengthening and replacement programmes.
- 2.3 Bridge assessments, principal inspections and general inspections that have been carried out to date have identified a total of £16M of strengthening and upgrading work. A programme of interim measures is being implemented to manage structures that have been identified as being weak or requiring upgrading and include weight restrictions, lane restrictions and / or regular monitoring. Such measures will be put in place until works are brought forward as part of the prioritised programme of Bridge and Culvert Strengthening.

3. 2010-11 BRIDGE AND CULVERT STRENGTHENING PROGRAMME

- 3.1 The 2010-11 capital allocation for bridge and culvert strengthening is £650,000. The proposed programme for 2010-11 is set out below and takes account of information from bridge assessments and inspections completed during the last year.

Interim Measures	£ 65,000
Bridge Assessments	£110,000
Bridge Strengthening	£165,000
Upgrading works identified from inspections	£220,000
Rail Incursions	£ 25,000
Bridge Parapets	<u>£ 65,000</u>
Total	<u>£650,000</u>

3.1 Interim Measures (£65,000)– Interim measures are used to manage weakened structures or those requiring upgrading, until a permanent solution can be provided as part of the Bridge and Culvert Strengthening programme. Such measures include weight restrictions, lane restrictions and propping are implemented until structural upgrading can be carried out. Weight limits will be introduced at 9 bridges in 2010-11. Interim measures will be carried out at Mathew Burn Culvert in Darvel including installation of bollards to prevent parking on the footway.

3.2 Bridge Assessment (£110,000) – The Bridge Assessment Programme is 82% complete and the remaining 18% will be completed by 31 March 2011. Notwithstanding the Council's efforts over the last four years, Network Rail has still to carry out the assessment of 13 rail bridges. There have been discussions at a national level and Network rail have indicated that a restructuring has been carried out within their organisation and they are endeavouring to progress this matter now. It is proposed to allocate £50,000 to complete the Council's programme of bridge assessments and £60,000 for the Network Rail bridge assessments.

3.3 Bridge Strengthening and Replacement (£165,000) - The following bridge strengthening and replacement programme is proposed to upgrade structures that have failed the 40 tonne assessment:-

3.3.1 B741 Muck Bridge Replacement - The need to replace Muck Bridge, on the B741 near Dalmellington, was identified in the programme last year. Site surveys, ground investigation, assessment of options and preliminary design work have been carried out. The ground conditions are extremely poor, with 30 to 40metres depth of peat and soft clays overlying bedrock. This will require either the removal or stabilisation of the peat at significant cost.

The preferred option is a reinforced concrete box culvert which would minimise the loading on the poor ground, minimise costs and provide a small improvement in the flow through the structure. The estimated construction cost is £609,000 including a temporary bridge for local access during the site works and a contingency sum because of the poor soil conditions.

The B741 carries 300 to 400 vehicles per day and can only be used legally by light vehicles as a 3T weight restriction has been in place on

the bridge since 3 November 2008. Subject to local consultations, it is proposed to close the B741 for approximately 4 months during the construction of the culvert, overcoming the need for a temporary bridge during the site works and reducing construction costs by £50,000 (closure of the road during construction would necessitate a detour of 25 miles for light vehicles accessing the 14 properties directly affected by the closure).

It is therefore proposed to:-

- (a) proceed with the box culvert option and to allocate £50,000 in 2010-11 for design, land purchase, tender document preparation and additional soil investigation to determine how best to stabilise the ground conditions;
- (b) invite tenders for the scheme in March 2011;
- (c) commence site works in the summer of 2011 when weather and soil conditions are likely to be at their best.
- (d) Reprofile the 10 year capital programme to accommodate the construction works in 2011-12.

3.3.2 U758 Skeldon Bridge Replacement - This bridge is a boundary bridge and South Ayrshire Council act as lead authority. At it's meeting on 16th December 2009, Cabinet agreed to amend the 10 Year Programme for the design of the bridge to be carried out in 2010-11 and construction in 2011-12. It is proposed to allocate £30,000 as East Ayrshire Council's contribution to design, land and ground investigation in 2010-11. South Ayrshire Council has also committed £30,000 to this project this financial year.

3.3.3 Other bridge replacements - Littlemill Bridge near Rankinston; Slot Burn Culvert near the boundary with South Lanarkshire; Burnfoot Bridge near Darvel; and the Whiteleeburn Bridge north of Stewarton; have all failed their bridge assessment, are in poor condition and require to be replaced or strengthened. The structures have been prioritised in accordance with the methodology approved by Cabinet on 4th June, 2008. It is proposed to prepare designs, negotiate for land where necessary for all four schemes and carry out the strengthening of Whiteleeburn Bridge. An allocation of £85,000 is proposed for these works in 2010-11.

3.4 Principal and General Inspections (£220,000)– The Principal and General Inspection programme has identified that urgent remedial works are needed at a number of structures; (a) Powharnal Burn Culvert, near Muirkirk, failed concrete pipes to be replaced; (b) Pogiven Bridge, near Darvel, masonry repairs and strengthening; (c) Woodhill Culvert near Kilmaurs, repairs to a failed section of the culvert; (d) Old Sorn Bridge, Sorn, masonry repairs to a damaged pier; (e) Auchmillan Bridge South, near Mauchline, repairs to the arch barrel and parapet; (f) Wyndy Burn Bridge, near Sorn, masonry repairs and replacement of collapsed training walls; (g) Cluech Burn Bridge, near Sorn, extensive masonry repairs to demolished parapet. Structures (b) to (g), above,

are new additions to the list of MPR4 bridges (those in need of urgent attention) identified in the 10 Year Programme but are considered to be of higher priority. It is proposed to allocate £220,000 to carry out the necessary remedial works in 2010-11.

3.5 Rail Incursions (£20,000) – It is proposed to install safety fence mitigation measures at the Dunlop Neighbourhood site and the Rigg Road Bridge site. Network Rail will provide match funding.

3.6 Bridge Parapets (£65,000) – It is proposed to allocate £65,000 to take down and rebuild the downstream parapet of the Sorn New Bridge.

4.0 ADDITIONAL SCHEMES

4.1 Kilmarnock Water Bridge at Dean Road – A budget of £1.0M was approved by Cabinet at its meeting of 11 February 2009 for the design and construction of a bridge to carry Dean Road across the Kilmarnock Water. A Feasibility Study to consider options for this scheme was commissioned in 2009-10 and a final report was received from the consultants at the end of May 2010. The report recommends a bridge of box culvert construction to replace the ford and adjacent footbridge. The progress of this project will be reported in the normal manner through the Finance and Service Strategy report to Cabinet

5.0 FINANCIAL IMPLICATIONS

5.1 The proposed programme of works in 2010-11 will be funded from the 10 year Roads and Transportation Capital budget, previously approved. A revised 10 year bridges programme, taking account of up to date bridge assessment and inspection information will be the subject of a future report to Cabinet, on completion of the bridge assessment programme.

6.0 LEGAL IMPLICATIONS

6.1 Under the Roads (Scotland) Act 1984, Roads Authorities have a duty to manage and maintain public roads. This duty includes the proper maintenance of all structures carrying or supporting the road.

7.0 PERSONNEL IMPLICATIONS

7.1 There are no personnel implications

8.0 POLICY IMPLICATIONS

8.1 The proposed programmes are in accordance with the Council's Local Transport Strategy objectives in terms of reversing the decline in the condition of the bridge stock and completing the assessment and strengthening of those structures to cope with EC Standards.

9.0 COMMUNITY PLANNING IMPLICATIONS

9.1 The 10 year Bridge and Culvert Strengthening Programmes will contribute to Delivering Community Regeneration and Improving Community Safety and by ensuring access is maintained to all areas of East Ayrshire for economic activity, employment and educational opportunities and that bridges and culverts are in a safe condition for the travelling public.

10.0 RISK MANAGEMENT IMPLICATIONS

10.1 A delay in the delivery of the 10 year programme will expose the Council to potential risks with regard to the deteriorating condition of the bridge stock which could result in structure failure and reduced level of service and accessibility issues for the travelling public.

11.0 RECOMMENDATION

11.1 It is recommended that the Cabinet:-

- (i) Approves the 2010-11 Bridge and Culvert Strengthening Programme as set out in Section 3, above;
- (ii) Approves the proposed programme for replacing Muck Water Bridge and that consultation is carried out on a proposed temporary closure of the road during the bridge replacement.
- (iii) Otherwise note the report.

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Depute Chief Executive / Executive Director of Neighbourhood Services
10/6/10

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LIST OF BACKGROUND PAPERS

1. Bridges, Traffic, Transportation and Road Safety Programmes 2008-09 Cabinet – 4 June 2008
2. Roads and Transportation Capital Investment Programme 2009/10 – 2018/19 - Cabinet - 4 March 2009
3. 10 Year Bridge and Culvert Strengthening Programme - Cabinet – 22 April 2009

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