

## **EAST AYRSHIRE COUNCIL**

**DEVELOPMENT AND PROPERTY SERVICES COMMITTEE – 12<sup>th</sup> October 2005**

### **REVIEW OF ROAD BRIDGE ASSESSMENTS/STRENGTHENING AND FUNDING REQUIREMENTS**

#### **Report by Executive Director of Development and Property Services**

## **1. PURPOSE OF REPORT**

### **1.1 The purpose of this report is to:**

1. advise the Committee of the current status of the programme of structural assessments of the Council's road bridges, and the requirements for strengthening/replacement of structures arising from the assessment process
2. request the Committee to note that a Report was submitted to the Policy and Resources Committee on 20<sup>th</sup> September 2005 asking the Committee to note the additional funding required to bring the assessment process and the strengthening/replacement programmes up to date
3. advise the Committee that the P&R Committee noted the report and agreed to consider, as part of the 2006/07 budget setting process, the allocation of additional funding to allow the completion of the assessment and strengthening programmes.
4. advise the Committee of the current backlog of bridge maintenance.

## **2. BACKGROUND**

### **2.1 ASSESSMENTS**

**2.2** A national programme of assessment and strengthening of local authority and privately-owned road bridges and retaining walls was started in 1988 to determine their ability to carry the 40 Tonne vehicle loads that were to be introduced to the UK in January 1999.

**2.3** The maximum permitted gross vehicle weight is currently 44 tonnes (with the same axle weights as the 40 tonnes vehicles) and the Department for Transport is considering proposals to increase the maximum gross weight of vehicles allowed on UK roads to 60 or 84 tonnes.

- 2.4** East Ayrshire Council has 412 structures comprising bridges, culverts and retaining walls that fall within the assessment criteria. The assessment of these structures to the 40 tonne criteria is ongoing but behind schedule. Any future increase in permitted gross vehicle weights will put further pressure on the Council to complete and update its bridge assessment and strengthening programme.
- 2.5** It is imperative that the assessment programme is completed to allow the bridge stock to be safely and sustainably managed with the aid of a full option appraisal. At present, decisions have to be made regarding safety and operational needs on an adhoc basis.
- 2.6** The current backlog will also impact on the Roads Division's ability to conform with the new Statutory Performance Indicator relating to bridges which was introduced this year.
- 2.7** Those structures that have not yet been assessed are being kept open/unrestricted on the basis of an annual visual inspection carried out once a year by a Chartered Engineer. However, pressure of work undertaking emergency repairs to the current bridge stock has reduced the number of inspections carried out.
- 2.8** Following on from the present assessment programme it is widely recognised that Local Authorities should instigate an on-going steady state programme of bridge assessments. This is to reflect the fact that over a period of time the condition of the structure can deteriorate from that when it was originally assessed, traffic flows may have increased and the original assessment safety margin may now be considered to be too low. Obviously, implementation of such a programme has major resource implications.

### **3. STRENGTHENING PROGRAMME ARISING FROM THE ASSESSMENTS**

- 3.1** Of the structures that have already been assessed the failure rate is 26% for Council bridges and 33% for Private bridges (Railway, etc).
- 3.2** A number of Council bridges that have failed their assessment have already been strengthened or had historical weight limits maintained. There are however, 10 Council bridges still awaiting funding for strengthening or replacement.
- 3.3** 5 Private bridges (Network Rail and Scottish Power) have failed their assessment and 4 are being strengthened this financial year. However, the Council is only liable for costs associated with the Network Rail bridge.
- 3.4** Based on the above failure rates it is anticipated that from those structures still to be assessed there will be a further 55 bridges that will fail their assessment and which will require to be strengthened, replaced or the imposition of a weight limit.

## **4. MAINTENANCE BACKLOG**

- 4.1** Maintenance programmes should be based on the findings from the General Inspections (2 year cycle) and Principal Inspections (6 year cycle). The Principal Inspection is a more detailed inspection than the General Inspection.
- 4.2** However, again due to pressure of work repairing the bridge stock, the Principal Inspection programme has never been completed within the prescribed cycle.
- 4.3** The Principal Inspection (PI) programme has been revisited this year with the aim of achieving approximately 90-100 inspections each year over the next 6 years. In-house staff are involved in this work and it is proposed to engage assistance from Consultants.
- 4.4** Part of the PI involves the assigning of a maintenance prioritisation ranking to the structure as well as estimating the cost of any necessary remedial works required.
- 4.5** The latest round of General Inspections on the Council's structures stock has just been completed and has provided evidence that a significant proportion of the structures stock is in an unacceptable state of repair. In the majority of structures inspected defects were identified in previous inspection cycles. Increased budget allocations are required to tackle this backlog and to prevent further deterioration of the bridge stock.

## **5. FINANCIAL IMPLICATIONS**

### **5.1 ASSESSMENTS**

- 5.2** In the current financial year £45,000 has been allocated from the Bridges Capital Budget for assessment of 5 Private (Network rail) bridges and 6 Council Structures (out of the 412) by Consultants.
- 5.3** It is estimated that beyond this financial year **£725,000** is required to allow completion of the bridge assessment programme by a combination of in-house staff and Consultants.
- 5.4** The P&R Committee agreed that the additional cost in relation to the outstanding assessment programme will be considered as part of the 2006/07 budget setting process.

## **6. STRENGTHENING PROGRAMME ARISING FROM THE ASSESSMENTS**

- 6.1** In the current financial year **£65,000** has been allocated from the Bridges Capital Budget for strengthening of a Network Rail bridge which failed its assessment.

The Council is liable for this since provision for the additional loading standard is the Roads Authority's responsibility. A further **£55,000** is required next year to complete the Council's contribution to the strengthening of this bridge.

- 6.2** The estimate of projected expenditure on strengthening or replacing bridges that have failed/anticipated that they will fail their assessment is **£3,850,000**. This figure is conservative in that it does not include for retaining walls and likely Statutory Undertaker costs, etc, which are unknown at this stage.
- 6.3** As described above, funding of the strengthening/replacement of assessment failures is presently being met from the Structures Capital Budget allocation. This budget (£200,000 in the current year) does not allow for a planned programme of strengthening works to be carried out. Instead the money has to be shared with emergency repairs and unplanned strengthenings of other road structures which are not necessarily on the assessment programme. (e.g. culverts below 1.8m span).
- 6.4** If the strengthening programme was spread over 20 years the additional Capital allocation required is estimated at **£193,000 per year**.
- 6.5** The P&R Committee agreed that the additional costs in relation to the strengthening programme will be considered as part of the 2006/07 budget setting process.

## **7. MAINTENANCE BACKLOG**

- 7.1** Principal Inspections carried out this year on the Roads Division's 28 footbridges indicate that they have a maintenance backlog amounting to over **£300,000**. Separate PI's carried out on 16 unallocated former Regional/District Council footbridges has identified a maintenance backlog of over **£278,000** and these unallocated footbridges are the subject of a separate report submitted to both this Committee and the P&R Committee on 20 September 2005.
- 7.2** In addition, 37 Principal Inspections carried out on the Council's road bridges in 1999 indicated a maintenance backlog of £235,000, which equates to approximately £6,400 per bridge. Due to current budget pressure it has not been possible to address this backlog which could result in further deterioration. EAC has 544 bridges and culverts of a span greater than  $\geq 0.9\text{m}$ .
- 7.3** In almost every year since East Ayrshires' inception there has arisen an emergency situation with respect to the structures stock which usually requires a redirection of major expenditure from already limited budgets. Even without these emergencies, present and past budget allocations do not allow for a planned effective proactive maintenance programme to be developed and implemented on the Council's road structures.

- 7.4** Instead monies are spent responding to emergencies and replacing parapets demolished as a result of vehicle accidents with limited reactive maintenance replacing any planned proactive maintenance.
- 7.5** The condition of the Council's road structures are in a continuing state of deterioration and without significant investment this will eventually lead to the need to close or weight restrict many bridges with the consequent increase in traffic congestion and possible effect on the local economy.

The inspection and assessment programmes detailed in this report will provide more accurate estimates of the costs of the maintenance backlog and the ongoing revenue costs required to keep the bridge stock in a safe and serviceable condition.

A further report will be brought to the Committee on these asset management issues.

## **8. LEGAL IMPLICATIONS**

- 8.1** 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 the road.

## **9. POLICY IMPLICATIONS**

- 9.1** Bridges are an essential component of the road infrastructure, and closure or weight restriction of the bridges and other structures as they deteriorate below acceptable safety levels would severely affect the local and wider community and be in conflict with the Council's access, social inclusion and non-discrimination policies.

## **10. RECOMMENDATIONS**

- 10.1** The Committee is requested to note:-

- 1/ the current status of the programme of structural assessments of the Council's road bridges, and the requirements for strengthening/replacement of structures arising from the assessment process
- 2/ that a Report was submitted to the Policy and Resources Committee on 20<sup>th</sup> September 2005 asking the Committee to note the additional funding required to bring the assessment process and the strengthening/replacement programmes up to date.

- 3/ that the P&R Committee noted the report and agreed to consider, as part of the 2006/07 budget setting process, the allocation of additional funding to allow the completion of the assessment and strengthening programmes.
- 4/ the current backlog of bridge maintenance.

**James Lavery**  
**Executive Director of Development & Property Services**

**21/09/05**  
**SG/AEI/YK**

#### **LIST OF BACKGROUND PAPERS**

1. Roads Capital Programme 1997-1998, Bridge Strengthening Development Services Committee – 3 June 1997.
2. Structural Assessment of Road Bridges owned by Railtrack Development Services Committee – 3 June 1997.
3. Structural Assessment and Strengthening of Road Bridges. Development Services Committee – 26<sup>th</sup> January 1999.
4. Structural Assessment and Strengthening of Road Bridges. Development Services Committee – 3<sup>rd</sup> August 1999.
5. Structural Assessment and Strengthening of Road Bridges. Development Services Committee – 11<sup>th</sup> April 2000.
6. Review of Road Bridge Assessments/Strengthening and Funding Requirements Policy and Resources Committee – 20<sup>th</sup> September 2005

**For further information please contact Alan Ierland on 01563 576310**

**Implementation Officer: Alan Ierland**