



***Technical, Economic and  
Environmental Services Scrutiny  
Panel***

***The Council's Policies on the  
Maintenance and Inspection of  
Bridges and Structures  
30<sup>th</sup> June 2003***

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# TECHNICAL, ECONOMIC AND ENVIRONMENTAL SERVICES SCRUTINY PANEL

## REPORT ON THE PANEL'S SCRUTINY REVIEW OF THE COUNCIL'S POLICIES ON THE MAINTENANCE AND INSPECTION OF BRIDGES AND STRUCTURES

### INTRODUCTION BY THE CHAIR



I found investigating this subject very interesting as we have such a variety of bridges in Tameside.

Road, railway, canal and footbridges cover all means of transport and we also have culverts, which are inspected by the same inspection team.

Our bridges are a very important part of our transport system, as they carry the varied means of transport. For instance, you cannot leave Hyde town centre and travel out of the town without going over or under a railway bridge.

I would like to thank all of the engineering staff who gave evidence to the Panel for their candour.

**Lowet Bennett St, Hyde  
(Footpath over railtrack)**



A handwritten signature in black ink that reads "P J Robinson".

**Councillor P J Robinson**

**Chair of Technical, Economic  
and Environmental Services  
Scrutiny Panel**

## 2. SUMMARY

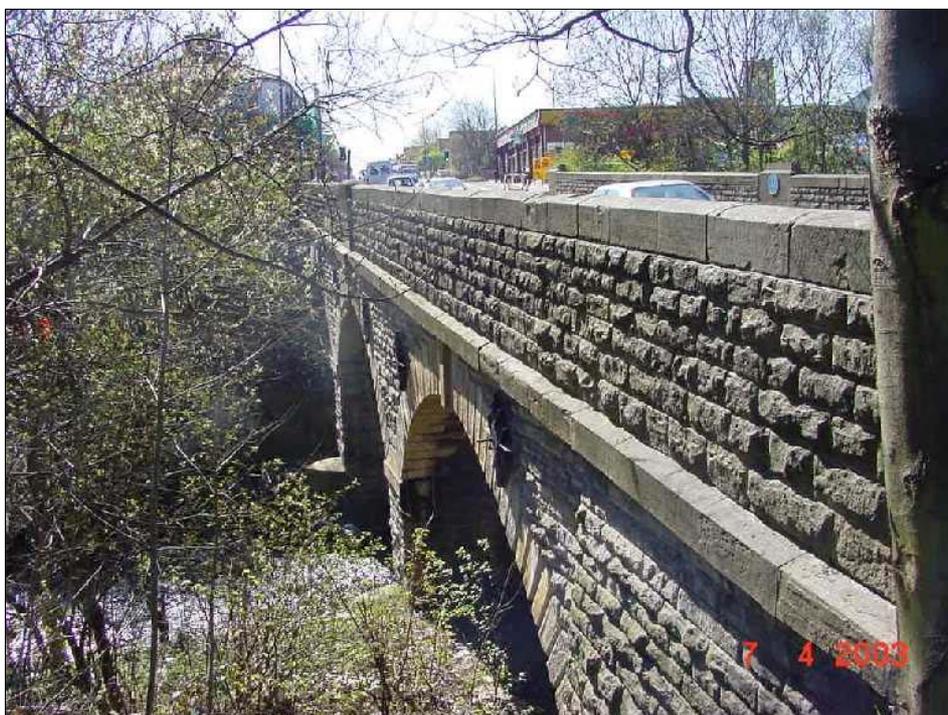
This report, which was approved by the Members of the Technical, Economic and Environmental Services Scrutiny Panel on the 30<sup>th</sup> June 2003, seeks to examine the Council's policies for the maintenance and inspection of the bridges for which it is legally responsible. In dealing with these issues, the Panel have looked at how effectively the Council's inspection regimes are being implemented and delivered, and at the strategic aims of the service.

Although the scrutiny review was not particularly lengthy, the report deals thematically with the scrutiny exercise. The conclusions and recommendations, relate to the major issues that were discovered by the Scrutiny Panel in the course of the exercise.

In preparing this report the Scrutiny Panel met officers responsible for the Council's service, and undertook a site visit to inspect a number of council owned bridges. The Scrutiny Panel also posed a number of written questions to the Cabinet Deputy (Technical Services) and the Head of Engineering.

The Scrutiny Panel found that many of the borough's bridges are very old, and unfortunately details of their construction methods are unavailable. Consequently, one of the main issues arising from the review is the importance of regular maintenance and inspection routines.

### **Alma Bridge, King Street, Dukinfield (on the border of Lancashire and Cheshire)**



### **3. MEMBERSHIP OF THE SCRUTINY PANEL**

#### **Membership during 2002/2003**

Councillor P Robinson (Chair), Councillor Wardle (Deputy Chair), Councillors Doubleday, Downs, Meredith, S Quinn, Roberts and Smith.

#### **Membership during 2003/2004**

Councillor P Robinson (Chair), Councillor Shepherd (Deputy Chair), Councillors Doubleday, Grundy, Meredith, S Quinn, S Smith and P Wright

### **4. TERMS OF REFERENCE**

The following Terms of Reference were approved by the Panel at its meeting held on 3<sup>rd</sup> February 2003 (See Appendix One for details of the Scoping Document):

**“To examine the Council’s policies and their implementation, together with the legal responsibilities for the inspection and maintenance of bridges and structures in the borough, regardless of ownership”**

### **5. METHODOLOGY**

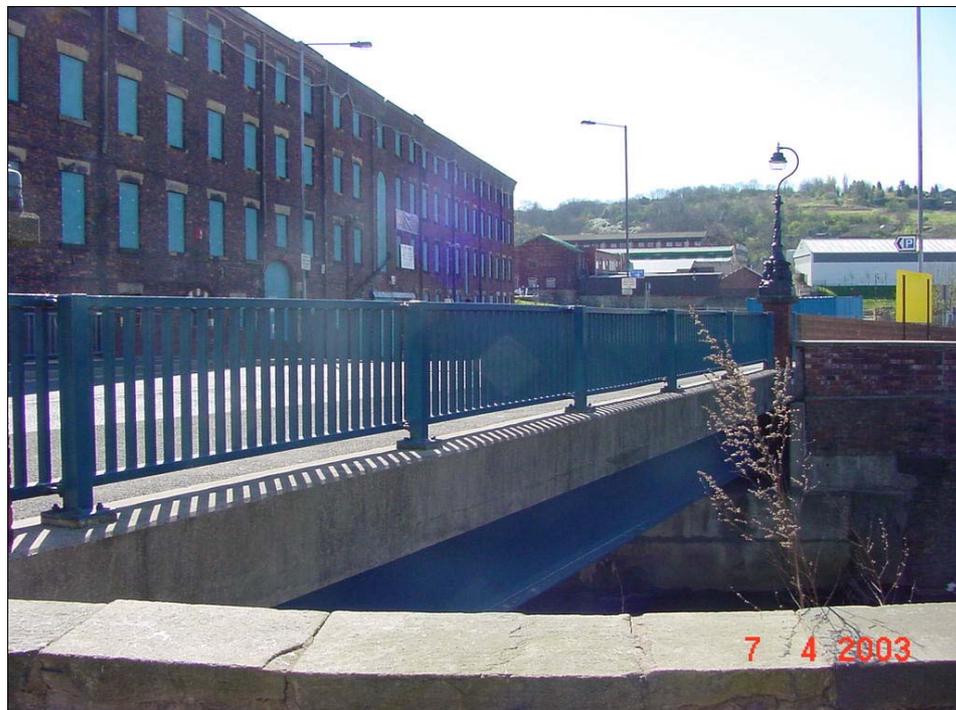
- 5.1 The Panel interviewed Mr Roger Booth, the Engineering Design Manager, and Mr David Goatman, Group Engineer, who provided information regarding the Council’s policies on the Inspection and Maintenance of the Borough’s bridges.
- 5.2 Members of the Scrutiny Panel also undertook site visits to various bridges in Tameside, which illustrated some of the issues facing the Council and brought back photographic evidence.
- 5.3 The Chair and Deputy met with Mr Richard Kromolicki, a Section Engineer.
- 5.4 Information was also received from the Cabinet Deputy responsible and the Head of Engineering.
- 5.5 The Panel contacted Network Rail and British Waterways Board. The comments received from British Waterways Board are recorded under Section 7 of this report.

## 6. REVIEW FINDINGS

### 6.1 Engineering Design Unit

- 6.1.1 The Council's Engineering Design Unit is responsible for the inspection and maintenance of its highway structures and bridges.
- 6.1.2 The Unit's key objective for highway structures and bridges is:  
**"To ensure all Tameside's bridges and highway structures are maintained to a satisfactory standard".**
- 6.1.3 The Unit is responsible for undertaking annual bridge inspections and ensuring ongoing maintenance problems are acted upon.
- 6.1.4 The Unit is also responsible for undertaking General, Principal and Special Inspections and carrying out the Bridge Assessment Programme in accordance with timescales and budget availability.
- 6.1.5 There are 363 bridges in Tameside of which the Council owns 145.

#### Caroline Street, Stalybridge



6.1.6 The total breakdown of the ownership of bridges in Tameside is as follows:-

<b>OWNERSHIP</b>	<b>NUMBER</b>
Tameside MBC	145
Railtrack	106
British Rail Property Board	17
British Waterways	28
Highways Agency	1
Unknown	22
Private	28
Manchester City Council	1
United Utilities	9
Oldham MBC	1
Derbyshire CC	4
Stockport MBC	1

6.1.7 The Unit states that general inspections should be carried out in intervals not exceeding two years, and include a visual aspect.

6.1.8 Principal inspections should be carried out in intervals not exceeding six years, and include a close examination of all inspectable parts of the structure.

6.1.9 Special inspections are undertaken when a particular problem needs investigating.

6.1.10 Priority is given to strengthening works required on major routes in the borough together with consideration for safety issues.

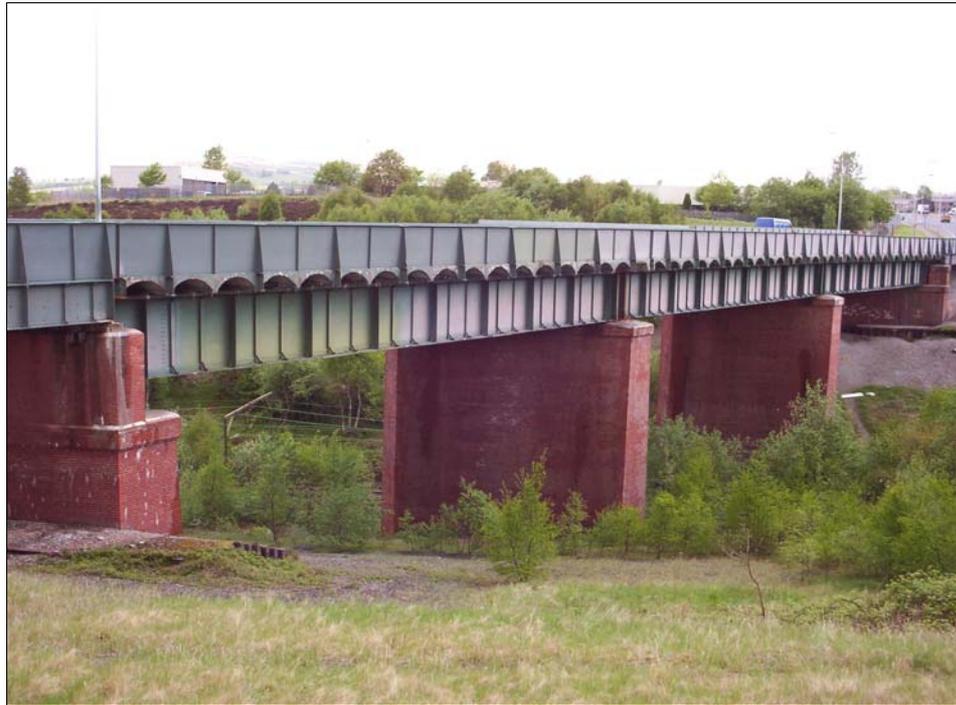
6.1.11 Unfortunately, due to high workloads within the Unit, the Bridge Assessment programmes have lapsed during the last couple of years.

6.1.12 There are 153 bridges currently in the assessment programme. Of these, the assessment of 31 bridges is incomplete, 41 bridges require strengthening work and 12 bridges require structural maintenance.

6.1.13 The inspection of highway structures is an essential part of their maintenance and it must be done as part of a systematic process rather than simply in response to their breakdown or failure.

6.1.14 Railtrack has appointed the Council to inspect road bridges which cross over the rail track.

## Hattersley Viaduct, Hattersley, Hyde



- 6.1.15 The Council ensures that they abide with British standards, for their bridge inspections and maintenance. It is likely that in the future British and European standards will be amalgamated.
- 6.1.16 Many bridges in Council ownership don't have associated drawings as they were built in the 1920's and may be lost.

## 6.2 Business Plan

- 6.2.1 The principal aim of the service is to deliver the most effective programme of bridge and retaining wall inspection, assessment, maintenance and strengthening works within the constraints of the annual budgets available.
- 6.2.2 In order that the programme runs smoothly and delivers the plan's aims and objectives, the following should be undertaken on an annual basis:
- ◆ Bidding for annual funding via the Local Transport Plan;
  - ◆ Preparing an annual programme of assessment strengthening and maintenance works based on the capital and revenue budgets available and how well the Council is progressing with its overall long-term programme;
  - ◆ Estimating the cost of the annual programme works;

- ◆ Maintaining and improving an asset register that records the current status of all the bridges in the Borough and all the outstanding strengthening works required;
- ◆ Prioritising the assessment programme so that the strength of the important highway bridges in the Borough (all owners) is re-examined on a regular basis (ideally every 10 to 12 years);
- ◆ Planning a detailed strengthening and structural maintenance programme that aims to ensure all the important highway bridges in the Borough are strong enough to support the 40 Tonne “Euro lorry” (achieving this target depends on the availability of future years’ programmes);

### **White bridge, Dukinfield (40 tonne weight restriction)**



- ◆ Obtaining approval from other bridge owners so that Tameside can complete the assessment of their bridges (in particular Network Rail);
- ◆ Liaising with all other bridge owners in the Borough to ensure that all the strengthening and structural maintenance programmes are co-ordinated;
- ◆ Reviewing the Tameside staffing numbers and training requirements to deliver the programme;
- ◆ Reporting yearly achievement to the Local Transport Plan process;
- ◆ Re-assessing the programme when unexpected safety issues come to light, for example partial structure collapse.

## Oldham's Bridge, Stalybridge Town Centre



### 6.3 Budget

6.3.1 The Capital and Revenue funding is prioritised at the start of each financial year against a programme of known essential works. Reactive events have to be dealt with by balancing the consequence of leaving essential elements on certain other structures to later in the programme.

Issues of Health and Safety have to be balanced against the implications of deferred maintenance.

6.3.2 The Unit has an annual Revenue Budget of approximately £94,000.

6.3.3 The Revenue Budget is funded from council resources and can be used for any aspect of bridgework or type of bridge owned by the council.

- 6.3.4 This budget is generally directed at footbridges or any other loadbearing structure owned by the council, and not supporting a highway which has traffic.
- 6.3.5 Typical projects funded by this budget include complete footbridge replacements, maintenance work and routine inspections.
- 6.3.6 The Capital Budget is funded as a result of the Local Transport Plan bidding process. The money comes from the Department for Transport.
- 6.3.7 The Department for Transport decide in December each year, the level of budget to be paid to the Council, based on how realistic they consider our Local Transport Plan bid, whether or not they consider that it complies with their aims, has the Council delivered in previous years, and how much the chancellor says public spending should be.
- 6.3.8 This enables the Unit to ascertain how much funding will be available for the following financial year, and how much will be required to complete each project.
- 6.3.9 The funding from the Capital Budget is specifically intended to be used to strengthen highway supporting/protecting bridges and retaining walls in Tameside.
- 6.3.10 The money can also be used to strengthen Tameside, Network Rail, British Waterways and private owner bridges in Tameside, subject to the Council and bridge owners agreeing how the scheme should be funded prior to its commencement.
- 6.3.11 To date only one Network Rail bridge in Tameside has been strengthened as a jointly funded project (this was located on Stamford Street, Stalybridge).
- 6.3.12 The aim of strengthening is to achieve the forty tonne weight standard on all bridges.
- 6.3.13 Unfortunately, funding is not available immediately, for all major structural works, therefore, the Unit has to inspect and prioritise any anticipated works and maintenance is undertaken on a priority basis.
- 6.3.14 The Unit's Work Programme is managed in accordance with the funds available. The Unit generally knows the costs involved in undertaking each project, therefore, if sufficient funds are unavailable for a particular project, the Unit will not embark on the work until funding is available. Alternatively the Unit will manage the project and ensure that enough funding will be available to complete the work within the following year's work programme.

**Arden Bridge, Denton**  
**(Replacement of bridge subject to obtaining all approvals from**  
**Stockport and Tameside Councils - earliest finish middle of**  
**November 2003)**



## **6.4 Nature and Regularity of Inspections**

- 6.4.1 In recent years resource has focused on the major bridge strengthening programme. Unfortunately, routine general inspections, which should be undertaken every two years, and principal inspections which should be undertaken every six years, have not taken place in accordance with the recommended guidance. The Unit is now addressing this issue, and it is detailed as a key objective within the Service Business Plan for this year.
- 6.4.2 The main reasons for the cause of slippage on the General Inspection programme are issues regarding resourcing (ie. funding of staff and appropriate training). The utilisation of existing inspection staff however, is being investigated, as appropriate training of these staff would need to be addressed.
- 6.4.3 Routine bridge inspections are used to check defects at an early stage. These inspections consist mainly of a visual inspection of the structure and are made in the form of either a Principal Inspection or a General Inspection.
- 6.4.4 Principal Inspections require a complete hands-on inspection of every part of the structure by an experienced bridge engineer.

- 6.4.5 Following the inspection, a report describing the findings is prepared, which may be used for further structural maintenance.
- 6.4.6 General Inspections comprise a visual inspection made by observation from ground or deck level and from any fixed walkway or travelling platform built into the structure. A walkover by a clerk of works is sufficient.
- 6.4.7 Following the inspection, the findings are formally reported and used as a basis to prepare routine maintenance programmes, such as painting, graffiti removal etc.
- 6.4.8 The reports of both the Principal and General Inspections should be taken together to provide a continuous record of any changes in the condition of the bridge.
- 6.4.9 Network Rail and the British Waterways Board have different assessment procedures than those of the Council, and the procedures for Network Rail are more intense than those of the others.
- 6.4.10 All bridges owned by Tameside on important routes, support the 40 tonne axle Euro lorry. There is however, some concern over the strength of a number of bridges owned by third parties, ie. Network Rail and British Waterways. This is a national problem and responsibility lies with the bridge owners. A shortfall in available funding combined with the level of responsibility for repair (ie. 95% Network Rail, 5% Local Authority) is causing a degree of consternation. Tameside MBC are working with third party owners (as are all other Local Authorities), to help resolve the issues.
- 6.4.11 Unfortunately, the Council has little influence on how Network Rail and British Waterways manage and fund the refurbishment of their bridge stock. The funding provided by Central Government under the Local Transport Plan programme is sufficient only to deal with the bridge stock owned by Tameside MBC.
- 6.4.12 The Unit would like to employ a Bridge Inspector if this is feasible.

## **CONCLUSIONS**

- 6.4(C1) That although the routine general inspections and principal inspections have not been undertaken in accordance with the recommended guidance, this issue is being addressed, and has been detailed as a key objective within the Service Business Plan for this year.**
- 6.4(C2) That in order to fulfil its obligations to inspect bridges and structures effectively, the authority would benefit from having**

the full-time services of a dedicated experienced and trained Bridge Inspector.

**6.4(C3)** During Site Visits, the Panel did not consider the road signs indicating the height and weight restrictions on the approach to bridges, to be prominently displayed, and in a position which allows the driver to take preventative or alternative action if necessary.

**6.4(C4)** During the Site Visits, concern was expressed regarding the large extent of fly tipping at the culvert on Halton Street, Hyde and the consequential damage.

**(Halton Street Culvert, Hyde – Desilting Works carried out in 2000)**



**(Halton Street Culvert, Hyde – Erection of New Screen following Desilting Works carried out in 2000)**



**6.4(C5)** The Panel noted that an anticipated housing development at Grove Road, Stalybridge, would require consideration of traffic requirements on the bridge at Grove Road.

## **RECOMMENDATIONS**

**6.4 (R1)** *That the Council ensures that it maintains a regular General and Principal Inspection Programme for its bridges and structures, in accordance with the recommended guidance.*

- 6.4(R2)** *That the Council gives serious consideration to the employment of a designated “Bridge Inspector” and the utilisation of existing inspection staff, via appropriate training, in order to improve the slippage in the inspection programme, and maintain a regular programme in accordance with recommended guidelines.*
- 6.4(R3)** *That road signs which indicate height and weight restrictions, on the approach to bridges, be displayed prominently, and in a position, which allows drivers to take preventative or alternative action if necessary.*
- 6.4(R4)** *That the Council submits a joint bid with Network Rail, via the Local Transport Plan, to lower the road surface under the bridge at Scotland Street, Ashton-Under-Lyne, and widen the road up to the roundabout.*



**Bridge at Scotland Street, Ashton-Under-Lyne**



**Damage to bridge at Scotland Street, Ashton-Under-Lyne**

- 6.4(R5)** *That the Council adopts a stringent approach to fly-tipping at the culvert at Halton Street, Hyde, and prosecutes any perpetrators.*
- 6.4(R6)** *That consideration be given to the introduction of appropriate traffic regulation orders on the bridge at Grove Road, Stalybridge, in view of the anticipated possible housing development.*

## **6.5 Rolling Programme for Bridge Inspections**

The Council has two rolling programmes for bridge inspections:

- 6.5.1 Rolling Programme of Bridge Strengthening and Assessment (Principal Inspections)
- There are 153 highway bridges in Tameside, which are included in the Rolling Programme of Bridge Strengthening and Assessment. The assessments of 31 Bridges on this Programme are currently incomplete. (For details of the bridges on the programme whose assessments are incomplete, see Appendix Two).
  - 41 Bridges are on the Strengthening Programme. Strengthening work involves the replacement of weak structural elements identified during the assessment process. (For details of the bridges on the strengthening programme, see Appendix Three).
  - 20 bridges in the Borough have been strengthened since 1990 and 44 bridges were built to full strength.
  - 12 bridges in the Borough require structural maintenance work. This work involves maintenance of the load bearing structural elements of the bridge so that they can support the loads they were originally designed to support. (For details of the bridges on the structural maintenance programme, see Appendix Four).
- 6.5.2 Rolling Programme of General Inspections
- There are 266 bridges in Tameside which are included in the Rolling Programme of General Inspections.
  - The programme records the dates of the last inspection for each of the bridges on the list. Of the 266 bridges, one has been inspected since 1996, 1 since 1997, 242 since 1998, 19 since 1999, and 3 since 2001.
- 6.5.3 The order of inspections is linked to the road network priority. Bridges that support the principal road network take precedence with non-principal classified roads (B and C class) second. This however, is a general prioritisation in relation to programmed works – urgent works, for example, retaining wall collapse, are dealt with individually on merit.
- 6.5.4 The National Design Manual for Roads and Bridges is issued by the Department for Transport which was developed for the

Motorway and Trunk Road network and is used to guide decisions regarding bridge inspection, assessment and maintenance.

- 6.5.5 The manner in which the programmes for General and Principal Inspections are co-ordinated involves both inspections running in parallel rather than in tandem and each is intended to satisfy a separate function. General inspections are normally carried out from ground level and are conducted on a regular two year basis to identify any obvious bridge defects. The principal inspection is a detailed inspection of structural elements generally carried out as a pre-cursor to assessing the strength of the bridge (eg. Checking the thickness of metal on a steel beam). The Engineering Service Business Plan 2003/2004 has identified the programming of bridge inspection work as a key priority.

### **Richmond Street, Ashton-Under-Lyne, Construction of Bridge**





## **6.6 Consequences of Lack of Maintenance**

- 6.6.1 The definition of “essential strengthening” work is a matter of engineering judgement. However, to summarise, essential strengthening work means anything that will ensure the structure can safely support the traffic loads specified in the latest Department of Transport guidance.
- 6.6.2 The deterioration of a bridge is a slow process.
- 6.6.3 Bridges are designed to have a life span of 120 years.
- 6.6.4 If a bridge in Tameside is assessed as being “weak” – ie. it cannot carry the maximum weight of a vehicle running on the roads today (40 tonne axle Euro lorry) – then as a first precaution, it has to be weight restricted. Following this, the bridge is then added to the Council’s list of structures to be strengthened. The bridge will then be monitored until finance is available for the strengthening work to be completed.
- 6.6.5 Each bridge has to be judged on its merits. The most vulnerable structures rely on cast iron to support the highway, however, cast iron can fail by cracking first rather than bending.

**War Memorial Bridge in Stalybridge**  
**(This bridge has historic value and is part of the community)**



- 6.6.6 If an unpredicted major incident occurs, for example a vehicle running into a bridge parapet, there should be sufficient strength in that part of the structure to resist the impact.

## **7. BRITISH WATERWAYS BOARD**

- 7.1 A principal inspection is carried out which results in a structure being given a condition grading, A (being the best) to E (being the worst).
- 7.2 The results from the principle inspection dictate the frequency of intermediate inspections. The intermediate inspections will be carried out at a maximum period of one year (condition grades D and E and highway bridges with a permanent weight restriction) and 5 years (grades A, B or C).
- 7.3 Where the structure does not have a condition grade (No Performance Indicator) then the impairment score from the intermediate inspections dictates the periods between inspections as follows:
- 6 Months (Impairment score < 80%)
  - 1 Year (Impairment score 61% to 80%)
  - 5 Years (Impairment score < 61%)
- 7.4 Inspections can be more frequent if required by management for various reasons, but they cannot be less frequent than those above.

## **8. OBSERVATIONS OF THE BOROUGH TREASURER, BOROUGH SOLICITOR AND HEAD OF ENGINEERING**

### **8.1 Borough Treasurer**

The capital budget 2003/2004 for Bridges and Structures is £852,000. The Unit's revenue budget in 2003/2004 is £98,760.

The employment of a designated Bridge Inspector would need to be met from revenue and whilst the Bridge Unit underspent by £23,000 in 2002/2003, the Engineering Service overspent by £99,000. Consideration will need to be given as to how any additional costs from the employment of a Bridge Inspector could be accommodated within the overall Engineering Service budget for 2003/2004 and future years.

### **8.2 Borough Solicitor**

The Policies reviewed in the report appear to be aimed at fulfilling the Council's statutory and common law duties in respect of bridges and structures for which it is responsible. There appear to be no legal implications arising from the review itself.

### **8.3 Head of Engineering**

The observations of the Head of Engineering have been incorporated within this report.

## **9. RECOMMENDATIONS**

- 9.1 That the Council ensures that it maintains a regular General and Principal Inspection Programme for its bridges and structures, in accordance with the recommended guidance.**
- 9.2 That the Council gives serious consideration to the employment of a designated “Bridge Inspector” and the utilisation of existing inspection staff, via appropriate training, in order to improve the slippage in the inspection programme, and maintain a regular programme in accordance with recommended guidelines.**
- 9.3 That road signs which indicate height and weight restrictions, on the approach to bridges, be displayed prominently, and in a position, which allows the driver to take preventative or alternative action if necessary.**
- 9.4 That the Council submits a joint bid with Network Rail, via the Local Transport Plan, to lower the road surface under the bridge at Scotland Street, Ashton-Under-Lyne, and widen the road up to the roundabout.**

## Appendix One

# TECHNICAL, ECONOMIC AND ENVIRONMENTAL SERVICES SCRUTINY PANEL

## Inspection and Maintenance of Bridges

### SCOPE AND PROJECT PLAN

Monday, 03 February 2003

#### TERMS OF REFERENCE

To consider the implementation of the Council's ongoing programme for the inspection of bridges and the undertaking of maintenance and repair work.

Structure  
Condition  
Ownership  
Ongoing programme of inspection and maintenance

#### PEOPLE TO SPEAK TO AND WHY

- ◆ Engineering:
  - Roger Booth, Engineering Design Manager  
*To discuss the Council's rolling programme, budget and business plan;*
  - David Goatman  
*To discuss the regularity and nature of inspections and methods of structural testing;*
  - Mike Thompson, Head of Engineering
- ◆ Railtrack
- ◆ British Waterways
- ◆ Highways Inspectors
- ◆ Cabinet Deputy
- ◆ Council's Insurance Department

#### INFORMATION

- ◆ Contents of the rolling programme and how it is implemented
- ◆ Regularity and nature of inspections
- ◆ Consequences of lack of maintenance in case of major incidents
- ◆ Methods of structural testing
- ◆ Business Plan

- ◆ Budget information
- ◆ Guidance for maintenance
- ◆ Information on disabled access – equal opportunities
- ◆ Map highlighting all bridges in the borough

## **CONSULTATION**

- ◆ People who use bridges
- ◆ Emergency services (effects on if bridge closed)
- ◆ PTA
- ◆ Road Haulage Association
- ◆ Department of Transport
- ◆ Highways Agency

**Possible site visits.**

## Appendix Two

### Rolling Programme of Bridge Strengthening and Assessment

#### Assessment Incomplete

Name	Owner	Road Number
Richmond St	Railtrack	
Fairfield Station	Railtrack	
Richmond St Railway	Railtrack	
Lodge Lane	Railtrack	
Godley Brook	TMBC	A560
Granville St	Railtrack	
Currier Lane	Railtrack	
Albion St	Railtrack	
Henrietta St Railway	Railtrack	
Lordsfield Avenue	British Rail Property Board	
Grove Rd Canal	TMBC	
Barmhouse Lane	TMBC	
Stalybridge Tunnel	TMBC	A635
Albion	TMBC	A635
Mossley Station	Railtrack	B6177
Littlemoss Road Railway	TMBC	
Manchester Road	Other	A635
Downing Street Culvert	TMBC	
Stalybridge Tunnel Live	Railtrack	A635
Wolley Mill	TMBC	
Stamford St Railway	Railtrack	A635
Lower Bennet St	Railtrack	
Rycroft Hall Railway	Railtrack	

Guide Bridge Station	Railtrack	A6017
Groby Rd Railway	Railtrack	B6390
Ashton St Canal	British Waterways	B6169
Astley St Railway	Railtrack	B6169
Bennett St	Railtrack	
Ashton Rd	Railtrack	B6170
Winterford Road Railway	British Rail Property Board	
Roughtown Road	Railtrack	

## Appendix Three

### Rolling Programme of Bridge Strengthening and Assessment

#### Strengthening Programme

Name	Owner	Road Number
Fairfield Rd Canal	British Waterways	
Currier Lane	Railtrack	
Mossley Rd Railway	Railtrack	A670
Albion St	Railtrack	
Cow Hill Lane	Railtrack	
Spring Bank Lane Railway	Railtrack	
Fennyfield	TMBC	
Wood Lane Railway	TMBC	
Woodend Railway	Railtrack	
Apethorn Lane W Railway	Railtrack	
Apethorn Lane E Railway	British Rail Property Board	
Wharf Mill	TMBC	A635
Warrington Street	TMBC	A635
Stamford Rd W Railway	Railtrack	B6169
Waggon Road River	TMBC	
Broadbottom Station	Railtrack	
Besthill	TMBC	
Barmhouse Lane Railway	Railtrack	
Park Street West	TMBC	A635
Arcadia	TMBC	A635
St. Michaels	TMBC	A635
Exchange	TMBC	A635
Albion	TMBC	A635

Castle Lane	TMBC	
Broomstair	TMBC	A57
Lower Bennet St	Railtrack	
Rycroft Hall Canal	British Waterways	
Manchester Rd Canal (ironworks)	TMBC	A57
Stamford Rd E Railway	TMBC	B6169
Audenshaw Tunnel	TMBC	A6017
Guide Bridge Canal	British Waterways	A6017
White	Railtrack	A627
Ashton Branch Railway	Railtrack	A627
Oldham Rd Railway	British Rail Property Board	A627
Trial Dog Railway	Railtrack	B6390
Shepley	TMBC	B6169
Ashton St Canal	British Waterways	B6169
Clarence St River	TMBC	B6431
Grove Rd River	TMBC	
Egmont Street	TMBC	
Egmont Street Canal	TMBC	

## Appendix Four

### Rolling Programme of Bridge Strengthening and Assessment

#### Structural Maintenance Programme

Name	Owner	Road Number
Fairfield Rd Canal	British Waterways	
Fennyfield	TMBC	
Denton Station	TMBC	A57
Rycroft Hall Canal	British Waterways	
Hattersley Viaduct	TMBC	A560
Penny Meadow Railway	Railtrack	A670
Caroline St River	TMBC	B6175
Cavendish St Canal	TMBC	A627
Whitelands Canal	TMBC	B6170
Staley Bridge	TMBC	A6018
Newton St	TMBC	B6170
Egmont Street	TMBC	