

RHONDDA CYNON TAF COUNTY BOROUGH COUNCIL

CABINET

24th NOVEMBER 2016

HIGHWAYS STRUCTURES

REPORT OF THE DIRECTOR, HIGHWAYS & STREETCARE IN DISCUSSION WITH THE RELEVANT PORTFOLIO HOLDER, COUNCILLOR A MORGAN

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1. PURPOSE OF THE REPORT

- 1.1 This report seeks to update Members on current and proposed inspection arrangements for Highways Structures and seeks approval for additional resources to continue to improve the condition of our assets.

2. RECOMMENDATIONS

- 2.1 It is recommended that Cabinet:-
- i. Note the current investment commitment to support improvements to the existing highway structures stock
 - ii. Agree to the implementation of a more risk based approach to inspection and monitoring to ensure that resources are prioritised effectively
 - iii. Agree that an additional revenue budget allocation is considered for 2017/18 and is built into the budget strategy process supporting the enhanced inspection processes as described.
 - iv. Note that any requirements for additional capital resources arising from the inspection work will be part of future capital programme strategy considerations for Members.
 - v. Note (subject to Cabinet and Council approval) the proposals to allocate a further £3.5M to Highways structures in 2016/17.

3 REASONS FOR RECOMMENDATIONS

- 3.1 To highlight the quantum and requirements in respect of Highways Structures across the County Borough and strengthen the inspection programme in place to support further investment in key priority areas.

4. BACKGROUND

- 4.1 The Council is responsible for the maintenance of over 1500 structures including, bridges, culverts, retaining walls, reinforced earth embankments and rock anchors. These structures are often critical to the continued safe operation of the highway network.
- 4.2 The Council's highway structures assets valued at £405M are an integral part of the highway network which is the Council's largest asset valued at over £3.4 billion. Details of the structures assets are shown in the table below:

Structures Assets			
Structure Type	Total number	Number on Critical Network	Gross Replacement Cost (£)
Road Bridges	192	130	135,525,967
Footbridges	93	16	24,588,070
Unusual Structures	21	8	20,705,250
Retaining Walls*	1093	468	198,427,593
Reinforced Earth Embankments	Unknown		
Rock Anchors	Unknown		
Culverts	145	85	22,968,835
Subways	12	9	2,631,151
Totals	1560	716	404,846,867

** Retaining wall Inventory on unclassified roads is based on sample surveys of representative sections of the network which have been factored up to provide an estimation of the scale of the asset and should be considered indicative only.*

- 4.3 In recent years additional and refocused revenue funding has allowed a step change in the level of inspections of highway structures across the county borough.

4.4 In addition, the significant investment in our highways network and in particular our highways structures (£6.7M since April 2013) has ensured that a number of critical structures have benefitted from major refurbishment or reconstruction. This action has safeguarded these structures into the future, enabling our businesses and communities to benefit from the ongoing availability of these key transport corridors. A summary of this investment is shown in the table below:

Structure	Spend £K
Merlin Bridge, Pontypridd	203
Llanharan Junction	12
Brook St Bridge, Blaenrhondda	361
Nant y Brynau	52
Glan Mychydd Fawr	89
Nant Clydach	67
Pant Du Bridge	45
Coed y Cwm Bridge	677
Victoria Bridge, Pontypridd	1352
Rhiwsaeson Bridge	245
Fiddlers Elbow (ongoing)	1200
Royal Oak Bridge, Abercynon	353
Aberaman Bridge (ongoing)	560
Upper Boat Bridge	484
Cilfynydd Wall	186
Glan Mychydd Fach	220
Gyfeillion Bridge, Hopkinstown	234
Cwmaman Footbridge	77
Mountain Ash Footbridge	50
Total	6467

4.5 Notwithstanding this unprecedented level of investment, the enhanced level of structures inspections has revealed;

- There is a significant level of historic deterioration across the network of structures assets and,
- Further enhanced and continuous levels of inspections are necessary to develop a robust overview of the condition of all our structures enabling appropriate targeting and prioritisation of funding and compliance with best practice guidance in the interest of the safety of the public.

5 INSPECTION REQUIREMENTS

5.1 The overall purpose of inspection, testing and monitoring is to check that the highway structures stock is safe for use and fit for purpose and to provide the data required to support good management practice. The Management of Highway Structures Code of Practice recommends the following inspection regime for highway structures.

Recommended and Actual Historic Inspection Regime				
	Frequency	Max	Council's Historic Frequency	Description
General	2 yrs	3 yrs	4 yrs	A visual survey of all parts of the structure that can be inspected without the need for special access or traffic management
Principal	6 yrs	6 yrs	>10yrs	A close, within touching distance, survey of all elements of the structure, including underwater parts and adjacent earthworks.
Monitoring / Special Inspection	As required		As required	A more specific inspection focussing on the condition of particular parts of a structure
Scour Inspection	Following flood or high levels of flow			A specific inspection to determine whether a structure has been undermined or damaged by water flows

- 5.2 A new code of practice “Well Managed Highway Infrastructure” was published on 28th October 2016. While the new code does not recommend the specific inspection frequencies for structures recommended by the old code, it retains a recommendation that the above inspection types are carried out at a frequency determined through a robust risk assessment process. In the absence of such a robust risk assessment, it is considered that the above frequencies are likely to be referred to as being good practice.
- 5.3 Not all aspects of the new code are currently being covered by the Council and as such a new risk based enhanced approach is suggested.
- 5.4 It is proposed to begin a programme of inspections initially of retaining walls on the critical network this financial year, together with consideration of the development of a programme for rock anchors and reinforced earth structures.
- 5.5 In recent years, all bridge and culvert inspections have been undertaken by a third party ie Capita (Joint Venture Partner). Following a period of training, a total of 120 inspections will be carried out in-house during this financial year. It is envisaged that 80 of these inspections will be classed as general inspections and 40 as principal inspections. In subsequent years, it is estimated that approximately 66% of general inspections and 33% of principal inspections of bridges and culverts can now be carried out in-house utilising existing resources.
- 5.6 Retaining wall, rock anchor and reinforced earth inspections are more difficult to estimate financially, due partly to an absence of historic costs, and partly due to the variable amount of vegetation clearance that may need to be carried out in order to be able to inspect the walls. Only wall inventory on the A, B & C network is sufficiently developed to enable an inspection programme to be considered. It is estimated that to extend the inspection programme to unclassified roads would be significantly more expensive as a much higher proportion of the inspections would involve entry to private properties which would increase the associated administration and management costs as well as potential costs associated with serving legal notices for land entry. No accurate estimate of costs can currently be made for the inspection of retaining walls on the unclassified network.

5.7 The costs of external structures inspections vary dramatically depending on the size of the structure, any rail possessions required, underwater working, access difficulties, overgrowth clearance, traffic related working time restrictions, etc. The table below shows the estimated costs of complying with the Code of Practice recommended inspection regime with the aforementioned bridge inspections being carried out in-house.

Estimated Cost to Comply With Recommended Inspection Regime			
	Bridges / Culverts £	Walls (A,B&C Roads Only) £	Total £
Principal Inspections	117,000	158,000	275,000
General Inspections	13,000	157,000	170,000
	130,000	315,000	445,000

5.8 In addition to Principal and General Inspections, in the 1990s Central Government charged highway authorities to assess the strength of bridges to ensure that they are capable of carrying the loads imposed by the largest permissible standard road vehicles (44Te). Certain structures are exempt from this recommendation e.g. structures designed after 1975 and bridges / culverts with a span less than 3m and depth of cover of more than 1m. A programme of bridge assessments has been ongoing since before the formation of Rhondda Cynon Taf CBC in 1996. 143 structures are programmed for future assessment, 80 of which are on the critical network.

5.9 In order to improve the level of condition information available regarding the structures on the Critical Network, 9 additional structures will be identified for Principal Inspection / Monitoring Inspection / Assessment this year.

6 CURRENT RISK ASSESSMENT

Financial Risk

6.1 Defects to structures, if identified and remedied early can often be rectified with relatively minor works. Defects that are not identified and remedied will often deteriorate to a point where much more expensive and disruptive works are required.

- 6.2 Early rectification of defects such as removal of vegetation or cleaning out expansion joints will greatly extend the life of a structure for relatively little cost.
- 6.3 When structures deteriorate, they may need to have weight restrictions imposed. Such restrictions can cause severe disruption to services such as public or home to school transport. There are currently a number of structures which are in a condition where weight restrictions will be required to be imposed shortly.

Highways Network Risk

- 6.4 Due to the topography of the county borough, particularly the Rhondda and Cynon Valleys, large quantities of residential and business properties are often served by a limited number of access routes, from small communities to entire valleys areas. For example, the Rhondda Valley has only 2 main access routes from the south, the A4119 from the M4 to Tonypany and the A4058 from Pontypridd. Each of these routes carries approximately 25,000 vehicles every day, and each of these routes is supported by numerous walls and bridges. The loss, or long term restriction of use of either of these routes would be a significant issue for the efficient working of the whole highway network across RCT and the wider South Wales trunk roads, especially the M4 and the A470.

Legal Risk

- 6.5 In the event of failure of a highway structure causing damage to private property, injury or fatality, it is likely that the Council would receive claims for compensation. It is also possible that claims for financial losses suffered by residents or businesses, such as additional travel costs, loss of trade etc could be made against the Council if significant traffic delays or disruption resulted from the failure of a structure.
- 6.6 In addition to the legal claims risk, the Council as a corporate body, individual members or officers of the Council could face prosecution under health and safety or corporate manslaughter legislation should it be found to have been negligent in its duty to maintain the highway in a safe condition. Such prosecutions could result in unlimited fines or imprisonment of individuals.

7 PROPOSED WAY FORWARD

- 7.1 It is proposed to implement the following enhanced structures prioritisation and monitoring strategy.

- 7.2 Principal Inspections will be prioritised for bridges / culverts on the critical network which have yet to undergo a principal inspection, then on bridges / culverts on the critical network where the Principal Inspection was carried out over 6 years ago.
- 7.3 By the end of 2018/19 all highway structures supporting or above the critical network should have had a principal inspection undertaken within the last 6 years, and either a general or principal inspection carried out within the last 3 years. It is likely that this accelerated inspection programme will identify a significant capital maintenance requirement, and further reports will be prepared to advise Cabinet of the findings and implications.
- 7.4 At the present time, resources have been redirected so that inspections of simpler structures are undertaken in house, which has significantly increased the number of inspections which can be undertaken in a year. However, many of the more complex structures require external technical specialists to undertake or oversee the inspection and interpret the results.
- 7.5 The Council does not currently employ a suitably qualified Supervising Engineer and is therefore reliant on external consultants to undertake many of the more complex inspections, assessments and to make recommendations regarding any weight restrictions or monitoring regimes required for all structures.
- 7.6 It is proposed that a full time suitably qualified Supervising Engineer and an Assistant Engineer be appointed in order to undertake the majority of necessary inspections and monitoring arrangements required. Specialised inspections e.g. diving, rope access, etc and complex structures would still need to be commissioned externally. This will ensure that the programme is delivered efficiently and prioritised in the most cost effective manner.
- 7.7 In addition, specifically:
- A programme of specialist inspections to determine the susceptibility of structures to scour by water flow and to determine the extent to which they have been affected will be commenced.
 - The programme of bridge assessments will be accelerated, prioritising structures on the critical network.
 - A programme of wall inspection will be commenced with priority being given to walls on the critical network where concerns or issues have been noted through observation.

- Minor reactive repairs will only be carried out where it is more cost effective to carry out repairs than to fence an area off and make it safe in the short to medium term.
- Reactive emergency works will generally comprise fencing off / making safe rather than repairs.
- Consideration will be given to refocusing resources to establish dedicated resources for items such as repointing and vegetation removal.

7.8 The enhanced inspection regime will identify a range of minor interventions which may exceed available funding but offer value in terms of a “stitch in time” approach, saving the Council more significant expenditure in the longer term. In these circumstances, further consideration will be given to the potential for funding such works.

8 EQUALITY AND DIVERSITY IMPLICATIONS

8.1 An Equality Impact Assessment screening form has been prepared for the purpose of this report. It has been found that a full report is not required. The proposals if implemented will ensure no adverse impact.

9 CONSULTATION

9.1 There is no public consultation requirement identified at this time.

10 FINANCIAL IMPLICATIONS

Revenue Budget

10.1 The revenue base budget for highway structures maintenance for 2016/17 is £460k. The revenue budget should be utilised to fund the structures inspection regime and minor housekeeping works such as removal of vegetation, repointing, greasing of bearings, cleaning of expansion joints, waterproofing, retensioning of rock anchors etc which would prolong the life of the major elements of the structure and reduce the need for major capital maintenance works.

10.2 However, year on year, the revenue budget has been extensively called upon to tackle reactive issues such as collapsed or dangerous retaining walls, reducing the amount of routine maintenance being carried out.

- 10.3 In order to implement the strategy proposed in Section 7 above additional revenue allocations will be required. An additional £110k of salary costs and £200k of Structures Maintenance funding will be required. This will increase the overall budget to £770k for 2017/18 and if agreed, this would be incorporated into the budget strategy proposals currently being worked up for 2017/18.

Capital Works Budget

- 10.4 Whilst a base annual capital budget of £350k is allocated to highway structures schemes, significant levels of additional investment have been made available to support key Highways Structures priorities over the last twelve months.
- 10.5 It is proposed that as resources become available into the medium term, further funding is earmarked as part of the Council's Capital Programme requirements and following the enhanced risk based approach to inspections that has been proposed within this report.
- 10.6 Further prioritisation of resources for structures is being evidenced currently. Subject to Cabinet approval on the 24th of November and if agreed, subsequent approval by Council on the 30th of November, a further £3.5M is being allocated to support two bridge schemes. Those schemes being St Albans Bridge (£2M) and Brook Street Footbridge (£1.5M).

11 LEGAL IMPLICATIONS OR LEGISLATION CONSIDERED

- 11.1 The main legal duty with regards to maintenance of the highway which the Council has as highway authority is imposed by Section 41 of the Highways Act 1980. It is a duty to maintain highways which are highways maintained at public expense as defined by S36 of the same act. Structures which carry the highway are generally considered to be part of the highway, unless ownership of, and maintenance liability for the structure lies with another individual or body. In the case of road bridges, the ownership is usually clear cut, but in the case of retaining walls, which can either support the highway, or support land above the highway, there is often no clearly defined ownership, especially in cases where roads and properties have been developed at the same time.

- 11.2 The law allows for persons who incur injury or damage due to a failure to maintain highway maintainable at public expense are entitled to compensation, however, Section 58 of the Highways Act gives a highway authority a statutory defence against such compensation claims providing it can show that it has “taken such care as in all the circumstances was reasonably required to secure that the part of the highway to which the action relates was not dangerous for traffic”. In the case of claims against a highway authority, a court will often have to decide firstly whether the authority has a reasonable policy regarding inspection and maintenance of the highway, and secondly whether that policy had been complied with. In the absence of a specific policy, or where the reasonableness of a council’s policy is challenged, a court will often be led to the guidance given in the appropriate code of practice as a benchmark of what would be considered to be reasonable, in the case of highway structures, the Management of Highway Structures Code of Practice issued in 2005.
- 11.3 In addition to claims for compensation, an accident resulting in a fatalities or serious injuries could result in prosecution of the Council as a corporate body, or Members or officers as individuals. In the case of a fatality, the Council could face unlimited fines and individuals could face fines or imprisonment.

12 LINKS TO THE COUNCILS CORPORATE PLAN / OTHER CORPORATE PRIORITIES/ SIP.

- 12.1 The proposals will make a significant contribution towards the Corporate Priorities “Building a Strong Economy” and “Improving our Communities”. The proposals have a significant impact on improving accessibility and connectivity which is recognised as a fundamental factor in linking the labour market with employment opportunities and supporting economic activity.
- 12.2 The proposals directly address the Corporate Plan commitment to invest in highways infrastructure and to improve the transport network.

13 CONCLUSIONS

- 13.1 The Council has allocated significant funding in recent years to Highways Structures. It is however recognised that further investment is required to improve the relatively poor condition of some assets.
- 13.2 In order to prioritise the allocation of future resources, the proposed risk based inspection strategy and monitoring regime highlighted in section 7 should be implemented to evaluate the highway structures stock and then act as a tool for proactive maintenance.

LOCAL GOVERNMENT ACT 1972

AS AMENDED BY

THE LOCAL GOVERNMENT (ACCESS TO INFORMATION) ACT 1985

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