

Report of the Strategic Director of Place to the meeting of Executive to be held on 5 February 2019

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Subject:

Queensbury Tunnel

Summary statement:

Queensbury tunnel is a disused railway tunnel constructed in the 1870's situated between Bradford and Halifax which passes directly beneath Queensbury. The tunnel is approximately 2.3km in length and formed from masonry and brick arches which span some 8 metres. At its deepest the tunnel is 115 metres below the surface.

This report outlines the key implications to the Council of taking over the ownership and responsibility for the tunnel to facilitate its ultimate conversion to a leisure cycling facility connecting Bradford and Halifax.

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Overview & Scrutiny Area:

Regeneration & Environment

1. SUMMARY

- 1.1 Queensbury tunnel is a disused railway tunnel constructed in the 1870's situated between Bradford and Halifax which passes directly beneath Queensbury. The tunnel is approximately 2.3km in length and formed from masonry and brick arches which span some 8 metres. At its deepest the tunnel is 115 metres below the surface.
- 1.2 The tunnel was abandoned in the 1950s and in the intervening period has suffered from lack of on-going maintenance. Structurally the tunnel has now been identified as a high risk asset by Highways England who through Historic Railways Estate have prepared proposals for the safe abandonment of the structure.
- 1.3 This report outlines the key implications to the Council of taking over the ownership and responsibility for the tunnel to facilitate its ultimate conversion to a leisure cycling facility connecting Bradford and Halifax.

2. BACKGROUND

- 2.1 Built in the 1870's Queensbury railway tunnel runs in a south-west to north-easterly direction under Queensbury. Abandoned in the 1950's the tunnel has suffered from a lack of on-going investment / maintenance leading to the development of structural weaknesses in its fabric. Currently Highways England (through the Historic Railways Estate ("HRE")) has responsibility for the maintenance and long-term management of the tunnel and as part of this duty regular structural inspections of the tunnel have highlighted the deterioration of the tunnel fabric as a cause for concern. This assessment has led to Highway England identifying the tunnel as a high risk asset which requires immediate work to make safe.
- 2.2 As part of Highway England's mitigation strategy development Jacobs Engineering were appointed to prepare a number of high-level engineering proposals for the abandonment or refurbishment of the tunnel together with indicative costs. Costs associated with repair of the tunnel were prohibitively expensive (£35.4million) and therefore a preferred solution of abandonment and budget was identified based on the Jacob's study recommendations. Funding of £3m was allocated by the Department for Transport to Highways England to undertake the proposed works.
- 2.3 Queensbury Tunnel Society (QTS) was formed with a view to maintaining the tunnel as an asset with the ultimate goal of reopening it as a multi-user leisure trail linking Bradford and Halifax. Early in 2016 HRE agreed to the Queensbury Tunnel Society arranging an independent assessment of the tunnel with a view to better understanding its condition and scoping the repair works needed prior to conversion to any future use. Estimates resulting from this assessment indicated that a budget cost of £2.81m (inclusive of a 20% contingency allowance) would be sufficient to address the structural defects making the tunnel safe to walk through.
- 2.4 In early 2017 Bradford Council were approached to support QTS' campaign to retain Queensbury Tunnel for enjoyment of future generations. Given the wide discrepancy in costs between the Jacobs Engineering and QTS reviewed the two technical assessments of the level of intervention necessary to secure the tunnel's

future and approached the Department for Transport for funding to conduct its own independent study into the tunnel's condition to determine a more accurate measure of costs. AECOM consultants were appointed to carry out a programme of investigations for this purpose. The initial Phase 1 study was a desktop review of documents to determine a likely level of funding which would be required to repair the tunnel together with a suitable programme of intrusive surveys which would comprise the Phase 2 commission designed to confirm the validity of assumptions in the desk top exercise. The Phase 2 survey works were completed in late 2017 and the results of this were received by the Council in November 2018. The main findings of this study were:

- a) The tunnel continues to suffer from on-going 'live' deformation and cracking of the tunnel lining within the crown of the masonry arch.
- b) The anticipated costs of a programme of remedial measures is £6,912,050 but this is not without risk as sections of the tunnel could not be surveyed due to HRE exclusion zones and other on-site factors.
- c) To further refine the works estimate to reduce this risk a further programme of surveys (at an additional cost of £120,000) were recommended should the ownership of the tunnel transfer to the Council or other appropriate body.

3. OTHER CONSIDERATIONS

Options for Future Ownership

- 3.1 A range of options for the future ownership and responsibility for the tunnel have been proposed, including:
 - a) Option 1 - HRE progress with their option to abandon the tunnel by permanently preventing future access and ensuring that any future collapse of the tunnel causes no risk to the general public or adjacent land owners.
 - b) Option 2 - Repairing the tunnel to a condition suitable for public access and incorporating the tunnel in a designated cycle route. HRE would retain ownership and be responsible for the day-to-day operation of the tunnel. HRE would be liable for the long-term upkeep, maintenance and management of the tunnel in its proposed use as a cycleway and as such all long term costs would be borne by the HRE.
 - c) Option 3 - Similar to the previous option HRE would retain ownership but funded by means of a contract to operate the tunnel on an annual basis by a third-party organisation (i.e. Cycle Queensbury, Bradford Council or others). HRE would retain responsibility for the long-term stability of the tunnel but its operating costs would be borne by others.
 - d) Option 4 - HRE retains ownership of the tunnel but leases day-to-day operation to another organisation such as Sustrans, Bradford Council, Railway Paths Limited, Cycle Queensbury. HRE would retain responsibility for the long-term stability of the tunnel but operating costs would be borne by others. Annual

costs could be drawn down from any initial dowry or funded annually by another organisation.

- e) Option 5 - HRE would transfer ownership and operation of the tunnel – with or without appropriate dowry – to a suitably competent organisation¹. The new owner of the tunnel would then be permanently liable for the safe condition of the tunnel as well as the day-to-day operating and maintenance costs associated with running a cycleway.
- f) Option 6 - As with option 5, but day-to-day operation of the tunnel is contracted to another organisation as in Option 4, with annual payments being made to cover on-going day-to-day maintenance and running costs.

Calderdale Council

3.2 To create a segregated cycle route between Bradford and Halifax connectivity of the tunnel portals on both the Bradford and Calderdale approaches would need to be improved. As a potential partner in the development of proposals for Queensbury Tunnel, Calderdale Council have been fully engaged in stakeholder discussions about Queensbury Tunnel. Following a series of stakeholder meetings and officer discussions the following points have been agreed:

- a) Whilst broadly supportive of the aspiration of bringing the tunnel back into use Calderdale's Cycle Strategy 2025 is targeting cycling improvements to the north of the district rather than routes to the south which would be necessary to connect to Queensbury Tunnel. Therefore were any scheme likely to come forward incorporating the tunnel Calderdale would be happy for Bradford Council to lead on its development and delivery.
- b) Calderdale would fully support any lobbying of the Department for Transport, Highways England or Historic Railway Estate to retain the tunnel rather than simply abandon it.
- c) Any applications for potential funding for delivery of a Queensbury Tunnel scheme through either the West Yorkshire Combined Authority or other government grants would be fully supported by Calderdale Members and Officers.

Benefit Cost Ratio (BCR) Assessment

3.3 In June 2017, Sustrans Research and Monitoring Unit produced a report² looking at the economic benefits of a combination of seven proposed routes around Queensbury area that could form links between Bradford, Halifax and Keighley, including the reopening of the tunnel itself. These routes were combined into

¹ To satisfy the Secretary of State for Transport, competence would relate to the ability to discharge the relevant statutory and common law duties, having adequate technical knowledge on the maintenance of the tunnel and shafts to manage risk, and sufficient financial stability to maintain the tunnel into the foreseeable future.

² "Queensbury Tunnel: Estimating the Economic Impact of Re-opening Walking and Cycling Routes around Queensbury Tunnel", June 2017

eleven different scenarios which were appraised for their economic benefits and are summarised below:

Scenario		Details	
Including Tunnel	A	Most extensive scenario developing a full network between Halifax, Bradford and Keighley	Great Northern Trail + Cullingworth to Keighley + Bradford Valley floor + Queensbury Tunnel to Halifax + Queensbury Tunnel.
	B		Great Northern Trail + Cullingworth to Keighley + Bradford Thornton Road + Queensbury Tunnel to Halifax + Queensbury Tunnel
	C	Developing a network from Halifax to Keighley	Great Northern Trail + Cullingworth to Keighley + Queensbury Tunnel to Halifax + Queensbury Tunnel
	D	Developing a network from Halifax to Bradford	Bradford valley floor + Queensbury Tunnel to Halifax + Queensbury Tunnel
	E		Bradford Thornton Road + Queensbury Tunnel to Halifax + Queensbury Tunnel
Excluding Tunnel	F	Developing a network from Queensbury to Keighley	Great Northern Railway Trail + Cullingworth to Keighley + Queensbury Tunnel
	G	Developing a route from Bradford to Queensbury	Bradford valley floor + Station Road
	H		Bradford Thornton Road + Station Road
	I	Developing a network from Bradford to Keighley, via Queensbury	Great Northern Railway Trail + Cullingworth to Keighley + Bradford Valley floor + Station Road
	J		Great Northern Railway Trail + Cullingworth to Keighley + Bradford Thornton Road + Station Road
	K	Developing a route from Cullingworth to Queensbury	Great Northern Railway Trail + Station Road

Table 1: Potential cycling and walking scenarios around Queensbury (Source: Sustrans)

- 3.4 At the time of the Sustrans economic assessment there was a significant range of potential costs for the repair of the tunnel fabric (ranging from £2.81m to £35.4m) and therefore assessments were made of each option (A-E in the table above) on low, mid and high value costs. Applying a WebTAG compliant assessment of each option the best performing tunnel option (Option D) returned BCRs of 2.0:1, 1.1:1 and 0.7:1 respectively representing a medium to poor value for money assessment of benefits. By comparison routes G and H which did not incorporate a tunnel element both returned a BCR of 3.8:1 representing a high value for money assessment.
- 3.5 To give a more holistic estimation of the economic impact of reopening the tunnel as a leisure cycle facility benefits associated with Sustrans' Cycle Route Economic Impact Model were incorporated into the calculations to provide an estimation of the tourism benefits which the tunnel could deliver. The RMU benefits estimated an annual tourism spend of £360,168 which when aggregated over the 30 year assessment period represent an additional benefit of £10.8m. Incorporating this into the BCR assessment for the tunnel based options returned increased BCR values of 3.2:1, 1.7:1, 1.2:1 against the Option D route representing a high to low medium

benefit assessment.

- 3.6 Following receipt of the AECOM report on the anticipated level of investment necessary to repair the tunnel a recalculation of the BCR was undertaken. Based on the Option D alignment and costs the BCR was calculated based on a WebTAG compliant assessment and a further assessment using the Tourism benefits described previously. This assessment demonstrated that a WebTAG compliant assessment returned a BCR of 1.43:1 (representing a medium value for money return), whilst with tourism benefits a BCR of 2.31:1 (representing a high value for money return) was achieved.

Funding Requirement and Opportunities

- 3.7 Based on the revised remediation costs for Queensbury Tunnel the construction cost for the above route would be:

Bradford City Centre to Queensbury via valley floor route	£2,505,227
Queensbury Tunnel (Remediation)	£6,912,050
Queensbury Tunnel (cycle route)	£2,300,000
Queensbury Tunnel to Halifax	£4,620,000
Total Capital Investment	£16,337,277
Capital Maintenance cost (for 30 years)	£7,000,000
Total Capital Investment Required	£23,337,277

- 3.8 Currently HRE have indicated that were the Council to take on responsibility for the tunnel management and maintenance then the residual of the £3m budget which has been allocated for the abandonment works could be transferred to the Council as a dowry. As there has currently been interim works undertaken by HRE to stabilise the tunnel it is anticipated that currently this budget has been reduced to circa £2.0m. On this basis a gap in funding of £4.9m exists between the anticipated remediation cost and the available budget from HRE/DfT which represents the 'minimum' capital investment necessary to secure the future of the tunnel. This investment would allow the structural fabric of the tunnel to be stabilised to allow a period of time over which funding for the remaining £16.4m could be sought.
- 3.9 Discussions with the West Yorkshire Combined Authority in relation to potential funding sources for the delivery of a cycle facility have taken place. These indicate that currently there are no funds available through the Growth Deal / City Connect or LTP programmes. The possibility of securing funding through the Transforming Cities fund is worth exploring however the scope of ask from this funding source is likely to be far in excess of available resources. During his visit to Bradford the Secretary of State for Transport was briefed on the potential for delivering the Queensbury Tunnel scheme and his support was sought to delay abandonment of the tunnel to allow the Council to complete its investigations.
- 3.10 In light of the current financial standing of Bradford and Calderdale Councils it is unlikely that investment of the £4.9m gap funding to stabilise the tunnel can be met by either organisation either collaboratively or separately and any decision on the

outcome of the Transforming Cities bid is unlikely to be known before Spring/Summer 2019. Similarly discussions with representatives from the Department for Transport have indicated that any additional funding from central government budgets is unlikely to be forthcoming.

Land Issues

- 3.11 The south-falling 1:100 gradient of the tunnel and the volume of water ingress combined with the partial backfilling of the approach cutting to the southern portal resulted in 10 metres of flood water accumulating in December 2015. A short-term (10 year) lease was negotiated by HRE to install water pumps to de-water the tunnel with the land owner of the southern portal approach; these pumps remained operational until a failure of the HRE to make its annual payment on the lease in late 2018 when water again began to accumulate at the tunnel portal. Payment has now been made and the pumps are again operational. This situation however does give rise to a key aspect of any remediation works which would be required, namely the urgent need to reach agreement with the landowner about the actions necessary to remove the partial backfilling of the southern portal approach.

4. FINANCIAL & RESOURCE APPRAISAL

- 4.1 Financially, any option to retain the tunnel in a safe condition suitable for its ultimate conversion will require a comprehensive programme of maintenance which has been estimated at circa £6.9m. Allowing for the transfer of the residual £2m HRE budget to fund such a programme this still leaves a funding deficit of £4.9m.
- 4.2 Currently there are no capital funding programmes which can be bid into to provide this initial investment amount within a timescale acceptable to the Department for Transport and Highways England who are keen to progress with the abandonment works.
- 4.3 There is no provision within the Council's current capital investment plan for reallocating existing budgets to provide this level of funding. Similarly, Calderdale MBC have indicated that they would be unable to provide the initial capital investment.
- 4.4 From resources perspective were funding to be found to carry out the remedial works the scope and programme of the works would necessitate that external consultants be appointed to develop and deliver the scheme. Such an approach would require a level of additional capital funding which is likely to be upwards of £0.5m.

5. RISK MANAGEMENT AND GOVERNANCE ISSUES

- 5.1 Options described within this report present differing levels of risk management and governance implications for the Council. Currently, all risk associated with the management and condition of Queensbury Tunnel rests with the Historic Railways Estate/Highways England as the asset owners. To this point the Council have been acting in a facilitative capacity to explore the potential options for retaining the tunnel and therefore no formal risk management strategy or governance

arrangements have been established. Were the Council to countenance the arrangements proposed in paragraphs 3.1(e) and (f) then such arrangement would need to be urgently established prior to any transfer taking place.

6. LEGAL APPRAISAL

- 6.1 The fact that a route is or was a railway does not confer on the public any highway rights and the Council as Highway Authority currently does not have any rights or responsibilities in connection with this route. In order to be able to be used by cyclists the Highway Authority would have to dedicate, construct and maintain the way as either a bridleway or cycle track. As part of this process an appropriate Road Safety Audit would be required at appropriate stages of the development of the scheme which in itself may give rise to additional issues which are not considered within the body of this report.
- 6.2 As Local Highway Authority the Council possess the necessary technical knowledge to be acceptable as a competent body to take on this responsibility.
- 6.3 Delivery of a cycle linkage from the southern portal to Halifax Town Centre within the Calderdale MBC district may require an appropriate legal agreement under Section 8 of the Highways Act 1980 to be entered were the Council to take on responsibility for delivery of such a project.
- 6.4 Establishment of a Trust (comprising Bradford Council, Queensbury Tunnel Society and Sustrans) to take on responsibility for the maintenance and management of the tunnel would not in itself absolve the Council from responsibility as Highway Authority if the way is to be dedicated as a public highway.
- 6.5 Land issues associated with the opening of the southern portal would need to be resolved through negotiation with the land owner. Whilst the land owner has indicated a willingness to engage in discussions about resolving these issues it is possible that recourse to the use of the Compulsory Purchase powers may be necessary which would add to anticipated costs and delay delivery of any works to the tunnel.

7. OTHER IMPLICATIONS

7.1 EQUALITY & DIVERSITY

Due consideration has been given in writing this report to the Council's duties under Section 149 of the Equality Act 2010. Were the Council to take on responsibility for the tunnel any proposed multi-use cycle leisure facility would need to be designed to be accessible to disabled users.

7.2 SUSTAINABILITY IMPLICATIONS

The connectivity of Bradford City Centre with Halifax Town Centre as a result of the tunnel and its connecting routes would promote economic activity. This potentially significant cycling scheme would offer positive contributions to environmental, personal and community wellbeing and because this is a significant piece of capital

infrastructure. As such its benefits and values would continue to be generated over the longer term.

7.3 GREENHOUSE GAS EMISSIONS IMPACTS

Conversion of the Queensbury Tunnel to a cycling facility, together with provision of the connecting routes between Halifax and Bradford would help accelerate the delivery of the Local Transport Plan's target of increasing journeys by cycle, reducing CO₂ emissions and improving air quality. It would assist not only this district's but also Calderdale's reduction in carbon footprint and emissions from other greenhouse gasses.

7.4 COMMUNITY SAFETY IMPLICATIONS

If the ownership of the tunnel passes to the Council then it will inherit the duty of the asset owner to ensure that abuse of the tunnel does not take place (e.g. vandalism, occupation by travellers, lighting of bonfires) through the presence of security officers and other measures.

Any future cycling facility utilising the tunnel would also need to be designed in such a manner as to encourage its safe use. Due to the tunnel's length preventing end-to-end sight for users significant measures potentially including CCTV and permanent manned presence may be required to ensure the safety of users of the tunnel.

7.5 HUMAN RIGHTS ACT

There are no Human Right Act implications associated with the contents of this report.

7.6 TRADE UNION

There are no trade union implications associated with the contents of this report.

7.7 WARD IMPLICATIONS

Both the northern and southern tunnel portals lie within the Queensbury ward within the Bradford district. Approaches to the southern portal also extend into the Illingworth and Mixenden ward within Calderdale. Ward Members from both of these wards have been part of the stakeholder meetings which have been established to look at the implications and proposals for bringing forward the Queensbury Tunnel Society's aspirations.

7.8 AREA COMMITTEE ACTION PLAN IMPLICATIONS

Not applicable.

7.9 IMPLICATIONS FOR CORPORATE PARENTING

There are no implications for corporate parenting associated with the contents of

this report.

7.10 ISSUES ARISING FROM PRIVACY IMPACT ASSESMENT

None.

8. NOT FOR PUBLICATION DOCUMENTS

None.

9. OPTIONS

9.1 The principal option for Executive's consideration relates to the Council's future level of engagement and support for the Queensbury Tunnel. Section 3.1 of this reports sets out varying options for the ownership of the tunnel were it to be converted to a cycling facility. Currently the six options which are proposed can be summarised as follows:

- a) Historic Railways Estate retain ownership of the tunnel – There are various permutations of options available under this ownership proposal. Currently HRE are progressing with their programme of abandonment works and therefore it is likely that without additional funding being forthcoming these options relating to the retention of the tunnel are considered to be unviable.
- b) Ownership of the tunnel transfers to a suitably competent organisation (e.g. Bradford Council) – Transfer of the Queensbury Tunnel in its current condition would present a significant financial risk to the Council. Although a dowry of £2m could be transferred from HRE to the Council the AECOM study as described in this report demonstrate that without additional funding of £4.9-£5.4m the Council would be taking on responsibility for maintaining a structure which is continuing to deteriorate.
- c) Ownership of the tunnel transfers to the Council with responsibility for on-going maintenance delivered by a Trust – this option would still involve the tunnel transferring to a suitably competent organisation with all the inherent costs and risks associated with this. However, the option would remove the responsibility for the day-to-day maintenance activities from the Council who would still remain financially liable for providing the budget to carry out repairs. This option therefore appears to offer little additional benefit to that described in 9.1(b) above.

9.2 If Executive are minded not to pursue options related to the transfer of ownership then further options in relation to the Council's continued involvement with the project arise, namely:

- a) The Council continue to lobby Highways England / HRE to delay their abandonment works to allow additional time to explore sources of funding for repairs – This option is unlikely to be acceptable to Highways England who are keen to pursue completion of their abandonment works at the earliest possible opportunity.

- b) The Council continue to work with the West Yorkshire Combined Authority and Calderdale MBC to secure potential funding partners for the project - Whilst some potential funding sources have been identified (Transforming Cities) for the necessary £6.9m to repair the tunnel fabric or the wider £16.3m for the full cycleway project the success of attracting this funding cannot be guaranteed. Other potential options for capital funding continue to be announced by Government and the Council would pursue any which are appropriate to the project.
- c) The Council begin work to explore “surface” options for a cycle route between Bradford and Halifax which have demonstrated high BCRs – As demonstrated in the Sustrans appraisal report high BCR benefits were achieved for routes which are based on surface level connections between Bradford and Halifax. These schemes have lower initial capital costs their benefits represent high, or very high, value for money and are indicative that potentially options for providing this connectivity may be worth pursuing through future West Yorkshire Transport Strategy programmes.
- d) The Council continues to support the aspirations of Queensbury Tunnel Society, but not proactively.

10. RECOMMENDATIONS

- 10.1 That Executive commend the work of Queensbury Tunnel Society in bringing forward the work which has been done to date to identify the issues and risks associated with the conversion of Queensbury Tunnel to a leisure cycling facility as well as their advocacy of the benefits of such a scheme to stakeholders.
- 10.2 That Executive fully recognise and support the benefits in saving the tunnel for the enjoyment of future generations and that its potential conversion to a leisure cycling facility connecting Bradford city centre and Halifax town centres.
- 10.3 That Executive acknowledge that the offer of Historic Railways Estate to transfer ownership of the tunnel to the Council, together with the residual of any unspent abandonment funding, as a dowry for its future maintenance is an interesting proposition. But, given the indicative repair costs and funding gap identified for the stabilisation works, Executive reluctantly confirm that it is currently unable to agree to the proposed transfer of ownership.
- 10.4 That the Strategic Director of Place in consultation with the Portfolio Holder continue to lobby Highways England / HRE to delay their abandonment works to allow the Council and its partners time to explore further potential sources of funding for the scheme through development of an advocacy document.

11. APPENDICES

- 11.1 None

12. BACKGROUND DOCUMENTS

- 12.1 Queensbury Tunnel: Estimating the economic impact of reopening walking and cycling routes around Queensbury Tunnel, Sustrans, June 2017
- 12.2 Queensbury Tunnel Report, Queensbury Tunnel Society, October 2016 ([http://www.queensburytunnel.org.uk/reports/QueensburyTunnelReport\(October2016\).pdf](http://www.queensburytunnel.org.uk/reports/QueensburyTunnelReport(October2016).pdf))
- 12.3 HQU_3D Queensbury Tunnel Options report, Jacobs, February 2016
- 12.4 Queensbury Tunnel: Phase 1: 60564940-REP-001 – Queensbury Tunnel – Technical Oversight – Phase 1 – Literature Review, AECOM, January 2018
- 12.5 Queensbury Tunnel: Phase 2: Technical Summary, Structure Number HQU_3D, Project Number 60582061; Report 60582061-REP-006, AECOM, October 2018