DUNHAM BRIDGE COMPANY

APPLICATION TO REVISE TOLL CHARGES

Application by

THE DUNHAM BRIDGE COMPANY

Dunham Bridge, Dunham Road, Newton on Trent, Lincoln LN1 2JR

Under the Transport Charges etc. (Miscellaneous Provisions) Act 1954

Section 6 Dunham Bridge Act 1830 and Dunham Bridge (Amendment) Act 1994

14 September 2025

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1. Executive summary

The Dunham Bridge Company ("the Company") is seeking permission to increase its tolls.

Vehicle Category	Proposed Toll *(Inc VAT)*	Current Toll *(Inc VAT)*
Cars	£0.70	£0.50
Vans	£1.50	£1.00
Agricultural Vehicles	£2.00	£2.00
Lorries	£4.00	£2.00

Table 1: Dunham Bridge – Current & proposed tolls

The Company is conscious of its position as a custodian of key local infrastructure. It is proposing to keep the cost per crossing for cars using the pre-paid card scheme unchanged, by increasing the discount to 35%. Consequently, the Company will have increased the toll for cars using this scheme by only 26% since 2006, an average rate of just over 1% p.a. The introduction of VAT accounts for the balance of the 51% total increase. Currently, the pre-paid card scheme offers cars a discount of approximately 10%.

The Company has continued to demonstrate sound and effective management, both operationally and financially, in recent years. It has continued to modernise and streamline its operations to manage ever increasing costs.

However, despite this, unexpected recent inflation and subsequent increases in the National Living Wage ('NLW') combined with increased taxes and an ongoing reduction in traffic flows mean that the Company now needs to increase its tolls.

The Company has obligations to its staff, the travelling public and its shareholders, in addition to the requirement to invest so that it can pay for the eventual rebuilding of the bridge. It will not be able to continue to meet all these obligations without this increase.

To reduce the uncertainty, cost and administration involved with the toll application process the Company is also seeking the right to automatically increase its tolls at, or below, the rate of the Consumer Price Index ('CPI') in future in a very limited number of scenarios. In particular, the requirement that the Company wait 12 months before resubmitting a toll application if one is turned down makes managing the process very challenging. Full details of this proposal can be found in "**4.2 CPI-Linked Future Toll Increases**".

2. Background

2.1 The Dunham Bridge Company

The Dunham Bridge Company was constituted in 1830 under the Dunham Bridge Act, now amended by the Dunham Bridge (Amendment) Act 1994. The Company was given authority to construct, at its own cost, a bridge over the River Trent at Dunham on Trent. In return, the Act allows the Company to collect tolls for the operating costs, maintenance and eventual replacement of the bridge, and for the payment of dividends to shareholders.

The Transport Charges &c. (Miscellaneous provisions) Act 1954 as amended by the Dunham Bridge (Amendment) Act 1994 ("the 1994 Act") allows the Company to apply to the Secretary of State at any time to revise the toll charges to meet its obligations and commitments.

The bridge is a strategic piece of the transport infrastructure for Lincolnshire and Nottinghamshire. It is situated 11 miles West of Lincoln on the A57 and crosses the River Trent. The nearest alternative crossings of the Trent are approximately 10 miles North of the bridge at Gainsborough or 13 miles South of the bridge at Newark.

Figure 1: Dunham Bridge – Location Map

The original bridge was built in 1831 and 1832. The Company replaced the bridge's superstructure in 1978 when a new superstructure was constructed on the original foundations and piers.

It is a four-span bridge and is approximately 144 m long. It carries a single carriageway asphalt road and a footway on the South side of the bridge. The Company collects tolls at a toll plaza on the Eastern end of the bridge. The plaza contains three toll booths (two single booths and one double booth) which allow up to four toll collectors to work at any one time.

The bridge carries approximately 69,000 vehicles per week currently, down from approximately 77,000 vehicles per week before the pandemic. Its traffic is approximately 79% cars, 17% vans and 5% lorries and agricultural vehicles. It employs 36 people.

The Company's registered office is at the offices of its accountants Wright Vigar at 15 Newland, Lincoln LN1 1XG.

2.2 Toll application requirements

Three legal documents regulate how Dunham Bridge is run and the requirements for a toll application.

(i) Dunham Bridge Act 1830

This Act of Parliament is the original constitutional document for the Company. It details the Company's right to build a bridge, charge tolls and how the company should be run, amongst other things.

It specifies that tolls can be charged to cover the bridge's operating costs, maintenance and eventual replacement, and to pay dividends to shareholders.

(ii) Transport Charges &c. (Miscellaneous Provisions) Act 1954

This Act of Parliament laid out how toll increases should be managed by the Department of Transport, and its successors, for a variety of entities including toll bridges.

It specifies that the Minister shall:

(a) have regard to the financial position and future prospects of the undertaking, and

(b) not make any revision of charges which in their opinion would be likely to result in the undertaking receiving an annual revenue either substantially less or substantially more than adequate to meet:

- expenditure required on the working, management, maintenance of the undertaking, and
- such other costs, charges and expenses of the undertaking as are properly chargeable to revenue, including reasonable contributions to any reserve, contingency, or other fund; and
- where appropriate, a reasonable return on the paid-up share capital of the undertaking

(iii) Dunham Bridge Act (Amendment) Act 1994

This Act of Parliament updated the original 1830 Dunham Bridge Act which had become increasingly outdated.

This Act replaced the term 'paid up share of the undertaking' with 'any amounts invested in the undertaking by the Dunham Bridge Company and any successor company.'

Taken together these documents allow the Company to charge tolls to cover:

- Operating costs. The cost of management, maintenance and other day-to-day activities.
- Reserves: Reasonable contributions to reserves.
- Shareholder Return: Pay shareholders a reasonable return on funds invested.

The 2006 toll inquiry noted that a shareholder rate of return of 6% to 8% would be appropriate given industry standards and this guideline has been used for subsequent toll applications.

> ***'In other regulated industries in the UK, rates of returns between 6% and 8% are considered reasonable'.***

The requirement for adequate reserves was also re-iterated at both the 2006 and 2023 toll inquiries, the 2006 inquiry stated that:

> ***'The Company needs to strike a balance between providing a reasonable rate of return to shareholders on their investments and the responsibilities of operating, maintaining and replacing the Bridge.'***

The Company has met the commitments made in its 2022 toll application to continue to invest shareholder funds into a ring-fenced 'Replacement Reserve' which now stands at approximately £5.6m.

2.3 Recent toll applications

The company has applied for two toll increases in the last 13 years.

(i) 2022 Toll Application

The most recent toll increase application was written during the first quarter of 2022 and submitted to the Department for Transport in the second quarter of 2022. A public inquiry was held in January 2023 and authorisation by the Department for Transport ('DfT') received in June 2023. The new tolls were introduced on 1st July 2023.

This was triggered by a sustained traffic decrease post the COVID-19 pandemic combined with increases in a variety of operating costs over the previous decade principally driven by the NLW, the cost of complying with new regulations and the rate of corporation tax increasing from 19% to 25%. Additionally, Public Health Nottingham required the bridge to be open but no tolls collected for 7 weeks during COVID.

It increased tolls as follows and moved agricultural vehicles from the 'Vans' category to the 'Lorries' category.

Vehicle Category	**New Toll** *(Inc VAT)*	**Previous Toll** *(Inc VAT)*
Cars	£0.50	£0.40
Vans	£1.00	£0.60
Lorries & Agricultural Vehicles	£2.00	£1.00

Table 2: Dunham Bridge – Current & proposed tolls in 2022 toll application

The percentage increases varied between vehicle categories, with lorries and agricultural vehicles bearing the largest increase because:

- The wear and tear suffered by the bridge increases exponentially with vehicle weight. Accordingly, the overwhelming majority of wear and tear is caused by lorries and agricultural vehicles, even after allowing for the increased weight of electric cars.
- The heaviest lorries had not seen an increase to their toll for 16 years in contrast to cars and vans.
- The Company is constrained by the need to ensure tolls are amounts that are quick and simple to collect to avoid delays as more than 50% of tolls are still paid in cash.

(ii) 2012 Toll Application

This application was driven by a change in the bridge's VAT status which increased all tolls by 20%.

Collecting the revised tolls caused significant delays. The increased tolls were difficult to collect as they required large amounts of change to be counted. The best example being the increase in car tolls from 30p to 36p. 30p is a simple amount to pay and give change for. 36p is time-consuming to pay, count and provide change for if the driver doesn't have the correct change.

As a result, the Company applied for small changes to its tolls to make them more practical to collect. Cars, which make up most of Dunham Bridge's traffic, moved from 36p to 40p. Van and lorry tolls were unchanged at 60p and £1 respectively.

As part of the same application, the Company rationalised its charging structure from 7 tiers down to 3 tiers to speed up toll collection and traffic flow. This consolidated the tolls charged to smaller lorries, which varied according to the number of wheels they had, into the toll charged to heavy goods vehicles ('HGV').

These changes meant that motorcycles and tricars would benefit from free passage, and that cars towing trailers, and vans towing trailers, enjoyed a reduction in their toll.

A further measure to improve traffic flow, which was committed to in that application, was creating a frequent user card system to facilitate the passage of frequent users of the bridge and provide cars with a discount.

The discount of approximately 10% for cars using a Dunham Bridge card meant that there was also no toll increase for this category of vehicle in 2012. Users of this scheme paid the same toll from 2006 when the bridge's previous toll increase was agreed, through to 2023 when the successful 2022 toll application was implemented.

Finally, as part of this application, the Company made commitments to make annual transfers into reserves for the repair of the bridge and the future rebuilding of the bridge.

This toll application did not generate a single complaint, and so no public inquiry was required.

The toll application prior to the 2012 toll application was made in 2006.

2.4 Improvements to bridge operations since the last toll application

Since its 2022 toll application, the Company has continued to invest in its infrastructure to ensure that the bridge continues to offer the travelling public a safe, efficient crossing and staff a modern, well-run and safe environment in which to work.

At the last toll application, the Company committed to substantial investment in a new office and access road for which it had planning permission.

Since then, the company has purchased the land for the access road and completed its construction. This has improved safety for staff and office visitors significantly.

Other improvements since the last toll application include:

- **New Signs**

  Electronic signs have been installed to improve clarity for drivers and reduce the risk of confusion.
- **Major patching work and replacement of joint nosing.**

As discussed later in this document, the bridge's surface is now approaching the end of its life. To ensure it continues to offer a safe surface and avoid further breakup, major patching of the surface was carried out in Q1 2024. At the same time the nosing of the bridge joints was replaced as they were also showing signs of significant wear and require ongoing monitoring and maintenance.

- **Installation of rumble strip**

  Rumble strips have been installed on the approaches to the toll booths to help ensure drivers are alert to the need to stop.

The previous application discussed the Company's need to upgrade or replace the current office buildings. Given continued cost inflation, subdued traffic flows and increasingly costly environmental regulations the Company is currently working on a plan to renovate the current offices with the aim of keeping the cost of creating functional offices to a minimum.

2.5 Engineering & maintenance since the last toll application

Dunham Bridge was set up to provide the travelling public with a safe crossing of the River Trent, and this continues to be the Directors' primary concern.

To ensure that the bridge's infrastructure continues to be well-maintained, the Board is assisted by professional consulting engineers who monitor and report on the bridge's condition.

Since the last toll application, key engineering and maintenance events include:

- The continued monitoring of the cathodic protection system by CorroCiv, cathodic protection specialists, showed an issue with the central section of the bridge. Work to repair this has been scheduled for Q4 2025, subject to the detailed scaffolding and river protection plans receiving authorisation from the Environment Agency and Canal and River Trust.
- There are a number of survey markers attached to the bridge. Ongoing annual monitoring of these helps to provide an early warning if there is a significant issue with the bridge's infrastructure.
- A principal inspection was carried out on the bridge in Q4 2024 by specialist bridge engineers (Inertia Consulting) who commented:

  "The structure appears to have benefited from the previous timely repairs, however further repairs are required to ensure that there is limited deterioration to the current defects ensuring that the structure is maintained in a good to fair condition."

  The full document can be found in **Appendix 1**.

The Board believes that, with the assistance of appropriate experts, it has a robust engineering and maintenance programme that will ensure that the bridge continues to be well-maintained and safe for the travelling public.

3. The need for a toll increase

The last toll application forecast no change in traffic during FY 2023 and FY 2024 before forecasting 0.25% increases in traffic in FY 2025 and FY 2026. This was in line with contemporaneous national traffic forecasts.

Actual traffic volumes, when compared to the forecast, were as below:

Actual Traffic Volumes Versus Forecast			
Year End 31 July:	**2024**	**2023**	**2022**
Forecast	100%	100%	100%
Actual	96%	99%	100%

Table 3: Dunham Bridge – Forecast vs Actual Traffic

The approach road to the bridge flooded in Q1 2024 and the bridge was closed for 11 days. Additionally, it took a number of days for Google Maps to update the bridge's status when it did open, further reducing traffic. The traffic lost during that period has been corrected in the figures above to remove the flood's impact.

Significant drivers of this reduction were:

- **Hybrid working**

  Subsequent to the last toll application being produced many private firms and public organisations, including Lincoln City and County Councils and Lincoln Police, have introduced hybrid or flexible working policies. This has accompanied the introduction of the Employment Relations (Flexible Working) Act 2023 in April 2024, which was designed to encourage the adoption of flexible working.

- **High fuel prices**

  In Q1 2022, when the previous financial forecast was produced, fuel prices were approximately £1.45 per litre for petrol and £1.50 per litre for diesel. They were expected to increase briefly because of the Ukraine war before returning to normal.

  In the event, they increased sharply reaching a peak in July 2022 of approximately £1.90 per litre for petrol and £2.00 per litre for diesel, surprising most commentators. They remained at or above their prices in early 2022 until June 2024 per the RAC Foundation.

- **Tax increases**

  A number of taxes are applied to vehicles.

  During this period, road tax increased ahead of CPI as has car insurance which increased approximately 40%.

  In addition, the HGV levy (suspended in 2020) was reintroduced in August 2023 and applied to both UK and foreign owned lorries adding to the costs of running commercial vehicles.

3.1 Sustained annual cost increases

The Company's costs fall into 3 broad categories:

- **Toll collector salaries:**

  This is the Company's largest expense representing approximately 50% of the Company's annual costs.

- **Engineering & maintenance:**

  This figure varies substantially year-to-year but can be as high as 20% of the Company's annual costs. This does not include larger, longer-term work which is capitalised and then depreciated, for example, £425k was spent in 2017 to repaint the bridge and install the cathodic protection system.

- **Other costs:**

  This comprises a variety of other costs including insurance, utilities, professional and audit fees and board costs.

The previous toll application was written in Q1 2022 and submitted during Q2 2022. During this period Russia invaded Ukraine driving up inflation expectations. Economic forecasts at that time acknowledged the very substantial uncertainties generated by the war but forecasted a short-term peak in inflation later in 2022 before falling back to the target rate of 2%. It was also a period when there was substantial uncertainty in forecast engineering and maintenance inflation driven by sustained increases in activity post COVID-19 restrictions being lifted.

Given the uncertainties professional forecasters were struggling with, the Company decided to use conservative forecasts which assumed a short-term increase in inflation before it returned to 2% p.a..

It noted these uncertainties in the application. It also noted that the Company was not seeking to 'future-proof' itself by assuming large increases, but rather that the requirement for a future application to increase tolls would be brought forward if they turned out to be too conservative. This has turned out to be the case.

The Company's forecasts for cost inflation proved to be substantially too low across the board as might be expected given this backdrop. This is most clearly demonstrated by the increases in the NLW.

As noted above, the Company's largest cost is the salaries of toll collectors who are paid the NLW. Driven by CPI peaking at over 11% in October 2022 the NLW increased by 9.7% on 1 April 2023, 9.8% on 1 April 2024 and 6.7% on 1 April 2025. Over these three years the Company's largest cost increased by 26.2% versus a forecast increase of 8.5% which was in line with expectations at the point that it was made.

In addition to this, there was an increase in National Insurance ('NI') in April 2025, which increased the Company's monthly wage cost by a further 10%.

CPI has remained above the Bank of England's target range since 2021 and as of July 2025 is again increasing not decreasing. Current Bank of England ('BoE') forecasts do not show CPI returning to the BoE's target range before late 2026, however many independent forecasts show inflation remaining elevated for substantially longer than that.

3.2 Recent financial performance

There is no requirement for Dunham Bridge's accounts to be audited given its size, however the Company believes that an annual audit demonstrates good financial management and discipline and ensures

transparency for Company shareholders. It is audited annually by Wright Vigar, a reputable Lincoln based accounting firm, who have been able to issue unqualified audit reports.

The table below shows the results of the bridge's tolling operations on their own, having removed the impact of the bridge's investment operations which are used to fund payments to the Company's replacement reserve. After meeting statutory obligations, the bridge has not generated a surplus in the last five years.

The benefit of the most recent toll increase can be seen in FY 2024. The increased tolls substantially improved the Company's financial position, but the high inflation discussed above meant that the Company was still not able to meet all its obligations on an ongoing basis.

The last time that the bridge's operations generated a surplus after paying the dividend was in FY 2017. Dividends are discussed in more detail in "**3.4 Dividends**" below.

Since 2017, the shortfall has been covered by the Company's accumulated reserves which benefited from above forecast investment returns generated by a strong global stockmarkets until the Covid pandemic hit.

Stock market performance above our long-term target cannot be relied upon. The profitability of the bridge needs to be restored. Given the downward trend in traffic volumes and continuing drive to reduce car use, the bridge's income is only likely to reduce in coming years. Recent and planned changes to corporation tax, the NLW and other compliance requirements, in conjunction with inflation will increase costs in coming years. The net effect of this will be that the bridge's financial position will steadily worsen in coming years without a toll increase.

Financial Year To 31 July	2024	2023	2022	2021	2020	2019
Turnover	**1,895,746**	**1,475,022**	**1,447,632**	**1,194,099**	**1,203,717**	**1,549,696**
Running Costs	(849,485)	(845,779)	(751,941)	(715,214)	(723,971)	(723,092)
Depreciation	(136,612)	(135,330)	(137,305)	(130,133)	(124,199)	(120,639)
Corporation Tax	(188,327)	(113,264)	(125,224)	(90,988)	(91,152)	(157,055)
Net Profit	**721,322**	**380,649**	**433,162**	**257,764**	**264,395**	**548,910**
Dividend	(1,002,800)	(654,000)	(1,002,800)	(566,800)	(566,800)	(555,900)
Transfer From Reserves	**(281,478)**	**(273,351)**	**(569,638)**	**(309,036)**	**(302,405)**	**(6,990)**

Table 4: Dunham Bridge - Recent financial performance

Please note that all financial figures in this document are exclusive of VAT unless noted otherwise.

3.3 Dividends

The 2006 toll enquiry noted that the

> ***'The Company needs to strike a balance between providing a reasonable rate of return to shareholders on their investments and the responsibilities of operating, maintaining and replacing the Bridge'.***

It also noted that

> ***'In other regulated industries in the UK, rates of returns between 6% and 8% are considered reasonable'.***

The Company has a history of paying dividends below the rate of between 6% and 8% agreed by inspectors at past public inquiries.

2020 was the first year in over 10 years that the Company paid a dividend of 5% or above on shareholder funds.

At the last toll inquiry, the Company committed to moving dividends into the authorised range. Larger more recent dividends mean that over the last 10 years shareholders have been paid an average dividend of 5.7% of invested capital.

Going forward the Company is committed to paying shareholders an average return of 7%, which is the middle of the authorised range and below the rate authorised for other similar bridges.

3.4 Current financial reserves

The Company operates two key financial reserves to manage the risks that it faces.

(i) Replacement Reserve

This reserve is designed to pay for the eventual rebuilding of the bridge. The bridge super-structure was rebuilt in 1978 with a 100-year design life, and so this is anticipated in 2078.

The current estimate for the bridge's future replacement cost is £60m in 2078. This is unchanged from the last three toll applications submitted. The Company reviews this calculation annually and believes that the long-term assumptions made previously continue to be appropriate, despite material short-term fluctuations.

As was agreed at the last three toll applications, this application assumes that over the long run, the cost of replacing the bridge will inflate at 3% per annum and that the replacement reserve can earn a net return after tax of 4.7% per annum.

The replacement reserve is financed with transfers of distributable profits into a ring-fenced replacement reserve. The Company has met its commitments to transfer funds into this reserve at or above the rate forecast since this reserving methodology was introduced in 2006.

The replacement reserve currently contains approximately £5.6m.

The Company will continue to transfer funds into this reserve to ensure that this reserve will meet the expected rebuild cost for the bridge in 2078.

Financial Year Ending 31 July:	2026	2027	2028	2029
Bridge Replacement Reserve	6,106,216	6,383,306	6,673,419	6,977,167
Transfer Of Shareholder Funds	264,651	277,090	290,113	303,748

Table 5: Dunham Bridge - Forecast bridge replacement reserve

(ii) Repairs Reserve

As noted in the last toll increase the Company maintains a repairs reserve. This specific fund is for larger repairs. At the last toll application, the fund stood at approximately £600k to pay for anticipated joint replacement.

Subsequent to the last toll application it became apparent that it would be prudent to resurface the bridge when it is closed to replace its joints. Accordingly, the Company transferred shareholder funds into the repairs reserve, increasing it to £800k in FY 2023 and £1.4m in FY 2024 as the costs of this work have become clearer.

The anticipated total cost of these works is almost £1.2m once the enabling costs of environmental and other compliance requirements are met. Additionally, the bridge will need to be closed for approximately 5 weeks for this work to be carried out causing a substantial drop in revenue as can be seen in "**3.5 Financial forecast assuming no toll increase**" below.

Inertia Consulting, specialist bridge engineers, carried out a Principal Inspection of the bridge in Q4 2024. They did not anticipate material works beyond the resurfacing work discussed above and provided initial working estimates for the cost of the works.

This will leave the Company with a repairs reserve of £200k for completely unexpected repairs, assuming the resurfacing work proceeds according to plan. The Company has not forecast any further additions to the repairs reserve during the forecast period.

3.5 Financial forecast assuming no toll increase

The figure below shows a financial forecast for Dunham Bridge, assuming it does not increase its tolls. Again, this forecast excludes the Company's investment funds.

FY Ending 31 July:	2026	2027	2028	2029
Turnover	**1,956,796**	**1,719,016**	**1,853,891**	**1,804,759**
Running Costs	(934,607)	(861,665)	(988,332)	(1,070,409)
Depreciation	(139,754)	(219,203)	(213,936)	(240,775)
Corporation Tax	(218,359)	(159,537)	(162,906)	(123,394)
Post-Tax Profit	**655,076**	**478,611**	**488,717**	**370,181**
Dividend	(843,660)	(854,560)	(852,380)	(850,200)
Transfers From Reserves	**(188,584)**	**(375,949)**	**(363,663)**	**(480,019)**

Table 6: Dunham Bridge – Financial forecast assuming no increase in tolls

As can be seen, this is not a sustainable situation for the Company.

For a discussion of the assumptions used to generate these figures see "**6.1 Assumptions"** below.

4. Proposed new toll structure

As a result of the issues discussed, the Company is now applying to increase its tolls.

4.1 New standard toll structure

The Company is requesting an increase in its standard tolls as per the below table.

Vehicle Category	Proposed Toll	Proposed Toll	Current Toll
	(Ex VAT)	*(Inc VAT)*	*(Inc VAT)*
Cars	£0.58	£0.70	£0.50
Vans	£1.25	£1.50	£1.00
Agricultural Vehicles	£1.67	£2.00	£2.00
Lorries	£3.33	£4.00	£2.00

Table 7: Dunham Bridge – Current & proposed tolls

This application maintains the current price for two categories of vehicle:

- **Cars who use a Dunham Bridge Card.**

  Full details are in section 4.3 '**Bridge Discount Scheme**' below.

- **Agricultural Vehicles**

  Our previous application moved agricultural vehicles from being classified as vans to being classified as lorries leading to a large increase in their tolls. We are conscious of how recent that large increase was.

The largest increase in this application is lorries with a £2.00 increase including VAT. Lorries cause the lion's share of the wear and tear on bridges and roads. Historically Dunham Bridge has been unusual in not charging lorries a larger multiple of its car toll to account for this.

In order to make tolls more reflective of the wear and tear caused to the bridge. The Company is seeking the right to classify cars towing caravans as vans and charge them accordingly.

This application seeks to increase the Company's toll income (net of VAT) at a similar rate to CPI and the adoption of the Company's proposal in "**4.2 CPI-Linked Future Toll Increases**" below would support this intent.

In the 15 years from March 2006 to April 2025 CPI inflation has been 78%. If authorised, the new toll is very unlikely to be introduced before total CPI inflation exceeds 80% since March 2006. The increase would be below cumulative Retail Prices Index inflation between March 2006 and April 2025 which was 106%.

The table below shows the increase in toll proposed in this application against the toll proposed in the March 2006 application to the Department for Transport.

Vehicle Category[1]	Proposed Increase Since 2006 *(Ex VAT)*
Cars: Not using Dunham Bridge card	94%
Cars: Using Dunham Bridge card	26%
Vans	108%
Lorries	233%
Agricultural Vehicles	178%
Average toll increase[2]	**90%**

Table 8: Dunham Bridge Tolls - % increase since 2006

In suggesting these increases, the Company has ensured that tolls remain very quick and simple to collect in cash. The majority of tolls will continue to be paid in cash for the foreseeable future.

4.2 CPI-linked future toll increases

The Company is also seeking the right to increase tolls in future without the need to apply formally to the DfT in a very limited number of scenarios.

This would save the DfT the time and cost of reviewing and managing a Dunham Bridge toll application and save the Company the cost of producing and managing a toll application and associated professional advice, given that the 2022 toll application process took approximately a year from submission to authorisation.

The Company proposes that an automatic toll increase only be allowed if all the conditions below have been met.

1. The increase is limited to a maximum of the increase in the consumer price index ("CPI") since the previous authorised toll increase.
2. The Company has not increased its tolls in the previous three years.
3. The Company has given DfT 3 months' notice of any planned increase.
4. The new tolls continue to be quick and simple to collect to avoid traffic delays.

4.3 Bridge discount scheme

The Company acknowledges its position as a provider of essential infrastructure to its local community and the responsibility that goes with that.

The Company created a discounted toll scheme for cars as part of its 2012 toll application, with pre-paid card users benefitting from a discount of just over 10% on each crossing. The Company is proposing to freeze

[1] *In 2006 the Company charged vans and lorries depending on their number of wheels. For this comparison, a standard van (6 wheels) and lorry (18 wheels) has been used.*
[2] *Average is weighted by the traffic over the bridge during 2024.*

this toll at its current rate, meaning that the discount will increase to 35%, and be maintained at that level for a minimum of two years.

The effect of this will be to maintain tolls for cars using a pre-paid card at their current levels.

Users of the car pre-paid card scheme now make up over 25% of car crossings, making this scheme expensive but the Company believes this is appropriate given the benefits of cars using cards versus paying cash, and its local responsibilities.

5. Comparative tolls

The Company believes that its tolls will continue to represent very good value to the travelling public after this increase. It will continue to charge significantly less than comparable bridges elsewhere in the UK in almost all cases.

The UK has a number of similar privately-financed toll bridges. A full list of these bridges can be found at: https://www.gov.uk/uk-toll-roads.

Each toll bridge in the UK has its distinct geography and position in local highway infrastructure. However, the bridges most similar to Dunham Bridge in terms of size, complexity, and traffic composition are those on A-roads that carry HGV traffic as well as cars and vans. The other toll bridges in this category are Humber, Itchen, Mersey Gateway and Tamar bridges per the Government website listed above. It should be noted that Batheaston is mis-categorised on the Government website, hence it's removal.

The chart below shows the cost of a standard car crossing for these comparable bridges. It should be noted that some comparative bridges only charge for crossing in one direction. The toll shown for Humber Bridge includes the increase announced on 26th June 2025.

After this toll increase, Dunham Bridge's toll will still be very modest versus any comparable bridge on the DfT website. The figures below are inclusive of VAT.

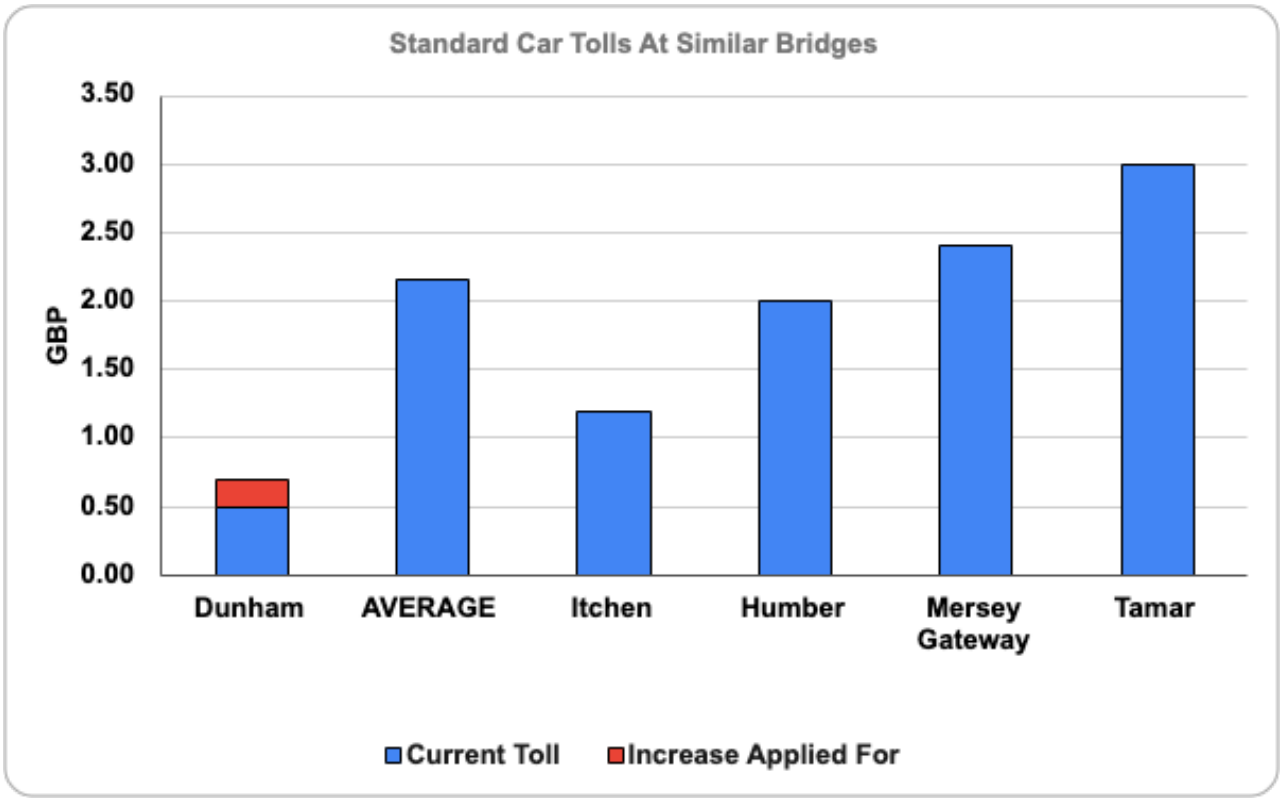

Figure 2: Dunham Bridge – Comparison with car tolls charged by similar bridges

All these bridges offer discounts for frequent or registered users. Even allowing for these discounts, Dunham Bridge's tolls will continue to be modest by comparison. The Company is not applying to increase its discounted toll car tolls.

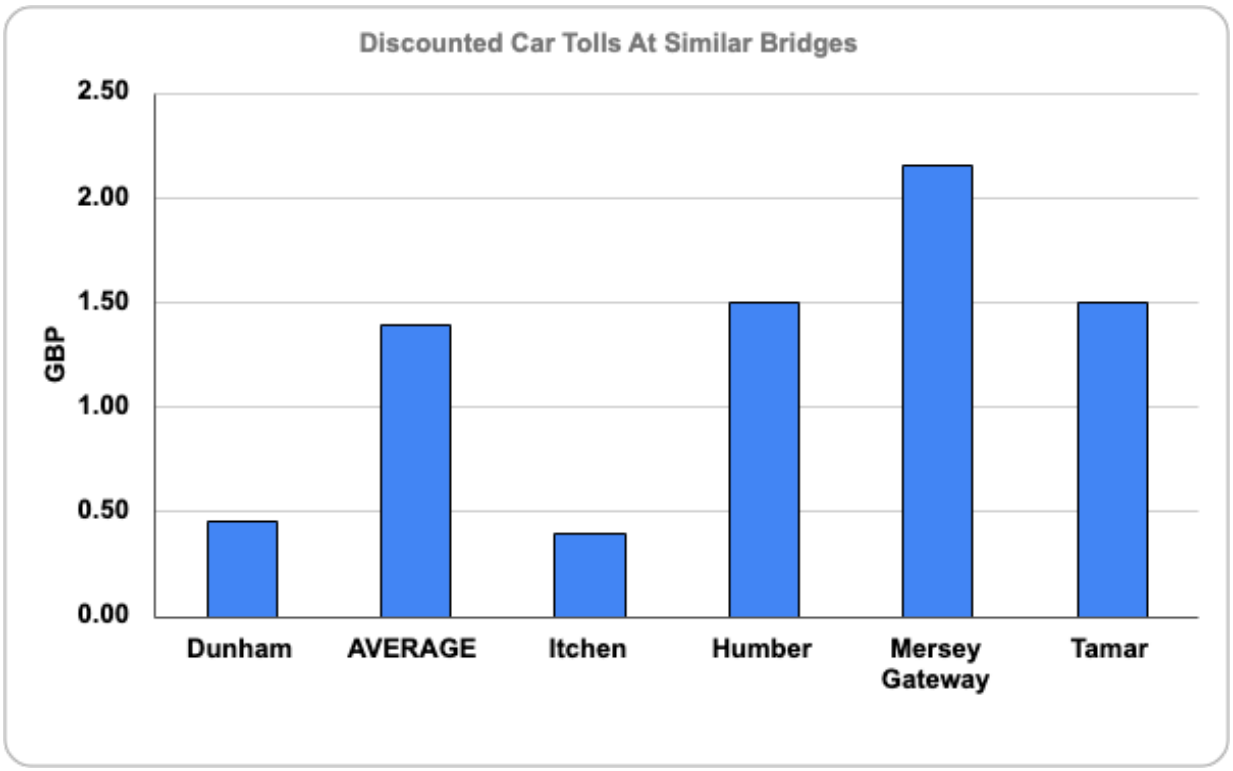

Figure 3: Dunham Bridge – Comparison with discounted car tolls charged by similar bridges

Similarly, the chart below shows the cost of a standard HGV crossing for these bridges. After this toll increase, Dunham Bridge's HGV toll will still be the lowest of any comparable bridge.

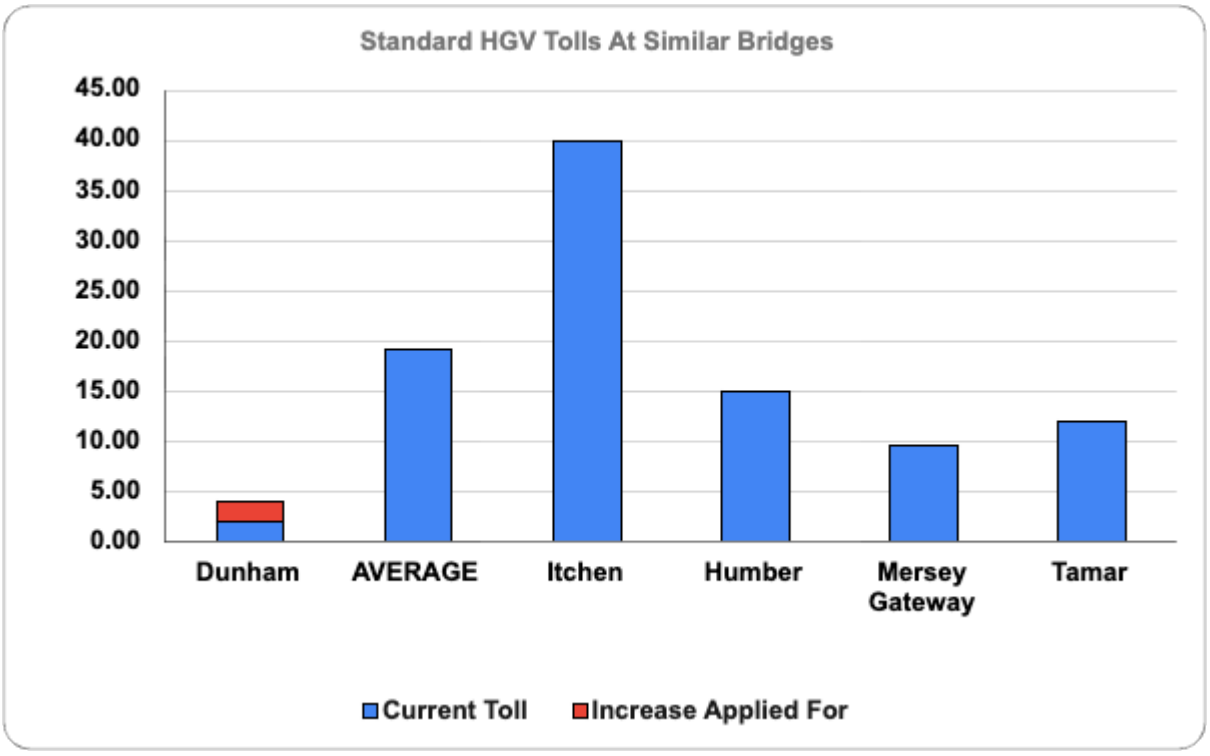

Figure 4: Dunham Bridge – Comparison with HGV tolls charged by similar bridges

Again, all these bridges offer frequent user discounts and even after taking these into account, a standard HGV crossing of Dunham Bridge will still be the same price or less than the discounted price of these bridges.

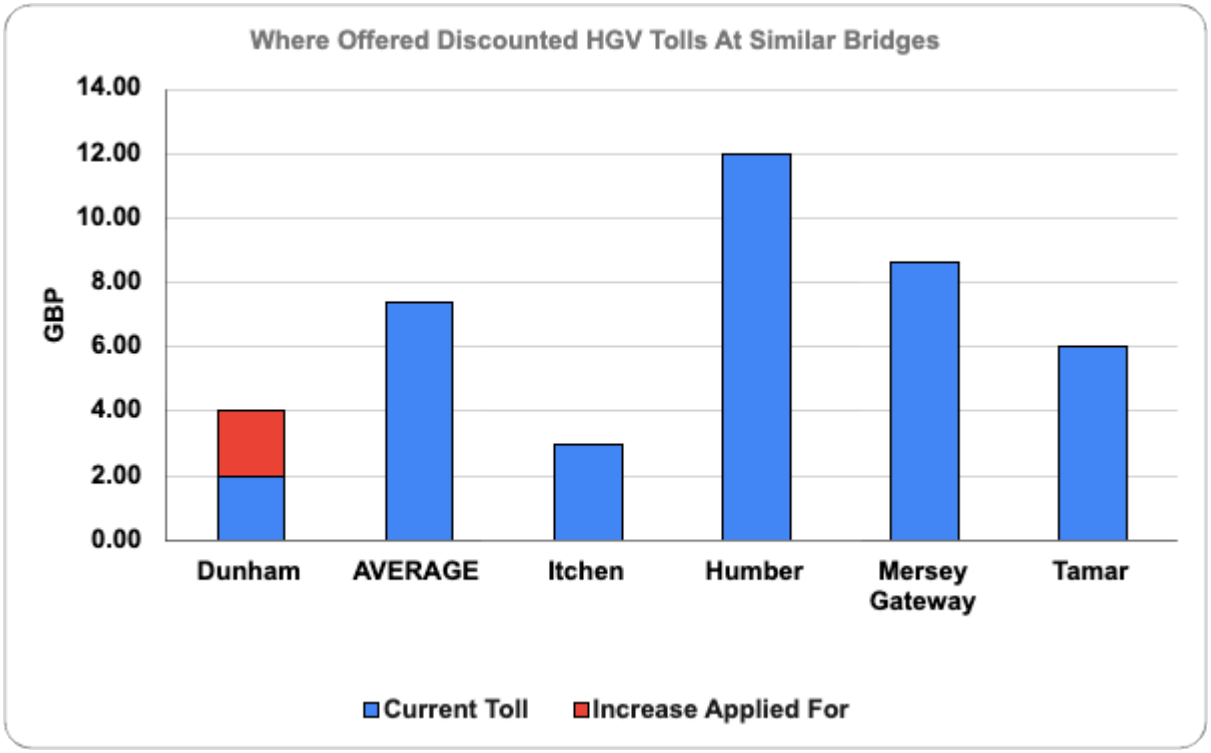

Figure 5: Dunham Bridge – Comparison with discounted HGV tolls charged by similar bridges

6. Future financial forecasts including a toll increase

The Company has created financial forecasts to assess the appropriate level of future tolls. Please note, all forecast figures exclude VAT.

6.1 Assumptions

The financial forecasts in this submission contain a number of material assumptions, which are laid out in more detail below.

(i) Bridge Rebuild Cost & Bridge Rebuild Investment Reserve

The public enquiry held in 2006 confirmed that the Company has a legal obligation to provide for the bridge's future replacement.

This submission retains three key assumptions which were also agreed in both subsequent toll applications.

1) The cost to rebuild the bridge was approximately £7m in 2005. This figure is from a survey carried out by the engineering firm PCC Consultants.

2) The cost to rebuild the bridge will increase by 3% per year over the long term.

3) The bridge replacement fund can be invested and grow at an average of 6.3% p.a. before tax over the long term.

However, the directors are aware that small changes to these assumptions make very substantial changes to the outcome.

If cost inflation averages 4% per annum rather than the forecast 3% per annum, the cost of replacing the bridge doubles to over £120m in 2078, leaving a c£60m shortfall.

Similarly, if the replacement reserve earns a return of 1% less than forecast, then the replacement reserve will only meet 48% of the bridge's projected replacement cost.

While the above demonstrates how little margin for error there is in the estimates regarding the Company's statutory obligation to replace the bridge, the Company is not proposing to change either of these assumptions. The Company reviews these assumptions annually.

It believes that they will continue to be appropriate over the anticipated lifespan of the bridge.

For example, as discussed above cost inflation in the building and engineering sector has been substantially above 3% p.a. in recent years, driven by the war in Ukraine, construction of HS2 and Brexit amongst other things.

Similarly, in recent years, the returns on the Company's investment portfolio have been very volatile with some years resulting in negative returns however the Company continues to believe that a gross investment return of 6.3% p.a. return can be earned over the medium term, although it is assuming that the return will be 5.3% p.a. pre-tax over the next few years.

(ii) Future Traffic Growth

The Company has forecast that its traffic will fall in coming years driven by continuing Government initiatives to reduce car usage and the steady increase in people working from home.

In recent years, even after allowing for the flood of 2024, car crossings have fallen approximately 2% p.a. and the Company, not seeing a reason why this trend would change, has used this in the financial model.

Historically the proportion of cars crossing benefitting from the discount applied to the Dunham Bridge card has grown at approximately 1% p.a. We have assumed that this will increase to 2% p.a. with the introduction of a more generous discount but there is considerable uncertainty around this.

Since financial year 2022 the number of crossings by vans, lorries and agricultural vehicles have fallen, rather than held steady as forecast in the last toll application. Restocking post Covid-19 meant that the 2022 figure was unusually high meaning that volumes for commercial vehicles have reduced approximately 5% p.a. from 2022 to 2024.

Given the unusually high number of crossings in 2022 the Company has assumed that traffic volumes in these categories experience ongoing falls of 0.5% p.a..

The Company believes that these figures are sensible given it's understanding of local traffic flows and the local area.

(iii) Business Cost Inflation – Cost of Sales

The backdrop for inflation is very uncertain. Recent conflict between Israel and Iran and Donald Trump's sudden introduction of tariffs are two examples of events with the potential to increase inflation substantially and without warning.

It has been assumed that the business will experience continuing cost inflation:

- **Cost of Sales (Toll collector salaries)**

  The Company has forecast that Cost of Sales will increase 9% p.a. It seems unlikely that future increases in NLW combined with any future changes to National Insurance and the costs of implementing planned changes to employment legislation will be less than that.

- **Engineering & Maintenance**

  The Company has forecast that engineering and maintenance costs will continue to increase at 9% p.a.

  Recent inflation per the Royal Institute of Chartered Surveyors has been 9.1% and 5.7% in FY 2023 and FY 2024 respectively, driven by increasing salary costs and raw material costs.

  The backdrop of stubborn services inflation combined with the current Government's pledge to build 1.5 million new homes before 2029 and with continuing work on HS2 will drive cost inflation over the medium term given the ongoing skills shortage that the construction industry faces. A recent Construction Industry Training Board report estimated that an extra 152,000 workers will be required by the construction industry to hit the target for new homes by 2029.

- **Other costs (Establishment & Administrative Expenses)**

  The Company has assumed that other costs will increase at 7% p.a.. This cost category contains a variety of expenses. Most relate to services like accountancy, audit, management and company secretarial and bridge insurance but it also includes heating and electricity.

Recent UK services inflation has proven to be stubborn. The most recent figures available show it increasing to 5.0% in July 2025 rather than decreasing as hoped. The Company's insurance policy has increased at over 8% p.a. over the last 5 years despite the best efforts of our insurance brokers. The Company's power bill has increased by approximately 300% since 2021.

(iv) Depreciation

The forecast depreciation figure is mainly made up of depreciation on the value of the bridge, the renovation or rebuilding of the bridge office (FY 2028) and the resurfacing of the bridge (FY2027).

The office building has an expected life of 40 years and so will be depreciated at 2.5% of cost p.a. in line with the Company's accounting policies. The new road surface will be depreciated at 5% of cost p.a. as it has an expected life of 20 years.

(v) Dividends

The forecasts assume that shareholders are paid a dividend representing a 7% return on capital, which has been stated as reasonable at previous public inquiries, and below the level authorised for other bridges.

(vi) Tax

The Company is not assuming any tax or NI increases in these financial forecasts.

6.2 Future financial position

The table below shows the financial forecast for the Company assuming that its tolls are changed from 1st August 2026.

FY Ending 31 July:	2026	2027	2028	2029
Turnover	**1,956,796**	**2,512,712**	**2,738,207**	**2,693,851**
Running Costs	(943,607)	(861,665)	(988,332)	(1,070,409)
Depreciation	(139,754)	(219,203)	(213,936)	(240,775)
Corporation Tax	(218,359)	(357,961)	(383,985)	(345,667)
Post-Tax Profit	**655,076**	**1,073,882**	**1,151,954**	**1,037,001**
Dividend	(839,300)	(850,200)	(893,800)	(926,500)
Transfers To / (From) Reserves	**(184,224)**	**223,682**	**258,154**	**110,501**

Table 9: Dunham Bridge - Financial forecast assuming a toll increase is granted

Our accountants Wright Vigar have verified the integrity of the financial model used to produce the figures above, and the figures shown in "**3.5 Financial forecast assuming no toll increase**" above. The

assumptions input into the model were not part of the exercise. The Company's unique nature making such an exercise unfeasible.

As can be seen, the toll increase allows the Company to meet all its obligations, but with a narrow margin for error. Smaller increases are not practical given the timing and uncertainty of the toll increase process.

Turnover reduces because of the reductions in traffic volumes and the increased proportion of discounted crossings by cars. The closure of the bridge for resurfacing during FY 2027 reduces the impact of the increase in tolls in that year.

This increase will allow it to continue to invest in modernising its infrastructure to improve traffic flows, transfer funds into its ‘Replacement Reserve’ at the agreed rate and pay shareholders an appropriate dividend.

The forecasts show a modest profit in 2029. There is considerable uncertainty in some variables in the financial forecast, not least the future traffic numbers and future cost inflation.

In due course, the Company will seek an appropriate further toll increase when it believes that it will no longer be able to meet its commitments to all stakeholders.

7. Summary

The Company submits this application to demonstrate that:

- The bridge is a piece of strategic infrastructure to the Counties of Nottinghamshire and Lincolnshire and that the Company has, and will continue to, operate it in a safe and sustainable manner.
- The Company has continued to demonstrate sound financial management and make appropriate provisions for all future liabilities. By doing so, the Company is ensuring that there is no potential liability for the public sector nor need for public sector finance.
- In recent years, the Company has invested substantial sums in maintaining and upgrading the bridge's infrastructure and has plans to continue to do so in future.
- The Company plans to offer shareholders an appropriate dividend in future.
- The Company's financial position is such that it will not be able to continue operating and meeting its legal commitments over the medium term without a toll increase.

The Company is seeking a toll increase that will increase its toll income by close to the rate of CPI inflation since its 2006 toll application.

The Company is also seeking permission to introduce CPI-linked future toll increases in future without the requirement for a formal application to the DfT.

The Company is seeking the increase in tolls as soon as is practical and is happy to provide further information and explanations as required.

Appendix A:

2024 Principal Inspection Report from Inertia Consulting

Principal Bridge Inspection

Dunham Bridge Company

Dunham Bridge

Report Reference: P20-0088/RPT/001
Report Date: 25/02/2025
Report Revision: 1
Report Status: Final

Contents

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Document Control Sheet

Report Title	P20-0088/RPT/001 – Dunham Bridge Principal Inspection
Revision	1
Status	Final
Control Date	25/01/2025

Record of Issue

Rev	Date	Originator	Checker	Authorised	Amendments	Purpose of Issue
-	23/01/25	C Statham		-		Internal Draft
1	25/01/25	C Statham	C. Spencer	D Roome	Checker Comments Added	Final

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Organisation	Contact	Copies
Dunham Bridge Company		1E

Note: Unless otherwise noted herein, the conclusions and recommendations contained in this document are based on the information supplied by the Client and visual inspection and testing (if any) described within. Inertia Consulting can accept no liability in respect of differences between the actual structure and the information supplied except (i) where these are readily apparent by visual inspection or (ii) where physical investigation has been undertaken by, or under the control of Inertia Consulting, and then only to the extent of such physical investigation.

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1. Introduction

Inertia Consulting Ltd were appointed by Dunham Bridge Company to carry out a Principal Inspection of Dunham Bridge.

The bridge carries the A57 Dunham Road over the River Trent to the West of Lincoln. The bridge is located at Ordnance Survey Grid Reference SK 81907 74469.

The purpose of the inspection was to undertake a 'within touching distance' inspection of all accessible structural components to determine the current condition of the structure and to identify remedial works that may be required to ensure the long-term durability of the structure.

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2. Bridge Description

Dunham Bridge carries the A57 Dunham Road over the River Trent to the West of Lincoln.

The structure is a four-span composite deck spanning West to East for report referencing, with the River Trent flowing South to North at the structure. The two Eastern spans are above the River Trent with the two Western spans over a flood plain. Each span is approximately 36m in length by 10m width. Each span comprises 3no. steel I-beams with a reinforced concrete deck supported on a type of trestle rocker bearing on stone abutments and piers. The West span is tied back to the West abutment with threaded bars embedded in the abutment.

There was a stone retaining wall either side of the East abutment with a metal walkway spanning between the retaining walls. The East abutment, retaining walls and piers in the river were all protected from scour with the use of large stone riprap with an average size of between 300-500mm.

The foundations are understood to be timber piles, but these were not inspected during this inspection.

The structure carries an asphalt single carriageway with an asphalt footway along the South side and a narrow brick verge along the North side. There were expansion joints between each section of deck and the abutments.

The structure had 1.2m high painted steel parapets on either side of the carriageway. Single open box beam barriers connected to the parapets at the South-West and North-East ends. The barrier to the North-West transitioned from a corrugated barrier to an open box beam barrier which was connected to the parapet. There was no impact barrier at the East end of the South parapet, where barriers are connected at the other ends of the parapet, in this corner there was a staircase accessing a footpath along the river below and to the East of that above a grass embankment was a timber post and beam fence.

Toll kiosks were on the East approach to the structure.

General photos of the structure can be found in Appendix A, plates 1-35.

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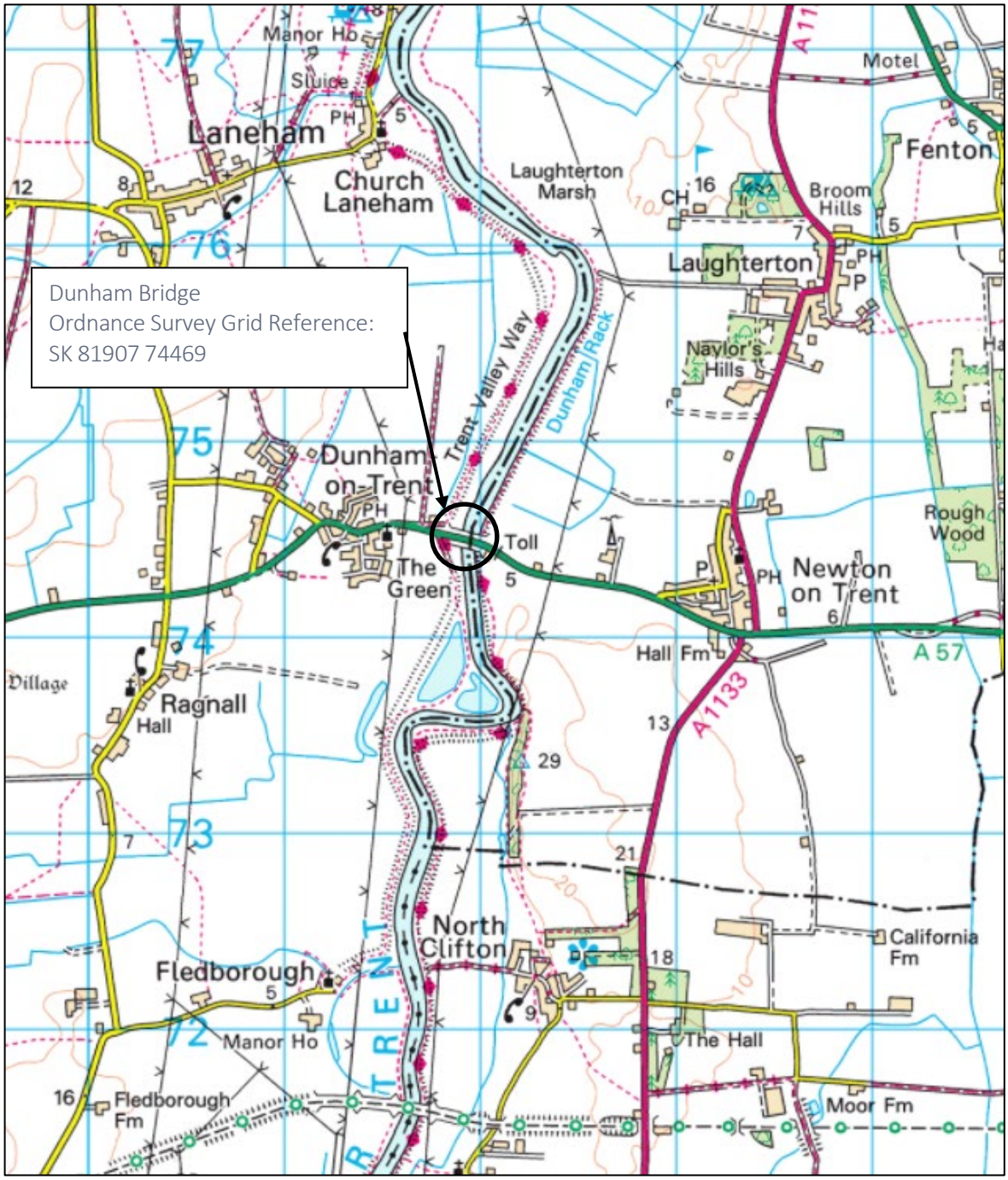
3. Location Plan



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4. Inspection

The inspection was carried out to Principal Inspection standards in accordance with Highways Agency Design Manual for Roads and Bridges document CS450.

The inspection comprised a visual inspection of all visible parts of Dunham Bridge.

4.1. Inspection Team

The inspection of the structure was completed over three nights on the 2nd, 3rd and 4th of December 2024 and one day on the 22nd of January 2025. The night shift inspections were completed by Chris Statham and Ben Byford. The one day was completed by Nat Field.

4.2. Inspection Methodology and Access Arrangement

All four spans were inspected on 2nd to the 4th of December 2024 utilising an underbridge unit to gain access to the deck and high-level elements. The north parapet and surfacing inspection was also carried out utilising traffic management on the 2nd of December 2024.

The topside and ground level elements were inspected on the 22nd of January 2025.

4.3. Weather Conditions

The weather for the three-night shifts was consistent, with clear conditions where the temperature ranged between 1℃ to 5℃. On the night of the 5th of December 2024 there was a shift due to take place, however winds were gusting to greater than 40 miles per hour and the underbridge unit was not able to deploy.

On the 22nd of January 2025 the weather was overcast, calm and 6℃.

4.4. Parts of Structure Not Inspected

All above ground elements were inspected.

The foundations and waterproofing were not inspected with portions of the piers beneath the water level also not being inspected.

A hammer visual to the centre joint was due to be undertaken on the final night of inspection utilising the underbridge unit and roped access. However, adverse weather conditions prevented the underbridge unit from safely deploying on the night this was going to take place, and it was agreed with the client that these works would not be rearranged.

4.5. Inspection Findings

The inspection findings are summarised below. General photos of the structure are in Appendix A, plates 1-35.

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4.5.1. Foundations

The foundations were not visible. There were no signs of settlement indicative of foundation failure.

4.5.2. Abutments

The abutments were in fair to good condition with several minor defects noted.

There was minor water staining noted to the back wall of both abutments. Plate 36.

Fine cracking was visible on the vertical face of the reinforced concrete caps on both abutments. Two notable horizontal cracks in the West abutment cap and one in the East abutment cap had associated rust staining implying corrosion to the reinforcement. The cracks on the West abutment cap were 1050mm and 350mm long respectively with the East abutment crack being much shorter. Cracking was measured up to 0.2mm wide. Rust staining was noted on the stone beneath the cracking in the West abutment cap. There was no hollow sounding concrete around the cracks when struck with a tap hammer at the time of the inspection. Other vertical cracks were also noted but were much finer and likely to be shrinkage cracks. Plates 37 – 39.

On the front face of the East abutment reinforced concrete cap there were two full height areas of repair measuring 1690mm and 1900mm, respectively. The repairs were sound when struck with a tap hammer, but cracking was common, most likely owing to shrinkage. There was cracking with associated rust staining at the base of the North repair. Plate 39 – 40.

At the top of the west abutment there was rust staining emanating from behind the drainage deflector, likely from the corroded joint above. Plates 41 – 42.

Anchorage bars embedded at the top of the back wall on the West abutment appeared to have been previously coated in a bitumen wrap. There was a residue on the anchor bolts which had been partially painted locally, with minor corrosion visible. Plates 43 – 44.

A small number of stone masonry units on both abutments had minor spalling, measured up to 300 x 10 x 40mm. There were historic corroding fixings in the East abutment. One abutment spall may have been due to the expansion of the historic fixings. Plates 45 – 48.

Several fine vertical cracks were also found in the stone masonry units of each abutment. The cracks appeared to non-continuous and limited to individual stones. Plates 49 – 51.

The mortar on both abutments was friable and in places there was minor mortar loss, the stone masonry units were secure. Plate 52 – 53.

Felt material had been adhered to the joint between the back wall of the abutments and the reinforced concrete caps, presumably to prevent water ingress behind the cap. The felt at the East abutment was particularly worn. Plates 54 – 56.

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A heavily corroded cathodic protection cabinet was noted on the West abutment. The cabinet was open. It was assumed that this cabinet was an old one and now redundant with the presence of newer cabinets and cabling adjacent to it. The cathodic protection cabinet on the East Abutment exhibited some minor surface corrosion. Plates 57 – 58.

One area of faded graffiti was found at the North end of the West abutment. Plate 59.

The previously reported fire damage to the west abutment was still present, there was no evidence of other fires being lit around the structure. Plate 60.

4.5.3. Wing Walls

The wing walls were in fair to good condition with only minor defects noted.

There were areas of rust staining visible at the base of the concrete slab at the intersection of the South-East wing walls and abutment. Plate 61.

Minor mortar loss was noted across the wing walls, but all stone masonry units were secure, and loss was minimal and localised. Plate 62.

There was evidence of old cable routing with corroding fixings left behind within the North-West and North-East wing wall. Plates 63 – 64.

4.5.4. Piers

The piers were found to be in fair to good condition. The East and centre piers were protected by riprap which appeared to be in good condition, intact and well distributed around the piers.

As with the reinforced concrete caps on the abutments, the caps on the piers also had visible cracking associated with reinforcement corrosion, measured up to 0.3mm wide. There were four areas of delamination to the centre pier concrete cap measured up to 920 x 120mm, and shrinkage cracking. An area of repair was also visible on the centre pier with rust staining beneath it, having emanated prior to the repair. Plates 65 – 70.

A small number of the stone masonry units across the three piers appeared to have been historically struck. The damage ranges from scrapes in the stones to notable spalls. Plates 71 – 73.

Water was dripping from the deck drainage on to the piers beneath resulting in staining but also calcite deposits. A historical attempt had been made to reduce the erosion effect of water dripping onto the pier caps by fixing acrylic sheets directly under the drainage, but these still allow for water flow beneath the sheet. Plates 74 – 77.

Cracks open to 1mm wide were found through stone masonry units in the piers, cracking appeared isolated to individual units and was not extending through adjacent stones. Some joints had leachate emanating through. Plates 78 – 80.

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There were areas of minor mortar loss noted across the piers, but these were not significant, and stone masonry units were secure. Plates 81 & 82.

The previous report mentioned evidence of fire against the West Pier, this defect was not present during the inspection.

4.5.5. Bearings

The bearings were in fair to good condition. There were no signs of distress that would indicate that the bearings were not functioning as designed.

The protective paint system had failed in several small areas. Rust staining was common in areas adjacent to the bearing plates, but little to no exposed corrosion was found. There was minor corrosion noted across the bearing frames/trestles with a few cracks found within the paintwork. Plates 82 – 91.

Grout surrounding the base of the bearings had cracked and spalled in several places, this was historic as none of the spalled pieces remained on the structure. Plate 92 – 94.

4.5.6. Deck Beams

The deck beams were in fair to good condition with common re-occurring minor defects.

The protective paint system had failed in several localised locations, typically on top of the bottom flange and at the bottom of the web. The paint was blistered/flaking and when broken away exposed early stages of corrosion to the beams. Plates 95 – 98.

Towards the beam ends including transverse beams, minor corrosion staining was noted that is due to the proximity to the failing expansion joints above. Plate 97 – 102.

A very small amount of bird droppings was found across the deck beams, unlikely to be having any significant effect of the structure. Plate 103.

On the South transverse beam over the Centre Pier there was remnants of bitumen from repairs of the joint and carriageway. Plate 104.

4.5.7. Deck Slab

The slab was fair to good condition with several minor defects.

Concrete around drainage outlets and adjacent to deck joints had notable water staining which appeared to have led to further defects including some minor spalling associated to delamination, delaminated concrete, rust staining and ultimately has led to repairs in these areas. Most repairs were in sound condition, but some exhibited minor shrinkage cracking. The largest areas of delaminated concrete with associated spalling noted measured up to 450 x 430mm. Plates 105 – 115.

There were small areas of exposed reinforced found in the deck slab soffit. This was located away from joints and drainage locations and was likely due to low cover. Plates 116 & 117.

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A small number of poor construction joints were visible that appeared to have low cover with rust staining and corroded ferrous debris. Plate 118.

Cracking that typically had associated leachate was found to the cantilever soffits and parapet beam face along the length of the structure. Plate 119 – 121.

There was a recurring narrow repair along the cantilever soffit towards the outside edges that would regularly break off if tapped with a tap hammer. The repair appeared to cover a construction joint between the cantilever soffit and the parapet edge beam and was very shallow. Plates 122 & 123.

There was no joint sealant found on the edge beams on either side of the deck at the centre joint above the centre pier. The centre joint was considerably wider than the others, measuring 68mm wide at the parapet edge beams compared to a typical measurement of around 30mm at the other joints except for the West abutment joint which is assumed to be fixed and had a measurement of 70mm. It is not clear whether the centre joint was originally sealed in the parapet beams or if it had failed historically. The joints in the edge beams with sealant all had varying levels of debonding between the sealant and adjacent concrete. Plates 124 & 125.

A small void was found in the deck slab in the inner West span, it was assumed that this was a construction defect and has been present since construction. Plate 126.

A small amount of corroded ferrous debris was found in the deck slab soffit this was more prevalent in the cantilever soffits and adjacent to construction joints. Plate 127.

4.5.8. Drainage

The carriageway drainage was largely clear of blockages and appeared to be functional. The concrete adjacent to the carriageway drainage outlets was deteriorating.

Joint drainage was largely in good condition although the detail discharges onto the piers beneath. The previously reported failed drainage had been repaired and was in good condition. There was minor corrosion to the drainage fixings within the soffit beneath the joint and downpipe fixings on the vertical steel members of the piers. Plates 128 – 130.

4.5.9. Waterproofing

The waterproofing was not inspected but there was water staining within the East span adjacent the East Pier, indicating there is potential failure to the waterproofing. The remainder of the deck was dry. Plate 131.

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4.5.10. Carriageway Surfacing

The carriageway surfacing was found to be in fair to poor condition.

There were settlement cracks at either end of the structure on the approaches to each abutment, the cracking was more significant to the West end of the structure. Plates 132 & 133.

There were several cracks across the structure that were open, sealed or where a repair had failed. Plates 134 – 137.

4.5.11. Expansion Joints

The expansion joints were in fair to poor condition with notable recurring defects across the five joints. The joints have continually deteriorated since the previous inspection, requiring patch repairs on the surfacing and the repairs to the pier joints beneath the deck were cracked and beginning to delaminate. Which in numerous places were wet, indicating there was water ingress from the joint above. Plates 138 – 141.

The joints leak, but the drainage channel installed beneath prevented most water leaking onto elements beneath. There was some ponding across the seals at the time of the inspection. Plates 142 & 143.

There was some debonding between the joint nosing material and the carriageway wearing course, adjacent to the joints. Cracking had occurred in the adjacent surfacing. There were numerous patch repairs adjacent the joints that were debonding and cracking. Plates 144 – 147.

The steel rail carrier rail in the West abutment and West pier joints was not continuous and was poorly installed. Movement here may have caused the cracking in the adjacent nosing mortar in the West pier joint. Plate 148.

The steel rails were commonly corroded with some minor lamination forming, particularly in the verges where not polished by tyre wear. Plates 149 – 152.

The joint seals were deformed in places across all five joints with areas visibly appearing to be detached allowing water ingress through the joint, as seen within the repairs beneath the joint. Plates 153 – 155.

Dirt and debris were trapped in the seal between the joint rails which affected the performance of the joints. Plate 156.

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4.5.12. Footway/Verge Surfacing

The footway surfacing was in fair condition.

There were surfacing and crack repairs at both ends of the structure in the South footpath where historic settlement had occurred, this does not appear to have significantly worsened since repairs were made. At the West end of the South footpath there has been some settlement since the repairs, cracking has widened on the West verge at the South end. Some distortion of the bricks in the North verge was noted at either end of the structure. Plates 157 – 160.

A longitudinal crack extended much of the length of the structure and was offset from the parapet edge beam by around 250mm. This gap extended at the West end where the footpath widens. Transverse cracks were found at drainage hole positions and raised bricks were also noted at drainage hole locations in the North verge. Plates 161 & 162.

4.5.13. Parapets

The parapets were in fair to good condition. Rust staining was common where the paintwork had failed. These areas were most common to the base plates of the parapet posts. A small number of fixings were corroded, and paint loss was noted at parapet expansion joints. Plates 163 – 167.

Lichen growth was common over much of the length of the parapet rails. Plate 168.

Cracking was found in several parapet post base plate plinths. Plate 169.

4.5.14. Approach Barriers

The structure had safety barriers on three of the four approaches with a timber post and rail fence on the South-East approach, due to the presence of a pedestrian staircase in this location. As the toll booths are located at this end of the structure, vehicles travel at a reduced speed.

All the barriers and fences were in good condition and secure. Bolt assemblies were not fully tightened at the connection between the North parapet and the North-East barrier. Plate 170.

4.5.15. Embankments

The embankments surrounding the structure were in fair to good condition.

The previously reported two separate pieces of large protruding reinforcement bars on the West riverbank to the South of the centre pier were not observed due to no access into the watercourse.

Animal burrows were regularly found on the banks adjacent to the wing walls of the structure, particularly adjacent to the North-East and South-West wing walls. Plates 171 & 172.

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4.5.16. East Retaining Walls

The retaining wall to the East of the structure was in fair to good condition.

A vertical crack was visible in the North face of the South section, spanning through the mortar and through some masonry units. Plate 173.

There was vegetation growth at the foot of the walls and growing from mortar joints. Plates 174 – 176.

4.5.17. East Abutment Walkway

The East abutment walkway was in good condition.

The steel support structure was in fair to good condition although minor surface corrosion was common across the frame and fixings where the protective paint system had failed, but no section loss was noted. Plates 177 – 179.

The previously reported walkway planks that were rotting towards the ends had been replaced with a metal walkway that was in good condition.

The previously reported failed parapet paint system had been repaired as the parapet had a new protective paint system at the time of inspection.

During the time of inspection there was no flood debris present on the walkway.

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5. Discussion and Recommendations

The structure was visibly in fair to good condition, although several minor defects were noted across the structure.

The structure appears to have benefited from the previous timely repairs, however further repairs are required to ensure that there is limited deterioration to the current defects. Ensuring that the structure is maintained in a good to fair condition.

A maintenance painting scheme should be carried out to locally repair the failing protective coating system to metallic structural elements and prevent early corrosion accelerating. These repairs should be carried out with a compatible system following local preparation of the substrate to St3 standard.

The deck slab was in good condition with defects concentrated towards joints and adjacent to carriageway drainage outlets. Repairs were common in these areas and were typically in good condition. Some minor delaminated and/or spalled concrete was noted in a small number of areas on or adjacent to repairs. Minor rust staining was also noted on or adjacent to repairs. Localised concrete repairs are recommended to the concrete deck to maintain long term durability.

The carriageway surfacing was still serviceable but showed signs of weathering/wear and was reaching the end of its serviceable lift. Cracking was common in the surfacing across all four spans, including the South footpath. Some cracks have previously been repaired, of these some of the repairs had failed exposing open cracking particularly at the South-West corner of the structure. Full resurfacing work should be undertaken to ensure there is no further deterioration to the cracked surfacing.

The expansion joints appeared to be part-functioning but were reaching the end of their serviceable life. The joints have continually deteriorated since the previous inspection and had several patch repairs. Concrete repairs beneath the joints were failing and water stained. The joints should be replaced at the same time as the carriageway surface, with concrete repairs being undertaken. Re-waterproofing should be considered at the same time as the re-surfacing as this is likely to be near end of serviceable life.

The parapets and safety barriers do not meet current standards and exhibit paint loss and corrosion. A site-specific risk assessment should be carried out to assess whether the current road restraint systems should be upgraded in the next major maintenance scheme.

Cracking to masonry and concrete should be continually monitored at future inspections.

The full schedule of recommended repairs includes overleaf.

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Remedial Actions

Suggested Remedial Work	Priority (1)	Estimated Cost (2)
Tighten loose bolt assemblies connecting the North-East barrier to the North parapet	M	£250
Replace expansion joints	M	£180,000
Clean areas of failed paintwork across the main beams and re-paint	L	£10,000
Clean areas of failed paintwork across the parapets and re-paint	L	£15,000
Concrete repairs to deck soffit	L	£10,000
Concrete repairs to abutment and pier caps	L	£4,000
Resurface and re-waterproof carriageway and footpath surfacing	L	£400,000
Consider improving the drainage system	L	£5,000
Remove redundant cathodic protection box from West abutment	L	£450
Re-apply felt at junction between abutment caps and the back walls	L	£1,200
Clean & re-paint the East abutment walkway framework & parapet	L	£8,000
Clear vegetation and tree growth from East retaining walls and beneath the East abutment walkway	L	£1,200
Undertake Road Restraint System Replacement Study	L	£5,000
Re-wrap abutment anchors with protective wrap system	L	£2,000

1) Priority ratings envisage remedial work being completed within 6 months (H); 12 months (M) and 24 months (L)
It should be noted that cost estimates are indicative only and should not be relied on as outturn costs. All estimates are for the work activity and exclude access, project management and site setup costs

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Appendix A
Photographs

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Plate 1. North elevation

Plate 2. South elevation

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Plate 3. West Abutment

Plate 4. East Abutment

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Plate 5. North-West Wing Wall

Plate 6. North-East Wing Wall

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Plate 7. South-West Wing Wall

Plate 8. South-East Wing Wall

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Plate 9. West Pier

Plate 10. Centre Pier

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Plate 11. East Pier

Plate 12. Typical lower Bearing, East Abutment

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Plate 13. Typical Upper Bearing, East Abutment

Plate 14. Outer West Span Soffit

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Plate 15. Inner West Span Soffit

Plate 16. Inner East Span Soffit

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Plate 17. Outer East Span Soffit

Plate 18. View East over structure

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Plate 19. View West over structure

Plate 20. West Expansion Joint

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Plate 21. West Pier Expansion Joint

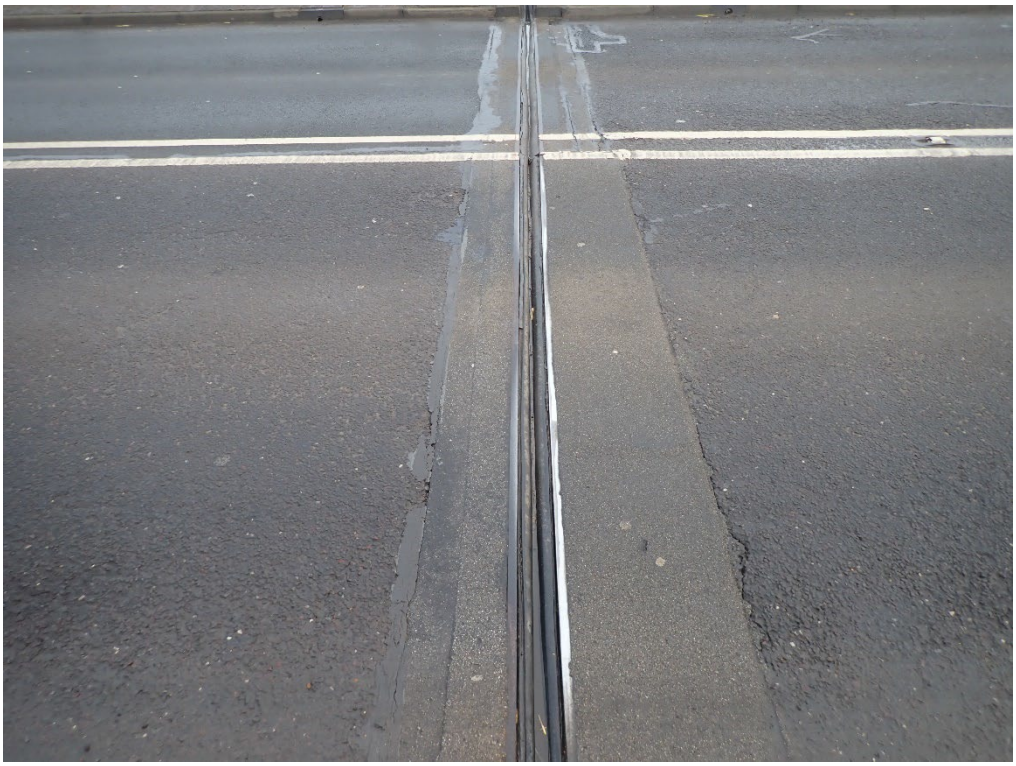

Plate 22. Centre Pier Expansion Joint

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Plate 23. East Pier Expansion Joint

Plate 24. East Abutment Expansion Joint

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Plate 25. North Parapet, West

Plate 26. North Parapet, East

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Plate 27. South Parapet, West

Plate 28. South Parapet, East

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Plate 29. View West of structure

Plate 30. View East of structure

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Plate 31. View upstream of structure

Plate 32. View downstream of structure

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Plate 33. East Riverbank and Retaining Wall

Plate 34. Access Stairs to the South-East of the structure

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Plate 35. East Abutment walkway

Plate 36. Water staining to the West Abutment back wall

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Plate 37. Reinforcement corrosion cracking to West Abutment concrete cap

Plate 38. Reinforcement corrosion cracking to West Abutment concrete cap

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Plate 39. Reinforcement corrosion cracking to East Abutment concrete cap.

Plate 40. Repair to front face of East Abutment concrete cap

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Plate 41. Rust staining emanating from the drainage deflector on the West Abutment, south end

Plate 42. Rust staining emanating from the drainage deflector on the West Abutment

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Plate 43. Exposed anchorage bars at the West Abutment, partially painted

Plate 44. Minor corrosion from paint loss on the anchorage bar at West Abutment

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Plate 45. Shallow spall to West Abutment stone

Plate 46. Shallow spall to the West Abutment, South end

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Plate 47. Spall to stone in the East Abutment adjacent to historic fixing, 300 x 10 x 40mm.

Plate 48. Corroded historic fixings in the East Abutment

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Plate 49. Fine cracking through stones in the East Abutment back wall

Plate 50. Cracking through stones in the West Abutment lower wall

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Plate 51. Fine cracking through stones in the West Abutment back wall

Plate 52. Typical condition of mortar on the West Abutment back all

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Plate 53. Mortar loss between the East Abutment brickwork

Plate 54. Damage to felt on the East Abutment

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Plate 55. Damage to felt on the East Abutment

Plate 56. Damage to felt on the West Abutment

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Plate 57. Open and corroded cathodic protection cabinet on the West Abutment back all

Plate 58. Minor corrosion to the cathodic protection cabinet on the East Abutment back wall

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Plate 59. Painted Graffiti on the West Abutment

Plate 60. Historic fire damage to the West Abutment

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Plate 61. Rust Staining to Slab above South-East Wing Wall

Plate 62. Mortar loss towards the top of the South-East wing wall

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Plate 63. Corroded Historic Fixings, North-West Wing Wall

Plate 64. Evidence of Old Cable Tray, North-East Wing Wall

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Plate 65. Reinforcement corrosion cracking with adjacent delamination 770 x 80mm, Centre Pier

Plate 66. Two areas of delamination, Centre Pier measured up to 920 x 120mm.

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Plate 67. Delamination to the East face of the Centre Pier, 490 x 80mm with corrosion cracking

Plate 68. Cracking to the West Pier concrete cap

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Plate 69. Cracking to the East Pier concrete cap

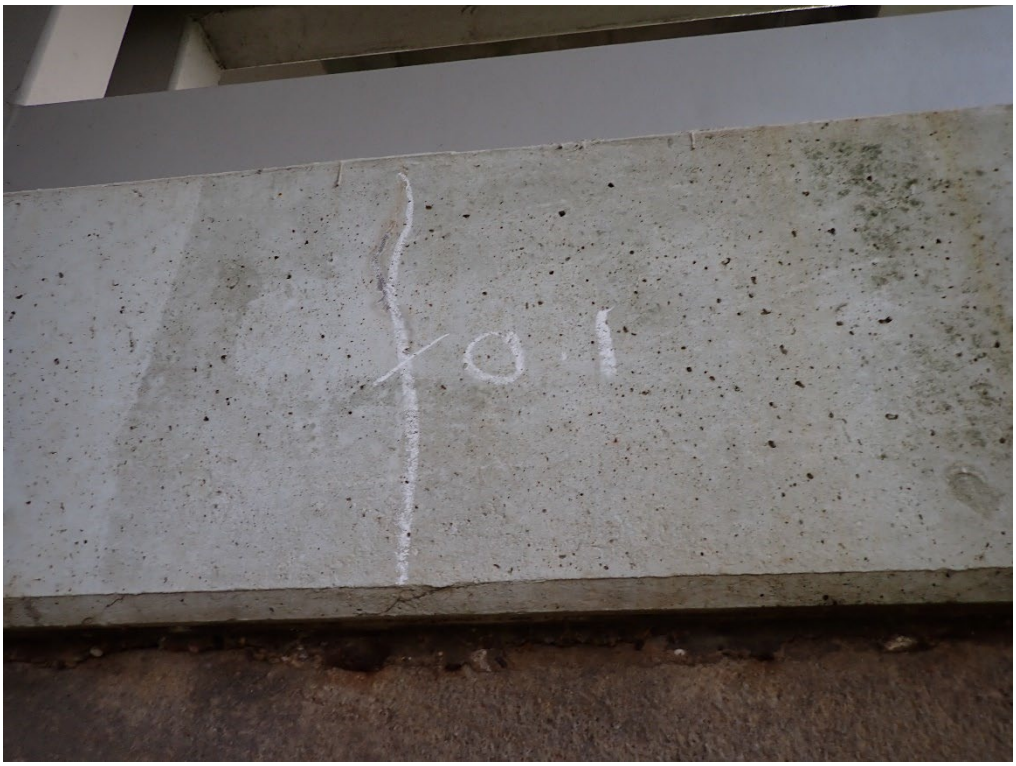

Plate 70. Typical cracking to Pier cap, East Pier

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Plate 71. Spall to Downstream End of the Centre Pier

Plate 72. Impact Damage to Upstream End of the East Pier

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Plate 73. Impact Scraping to the West Pier

Plate 74. Water-stained downstream end of the West Pier

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Plate 75. Water staining to upstream end of the Centre Pier

Plate 76. Calcite Deposits to the Upstream End of the East Pier

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Plate 77. Leachate through mortar joints within the Centre Pier

Plate 78. Cracking 1mm wide to the West Pier

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Plate 79. Crack Through Stone in the West Pier

Plate 80. Mortar loss to the East Pier

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Plate 81. Typical minor mortar loss to the Centre Pier

Plate 82. Rust staining to East Abutment bearing (South)

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Plate 83. Rust staining to upper connection of upper Bearing, West Abutment

Plate 84. Rust staining to lower bearing on the West Pier

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Plate 85. Protective paint loss on the West Abutment lower bearing

Plate 86. Paint blistering within the West Pier bearing frame

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Plate 87. Rust staining to the upper bearing on the West Pier

Plate 88. Spalled grout around Centre Pier Bearing

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Plate 89. Paint blistering on the East Pier cross beam

Plate 90. Paint blistering and cession to the South upper bearing on the Centre Pier

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Plate 91. Minor corrosion to the centre Pier cross beam

Plate 92. Spalling to the lower bearing plinth on the East Pier

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Plate 93. Spalling to the lower bearing plinth on the Centre Pier

Plate 94. Cracking to the Centre Pier bearing plinth

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Plate 95. Flaking paint and minor underlying corrosion to North Beam, West Span

Plate 96. Flaking paint exposing underlying corrosion to South Beam, West Span

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Plate 97. Cracked paint to the North beam on the inner West Span

Plate 98. Flaking Paint to South Beam, Inner West Span

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Plate 99. Corrosion Staining to steelwork above the West Pier

Plate 100. Corrosion staining to steelwork above the Centre Pier

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Plate 101. Corrosion to transverse beam at the Centre Pier

Plate 102. Corrosion staining to the transverse beam over the West Pier

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Plate 103. Bird dropping to the South edge beam adjacent the East Pier

Plate 104. Bitumen on the transverse beam of the Centre Pier, from repairs at the Centre Joint

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Plate 105. Delamination to the South edge beam on the West Span, 450 x 430mm

Plate 106. Minor spalled concrete and cracked repair to the North edge beam adjacent the West Joint

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Plate 107. Minor spall and cracked repair to the North edge beam on the West inner span

Plate 108. Minor delamination to the South edge beam adjacent the West Joint

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Plate 109. Minor spall to the North edge beam adjacent the Centre Joint

Plate 110. Minor spall and cracked repair to the North edge beam adjacent the East Joint

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Plate 111. Rust staining to the North edge beam, inner East span

Plate 112. Rusty tie wire and repair to the North edge beam, inner West Span

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Plate 113. Rust staining adjacent to deck drainage outlet

Plate 114. Cracks to concrete repair at East Joint

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Plate 115. Water seepage to the deck soffit on the North end at the West Joint

Plate 116. Spalled concrete exposing reinforcement in North Cantilever soffit, East Span

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Plate 117. Exposed reinforcement in East Span

Plate 118. Corroded ferrous debris & crack, North edge beam on West Span

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Plate 119. Crack with leachate to the West Span edge beam

Plate 120. Typical cracking to North edge beam on inner East Span

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Plate 121. Hairline cracking North edge beam, West Span

Plate 122. Typical view of narrow repair in Cantilever Soffit, South-East corner

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Plate 123. Long narrow repair, inner West Span, South Cantilever Soffit

Plate 124. No sealant in joint above the Centre Pier

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Plate 125. De-bonding of sealant above the West Pier, North edge beam

Plate 126. Void in Deck Soffit, Inner West Span

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Plate 127. Minor corroded ferrous debris found in Deck Soffit, West Span

Plate 128. Minor corrosion to fixings on the East Joint

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Plate 129. Corrosion to fixings on the Centre Pier joint drainage

Plate 130. Minor corrosion to downpipe fixing on the Centre Pier

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Plate 131. Water staining to the East Span adjacent the East Pier

Plate 132. Transverse cracking on the East Approach

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Plate 133. Settlement and transverse cracking on the West Approach

Plate 134. Open crack in surfacing on the West Span

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Plate 135. Open and sealed cracks in surfacing on the East Span

Plate 136. Sealed cracks in surfacing on the Inner East Span

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Plate 137. Typical carriageway condition, Inner West Span

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Plate 139. Cracking to a repair beneath the West Joint

Plate 140. Water seepage and cracking to the repair beneath the Centre Pier joint

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Plate 141. Water-stained repair on the south end of the East Pier joint

Plate 142. Active water ponding in the West Joint

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Plate 143. Active water ponding in the Centre Pier joint

Plate 144. Failed repair and cracking adjacent the East Abutment joint

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Plate 145. Failed repair to cracking adjacent to the West Abutment Joint

Plate 146. Debonding between the nosing surfacing and carriageway, West Pier joint

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Plate 147. Cracking in the nosing material of the East Pier joint

Plate 148. Non-Continuous & untidy Joint in the nosing rails, West Abutment

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Plate 149. Corrosion and minor lamination to the West Abutment joint rails

Plate 150. Corrosion to the West Pier Joint nosing rails

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Plate 151. Corrosion to Nosing Rails of the Centre Pier Joint

Plate 152. Corrosion with lamination to the East Joint rails

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Plate 153. Large Deformed Area of Joint Seal, Centre Pier Joint

Plate 154. Deformed Seal in the East Abutment Joint

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Plate 155. Deformed seal on the East joint

Plate 156. Debris within the Centre Pier joint seal

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Plate 157. Surface and cracking repairs at the West end of the South Footpath on the approach

Plate 158. Cracking to a repair on the West end of the South verge on the approach

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Plate 159. Cracking on the East Approach of the South footpath

Plate 160. Misaligned bricks at the West End of the North Verge

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Plate 161. Repair to Crack in the South Footpath

Plate 162. Movement of bricks at drainage locations in North Verge

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Plate 163. Typical Rust Staining to Parapet post base plates

Plate 164. Typical corrosion and rust staining to North Parapet post base plate

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Plate 165. Typical Corrosion to Fixings Where Paint Has Failed

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Plate 167. Area of paint loss to the North Parapet where corrosion has occurred

Plate 168. Typical lichen growth on the Parapets

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Plate 169. Typical cracking to Parapet base plate mortar

Plate 170. Loose nuts on the connection at the North-East corner

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Plate 171. Animal burrows on the bank adjacent to the South-West Wing Wall

Plate 172. Animal burrows on the bank adjacent to the North-East Wing Wall

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Plate 173. Vertical crack in the North Face of the South Retaining Wall

Plate 174. Tree growth at the base of the North-East Retaining Wall

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Plate 175. Vegetation growth from the mortar joints of the East Retaining Wall

Plate 176. Tree growth between the two Retaining Walls beneath the East Abutment Walkway

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Plate 177. Typical Condition of Walkway Frame

Plate 178. Minor corrosion to the underside of the Walkway

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Plate 179. Corrosion to the topside of the Walkway supports

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