



Report for South West Chilterns Community Board meeting relating to petition received.

Date:	16 February 2022
Title:	Petition – Remove Hazardous Bollards at Marlow Bridge – Position Statement
Author and/or contact officer:	Keith Dolan – Highway Structures Team Leader
Recommendations:	To retain the protective bollards at Marlow Suspension Bridge whilst the bridge continues to be classified as a structurally sub-standard (weak) bridge OR until such time that an alternative measure is proven to successfully, and sustainably, prevent overweight vehicles from crossing the bridge.
Reason for decision:	The bridge is classified as a structurally sub-standard (weak) bridge and, without this deterrent, many more overweight vehicles would be driven over the bridge on a daily basis, thereby jeopardising the condition of the bridge.

1. Executive summary

- 1.1 A petition has been received which asks Buckinghamshire Council to remove the bollards which are located on the approaches to Marlow Bridge.
- 1.2 The headline of the petition reads “We the undersigned petition the council to Remove the extremely narrow bollards at Marlow bridge”.
<https://buckinghamshire.moderngov.co.uk/mgEPetitionDisplay.aspx?ID=56>
- 1.3 The petition cites the following concerns:

The current bollards are meant to restrict overweight lorries but, at just over 2 metres wide, they are actually restricting family cars.

Hundreds of motorists have now damaged not only their wheels but the bodywork of their vehicles. Apart from costing the public vast amounts of money, these restrictions may / will also cause other issues:

- Traffic congestion north and south of the bridge.
- Excessive car parking on the south side of the river.
- Slower economic recovery of Marlow High Street post Covid-19 - visitors are discouraged from travelling into Marlow from areas to the south.
- Increase in road traffic accidents along Little Marlow Road.
- Increase in air pollution along Little Marlow Road as the re-routing of road traffic via the A404/A4155 junction will lead to more road traffic in areas where the Council has declared an Air Quality Management Area*.
- Increase in Carbon emissions from extra distances travelled by re-routed road traffic.
- Bisham, the Cookhams and Bourne End - Wider implications for traffic congestion.

2. Content of report

- 2.1 Marlow Suspension Bridge is a Grade I listed highway structure which was opened to traffic in 1831.
- 2.2 The bridge spans the River Thames and is located on the boundary of Buckinghamshire Council (Marlow) and the Royal Borough of Windsor & Maidenhead (Bisham).
- 2.3 As a boundary bridge, Buckinghamshire Council and the Royal Borough of Windsor and Maidenhead have a shared responsibility for the asset, however Buckinghamshire Council are deemed to be the prominent maintaining authority and act accordingly.
- 2.4 Marlow Suspension Bridge was deemed to be a sub-standard (weak) bridge in 1990. The bridge continues to be a sub-standard bridge today.

As such, interim measures are required in order to permit continued use by vehicular traffic.

- 2.5 In 1990 Buckinghamshire County Council introduced a 3T mgw weight restriction over the bridge as an interim measure. This weight restriction continues to be in place today.
- 2.6 The weight restriction alone did not adequately prevent / deter the drivers of overweight vehicles from travelling over the sub-standard bridge. As such, a 2000mm / 6'6" width restriction was introduced on the approaches to the bridge in 1999.
- 2.7 Despite a weight restriction, and width restriction, both being in force at the bridge, the drivers of overweight vehicles continue to travel over the bridge. As such, Buckinghamshire County Council, and now Buckinghamshire Council, have had to take action to prevent overweight vehicles from damaging this structurally weak heritage bridge. Traffic islands were initially installed on the approaches to the bridge and bollards were subsequently introduced to help reinforce the restrictions.

Whilst overweight breaches are a long-standing issue, it must be recognised that various makes and models of domestic vehicles exceed the 3T mgw weight restriction.

- 2.8 The form / style of bollard has been changed over time, to reduce the passable gap between the bollards, in response to continued breaches by the drivers of overweight vehicles, and the risks to the bridge.
- 2.9 In September 2016 a 37T articulated lorry travelled over the bridge before it broke down and became entrapped whilst the driver sought to leave the bridge. This event resulted in the bridge being closed for more than 3 months, whilst structural inspections and testing took place. This event acted as a catalyst for change.
- 2.10 The current marine-style bollards were installed in October 2018 to replace the previous heritage-style bollards. The marine-style bollards reduced the passable gap down to 2400mm, whereby the preceding low-level heritage-style bollards offered a wider gap and were easily negotiated by the drivers of overweight vehicles, including the 37T articulated lorry mentioned in Item 2.9.

The marine-style steel bollards have a reinforced concrete foundation which make them very strong and they will resist all but the most significant of vehicular impacts. The previous heritage-style steel bollards had a simple concrete base, and they required resetting following moderate impact.

- 2.11 Between October 2018 and February 2021, a number of traffic surveys were undertaken to understand if the marine-style bollards were successfully preventing / deterring the drivers of overweight vehicles from crossing the bridge.

The bollards were found to have made a slight improvement, however a survey undertaken 2 July 2019 found that 399 overweight vehicles continued to cross the bridge, in a 12-hour window between 07:00 and 19:00.

- 2.12 As a result, in February 2021 steel plates were added onto the top of the marine-style bollards in order to reduce the passable gap down to 2145mm. The plates extend out from the underlying bollards to reduce this gap, and their fixing assemblies were designed in a manner where the plates could be adjusted to create a passable gap of up to 2300mm. Beyond a width of 2300mm the steel plates would need to be removed, whereby the bollards would revert to having their original 2400mm passable gap.
- 2.13 Post-completion traffic surveys have been undertaken at the bridge since the steel plates were added onto the top of the bollards. The most recent of which was undertaken on 20 July 2021 which found that 301 overweight breaches occurred in a 12-hour window between 07:00 and 19:00, despite the presence of the current bollards and the longstanding restrictions. Likewise, the percentage of overweight vehicles crossing the bridge, when considering the total number of vehicles crossing the bridge, continues to be similar, thereby if the traffic levels increase the number of breaches is likely to increase as well.
- 2.14 Buckinghamshire Council are responsible for undertaking routine inspections on Marlow Suspension Bridge and presently 5 of the 12 bearings which help limit movement of the bridge deck sections, under trafficking, now require refurbishment. Plans are in place to replace these bearings in 2022/23 as part of the ongoing maintenance work at the bridge.
- 2.15 As part of Buckinghamshire Council's statutory role as Highway Authority and Traffic Authority, and Maintaining Authority for this bridge, the Council has a duty to ensure that the bridge remains in a safe condition for users.

The bridge was previously assessed in 1990 as having 3T mgw capacity. As a result of the persistent overweight breach matter, the Council commissioned a structural review of the bridge and subsequently progressed onto a structural re-assessment of the bridge.

The structural assessment is currently underway, but the interim results clearly demonstrate that a structural weight restriction continues to be necessary at the bridge.

- 2.16 Traffic data collected at the bridge in April 2021 and July 2021, together with traffic data collected on the approach route in November 2021 indicates that fewer

vehicles crossed the bridge during these of time, than before the bollards were modified in February 2021.

However, the Covid-19 pandemic has changed travel demand, and travel / journeys by motorised vehicles have not normalised since, therefore comparisons are unreliable at present.

The key message here is that more than 300 overweight vehicles were driven over this sub-standard (weak) bridge in a day in July 2021 (after the top plates were added), where the number of breaches caught on similar traffic surveys peaked at 465 in a day in November 2018 (before the top plates were added).

- 2.17 Traffic data collected at the A4155 / B482 roundabout from November 2017 / 2019 / 2021 generally indicates that more traffic is now using this roundabout, however the results have fluctuated up and down over this period of time.

As per Item 2.16, the Covid-19 pandemic has changed travel demand, and travel / journeys by motorised vehicles have not normalised since, therefore comparisons are unreliable at present.

- 2.18 Whilst journeys by motorised vehicles have not normalised since, fewer journeys are currently being made, and fewer miles are currently being travelled in motorised vehicles, when compared to the pre-pandemic levels. Therefore, congestion has eased on the road network, as a result of these changes.

- 2.19 The latest 5-year period of road traffic collision data along the C80 / A4155 does not show any increase in collisions along these alternative routes, nor any information which demonstrates that the bollard modifications contributed to any collisions on these routes.

- 2.20 The Marlow Low Emission Zone Study – Air Quality Assessment was published in January 2022. An air quality management area (AQMA) for Marlow was declared in 2017 for exceedances of the annual mean objective for NO₂. The findings of the January 2022 study state that exceedances are very localised in Marlow, and the study notes that such concentrations are improving in Marlow each year, based on the variety of action being taken.

- 2.21 The 2000mm / 6'6" width restriction at Marlow Suspension Bridge has been in force since 1999 and bollards have been present on the approaches to the bridge to help reinforce the signposted width restriction for more than 20 years. The current bollards have a gap between them of 2145mm, which provides some tolerance for driver error / vehicle misalignment.

As such, drivers of motorised vehicles should plan their journeys accordingly based on their origin and intended destination.

The amount of carbon emitted from motorised vehicles is influenced by various factors, not merely the length of any journey. As such, the vehicle owner / driver is in control of many of the underlying factors affecting carbon emissions.

- 2.22 The Neighbourhood Services Team at the Royal Borough of Windsor and Maidenhead are unaware of any new parking issues arising on the Bisham side of the bridge as a result of the bollards being modified.
- 2.23 The Traffic Safety Team at the Royal Borough of Windsor and Maidenhead are unaware of any new congestion issues arising in Bisham, Cookhams and Bourne End as a result of the bollards being modified.
- 2.24 The structural weight restriction, and the complementary width restriction, are in place to safeguard the continued use and condition of the Grade I listed Marlow Suspension Bridge. This accords with the principles of strategic asset management planning.

The combined set of restrictions at the bridge have been in force for more than 20 years.

Businesses operating within Marlow town centre will be familiar with the restrictions and will benefit from the presence of the Grade I listed Marlow Suspension Bridge within the locality.

3. Other options considered

- 3.1 Many other options were considered by Buckinghamshire County Council in 2017 following the extraordinary overweight breach which took place at the bridge in September 2016. This breach acted as a catalyst to the preparation of the Prevention of Overweight Vehicles Study – October 2017. This study has underpinned the Council's asset management strategy for Marlow Suspension Bridge since its release. The options which are mentioned below in Item 3.3 through Item 3.16 were considered as part of the feasibility study.
- 3.2 Buckinghamshire Council are actively exploring the use of automatic number plate recognition (ANPR) / closed circuit television (CCTV) systems as an alternative deterrent / prevention measure. A feasibility study is underway, but has been paused, as new powers are being afforded to Local Highway Authorities to self-enforce moving traffic offences, however structural weight restrictions were not included in the first tranches of such new powers. Buckinghamshire Council are now

looking into the potential future use of these new prospective powers throughout the Council, and the needs along High Street, Marlow will be considered accordingly.

- 3.3 The existing weight and width restrictions at the bridge could be enforced by Thames Valley Police and/or Buckinghamshire Council's Trading Standards team. This is deemed to be unrealistic and unsustainable, as personnel would need to be permanently present at the bridge to enforce the restrictions.

Thames Valley Police have undertaken sporadic driver awareness and enforcement campaigns at the bridge in the past, but these efforts made negligible difference to driver behaviour, and such activities are not currently a priority for the police.

Buckinghamshire Council's Trading Standards team have never been called upon to enforce the restrictions at the bridge and the team currently does not have the operational / logistical infrastructure in place, nor the amount of personnel required for such an undertaking.

- 3.4 Buckinghamshire Council are currently re-assessing the structural capacity of the bridge, to explore if the 3T mgw weight restriction continues to be appropriate, as the current weight restriction is based on a structural assessment undertaken in 1990. The bollards and width restriction are complementary measures which help enforce the weight restriction at the bridge.

The re-assessment process is currently underway, however current interim advice clearly states that increasing the weight restriction up from 3T mgw will not be possible, and measures to remove dead loads and live loads from the bridge would be required to do so.

- 3.5 The current marine-style bollards, inclusive of their top plates, reduce the passable gap down to 2145mm. As fixed rigid street furniture, they effectively serve this purpose. Alternative bollards and/or other street furniture could be installed to serve the same function as the existing bollards, but the physical constraint would still remain.

High containment kerbs are a commonly used alternative, however their profile / recessed upper shape naturally allows vehicles to drive over the lower portion of these kerbs, therefore their configuration would require consideration. Their comparatively low position at wheel level (lower than the current marine-style bollards), would enable more overweight breaches, noting that the wheelbase of heavy goods vehicles etc are typically similar to domestic vehicles. Likewise, high containment kerbs would also create level differences in the footway / traffic islands over their length, presenting a hazard to footway users.

3.6 Height restrictions are often suggested as an alternative. However, height restriction barriers cannot legally be used on the public highway where there is not already a height hazard. There is not an existing height hazard at Marlow Suspension Bridge.

3.7 Traffic sign improvements have been considered and Buckinghamshire Council have developed proposals to improve the traffic signs in the area, to warn drivers about the restrictions at the bridge.

These proposals will be contained within Transport for Buckinghamshire's annual business plan for delivery in 2022/23, budget permitting. It should be noted that the highway South of the bridge is managed by the Royal Borough of Windsor and Maidenhead and the A404M is managed by the Highways Agency. As such, the traffic signs proposals would need to be approved by those authorities prior to any changes taking place within their jurisdictions.

3.8 In addition to traditional traffic signs, vehicle activated signs (VAS) have also been considered. Such measures would be considered alongside Item 3.7 above, as visual messaging / warning to the driver would be the main benefit of such measures.

3.9 Weigh-in-motion technologies have been considered along the approaches. Such measures would be considered alongside Item 3.8 above, as visual messaging / warning to the driver would be the main benefit of such measures.

3.10 In addition to street furniture / physical measures, improved communication has been considered. Improved communication with drivers, community groups, governing bodies, hauliers, etc are being explored to help proactively educate and inform potential bridge users about the restrictions at the bridge.

This could also be complemented by providing improved information to drivers through satellite navigation systems and/or other driving aids used by drivers.

3.11 Beyond the bollards themselves, measures on the approach roads to the bridge have also been considered. Corridor improvements could be considered further, whereby drivers would be provided with a clearer understanding of the restrictions at the bridge, in advance of reaching the bridge itself.

However, current traffic information indicates that many drivers are repeat offenders despite the current restrictions and measures, so removing the bollards would only open up further opportunities for the drivers of overweight vehicles to cross the bridge.

3.12 Traffic signals could be installed on the approaches to the bridge. This option has many contrasting benefits / dis-benefits but these are predominantly related to limiting the live loads imparted onto this sub-standard bridge.

If traffic signals were implemented, in parallel with removal of the bollards, the only perceived benefit would be greater time for the drivers of overweight vehicles to

consider their actions, before they made a decision to drive over the bridge illegally, or u-turn.

Traffic signals would not prevent the drivers of overweight vehicles from being able to cross the bridge.

- 3.13 A one-way system / tidal flow system was given some consideration.

However, in parallel with removal of the bollards, this would not prevent the drivers of overweight vehicles from being able to cross the bridge.

- 3.14 The bridge could be converted into a toll bridge. This option was given cursory consideration within the Prevention of Overweight Vehicles Study – October 2017. However, the bridge would need to be taken out of Buckinghamshire Council's ownership and roles as the Highway Authority and Traffic Authority.

The act of collecting a toll from users could then offer the opportunity to stop the drivers of overweight vehicles using a barrier or the like, and then get them to u-turn to prevent overweight vehicles from travelling over the bridge.

- 3.15 Automatic barriers were given cursory consideration within the Prevention of Overweight Vehicles Study – October 2017.

However, the permissible use of such barriers on the public highway has not been considered further at this time.

- 3.16 If Buckinghamshire Council, as Highway Authority, deem that bridge is in an unsafe condition, and/or likely to be at risk of being put into an unsafe condition, the closure of the bridge to vehicular traffic and/or other users could be considered.

To help ensure that this does not need to happen, the Council is actively monitoring the ongoing level of overweight vehicles crossing the bridge.

In parallel with these efforts, the Council also inspects the bridge on a regular basis for defects and/or changes in its condition.

Likewise, the Council is currently re-assessing the structural capacity of the bridge and this process has seen increased testing and investigatory activity at the bridge since the extraordinary overweight vehicle breach in September 2016.

The Council has also made a clear commitment to safeguarding the condition of this Grade I listed structure, by investing in major maintenance activities at the bridge and the ongoing efforts will continue into 2022/23.

Moreover, the Council has also commissioned the preparation of an Operation & Maintenance Manual for the bridge, which will provide the Council with a more definitive understanding of the cyclic maintenance requirements for this bridge, and the estimated amount of annual budget which will be required to maintain the current condition of the bridge.

Furthermore, the Council, acting on advice from Structural Engineers, have sought to safeguard Marlow Suspension Bridge on New Year's Eve over the past 3 years (2019, 2020, 2021), as the bridge is at risk of excessive crowd loading, which presents a risk to the structural integrity of the bridge, and therefore those persons in the vicinity of the bridge. If the bridge continues to be classified as a sub-standard (weak) bridge, measures will continue to be used to limit loading on New Year's Eve.

- 3.17 The bridge could be strengthened. This would then remove the need for the bollards, and the corresponding restrictions, altogether.

The option to strengthen the bridge would be a major undertaking and due consideration would need to be given. As a Grade I listed structure, any material changes to the bridge would be subject of due scrutiny by Historic England and the conservation teams within Buckinghamshire Council and the Royal Borough of Windsor and Maidenhead.

It would also require identification of a significant budget. Buckinghamshire Council do not have any plans to strengthen this bridge at the present time.

- 3.18 The bridge could be replaced, either along an in-line alignment in response to Item 3.17 or replaced with a new off-line alignment.

Buckinghamshire Council do not have any plans to replace the bridge at the present time.

4. Legal and financial implications

- 4.1 A 3T mgw weight restriction is in place at the bridge.

- 4.2 A 2000mm / 6'6" width restriction is in place at the bridge.

The bollards are currently set with a 2145mm gap between their upper sections, which is wider than the signposted width restriction.

- 4.3 Buckinghamshire Council, as the Highway Authority and Traffic Authority, and lead Maintaining Authority for Marlow Suspension Bridge, are responsible for ensuring that the bridge remains in a condition which is safe for all permitted users to use.

5. Corporate implications

- 5.1 The relevant corporate plan considerations include:

- a) Property – No property is relevant to this petition.
- b) HR – No human resources issues are relevant to this petition.
- c) Climate change – For vehicles unable to fit through the width restriction, the expected alternative route (via Marlow Bypass) is longer and would

therefore lead to higher carbon emissions for this section of a journey for a given vehicle. It is not known how many journeys this affects.

d) Sustainability – Air Quality – Marlow town centre has an Air Quality Management Area (AQMA) designation along several roads including the High Street which approaches Marlow Bridge. Depending on the start point of a journey, traffic avoiding the bridge could travel along some of the roads inside the AQMA as a result. However, for other start points traffic would avoid the AQMA entirely. It is understood that the 3-month closure of the bridge as a consequence of the bridge being blocked by a HGV resulted in an increase in traffic in the AQMA. Therefore, any action that would enable the bridge to remain open would benefit air quality in the AQMA.

e) Equality (does this decision require an equality impact assessment) – No equality impacts are relevant to this petition.

f) Data (does this decision require a data protection impact assessment) – No data impacts relevant to this petition, in relation to the bollards.

If ANPR / CCTV cameras are used at the bridge in the future any relevant proposals would be subject to due consideration at that time.

g) Value for money – The bollards, as a physical deterrent / prevention measure, provide value for money. The bollards help prevent overweight vehicles from crossing the bridge, which reduces traffic loading on the bridge, and thereby reduces the ongoing maintenance costs at the bridge. The cost of ongoing maintenance for the bollards themselves is minimal. Likewise, the bollards help ensure that the bridge remains in a safe condition, which safeguards continued use by permissible users.

6. Local councillors & community boards consultation & views

6.1 A workshop was held with local Councillors in relation to this petition on 9 February 2022. The unanimous feedback was that the bollards are serving their intended purpose to help safeguard the continued safe use and condition of the bridge.

The Councillors were also supportive of continued efforts by Buckinghamshire Council:

a) To explore the use of devolved powers to self-enforce moving traffic offenses within their jurisdiction. These devolved powers are expected to be afforded to qualifying Local Highway Authorities in the next few months.

The Councillors were happy for Transport for Buckinghamshire (TfB) to continue to explore the potential future use of ANPR cameras for this purpose.

- b) To investigate and assess whether or not extension pieces could be attached to the top plates of the bollards to increase their height slightly, to make them more conspicuous to approaching drivers.

The Councillors were also supportive of:

- c) Undertaking complementary awareness and education campaigns.

Firstly, to help ensure that prospective users understand that Marlow Suspension Bridge is a sub-standard (weak) bridge which requires safeguarding, to explain why Buckinghamshire Council are taking the actions which they are.

Secondly, to inform prospective users that the vehicles which they are driving may exceed the weight and/or width restrictions in force at the bridge to help eliminate unintentional breaches. Various makes and models of domestic vehicles exceed the 3T mgw weight restriction.

7. Communication, engagement & further consultation

- 7.1 No public consultation or engagement has been carried out as a specific result of this petition.
- 7.2 However, a public exhibition was held prior to changing the bollards to the marine-style bollards in October 2018.
- 7.3 A further driver awareness campaign was also undertaken prior to incorporating the top plates onto the marine-style bollards in February 2021.

Variable messaging signs were installed at the roadside, linked through ANPR, the DVLA database and motion-detection equipment mounted to the bollards, which showed messages to passing drivers, whose vehicles were either “Too Heavy” and/or “Too Wide”.

Temporary variable messaging signs, and new road layout ahead traffic signs, were also used on the approaches to the bridge to accompany both sets of work in October 2018 and February 2021 to make drivers aware of the new road layout ahead.

8. Next steps and review

- 8.1 Buckinghamshire Council will continue to manage and maintain Marlow Suspension Bridge, including the bollards on the approaches. This is an ongoing responsibility as the Highway Authority.

8.2 Buckinghamshire Council will progress the activities stated in Items 6.1a, 6.1b and 6.1c. These activities will form part of Transport for Buckinghamshire's annual business plan in 2022/23.

9. Background papers

9.1 Documents referred to in this report:

- a) Prevention of Overweight Vehicles Study – Ringway Jacobs – October 2017
- b) Marlow Low Emission Zone Study – Air Quality Assessment – AECOM –
Project Reference 60648202 – January 2022

