

A601(M)

Strategic Outline Business Case

September 2019

Executive Summary

Introduction:

This report presents the Strategic Outline Business Case (SOBC) for the A601(M) Refurbishment scheme. The scheme, which is being promoted by Lancashire County Council, is seeking funding from the DfT Maintenance Challenge Fund.

In line with DfT guidance, a proportionate approach to the development of the Transport Business Case has been applied.

Scheme Overview:

The A601(M) is a 1.3 mile (2.1km) Special Road in Lancashire, it is a key road from M6 junction 35, linking the M6 to the A6, providing access to the Truck Haven located on the junction of the A601(M) and A6, as well as Carnforth itself. The A601(M) also forms part of the official M6 motorway diversion route between junctions 35 and 36.

The following structures on the A601 (M) have current maintenance issues (i.e. failure of bearings, and waterproofing system, parapet and concrete repairs) - Brewers Barn West, Brewers Barn East, Higher North Road and Elpha bridges. Intervention is necessary, as if the structures are left to deteriorate further, access along the A601(M) and over Higher North Road bridge (along Nether Beck) will need to be constrained through weight and/or lane restrictions or closed entirely. Without major refurbishment use of the A601(M), particularly by heavy goods vehicles, will need to be restricted along with temporary propping of the more critical structures to enable general traffic (cars/LGVs) to continue to access.

Any diversion of traffic resulting from restriction of A601(M) will impact on parts of central Carnforth which has been designated as an Air Quality Management Area (AQMA). HGVs will have a longer diversion of approximately 34km, via M6 junction 36 and A6, due to a 7.5t weight restriction on B6254 into Carnforth restricting access.

The proposed scheme (Option 5) includes refurbishment and repair of bridge structures (Brewers Barn West, Brewers Barn East and Elpha), the removal of Brewers Barn West (widening) bridge and the removal and replacement of Higher North Road bridge with an at-grade junction at Nether Beck. To facilitate the installation of the at-grade junction, the preferred scheme also proposes to despecialise the road. This will also benefit the ongoing maintenance burden by reducing standard requirements the road has to be maintained to when compared to a M status road. The A601(M) will also be fully resurfaced as a result of these works.

A Cost Benefit Analysis (CBA) assessment has been undertaken to calculate the economic benefits of the A601(M) refurbishment scheme.

The CBA assessment has been undertaken using a spreadsheet-based tool which has been developed in line with the principles contained within the DfT's Transport Appraisal Guidance. The journey time and distance savings generated by the scheme have been used to calculate the Journey Time benefits.

The A601(M) Refurbishment scheme is expected to deliver **£26.9m** of benefits (2010 prices, discounted over 30 years). The scheme therefore has a Benefit to Cost Ratio (BCR) of **3.3** and is subsequently expected to deliver 'High' Value for Money based on DfT guidance.

In addition to the transport benefits, when accounting for potential land value uplift, the BCR increases to **5.0** which represents 'Very High' Value for Money (VfM) according to DfT Value for Money guidance.

The scheme will be procured through a single-stage quality and price, New Competitive Tender process. Contractors will be appointed using a NEC4 Option A contract.

The project will be managed in line with the principles of PRINCE2.

The project specific governance is based on established and operating governance arrangements for schemes currently being delivered by LCC, adapted to reflect the specific requirements of devolved Local Major Scheme governance.

The success of the scheme and the associated benefits will be measured against a set of identified metrics including traffic flows and speeds, bridge condition inspections, road condition inspections and progress during construction.

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1 Strategic Case

The strategic case helps to determine the need for a scheme. It must demonstrate the case for change, presenting a clear rationale for making an investment against the strategic objectives of the organisation proposing it and other relevant Government objectives. It provides important evidence and sets out robust assumptions at an early stage in the development of a business case and explains how various options have been sifted and distilled into a preferred scheme.

1.1 Strategic Context

Please explain the wider strategic context for the proposed scheme by describing the aims and objectives of the promoting organisation. Consider what is driving the need for change at a strategic level, including external factors such as new legislation, technology.

- Aims & objectives for promoting the scheme
- Drivers for need of change (strategic level)
- External factors inc. new legislation, tech etc

Scheme overview:

The A601(M) is designated as a Special Road (Motorway) status, which is located in Carnforth, Lancashire and carries traffic from the M6 junction 35 to the A6 to the north and B6254 to the south. The route lies north-east to the historic market town of Carnforth, a hub for the north Lancaster district and south Cumbria.

Carnforth is situated to the west of M6 junction 35 and A601(M), it is a small historic town within north Lancashire. Although now at the heart of a largely rural area, Carnforth owes its size to the railways, iron and steel working; still providing an essential role as a local service centre. The town is also a gateway for visitors to enjoy the countryside and wildlife of the area, as well as its railway heritage. It is becoming more reliant on the visitor economy, particularly given its proximity to outstanding natural landscapes.

Parts of central Carnforth have been designated as an Air Quality Management Area (AQMA), predominately resulting from congestion. The A601(M) is not a solution to this central area congestion and associated air quality issues, however maintaining the A601(M) and the access it provides is vital in preventing additional congestion.

The B6254, at the south of the study area, is subject to a 7.5 tonne weight restriction (except for loading) at the access to the Kellet Road Industrial Estate. This is to prevent HGVs using the section to the west of the Industrial Estate to travel through the town to the A6.

The A601(M) provides access to the Carnforth Truck Haven, which is located on the junction of the A601(M) and the A6, as well as Carnforth itself. The road is also identified as part of the official Strategic Road Network (SRN) M6 diversionary route, in the event of the M6 being closed between junctions 35 and 36.

There are no significant congestion issues identified along the A601(M), with the existing capacity of the road catering for the current levels of daily traffic. Nether Beck, which runs over Higher North Road also operates well within the capacity of the road.

The A601(M) route has four underbridges and two overbridges.

The four underbridges are:

- 5384B1 – Elpha carries A601(M) over River Keer
- 5381B1 – Brewers Barn West carries A601(M) over Lancaster Canal
- 5382B2 – Brewers Barn West (widening) is an unused section of the bridge which used to carry the road over Lancaster Canal
- 5387B1 – Brewers Barn East carries A601(M) over Lancaster Canal

The two overbridges are:

- 5383B1 - Higher North Road carries Nether Beck (unclassified road)
- 5382B1 – Carnforth Brow carries Carnforth-Wennington Railway (not part of this scheme, as a Network Rail asset)

Lancashire County Council have advised that the following bridge structures on the A601(M) have current maintenance issues:

- Brewers Barn West (and widening);
- Brewers Barn East;
- Higher North Road; and
- Elpha Bridge.

Intervention is necessary, as if the structures are left to deteriorate further, access along the A601(M) and over Higher North Road bridge (along Nether Beck) will need to be constrained through weight and/or lane restrictions or closed entirely.

As such, HGV access between the M6 and A6 will be prevented, which will impact access to the Truck Haven (as well as part of the M6 diversionary route) and could cause non-HGV traffic to divert via central Carnforth, a designated AQMA.

Lancaster City Council needs to plan for around 13,000 to 14,000 new homes in the district over the 20-year period from 2011 to 2031. One of the options suggested to meet this requirement would involve a large extension of Carnforth southwards into the Green Belt that could provide for more than 1,250 new homes and employment land.

Outline planning permission for 158 houses has been granted for land directly off the A601(M). Permission is dependent on the reclassification of the A601(M) to revoke the special road (Motorway) status.

Drivers for the Need of Change:

Highway maintenance budgets are reducing, highway authorities can no longer maintain all their assets to the same standard or carry out cyclic activities at the same frequency as in the past. The reducing budgets require management of aging assets and management of risk, in order to provide a safe and as reliable highway asset network as resources will allow.

Structure Condition & Maintenance

The bridge at **Brewers Barn West** was last assessed in 1995 with a capacity of 40 tonnes and 45 units of HB. The latest inspection gave the bridge the following scores:

- BClav – 70.88
- BCcrit – 22.12

The BCcrit score of less than 40 would indicate failure or possible failure of critical element. In the case of the structure at Brewers Barn West, the bearings have failed but a risk assessment would indicate collapse of the structure due to this failure mode would not be catastrophic, thus can remain open. The lack of movement in the

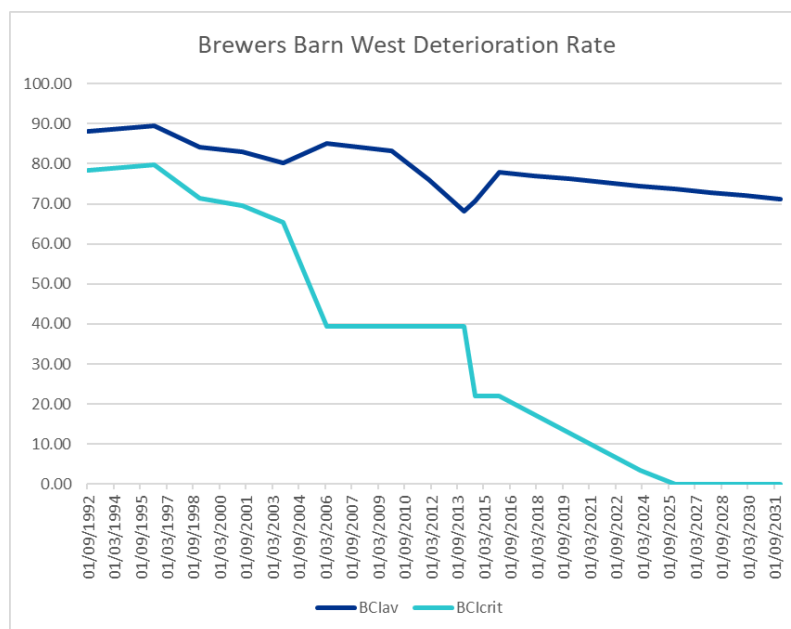
bearings will however weaken the superstructure and increase the rate of fatigue, shortening the design life of the bridge.

It has been identified that essential maintenance is required to Brewers Barn West bridge to maintain the capacity of the bridge and prevent the implementation of propping in place of failed bearings and restrictions to Abnormal Loads and HGVs in the near future. The propping will also restrict the Lancaster Canal beneath.

It is difficult to predict the future intervention date for the structure as the problem is localised to a single structural element. The bridge inspection regime for this structure has been increased to yearly from two-yearly.

The bridge was subject to a Principal Bridge Inspection (PBI) and Post Tension Special Inspection (PTSI) in 2014. The main defects noted were ‘failure of the bearings’ and ‘failure of the waterproofing system’ which require urgent renewal to prevent further damage occurring to the structure.

The figure below illustrates that bridge inspection scores indicate that the critical element is already beyond serviceability. The bridge can remain in use as there would be temporary measures protecting the public from the weak area.



Brewers Barn West (widening) does not carry an adopted highway. It is a legacy structure from the original Lancaster bypass road configuration. It has therefore not been subjected to the same inspection and assessment regime as the other structures on the route. The bridge is however of the same age and construction as Brewers Barn West and a general inspection carried out in 2014 indicates similar problems with the bearings.

The bridge at **Brewers Barn East** was last assessed in 1995 with a capacity of 40 tonnes and 33 units of HB. The latest inspection score gives the following scores:

- BClav – 82.57
- BCcrit – 100

Brewers Barn East has not been subject to a detailed PBI recently. However latest inspection scores are good, but identify some works required to the parapets as well as concrete repairs.

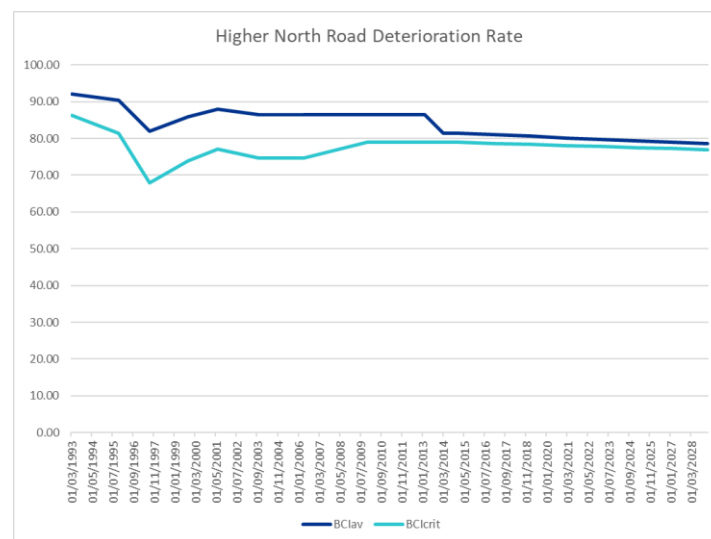
The bridge at **Higher North Road** was last assessed in 1991 with a capacity of 40 tonnes and 25 units of HB. The latest inspection score gives the bridge the following scores:

- BClav – 84.44
- BClcrit – 78.88

The BCI scores show that the structure is in overall Good to Fair condition. However, the individual element score for the bearings is 4E, showing the condition of the bearings is poor, with extensive corrosion throughout and in some cases have failed. In the case of Higher North Road, the bearings have failed but a risk assessment would indicate collapse of the structure due to this failure mode would not be catastrophic so can remain open. However, the lack of connection and support at some of the bearing positions will be placing undue stress on the remaining bearings positions and will weaken the superstructure, to increase the rate of fatigue and shortening the design life of the bridge.

Essential maintenance is required to Higher North Road to maintain the capacity of the bridge and to prevent the implementation propping in place of failed bearings. Due to the proximity of the piers to the A601(M) carriageway the propping would take each carriageway down to a single lane. A weight restriction of 3 tonnes may be required to be implemented on the road above.

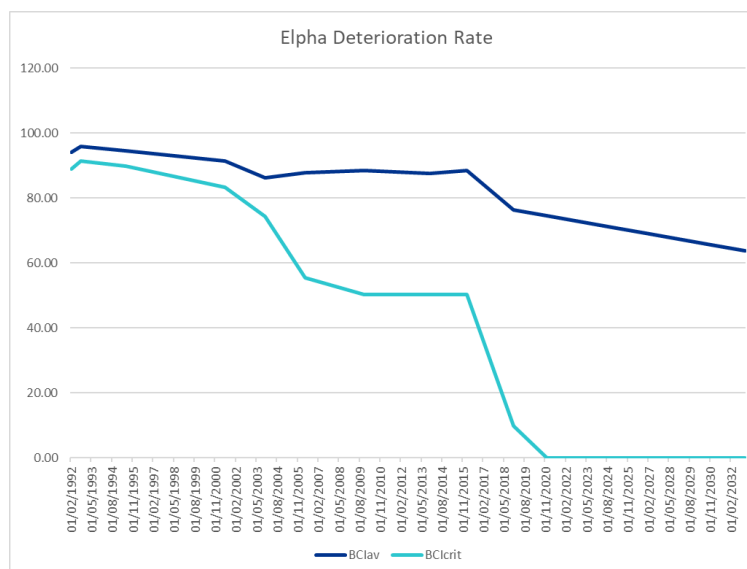
It is difficult to predict the future intervention date for the structure as the problem is localised to one element of the structure. The bridge inspection regime for this structure has been increased to yearly from two-yearly.



The figure above illustrates the deterioration rate of the structure, which shows the structure should remain in a 'fair' condition for a considerable amount of time. However, this is unlikely to be an accurate forecast as the defects are localised to the bearings.

The bridge at **Alpha** underwent a PBI in 2018. Essential maintenance is required to the southwest and northeast mounting beams and metal parapets along with general concrete repairs to the deck soffit and drainage repairs is required. The latest inspection score gives the bridge the following scores:

- BClav – 76.33
- BClcrit – 9.72



The bridge inspection scores illustrated above show that the critical element is already beyond serviceability. The bridge can remain in use as there are temporary measures protecting the public from the weak area.

Supporting Economic Growth:

Carnforth is a small town within Lancaster, with a population of circa. 5,500 (Census 2011). Predominately providing a local service centre to residents, the town is more reliant on the visitor economy as a gateway for visitors to enjoy the countryside and wildlife of the area.

Lancaster's economy has grown rapidly over recent years driven by service and knowledge-based industries. The area has strengths in education, energy, and health, with growth sectors in the low carbon economy, environmental technologies, creative and digital industries, and tourism.

As one of the county's most competitive locations, Lancaster has seen good levels of employment growth over the last 10 years, with a 5.3% increase in employment numbers between 2015 and 2016 alone, exceeding national and regional comparisons over this period.

According to the Annual Survey of Hours and Earnings 2018 (provisional)¹, resident-based median earnings in Lancaster (£411.20) are higher than median workplace earnings (£408.70), of which both are below the rate for Great Britain (median

¹ <https://www.lancashire.gov.uk/media/910886/average-earnings-and-hours-ashes-report-web-final.pdf>

resident-based and workplace earnings £460.00). The average gross household income in Lancaster is £32-33,000, lower than the Lancashire average of £34,400.

Lancaster has the most self-contained local labour market in Lancashire, with nearly 83% of employed residents living and working in the area, with the district's strongest travel to work links with South Lakeland in Cumbria.

With a growing economy, excellent road and rail connections and a highly skilled population, Lancaster offers the potential for investment and growth in higher value service sectors. Lancaster University, one of the UK's top universities, contributes significantly to the local economy and knowledge-based growth in the area.

Much of the district is rural, with large sections covered by two Areas of Outstanding Natural Beauty (AONB) - the Forest of Bowland and Arncliffe/Silverdale. Lancaster also has a strong heritage offer and benefits from close proximity to Cumbria and the Lake District National Park.

The issues for Lancaster's economic development include:

- Ensuring connectivity and sustainable access from both urban and rural areas
- Developing cultural, leisure and tourism-related activities, particularly in Lancaster city centre, Morecambe and Carnforth
- Supporting major strategic development opportunities
- The need for appropriate employment opportunities in the district, including the development of local entrepreneurship particularly with respect to the knowledge-based sector

A sustainable approach to economic growth that maximises the benefits of the district's environment and heritage assets will make Lancaster more attractive to business and is deliverable by a range of directorate services, including the more obvious areas such as road safety, public realm and public transport, but also by services such as Trading Standards, environment and communities and asset management. Sustainable travel in particular could have a fundamental role in ensuring low cost access to employment and education.

Policy Alignment:

A fully repaired A601(M) will be essential to gaining the maximum benefit from the regeneration of sites in and around Carnforth, as well as supporting existing businesses in this area.

The recently published Lancaster Masterplan: highway and transport (2016) presents a vision for developing Carnforth to become a hub for the north of Lancashire, with more pleasant public spaces and improved air quality making the town centre a more attractive place to live and visit. Maintaining safe, reliable local and regional transport routes is essential to support such a development.

Lancaster City Council needs to plan for around 13,000 to 14,000 new homes in the district over the 20-year period from 2011 to 2031. One of the options suggested to meet this requirement would involve a large extension of Carnforth southwards into the Green Belt, with the potential to provide more than 1,250 new homes, as well as

unlocking employment land. Should development on this scale take place, key service centre would become all the more important to both new and existing residents.

In addition to this, outline planning permission has been granted for a development of 158 houses adjacent to the A601(M). Though the development is dependent on the reclassification of the A601(M), to revoke the special road (motorway) status.

One of the key objectives of this scheme is not to preclude the unlocking of potential land for development directly adjacent to the A601(M), which in its present state inhibits access. Solutions have been developed including the despecialisation to remove M status from this route, which has the potential to enable the development of land either side of the route, subject to other considerations, such as flood assessment and mitigations.

However, the centre of Carnforth sees very heavy traffic, namely around the signalised A6/B6254 junction. As a result, the area has been declared an Air Quality Management Area (AQMA). Carnforth needs a long-term solution to the congestion at its centre and although the A601(M) is not this solution, maintaining the route is vital to prevent additional congestion.

The A601(M) forms part of the official diversion route between M6 junctions 35 and 36 and acts as a northern by-pass to Carnforth, whilst also providing access to the north Lancashire/south Cumbria region from the Strategic Road Network. The maintenance of the A601(M) is key to developing Carnforth as a “hub” for the region by allow for the continued supply of goods and services to the area.

Lancashire’s Strategic Economic Plan (2014) outlines the importance of road freight to the local and regional economy, particularly the enabling “just in time” movement of goods. Access to the strategic road network and to Truck Haven are key in assisting the operations of road freight (i.e. in the logistical planning of driver rest periods).

Alignment with key priorities of Lancashire’s Local Transport Plan (2011-2021) include:

- *Improving access to areas of economic growth and regeneration* – this would be achieved by retaining good links to the SRN and not precluding future development of potential sites for housing and employment use.
- *Reducing carbon emissions and its effects* – should a HGV ban be introduced on along the A601(M), vehicles would be required to significantly travel further (approximately 34km) than if the A601(M) remained available, therefore leading to an increase in carbon emissions.
- *Maintenance of assets* – repairing the structures, so they remain fit for purpose, as well as reducing the ongoing maintenance and monitoring burden.
- *Improving peoples’ quality of life and safety of vulnerable road users* – this would be achieved by retaining suitable routes for large vehicles, avoiding an increase in large vehicle diversions along less suitable routes.

1.2 Challenge or Opportunity to be addressed

Please describe the key characteristics of the challenge to be addressed and the opportunity presented. Provide an overview of the evidence supporting this and the impact of not progressing the proposed scheme.

Challenges to be addressed by the scheme:

LCC have identified maintenance issues with the structures on the A601(M), located at Brewers Barn West (and widening), Brewers Barn East, Higher North Road and Elpha. As mentioned in section 1.1, the condition of these structures are requiring essential repairs, leading to a high maintenance burden, whilst requiring an increased frequency of inspection and repair. In light of reducing highway maintenance budgets, it becomes more difficult to maintain assets to the same standards or carry out cyclic activities at the same frequency as in the past.

If these assets are left to further deteriorate, access along the A601(M) and Nether Beck (over Higher North Road bridge) will have to be constrained through weight and/or lane restrictions, which will impact HGVs particularly along the A601(M) accessing Truck Haven and could cause non-HGV traffic to divert via Carnforth itself (where the central area designated as an AQMA). As a designated M6 diversionary route, this would also impact the operations of the SRN when the M6 is closed to traffic between junctions 35 and 36.

Based on the current rate of deterioration the following restrictions will be required to be implemented:

- 2021 – Closure of A601(M) to abnormal loads
- 2022 – Closure to A601(M) to all HGVs, implement a 7.5t or even 3t weight restriction, permits for emergency vehicles
- 2025 – A601(M) closed to all vehicles

However, as a key route to the SRN and a by-pass to Carnforth town centre, it is unlikely that LCC would allow the bridge to be closed to all vehicles and that the necessary works to allow the bridge to remain open to light vehicles would be undertaken prior to 2025.

Opportunities identified:

The opportunity presented by the scheme include preventing the restrictions above from being implemented and ensuring the route is kept open at its full capability, thus alleviating pressure on surrounding alternative routes, reducing diversionary routes and maintaining key access to the SRN. It also maintains the availability of the M6 diversionary route of A601(M) and access to Truck Haven for HGVs, who have limited options for layover and stopping facilities in the area.

In repairing the bridges, it provides the opportunity to reduce the requirements for ongoing monitoring, inspections and emergency maintenance. This in turn, limits the escalation of costs required for future maintenance of structures at Brewers Barn East, Brewers Barn West (& widening), Elpha and Higher North Road.

The despecialisation of the A601(M) increases the potential to unlock land adjacent for development. Potential scheme options have also investigated the possibility of replacing Higher North Road bridge, with

	<p>an at-grade crossing, which would further provide opportunities for unlocking of development.</p> <p><u>Impact of not progressing the scheme:</u></p> <p>LCC is not currently in a position to fund the continued long-term maintenance of the structures along the A601(M) from its annual Bridges Capital Programme. It would attempt to undertake temporary maintenance work to parts of the A601(M) to ensure that it does not deteriorate further. However, the nature of the works presently required are such that this maintenance would does not form a cost-effective solution.</p> <p>The Council has already increased the inspection frequency from 2 yearly to every 6 months for Brewers Barn West Bridge. Should any further deterioration be found they would need to undertake a full assessment for vehicle capacity and implement restrictions as indicated above in Section 1.1.</p> <p>If an updated maintenance solution is not developed and implemented now, the condition of the bridges will deteriorate further, with the required repair work becoming more severe. In addition, the asset would continue to depreciate at a quicker rate if repair work isn't undertaken.</p> <p>As mentioned in Section 1.1, Carnforth has potential for significant growth as the hub for the north of the wider Lancaster district. However, should the bridges have further restrictions placed upon them, limiting use of the A601(M) by HGVs (and potentially general traffic), the scale of these opportunities may be reduced due to the reduced accessibility for goods and services. Further issues of wider accessibility of goods particularly are likely to be affected by the reduced access to Truck Haven services as well as the implications to the M6 diversionary route access.</p>
<p>1.3 Strategic Objectives Please present the SMART (specific, measurable, achievable, realistic and time-bound) objectives that will resolve the challenge or opportunity identified in Section 1.2 and explain how these contribute towards achieving the wider context set out in Section 1.1.</p>	<p>The principle aim of the scheme is to maintain the A601(M) route to retain links for all vehicles with areas of housing, employment and economic growth, while safeguarding the AQMA in the centre of Carnforth. This will entail major repairs to the bridges (or their removal and/or replacement) to ensure the route is capable of supporting all vehicle types and consequently providing a key link to existing and potential development sites, to enable the unlocking of development sites directly adjacent to the route.</p> <p>The scheme subsequently has the following strategic objectives:</p> <ul style="list-style-type: none"> • Retain the use of the A601(M) to establish or maintain links with areas of housing, employment, and economic growth. • Improve the quality of life for residents who would be affected by alternative routeing of HGVs.

	<ul style="list-style-type: none"> • To secure the best solution for the long-term management and safety of the structures along the route, namely bridges at Brewers Barn East & West, Higher North Road and Elpha • Prevent further restrictions to the use of bridges, which would cause congestion on alternative routes. • Reduce the need for ongoing monitoring, inspections and emergency maintenance, to facilitate lower life costs and reduction in public sector expenditure.
<p>1.4 Achieving Success <i>Please describe how the success of the proposed scheme will be assessed and/or quantified.</i></p>	<p>Reporting on the success of the scheme and the associated benefits will be through the Growth Deal monitoring, implementation and reporting arrangements.</p> <p>The scheme will be considered a success if:</p> <ul style="list-style-type: none"> • The A601(M) is maintained without the requirement to install any of the restrictions referred to in section 1.2. • The works are undertaken within the timescales and budget outlined later in this document. • Unrestricted vehicular access will assist in local regeneration assessed by monitoring of abnormal loads accessing developing/expanding housing and employment sites <p>Further details on the Monitoring and Evaluation strategy for the scheme and metrics selected to assess the scheme’s success are contained within Section 5.8.</p>
<p>1.5 Delivery Constraints <i>Please describe any high level internal/external constraints or other factors that present a material risk to the delivery of this scheme.</i></p>	<p>The key delivery constraints for the scheme are highlighted below:</p> <ul style="list-style-type: none"> • Identifying a funding route and gaining funding • Coordination with Highways England during planning and construction periods– early engagement is key to ensuring that any disruption to the M6 diversionary route is managed effectively <p>A high-level Risk Register is available in Appendix B.</p>
<p>1.6 Stakeholders <i>Please outline the main stakeholder groups/organisations and their relevance or involvement in the development of the scheme. Identify any specific requirements, constraints or conflicts between stakeholders.</i></p>	<p>The main stakeholder groups affected by the scheme are outlined below, along with their likely interest:</p> <p>Lancaster City Council – Lancaster City Council have an interest in ensuring the A601(M) route is maintained for access to Carnforth and retention of a key HGV route in the area. A letter of support for the scheme can be found in Appendix C.</p> <p>Highways England – Highways England have an interest in ensuring the A601(M) route is maintained, as part of the SRN diversionary route for M6.</p> <p>County Councillors and MP– as local representatives they have been contacted and have expressed support for the scheme.</p>

Network Rail – although the Carnforth Brow bridge is not directly affected by the proposed scheme, works would be carried out on the A601(M) underneath the structure.

Carnforth residents – works to the A601(M) and bridges may result in disruption to accessibility and reliability of journeys of residents both for employment and leisure. Any temporary lane restrictions or diversions resulting from the works on the A601(M) are likely to have a short-term impact on local residents in terms of increased congestion. However, stakeholders are likely to approve of the scheme on the basis of the long-term benefits

Local businesses and shops within the town centre – works to the bridges and A601(M) may result in some disruption to business due to temporary re-routeing or congestion. However, stakeholders are likely to approve of the scheme on the basis of the long-term benefits.

Truck Haven – works to the bridge may result in some disruption to access due to temporary re-routeing or congestion. However, as access for HGVs would be maintained by the proposed scheme, the stakeholder is likely to approve of the scheme on the basis of the long-term benefits.

Nether Beck Caravan Parks – access along Nether Beck is likely to be temporarily impacted during works involving Higher North Road. However, as access would be maintained as part of the proposed scheme, the stakeholder is likely to approve of the scheme on the basis of the long-term benefits.

The communication and stakeholder management strategy of the scheme is outlined in Section 5.5.

1.7 Strategic Assessment of Alternative Options

	Option 1	Option 2	Option 3	Option 4	Option 5 (Proposed Scheme)	Option 6
Option Name <i>Please insert the name by which the option is known</i>	Do minimum	Major refurbishment Keep M Status	Major refurbishment Remove M status	Major redesign of A601 (M) route A – reallocation of carriageway and remove M status.	Major redesign of A601 (M) route B – retention of dual carriageway and remove M status.	Major redesign of A601(M) – stop up Nether Beck, remove M Status.
Infrastructure Type <i>Please provide if different from the proposed scheme.</i>	N/A	Roads and Bridges	Roads and Bridges	Roads and Bridges	Roads and Bridges	Roads & Bridges
Variation from Proposed Scheme <i>What are the key differences (characteristics) between the proposed scheme and this option? How is it different?</i>	Continued monitoring of bridges. Temporary propping of Brewers Barn West and Higher North Road Bridges. Management of permitted traffic loading could be implemented by introducing permanent weight restrictions and permanent physical measures such as reduction in the number of lanes. Delayed capital expenditure for 20 years.	Major repairs to the bridges. Resurfacing entire route. Upgrading central reservation barrier to bring route up to required motorway standards. Removal of Brewers Barn West widening bridge deck and make safe the abutments. Ongoing monitoring and maintenance requirements in line with motorway standards	Major repairs to the bridges. Resurfacing entire route. Removal of M status. Removal of Brewers Barn West widening bridge deck and make safe the abutments. Ongoing monitoring and maintenance requirements in line with key network two-lane, dual carriageway	Removal of M status. Major repairs to bridges at Brewers Barn East, Brewers Barn West and Elpha. Removal of Higher North Road overbridge and replacement with an at-grade junction. Removal of Brewers Barn West widening bridge deck and make safe the abutments. Closure of one carriageway on A601(M) and conversion of the other carriageway into two-way running. Enable old carriageway to be converted to foot/cycleway link.	Removal of M status. Major repairs to bridges at Brewers Barn East, Brewers Barn West and Elpha. Removal of Higher North Road overbridge and replacement with at grade junction. Removal of Brewers Barn West widening bridge deck and make safe the abutments. Retention of dual carriageway along A601(M).	Removal of M status. Major repairs to all bridges excluding Higher North Road Bridge. Removal of Brewers Barn West widening bridge deck and make safe the abutments. Stop up Nether Beck Road to obstruct access to Higher North Bridge. This does not include the removal of Higher North Bridge.
Technical Assessment & Appraisal <i>Please describe the level of technical appraisal or assessment undertaken – including previous studies and relevant data – to assess this option, including application of the Early Assessment and Sifting Tool.</i>	An Options Assessment Report (OAR) has been produced, which scopes these potential options for initial consideration. Having scoped these options, the sifting assessment considers the most suitable options for further consideration, using a multi-criteria assessment matrix. A spreadsheet matrix was used for the long-list sifting, using a combination of project objectives, WebTAG and EAST criteria to ensure the most suitable decision is made regarding the future of the A601(M) route. The study area site observations and issues were used to inform the sifting process, along with indicative capital costs and level of maintenance burden. The short-listed options were further developed with regards to capital cost and maintenance requirements, as well as assessed in terms of high-level environmental considerations, to enable the identification of preferred option.					
Consultation <i>Please explain the extent of any stakeholder or wider consultation on the option and summarise the key findings.</i>	No formal consultation has yet taken place for any option. The following stakeholders have been engaged with on the preferred proposals: <ul style="list-style-type: none"> - Lancaster City Council – (including planning) - County Councillors - MPs 					

	Option 1	Option 2	Option 3	Option 4	Option 5 (Proposed Scheme)	Option 6
	<p>Possible responses:</p> <p>Diversion of HGVs, resulting in additional journey time and others affected by the change in vehicles on alternative route.</p> <p>Likely diversion of other vehicles (cars/LGVs) via Carnforth town centre, impacting AQMA.</p>	<p>Possible responses:</p> <p>No change to operations of the A601(M) and Nether Beck, therefore limited responses expected from businesses or residents of Carnforth.</p> <p>However impact on LCC future budgets due to motorway standard maintenance requirements.</p> <p>Does not unlock development opportunities, no assistance in delivery of housing allocation.</p>	<p>Possible responses:</p> <p>Minimal change to operations of the A601(M), in terms of capacity, and Nether Beck, therefore limited responses expected from businesses or residents of Carnforth.</p> <p>However more of an impact on LCC future budgets due to retention of Higher North Road bridge maintenance requirements</p> <p>Does not unlock development opportunities, no assistance in delivery of housing allocation.</p>	<p>Possible responses:</p> <p>Retention of access along A601(M) and maintained access along Nether Beck with at-grade junction. However, could be issues with the reallocation of the carriageway in reducing capacity.</p> <p>Unlocks opportunities for development, adds value to existing development sites</p> <p>Removes future costs of maintaining Higher North Road Bridge.</p> <p>Encourages active mode travel.</p>	<p>Possible responses:</p> <p>Retention of access and capacity along A601(M) and maintained access along Nether Beck with at-grade junction. Therefore limited responses expected from businesses or residents of Carnforth.</p> <p>Unlocks opportunities for development, adds value to existing development sites</p> <p>Removes future costs of maintaining Higher North Road Bridge.</p>	<p>Possible responses:</p> <p>Minimal change to operations of the A601(M), in terms of capacity, therefore limited responses expected from businesses or residents of Carnforth.</p> <p>More limited opportunities to unlock development opportunities.</p> <p>Removes future costs of maintaining Higher North Road Bridge.</p> <p>Opposition to the closure of Nether Beck to vehicles, limiting access. Although it does not carry large numbers of vehicles, impact on those in terms of diversion.</p>

	Option 1	Option 2	Option 3	Option 4	Option 5 (Proposed Scheme)	Option 6
<p>Indicative Cost (£M) & Economic Appraisal <i>Please provide indicative costs if known or provide information on the likely affordability against the headings 'high' 'medium' or 'low.' Also explain any economic appraisal undertaken, including benefit/cost analysis</i></p>	<p>Initial temporary propping and lane/weight restrictions are expected to be £1.6m.</p> <p>Enhanced monitoring and maintenance requirements between years 1-20 – approx. £3.1m over 20 years</p> <p>Capital cost of intervention in year 20 is expected to be £8.5m.</p> <p>Further £4.4m maintenance and renewal costs between years 20-60</p> <p>Option used for Do Minimum comparison in economic assessment.</p>	<p>Capital cost intervention in years 1 and 2 is estimated at £6.0m</p> <p>60-year maintenance and renewal costs (undiscounted) - £6.9m</p> <p>Scheme was not shortlisted for further assessment, following long-list sifting which included MCA incorporating EAST categories.</p>	<p>Capital cost intervention in years 1 and 2 is estimated at £6.3m</p> <p>60-year maintenance and renewal costs (undiscounted) - £5.8m</p> <p>Scheme was shortlisted for further assessment, following long-list sifting which included MCA incorporating EAST categories. Further developed with regards to capital cost and maintenance requirements, as well as assessment in terms of high-level environmental considerations, to enable the identification of preferred option.</p> <p>An economic assessment of this option has been undertaken which suggests that the scheme could deliver Very High Value for Money.</p>	<p>Capital cost intervention in years 1 and 2 is estimated at £7.4m</p> <p>60-year maintenance and renewal costs (undiscounted) - £3.2m</p> <p>Scheme was shortlisted for further assessment, following long-list sifting which included MCA incorporating EAST categories. Further developed with regards to capital cost and maintenance requirements, as well as assessment in terms of high-level environmental considerations, to enable the identification of preferred option.</p> <p>A high-level economic investigation of this option has been undertaken which suggests that the scheme could deliver Very High Value for Money.</p> <p>However, it has not been taken forward for consideration as the preferred option, due to the acceptability of reducing road capacity, particularly as an M6 diversion route.</p>	<p>Capital cost intervention in years 1 and 2 is estimated at £7.5m</p> <p>60-year maintenance and renewal costs (undiscounted) - £4.3m</p> <p>Scheme was shortlisted for further assessment, following long-list sifting which included MCA incorporating EAST categories. Further developed with regards to capital cost and maintenance requirements, as well as assessment in terms of high-level environmental considerations, to enable the identification of preferred option.</p> <p>An economic assessment of this option has been undertaken which suggests that the scheme could deliver Very High Value for Money.</p>	<p>Capital cost intervention in years 1 and 2 is estimated at £4.1m</p> <p>60-year maintenance and renewal costs (undiscounted) - £4.3m</p> <p>Scheme was not shortlisted for further assessment, following long-list sifting which included MCA incorporating EAST categories.</p>
All costs are assumed at 2019 prices, undiscounted.						
<p>Impact against Strategic Objectives <i>Please describe how this option delivers against the strategic objectives set out in Section 1.3. Make reference to the outputs of the Early Assessment and Sifting Tool process.</i></p>	<p>Retain the use of the A601(M) to establish or maintain links with areas of housing, employment, and economic growth.</p>	<p>The A601(M) acts as a northern bypass for Carnforth. This option will mean this route will be lost for HGVs and abnormal loads, with a 34km diversion.</p> <p>It is also likely that any weight and lane restrictions will push more general traffic into the centre of Carnforth.</p>	<p>Existing connections on the A601(M) would be maintained for all vehicles.</p> <p>No additional development opportunities would be unlocked.</p>	<p>Existing connections on the A601(M) would be maintained for all vehicles.</p> <p>Despecialisation would enable development opportunities, however retention of Higher North Road bridge and Nether Beck as a grade-separated route has the potential to constrain some of these opportunities.</p>	<p>Existing connections on the A601(M) would be maintained for all vehicles.</p> <p>Additional development opportunities would be unlocked via the introduction of an at-grade junction at Higher North Road bridge.</p> <p>The reduction in capacity of the road may have implications on future growth, over and above the planned period forecast growth.</p>	<p>Existing connections on the A601(M) would be maintained, however links via Nether Beck over Higher North Road bridge would be severed for vehicles.</p> <p>Despecialisation would enable development opportunities, however retention of Higher North Road bridge infrastructure has the potential to constrain some of these opportunities.</p>

		Option 1	Option 2	Option 3	Option 4	Option 5 (Proposed Scheme)	Option 6
	Improve the quality of life for residents who would be affected by alternative routing of HGVs.	Should the HGV ban be implemented there would be a sustained worsening of quality of life for residents along the diversion route. The weight restriction on the B6254 result in HGVs needing to divert approximately 34km to maintain current access.	Existing connections on the A601(M) would be maintained for all vehicles.	Existing connections on the A601(M) would be maintained for all vehicles.	Existing connections on the A601(M) would be maintained for all vehicles. The reduction in the capacity of the A601(M) may encourage general traffic to divert via Carnforth town centre	Existing connections on the A601(M) would be maintained for all vehicles.	Existing connections on the A601(M) would be maintained for all vehicles. Closing of Nether Beck prevents East-West movements across A601(M), inbound/outbound to Carnforth town centre. Would involve rerouting farm vehicles with potential to increase traffic in Carnforth due to lack of bypass.
	To secure the best solution for the long-term management and safety of the structures along the route, namely bridges at Brewers Barn East & West, Higher North Road and Elpha	Increased maintenance and monitoring requirements for 20 years to maintain safety. Critical failure of structures are temporarily propped and weight restrictions reduce the impact on the structures to extend structure life.	Upfront expenditure improves the safety of the structures. The retention of the M status results in the higher standards for longer-term management and maintenance requirements for the A601(M) and its structures, which have more significant financial implications on LCC budgets.	Upfront expenditure improves the safety of the structures. The despecialisation reduces the long-term management and maintenance requirements for the A601(M) and its structures, which reduce the financial implications on LCC budgets.	Upfront expenditure improves the safety of the structures. The despecialisation reduces the long-term management and maintenance requirements for the A601(M) and its structures, which reduce the financial implications on LCC budgets. Further reductions on maintenance requirements of A601(M), due to road-space reallocation.	Upfront expenditure improves the safety of the structures. The despecialisation reduces the long-term management and maintenance requirements for the A601(M) and its structures, which reduce the financial implications on LCC budgets.	Upfront expenditure improves the safety of the structures. The despecialisation reduces the long-term management and maintenance requirements for the A601(M) and its structures, which reduce the financial implications on LCC budgets. Further reductions on maintenance requirements of Higher North Road bridge, due to the closure (stopping up) of Nether Beck to traffic.
	Prevent further restrictions to the use of bridges, which would cause congestion on alternative routes.	As time passes further restrictions on general traffic (cars/LGVs) would be required, leading to more vehicles re-routing through Carnforth and impacting on the AQMA. As over time the capacity of the bridges to cater to normal traffic would be reduced.	Prevents further restrictions on the use of bridges being implemented	Prevents further restrictions on the use of bridges being implemented	Prevents further restrictions on the use of bridges being implemented.	Prevents further restrictions on the use of bridges being implemented	Prevents further restrictions on the use of bridges at Brewers Barn West, Brewers Barn East and Elpha. The stopping up of Nether Beck to traffic over Higher North Bridge restricts access and causes diversion of traffic onto other routes.
	Reduce the need for ongoing monitoring, inspections and emergency maintenance, to facilitate lower life costs and reduction in public sector expenditure.	The need for monitoring and inspections work would increase following temporary propping. Frequency and costs of emergency works would increase over time.	Major refurbishment of all bridges would reduce the need for ongoing monitoring, inspections and emergency maintenance. The retention of the M status results in the higher standards for monitoring and maintenance requirements for the A601(M) and its structures, which have more significant financial implications on LCC budgets.	Major refurbishment of all bridges would reduce the need for ongoing monitoring, inspections and emergency maintenance.	Major refurbishment or replacement of bridges would reduce the need for ongoing monitoring, inspections and emergency maintenance.	Major refurbishment or replacement of bridges would reduce the need for ongoing monitoring, inspections and emergency maintenance.	Major refurbishment or closure (Higher North Road) of bridges would reduce the need for ongoing monitoring, inspections and emergency maintenance.

	Option 1	Option 2	Option 3	Option 4	Option 5 (Proposed Scheme)	Option 6
<p>Key Risks <i>Please identify the key technical, funding and delivery risks associated with this option.</i></p>	<p>Bridges will deteriorate further leading to escalation of future costs.</p> <p>Current congestion concerns on the A6/B6254 Kellet Road and A601(M)/B6254 Kellet Road junctions will not be addressed, with the potential to worsen in future.</p>	<p>Insufficient funding in the LCC Bridges Capital Programme to fund scheme.</p> <p>Limits development opportunities as links off the M Status road are unlikely to be approved.</p> <p>Scheme costs are based on professional judgement and previous bridge inspections. No design work has been undertaken at this stage, to underpin costings. Reasonable contingency has been included, with revised costs to be developed at OBC stage.</p>	<p>Insufficient funding in the LCC Bridges Capital Programme to fund scheme.</p> <p>Despecialisation would enable development opportunities, however retention of Higher North Road bridge and Nether Beck as a grade-separated route has the potential to constrain some opportunities.</p> <p>Scheme costs are based on professional judgement and previous bridge inspections. No design work has been undertaken at this stage, to underpin costings. Reasonable contingency has been included, with revised costs to be developed at OBC stage.</p>	<p>Insufficient funding in the LCC Bridges Capital Programme to fund scheme.</p> <p>Despecialisation and road space reallocation are likely to an impact on future capacity of A601(M).</p> <p>Proposed at-grade junction at Nether Beck introduces conflicting traffic movements on the A601(M), particularly additional traffic resulting from new trips generated by unlocked development.</p> <p>Reallocation of carriageway and replacement with active mode infrastructure may have public/political opposition.</p> <p>Scheme costs are based on professional judgement and previous bridge inspections. No design work has been undertaken at this stage, to underpin costings. Reasonable contingency has been included, with revised costs to be developed at OBC stage.</p>	<p>Insufficient funding in the LCC Bridges Capital Programme to fund scheme.</p> <p>Proposed at-grade junction at Nether Beck could introduce additional traffic usage on the A601(M), in addition to new trips generated by unlocked development.</p> <p>Scheme costs are based on professional judgement and previous bridge inspections. No design work has been undertaken at this stage, to underpin costings. Reasonable contingency has been included, with revised costs to be developed at OBC stage.</p>	<p>Insufficient funding in the LCC Bridges Capital Programme to fund scheme.</p> <p>Proposed stopping-up of Nether Beck would result in traffic diverting via Carnforth town centre (declared AQMA) and likely increase congestion.</p> <p>Scheme costs are based on professional judgement and previous bridge inspections. No design work has been undertaken at this stage, to underpin costings. Reasonable contingency has been included, with revised costs to be developed at OBC stage.</p>

	Option 1	Option 2	Option 3	Option 4	Option 5 (Proposed Scheme)	Option 6
<p>Rationale for Rejection/Selection <i>Please explain why this specific option has been rejected in favour of the proposed scheme/selected as the proposed scheme.</i></p>	<p>At the request of LCC, this option had been retained for further stages of analysis, as the “Do Minimum” scenario.</p> <p>This case has therefore been retained with the purpose of providing a basis for comparison.</p> <p>The option itself has been rejected due to the following reasons:</p> <ul style="list-style-type: none"> - Concerns over the safety of the general public. - Loss of the route causing severe congestion on alternative routes. - Closure of the A601(M) leading to diversions of 34km for HGVs and potentially 4km for all other vehicles. - Repair works would still eventually be required at a much greater rate and cost than the current estimate. 	<p>The option has been rejected following the result of multi-criteria analysis and the options sifting procedure.</p> <p>The multi-criteria analysis revealed several factors that lead to this option being discounted. Including that the option is misaligned with core strategic objectives outlined in Section 1.3.</p> <p>For example, the impacts of retaining special status for this route leads to high maintenance requirements for the route, when compared with a despecialised option. The need for intervention was identified due to a high maintenance burden and reducing funds, thus this option does not support the optimisation of highway asset maintenance for the A601(M).</p> <p>The retention of M status as proposed in this option would restrain potential development along the route, a key objective of the scheme.</p>	<p>This option was selected in the short-list of sifted options following multi-criteria analysis.</p> <p>The reasons for this being that the option addresses safety concerns and presents a reasonable capital expense, as well as proposing despecialisation which has the potential to unlock some development opportunities.</p> <p>Further analysis was carried out to better understand the implications of this option, resulting in Option 3 providing a Very High Benefit to Cost Ratio (BCR). The BCR was generated based on a range of factors including the impact of proposed changes on journey time and changes to accident susceptibility.</p> <p>However, this option has not been selected as the preferred scheme, as the ongoing maintenance burden is higher than other short-listed options – due to the retention of Higher North Road bridge as a grade-separated route. This retention also has the potential to constrain some development opportunities.</p>	<p>This option was selected in the short-list of sifted options following multi-criteria analysis.</p> <p>The reasons for this being that the option addresses safety concerns and presents a scheme that reduces the maintenance burden for LCC.</p> <p>In proposing despecialisation, this has the potential to unlock some development opportunities. Particularly due to the introduction of an at-grade junction, facilitating improved access to development land adjacent to the A601(M).</p> <p>The option does include reallocation of the carriageway, reducing vehicular capacity from a dual to a single carriageway, while introducing active mode infrastructure.</p> <p>This option has not been selected as the preferred scheme, due to the likely public and political unacceptability of the road space reallocation on A601(M), particularly as a SRN diversionary route for the M6.</p>	<p>This option was selected in the short-list of sifted options following multi-criteria analysis.</p> <p>Following further analysis to better understand the implications of this option, resulting in Option 5 providing a Very High Benefit to Cost Ratio (BCR). The BCR was generated based on a range of factors including the impact of proposed changes on journey time, land value uplift and changes to accident susceptibility.</p> <p>This option has been selected as the Proposed scheme as a result of a strong fit with core strategic objectives.</p> <p>The option proposes the introduction of an at-grade junction, reducing maintenance burden of Higher North Road structure and enabling development along the route.</p> <p>Option 5 does not involve the reduction of road capacity.</p>	<p>The option has been rejected following the result of multi-criteria analysis and the options sifting procedure.</p> <p>The main reason for this option being discounted is the stopping up of Nether Beck to vehicles and the resulting severance for users.</p> <p>Although the most cost effective in terms of capital expenditure, it does not considerably decrease the maintenance burden any more than Options 4 or Option 5, which also involve changes to Higher North Road bridge.</p> <p>Although the despecialisation would enable development opportunities, the retention of Higher North Road bridge infrastructure has the potential to constrain these opportunities.</p>

Strategic Case Summary

The A601(M) Refurbishment scheme will ensure key strategic and local access is maintained for all vehicles between the strategic road network (M6) and wider Carnforth as a hub for the north Lancaster district and south Cumbria.

The scheme has a good strategic fit with policy aspirations contained within Lancashire's Strategic Economic Plan and Local Transport Plan. In addition, the scheme will help support the unlocking of potential development sites to assist in the delivery of Lancaster's housing allocation.

A set of strategic objectives have been defined for the scheme, along with development of a multi-criteria assessment matrix (including EAST categories). This enabled a fair assessment of a number of options to be undertaken. The best performing option was subsequently identified as the proposed scheme (option 5).

The main stakeholder groups affected by the scheme have been identified and subsequent engagement will take place. Lancaster City Council have indicated their support for the scheme. A communication and stakeholder management strategy has been developed in order to keep local businesses, residents, transport operators and other stakeholders informed on proposed works and progress.

The key risks associated with the delivery of the scheme have been documented and where appropriate suitable mitigation measures identified.

2 Economic Case

The Economic Case assesses options to identify all their impacts and the resulting value for money. This is a key requirement in fulfilment with HM Treasury's requirement for appraisal. In line with HM Treasury's appraisal requirements, the impacts considered are not limited to those directly impacting on the measured economy, nor to those which can be monetised. The economic, environmental, social and distributional impacts of a proposal are all examined, using qualitative, quantitative and monetised information. In assessing value for money, all of these are consolidated to determine the extent to which a proposal's benefits outweigh its costs.

2.1 Value for Money

Please describe to what extent the proposed scheme has been assessed in terms of value for money. Also explain how this will be developed through the Outline Business Case to provide accurate benefit-cost ratio information.

Where applicable, please include details of all options that have been appraised.

VfM should also include reference to the proposed scheme's economic, social, environmental and public accounts impact. (in line with the DfT's Transport Appraisal Framework)

A Cost Benefit Appraisal (CBA) assessment has been undertaken to assess the economic benefits of the A601(M) refurbishment scheme.

Whilst CBA is the traditional approach to assessing the merit of transport schemes, land value uplift seeks to complement standard transport appraisals where there is potential opportunities for development land to be unlocked as a result of the scheme. The wider economic impacts of the proposed transport schemes are particularly important to understand in terms of the potential benefits in the context of supporting the funding bid for the scheme as well as the regional and local economic growth agenda.

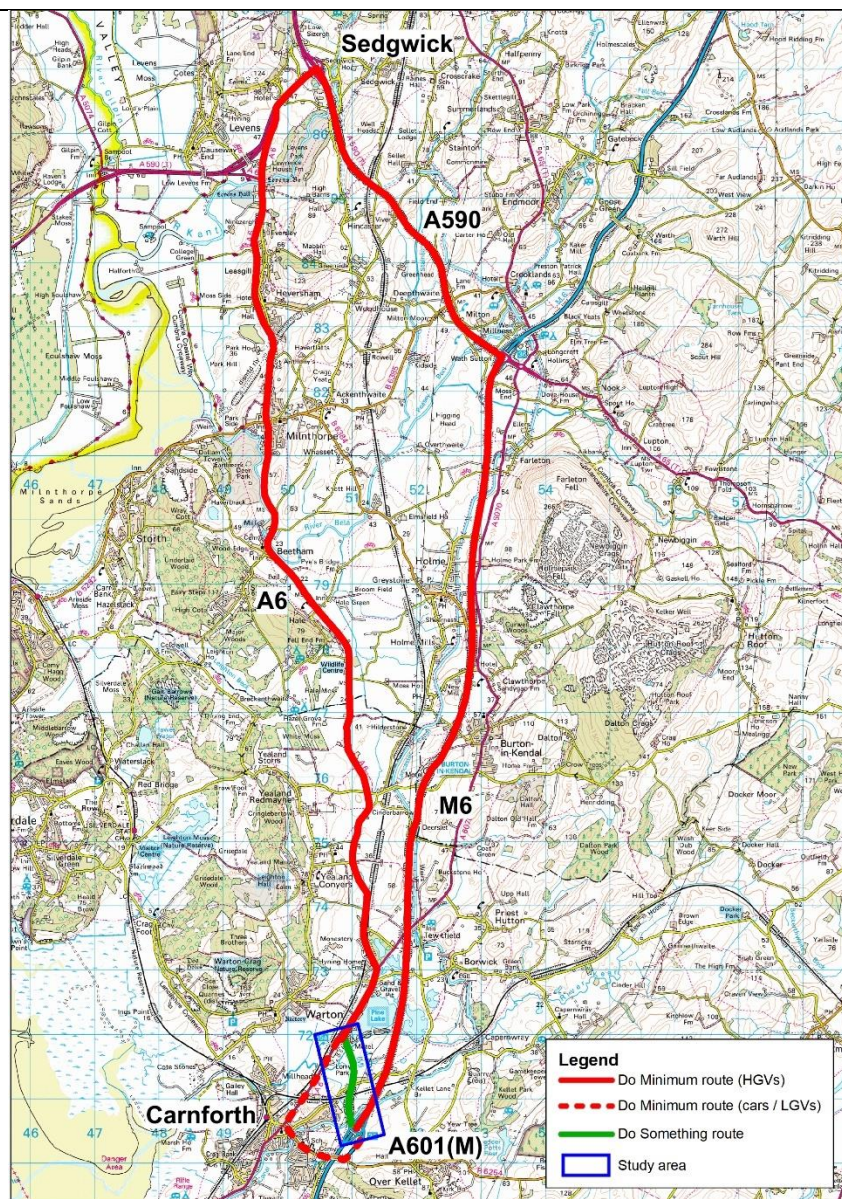
In line with the DfT guidance a proportionate approach has been adopted for the assessment of the economic benefits of the scheme.

The CBA assessment has subsequently been undertaken using a spreadsheet-based tool that has been developed in line with WebTAG principles. This methodology uses journey time and distance savings with the number of effected vehicles to estimate potential journey time savings.

The economic assessment is based on whole years of benefit and as such the benefit assessment is based on an opening year of 2022.

Scheme benefits have been derived from analysis of the existing traffic flows in the vicinity of the scheme, utilising observed traffic flows provided by Lancashire County Council.

Scheme benefits were derived through comparing the savings in distance and journey time for HGVs using the A601(M) rather than a diversion route via M6, junction 36 and A6 shown below.



Average speeds (based on the road speeds and vehicle types) have been assumed for journey times of the diversion. Further assessment of the impact of the diversion using local modelling and Trafficmaster data will be undertaken as part of the OBC to confirm assumptions.

Traffic numbers used in this economic analysis were taken from LCC's temporary ATC sites on A601(M) from 2017. These were then factored using TEMPro (version 7.2) to account for the change in traffic due to traffic growth.

Additional Marginal External Cost (MEC) benefits and Gross Value Added (GVA) assessments have not been undertaken at this stage, these will be undertaken at OBC stage.

	<p>Delays during construction have also not been considered at this stage, further assessment of the preferred scheme will be undertaken of the OBC.</p> <p>The results of this CBA assessment are summarised below:</p> <table border="1" data-bbox="695 382 1523 682"> <thead> <tr> <th>Benefits</th> <th>A601(M) Refurbishment (Discounted to 2010 prices)</th> </tr> </thead> <tbody> <tr> <td>Accidents</td> <td>£1.73m</td> </tr> <tr> <td>Economic Efficiency: journey time savings</td> <td>£25.12m</td> </tr> <tr> <td>Present Value of Benefits (PVB)</td> <td>£26.85m</td> </tr> <tr> <td>Present Value of Costs (PVC)</td> <td>£8.10m</td> </tr> <tr> <td>Net Present Value (NPV)</td> <td>£18.75m</td> </tr> <tr> <td>Benefit to Cost Ratio (BCR)</td> <td>3.3</td> </tr> </tbody> </table> <p>With a BCR of 3.3 the A601(M) Refurbishment scheme represents ‘high’ Value for Money (VfM) according to DfT Value for Money guidance.</p> <p>In addition to the transport benefits, when accounting for potential land value uplift from unlocked development opportunities as a result of the proposed scheme, the BCR increases to 5.0 which represents a ‘very high’ VfM.</p> <p>Although benefits to the local economy have not yet been assessed (GVA Uplift per annum), it is expected that benefits would be positive due to direct cost savings for HGVs, in not having to divert a significant distance.</p> <p>This scheme has also taken a longer-term view, with regards to costs of ongoing maintenance and renewal requirements, however benefits have not been calculated for post 30-years. Over a 60-year appraisal, the proposed scheme remains at ‘high’ VfM (without land value uplift) and increases to ‘very high’ with land value uplift.</p>	Benefits	A601(M) Refurbishment (Discounted to 2010 prices)	Accidents	£1.73m	Economic Efficiency: journey time savings	£25.12m	Present Value of Benefits (PVB)	£26.85m	Present Value of Costs (PVC)	£8.10m	Net Present Value (NPV)	£18.75m	Benefit to Cost Ratio (BCR)	3.3
Benefits	A601(M) Refurbishment (Discounted to 2010 prices)														
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Net Present Value (NPV)	£18.75m														
Benefit to Cost Ratio (BCR)	3.3														
<p>2.2 Economic Assumptions <i>Please describe any economic assumptions made or that will be made as part of future appraisal work and the development of the Outline Business Case.</i></p>	<p>The following assumptions have been made to assess the economic benefits of this scheme:</p> <ul style="list-style-type: none"> • In the Do Minimum Scenario all HGVs are restricted from using the A601(M). • All HGVs currently using the A601(M) have a 34km diversion via M6 junction 36 and A6. • Traffic growth has been estimated using LCC traffic flows and TEMPro (version 7.2) growth factors. • Optimism Bias has been included as per guidance in TAG Unit A1.2, Optimism Bias uplift has been assumed at 66% for structures and 44% for roads in accordance with WebTAG Unit A1-2. • 30-year appraisal period has been considered 														

	<ul style="list-style-type: none"> Land value uplift estimated using MHCLG land value estimates for policy appraisal data (2017).
<p>2.3 Sensitivity & Risk Profile <i>If applicable, please describe how changes in economic, environmental and social factors could affect the impact of the proposed scheme in terms of its benefit and costs.</i></p>	<p>Sensitivity and risk within the NPV has not yet been considered, given the stage of scheme development and costing. These will be examined for the Outline Business Case (OBC).</p>
<p>2.4 Value for Money Statement <i>Using the Appraisal Summary Table (AST) (see section 2.5), please include a summary of the conclusions from the Value for Money assessment. The statement should provide a concise summary of the proposed scheme's economic, environmental, social and public accounts impact.</i></p>	<p>The A601(M) Refurbishment is expected to deliver £26.9m of benefits (2010 prices, discounted).</p> <p>The scheme, including future maintenance and renewal costs, is expected to cost £8.1m (2010 prices, discounted)</p> <p>The scheme therefore has a BCR of 3.3 and is subsequently expected to deliver 'high' Value for Money according to DfT guidance.</p> <p>In addition to the transport benefits, when accounting for potential land value uplift, the BCR increases to 5.0 which represents a 'very high' VfM.</p> <p>The majority of the transport benefits produced by the scheme are journey time savings generated by HGVs being able to use the most direct route. In addition, the scheme is likely to have a slight beneficial impact on Reliability and Regeneration.</p> <p>The scheme is also expected to have slight beneficial noise, air quality and greenhouse gases benefits as well as on townscape and the water environment. These will be identified as part of the OBC.</p> <p>The scheme is expected to generate accident benefits due to a reduction in vehicle kilometres.</p> <p>The scheme is expected to have a neutral impact against most of the social impacts, as detailed in the AST below.</p>

2.5 Preliminary Appraisal Summary Table

Appraisal Summary Table		Date produced:	August 2019		Contact:
Scheme Name:	A601 (M)	Name	David Griffiths		
Scheme Description:	Refurbishment of A601 (M) and associated structures. N.B All monetary benefits have been calculated for a 30-year appraisal period in 2010 prices, discounted to 2010 (unless stated otherwise)	Organisation	Lancashire County Council		
		Role	Scheme promoter		
Impacts	Summary of key impacts	Assessment			
		Quantitative	Qualitative	Monetary	Distributional
				£(NPV)	7-pt scale/ vulnerable grp
Economy	Business users & transport providers	Currently the A601(M) has no restrictions in place for HGVs or abnormal loads. However, if necessary works are not carried out then HGVs and abnormal loads would be required to divert onto other routes and could also include a restriction on all traffic (cars and LGVs) if the bridges on the A601(M) are not refurbished given the rate of deterioration of the bridges. Higher North Road, carrying Nether Beck, would also be subject to weight restrictions, if necessary works are not undertaken. The bridge forms a vital part link to the strategic road network and as a bypass of Carnforth town centre (which has an AQMA). It also provides the most direct route to the M6, to Truck Haven services and the A6. The diversionary route of HGVs is such that there are potentially significant journey time and distance savings available if the A601(M) remains open to all traffic and HGVs – so as they are not forced onto the longer diversion route.		Beneficial (see commuting NPV)	
	Reliability impact on Business users	A601(M) is part of a key route linking to the strategic road network. Allowing this route to remain open to all vehicles will allow for greater journey time reliability for users through case of incidents and/or roadworks and by maintaining the most direct route. As part of the M6 official diversionary route, it also provides continued reliable route and access to HGV services for freight.		Slight Beneficial	
	Regeneration	The despecialisation of the A601(M) has potential to unlock development (housing and employment land) adjacent to the A601(M). The installation of the at-grade junction at Higher North Road, further facilitates access to unlocked land. This could aid the delivery of the Lancaster Masterplan housing allocation. A high-level assessment of land value uplift identifies a potential additional £13.6m of benefits, resulting from unlocking of land for development.	£13.6m (benefits)		
	Wider Impacts	The ability of all vehicles to have direct and quick access to the strategic road network, rather than having to divert as a result of weight restrictions on the A601(M), is key to continued economic growth of the area, through improving / retaining these connections businesses and freight can better work together to increase economic output.		Slight Beneficial	
Environmental	Noise	Maintaining A601(M) as an abnormal load and HGV route prevents large vehicles being routed via alternative routes. Noise benefits will be identified as part of the OBC.		Slight Beneficial	
	Air Quality	Parts of central Carnforth town centre have been designated as an AQMA. Maintaining all vehicle access along A601(M) would encourage more vehicles to travel along this route, thus limiting the impact on the AQMA. If a HGV ban was in force these vehicles would be forced to divert approximately 34km, therefore in refurbishing the A601(M) and its structures, it reduces air quality impacts overall through vehicles travelling shorter distances. Air quality benefits will be identified as part of the OBC.		Slight Beneficial	
	Greenhouse gases	The diversion route proposed for HGVs is longer than using the A601(M) currently; this will increase the output of GHG from the HGVs travelling along the diversionary route. Greenhouse Gases benefits will be identified as part of the OBC.		Slight Beneficial	
	Landscape	The scheme is unlikely to have any effect on landscape.		Neutral	
	Townscape	The scheme is likely to have a slightly beneficial impact on townscape. In maintaining the A601(M), this would limit the potential diversion of vehicles via Carnforth town centre and other villages and settlements along the longer HGV diversionary route.		Slight Beneficial	
	Historic Environment	The scheme is unlikely to have any effect on historic environment.		Neutral	
	Biodiversity	The scheme is unlikely to have any effect on biodiversity.		Neutral	
Social	Water Environment	The A601(M) passes over the River Keer and Lancaster Canal, which are at risk of pollution from surface run-off as the waterproofing of the bridges deteriorate over time. If this issue is not addressed, it is likely that the water environment will degrade in the vicinity of the scheme.		Slight Beneficial	
	Commuting and Other users	Currently the A601(M) has no restrictions in place. If the restrictions covered in section 1.2 are applied for abnormal loads and HGVs these will have to be diverted via other available routes (likely a 34km diversion). The A601(M) provides direct access to the strategic road network (M6) so there are potential journey time and distance savings available if the A601(M) is open to all traffic and HGVs are not forced onto the longer diversion route.		£17.0m	
	Reliability impact on Commuting and Other users	A601(M) is part of a key route linking to the strategic road network. Allowing this route to remain open to all vehicles will allow for greater journey time reliability for users through case of incidents and/or roadworks and by maintaining the most direct route. As part of the M6 official diversionary route, it also provides continued reliable route and access to HGV services for freight.		Slight Beneficial	
	Physical activity	It is unlikely that the scheme will lead to a change in the numbers of people walking or cycling or the distance that people already walking or cycling travel.		Neutral	
	Journey quality	Journey quality will be identified as part of the OBC. In addition, it is likely the scheme will result in a reduction in driver stress for HGV drivers.		Slight Beneficial	
	Accidents	Accident benefits have been estimated as part of the benefits calculation using the change in expected vehicle kilometres due to the scheme. As the diversion route is longer than the direct route using the A601(M), there are potential accident benefits generated as a result of being able to keep A601(M) open to all traffic.	£1.73m (benefits)		
	Security	The scheme is unlikely to have an impact on security.		Neutral	
	Access to services	The scheme is likely to have a positive impact on access to services, maintaining the A601(M) enables direct links to Truck Haven and the strategic road network, as well as reduced diversion if the A601(M) is closed to HGVs. In maintaining the bypass, any congestion in Carnforth town centre is not likely to be exacerbated, maintaining current access to local services.		Slight Beneficial	
	Affordability	The scheme is not expected to have an impact on parking charges, car fuel and non-fuel operating costs, road user charges, public transport fares or concession availability.		Neutral	
	Severance	The scheme is unlikely to have any impact on severance as it is not expected to affect pedestrian movements.		Neutral	
Public Accounts	Option and non-use values	It is unlikely that the implementation of the scheme will change the availability of public transport services within Carnforth.		Neutral	
	Cost to Broad Transport Budget	Scheme costs have been estimated at £8.03m (2019 prices). Temporary works currently required to keep the A601(M) and its structures safe to users and at its current capacity are estimated at £1.6m (2019 prices) with further increased maintenance and monitoring costs of approx. £0.16m per annum (£3.1m over 20 years). These figures will increase the longer the bridge goes without maintenance.		Beneficial	
	Indirect Tax Revenues	Indirect taxes will be identified as part of the OBC.			

Economic Case Summary

A Cost Benefit Appraisal (CBA) assessment has been undertaken to calculate the economic benefits of the A601(M) Refurbishment scheme.

The CBA assessment has been undertaken using a spreadsheet-based tool which has been developed in line with the principles contained within the DfT's Transport Appraisal Guidance. The journey time and distance savings generated by the scheme have been used to calculate the journey time benefits.

The A601(M) Refurbishment scheme is expected to deliver £26.9m of benefits (2010 prices, discounted). The scheme is expected to cost £8.1m (2010 prices, discounted). The scheme therefore has a BCR of **3.3** and is subsequently expected to deliver 'high' Value for Money.

In addition to the transport benefits, when accounting for potential land value uplift, the BCR increases to **5.0** which represents a 'very high' VfM.

The majority of the transport benefits produced by the scheme are journey time savings generated by HGVs being able to use the most direct route. In addition, the scheme is likely to have a slight beneficial impact on Reliability and Regeneration.

The scheme is expected to generate accident benefits due to a reduction in vehicle kilometres.

The scheme is expected to have a neutral impact against most of the social impacts, as detailed in the AST.

3 Financial Case

The Financial Case concentrates on the affordability of the proposal and its funding arrangements. It presents the financial profile of the proposed scheme and any associated risks. It determines the project costs per year and over its lifespan.

3.1 Affordability Assessment

Please explain how the affordability of the proposed scheme has been assessed.

Potential Funding Sources

The scheme is currently bidding for funding from the Department for Transport (DfT) Maintenance Challenge Fund Tranche 2.

The DfT Maintenance Challenge Fund aims to ensure that the UK has well maintained local highway infrastructure fit for the 21st Century. The fund is open to any English local highway authority outside of London and can cover geographic areas that cut across Local Authority boundaries.

Any required local contribution will be provided by Lancashire County Council

Scheme Costs

Initial scheme cost estimates have been estimated in the table below, however, following detailed design, the submission of tender documents and review of the risk register these costs are subject to change.

Option 5	Cost (2019 price)
Design	£0.50m
Preparation/supervision	£0.50m
Construction	£8.165m
Total Scheme Cost	£9.245m

The overall scheme cost estimate is **£9.245m** (2019 prices).

It is proposed that the scheme is funded on the following basis:

- a. 90% of construction works costs (£8.165m) from the DfT Maintenance Challenge Fund. It should be noted that obtaining this funding is a competitive process and the outcome of the bid for Challenge Fund funding is still unknown.
- b. 10% of the construction works cost and all design (£0.5m) and preparation/supervision costs (£0.5m) making a total LA Contribution of £1.850m—Funded from the Capital Programme. The LCC Cabinet Member for Highways and Transport has already approved the scheme.

Any expenditure above the estimated scheme costs will be covered by Lancashire County Council's Bridges Design budget as per the declaration included in the DfT Challenge Fund 2A Application Form associated with this SOBC.

3.2 Financial Costs <i>Please provide details of the Whole Life Costs of the proposed scheme and a profile of the costs over the period shown.</i>	Whole Life Costs (£000s)						
	Year	Total	2019/20	2020/21	2021/22	2022/2023	2023+
	Profile	9,245	450	2,900	5,595	300	-
3.3 Financial Cost Allocation <i>Please illustrate how the Whole Life Costs (WLC) will be allocated between the organisations involved in the delivery of the proposed scheme. Also provide a cost profile of the costs allocated to each organisation over the period shown.</i>	DfT Challenge Fund (£000s)						
	Profile	7,395	-	2,500	4,895	-	-
	Private Sector (£000s)						
	Profile	-	-	-	-	-	-
	Lancashire County Council Contribution (£000s)						
	Profile	1,850	450	400	700	300	-
3.4 Financial Risk <i>Please provide details of any financial risks associated with the delivery of the proposed scheme. Explain how these have been assessed and quantified. Have funds been committed? Identify any known shortfall in funding and provide evidence of how this shortfall will be addressed.</i>	<p>A high-level Quantitative Risk Assessment (QRA) is provided in Appendix B.</p> <p>Risks have been assessed using a slight variation on the Highways Agency Risk Management (HARM) Tool. A QRA figure of £1.24m has been calculated and is incorporated within the scheme cost estimate.</p> <p>Key financial risks are summarised below:</p> <ul style="list-style-type: none"> • No suitable funding route Identified • Escalation of repair costs <p>Any increases in scheme costs will be covered by Lancashire County Council's Bridge Capital Maintenance budget.</p>						
3.5 Financial Risk Management <i>Please provide details of any risk allowance or contingency built into the Whole Life Costs of the project. Explain the rationale for the level of risk/contingency allocated and how this will be managed.</i>	<p>Risks associated with this scheme have been estimated at £1.24m based upon a Quantitative Risk Assessment (QRA).</p> <p>This is a broad assumption based on an initial analysis of project risks as set out in the Risk Register based on scheme specific contributory factors related to cost and programme risk. These include disputes and claims associated with procurement and environmental impact / mitigation.</p> <p>A shortfall in funding is not expected but will be identified and addressed at the end of the tender stage if any shortfall exists. Any increases in scheme costs will be covered by Lancashire County Council's Bridge Capital Maintenance budget.</p>						
3.6 Financial Accountability <i>Please explain who will be responsible for managing the</i>	<p>The overall scheme costs will be monitored by the LCC Bridges Design Team.</p> <p>The scheme will be procured using an NEC4 Option A competitive tender.</p>						

<p><i>finances of the project. What arrangements are in place to ensure diligent financial management is in place?</i></p>	<p>Once the Tenders are received the overall cost of the works will be reviewed and confirmed. Under the terms of the contract the works costs will be assessed every 4 weeks.</p>
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Financial Case Summary

The scheme is currently bidding for funding from the Department for Transport (DfT) Maintenance Challenge Fund Tranche 2.

The overall cost of the scheme is estimated at **£9.245m** in 2019 prices.

Risks associated with this scheme have been estimated at £1.24m based upon a high-level Quantitative Risk Assessment (QRA). This risk allowance has been incorporated within the scheme cost estimate.

Any increases in scheme costs will be covered by Lancashire County Council's Bridge Capital Maintenance budget.

4 Commercial Case

The Commercial Case provides evidence on the commercial viability of the proposed scheme and the procurement strategy. It should clearly set out the financial implications of the procurement strategy. It presents evidence on risk allocation alongside implementation timescales and details of the capability and skills of the delivery team.

<p>4.1 Commercial Viability <i>Please outline the approach taken to assess commercial viability.</i></p>	<p>The Commercial Viability of the scheme has been assessed under the following headings:</p> <ul style="list-style-type: none"> • Procurement strategy; • Identification of risk; • Risk allocation; and • Contract management.
<p>4.2 Procurement Strategy <i>Please summarise potential procurement options available (e.g. partnership, framework, new competitive tender). Details of the intended procurement strategy and the rationale behind selecting it should be provided.</i></p>	<p>LCC are mindful given the complexity of the construction works involved of the need to secure best quality and best value tenders for the scheme.</p> <p>A Two stage quality and then price, new competitive tender process has been chosen for securing the services of a contractor.</p> <p>Stage 1 – A Pre-Qualification Questionnaire (PQQ) will be used to produce a shortlist of prospective tenderers. The PQQ will assess tenderers ability to deliver the scheme based on Contractor Acceptability, Compliance with EC and UK Legislation, Quality Assurance, Economic and Financial Standing, Track Record, Business Capacity and Capability, Only Tenderers who successfully pass all the requirements of the PQQ will be invited to tender.</p> <p>Stage 2 – The shortlist of tenderers from stage 1 will be asked to submit a price for delivering the scheme. The Tender will be awarded based on lowest price.</p> <p>The chosen form of contract is NEC4, Option A, Priced Contract with Activity Schedule. The concrete repair element of the works are difficult to quantify at Tender Stage. This portion of the works will be assessed at Tender Stage using a schedule of rates, the areas of repairs will be agreed between Client and Contractor and the Contractor will be reimbursed accordingly.</p> <p>NEC4, Option C, Target Cost with Activity Schedule was considered in the early stages of the scheme development as there were a large number of unknowns constituting high risk to both Client and Contractor. As detailed design has progressed these risks have been reduced so Option A has become the more appropriate choice. Option A means that the remaining risk is transferred to the contractor.</p>

<p>4.3 Identification of Risk <i>Please outline the main commercial risks associated with the scheme (e.g. at-risk funding (capital and revenue)) and what strategy is in place to monitor and review these risks.</i></p>	<ul style="list-style-type: none"> • Ongoing maintenance funding risk • DfT timescales too tight to spend allocation efficiently • Brexit affecting prices after scheme estimate but before procurement process has been finalised <p>A proposed Risk Management Strategy is provided in Section 5.7.</p>
<p>4.4 Risk Allocation <i>Please describe how the risks identified in section 4.3 will be apportioned and shared to demonstrate that risks are allocated to the organisation / body best placed to manage them to ensure cost effective delivery.</i></p>	<p>The project would be managed using NEC4 Option A contract</p> <p>This form of contract means that project risks are transferred to the contractor. The contractor would also take on the risk of programme overrun on the basis of a target date-of-completion contract.</p> <p>The repair element of the works are difficult to quantify at Tender Stage. This portion of the works will be assessed at Tender Stage using a schedule of rates, the areas of repairs will be agreed between Client and Contractor and the Contractor will be reimbursed accordingly.</p>
<p>4.5 Contract Management <i>Please explain the contractual arrangements for delivering the proposed scheme. A high-level overview of the implementation timescales should be included (append MS Project Programme, if preferred).</i></p>	<p>The project would be undertaken by the contractor appointed using a new competitive tender two stage process Quality and Price NEC4 Option A.</p> <p>The stated objective of the NEC is to stimulate good management. The principles upon which it is based are that foresight applied collaboratively mitigates problems and shrinks risk and that a clear division of function and responsibility helps accountability and motivates people to play their part. The contract places particular emphasis on the importance of planning/programming and a transparent and collaborative approach to risk management.</p> <p>The Option A: Activity Schedule establishes a lump sum price for a range of activities according to the defined activity schedule set out in the tender documentation. This form of contract means that risk is transferred to the contractor. The contractor would also take on the risk of programme overrun on the basis of a target date-of-completion contract.</p> <p>Any cost overruns will be the responsibility of the LCC Capital Bridge Design Team budget.</p> <p>Established approval processes are in place via the Project Board / Project Sponsor (decision making, etc.). The project tolerances would be approved by the Project Executive. If these tolerances are exceeded, an exception report will be raised by the Project Manager. If there is a prediction that any one tolerance is to be exceeded; this will be raised as an issue to the executive board for discussion.</p>

Commercial Case Summary

The scheme will be procured through a two-stage quality and then price, new competitive tender process.

Contractors will be appointed using a NEC4 Option A contract. The Option A: Activity Schedule establishes a lump sum price for a range of activities according to the defined activity schedule set out in the tender documentation. This form of contract means that risk is transferred to the contractor. The contractor would also take on the risk of programme overrun on the basis of a target date-of-completion contract.

Established approval processes are in place via the Project Board / Project Sponsor.

5 Management Case

The Management Case assesses whether a proposal is deliverable by reviewing the project planning, governance structure, risk management plan, communication and stakeholder management. The Management Case should be clearly defined, concise and sufficiently robust to enable cost-effective delivery.

5.1 Governance

Please describe the Project Governance arrangements in relation to the Project Team; Project Sponsor/Project Manager; Project Board/Executive and their suitability to the role based on previous programmes of work.

The scheme is currently bidding for the funding from the DfT's Maintenance Challenge Fund Tranche 2.

The project governance structure below is typical for other schemes in Lancashire and is considered appropriate to the size of the scheme.

The project board will be established by drawing members from LCC experienced in the delivery of similar types of schemes to A601(M).

The Project Board consists of the Project Executive, Senior User and Senior Supplier. Representatives for each role will be selected based upon their previous project experience. The potential makeup of the project board and their responsibilities are described below.

Role	Representative	Responsibility
Project Executive (Senior Responsible Owner)	LCC Head of Design & Construction - Shaun Capper	Will have overall responsibility for delivering the scheme. Ensures that the project / programme meets its objectives, delivers the projected benefits, maintains its business focus and is well managed with clear authority, context and control of risk.
Senior Users	LCC Asset Group – Paul Binks	Work with the Project Executive and Project Board to ensure that the specification for the scheme will meet the needs of its users within the constraints of the business case.
Senior Suppliers	LCC Bridges Design Team- David Hurford Principal Contractor (appointed after procurement)	Agree a design and work programme with the Project Board which minimises environmental impact, inconvenience to residents and road user impacts. Accountable for the quality of products delivered by the supply chain and has the authority to commit or acquire the necessary supplier resources.

A Project Manager for the Scheme will be drawn from the LCC Bridges design team. The Project Manager will provide the interface between the Project Board via the Project Executive and the Team Managers. The Project Manager will be the single point of contact for the day to day management of the scheme.

<p>5.2 Go/No-Go & Decision Milestones <i>Please describe any outstanding Go/No-Go processes and Decision Milestones in relation to the progression of the proposed scheme.</i></p>	<p>The outcome of the DfT Maintenance Challenge Fund Tranche 2 bid will determine the progress of the scheme and is the key Go/No-Go decision milestone.</p>
<p>5.3 Project Programme <i>Please set out an indicative delivery programme, including key milestones. Any programme / project dependencies should be referenced. If applicable, please explain how the programme is aligned to relevant delivery strategies and plans.</i></p>	<p>An indicative delivery programme is provided in Appendix E.</p> <p>It is expected that works on the A601(M) and its structures will last approximately 104 weeks, which consists of:</p> <ul style="list-style-type: none"> • 52 weeks design preparation and procurement • and 52 weeks construction <p>Higher North Road bridge removal and at-grade junction installation works are expected to take 6 and 26 weeks respectively.</p> <p>The programme will be refined following detailed design and confirmed following the appointment of a contractor.</p> <p>Some key risks that could impact the delivery programme are outlined below:</p> <ul style="list-style-type: none"> • Repairs are more complex than estimated and lead to a longer duration • Removal of Higher North Road bridge and installation of at-grade junction takes longer than expected, increasing traffic management requirements and extending works. • Requirement for third party land
<p>5.4 Assurance and Approvals Plan <i>Please document any key assurance and approval milestones (including any independent assurance).</i></p>	<p>An overall framework will be adopted at the LCC Programme Management level which will define an assurance role to oversee the governance and working arrangements in line with the requirements of the funding body.</p> <p>Project-level assurance roles will be in place to provide the Project Board with independent guidance and advice with regard to all matters related to the status of the scheme.</p>
<p>5.5 Communications & Stakeholder Management <i>Please explain how key stakeholders will be engaged throughout the delivery of the scheme, including details of proposed consultation events.</i></p>	<p>The County Council will develop a communications strategy to inform local businesses, residents, transport operators and other stakeholders on proposed works and progress.</p> <p>Quarterly progress updates will be made available on the County Council's website.</p> <p>Briefing reports will be undertaken for Local Members throughout the duration of the project to ensure that Members are aware of progress and can feedback to their constituents.</p> <p>Press releases will be carried out through the Corporate Communications Team using local press and radio. Leaflets with information on the scheme will be delivered in advance of the works to</p>

	<p>inform those affected on the programme. A site notice board will also be installed to provide regular updates.</p> <p>The majority of the works consultation would be employed through the preparation of the proposed scheme phases to ensure comprehensive public participation.</p> <p>As the construction phases of the programme are implemented, contact with stakeholders and the public would be increased to ensure they are fully informed of project timescales, any possible disruption to local activities, and possible visits to the sites to view construction activities.</p> <p>The construction phase of project delivery can have a significant impact on the relationship with the local community and their early impressions of the scheme. Many stakeholders will have contact with other opinion formers and influencers, so it will be vital to keep stakeholders informed and to be as open as possible with communications. This engagement would continue throughout the delivery phases.</p> <p>It will be important to ensure all temporary traffic management and construction works are phased to minimise adverse impacts on the journeys of local residents and others.</p>
<p>5.6 Programme / Project Reporting <i>Please describe the proposed reporting and approvals process. This must cover technical, financial, commercial and management elements.</i></p>	<p>The Project Executive will report to the Project Board according to a defined and regular programme of meetings. During these meetings, key highlights, risks, programme and the financial position of the project will be discussed. The Project Executive will be supported by the Project Manager at these meetings as appropriate. Any corrective actions or decisions will be agreed by the Project Board and cascaded to Team Leaders via the Project Manager.</p>
<p>5.7 Risk Management Strategy <i>Please describe the scope of the Risk Management Strategy for the proposed scheme. Include details of the key risks including organisational accountabilities.</i></p>	<p>An initial quantified risk register highlighting the key risks to scheme cost and programme is presented in Appendix B. This includes mitigation measures for each of the risks which will form the basis for the risk management strategy.</p> <p>The Project Board would have overall responsibility for governance and risk associated with the delivery of the scheme. The Project Executive would be responsible for managing and overseeing the Risk Management Strategy and where appropriate agreeing and undertaking actions to mitigate key risks. The Project Manager would be responsible for maintaining and updating a Quantified Risk Register and undertaking actions to mitigate the risks that do not require escalation to the Project Executive.</p> <p>The project governance structure, as outlined in Section 5.1, would include arrangements for decision making and approvals, and</p>

	<p>information on roles and responsibilities such that responsibilities with regard to risk will be well defined.</p> <p>Risk management activities and risk registers are already in place as part of ongoing LCC scheme delivery work. These are informed by regular meetings and risk workshops which are aligned to key programme design and delivery phases. The membership of these meetings will vary and would be dependent upon the particular project phase.</p> <p>These risk workshops would draw up and review risk registers to identify the range and extent of risks that could adversely affect the delivery of the scheme. These sessions would identify the likelihood of each risk occurring and the relative quantifiable impact in terms of cost and programme. The risk register will be maintained throughout the project as a live document and reviewed on an ongoing basis. The most significant risks will have Risk Management Plans developed. Risks can also be identified at any time outside of these formal lines of communication and will be highlighted to the project manager if this occurs.</p> <p>The key risks (that could add significant cost or delay to the scheme) are shown below with possible mitigating measures:</p> <ul style="list-style-type: none"> • <i>Inaccurate pricing of design issues and impact on buildability</i> – mitigation would be to ensure adequate time given for design and preparation. • <i>Significant disruption to highway network during construction (road closures for the removal of Higher North Road)</i> – mitigation would be to redesign the road system for the duration of the works and preparation of suitable traffic management plans. • <i>Failure to achieve detailed design completion in advance of site works</i> – robust supervision of design and building float/contingency into the programme. <p>Full details of identified risks and proposed mitigation are presented in the Risk Register in Appendix B.</p>
<p>5.8 Monitoring and Evaluation <i>Please summarise outline arrangements for monitoring and evaluating the performance of the proposed scheme.</i></p>	<p>A requirement of the DfT Challenge fund is that <i>‘successful bidders will be expected to commit to quarterly monitoring of the impact of the scheme once construction has started, including the forecast and actual spend profile each quarter up to completion’</i>. As such LCC will undertake the above monitoring during construction.</p> <p>In addition it is proposed that post-scheme monitoring and evaluation will also be undertaken by LCC to assess the effectiveness of the scheme.</p>

	<p>The key impact of the scheme will be the prevention of the need to implement weight restrictions on the A601(M) and as such it is considered that bridge condition inspections are the most relevant monitoring tool for use on the scheme as these will assess the need for potential future restrictions.</p> <p>In addition, it is proposed that classified traffic counts be carried out on along the route and local traffic modelling to investigate whether assumptions adopted during the calculation of scheme benefits with regards to re-routeing of traffic and growth in traffic were in line with future observed traffic conditions.</p> <p>It is also proposed that journey time analysis is undertaken using TrafficMaster data that LCC hold.</p> <p>In summary the following metrics are proposed to be assessed as part of the Monitoring and evaluation of the scheme</p> <ul style="list-style-type: none"> • Scheme Progress and spend (During construction) • Bridge Condition Surveys (Post-construction) • Road Condition Surveys (Post-construction) • Traffic Flows (Post-construction) • Traffic Speeds (Post-construction)
<p>5.9 Project Management <i>Please summarise the overall approach for project management at this stage of the project.</i></p>	<p>The project will be managed in line with the principles of PRINCE2.</p> <p>PRINCE2 is a de facto process-based method for effective project management. Used extensively by the UK Government, PRINCE2 is also widely recognised and used in the private sector, both in the UK and internationally.</p> <p>To ensure consistency with the principles of PRINCE2, a defined organisation structure for the project management team will be agreed. In addition, the project will be divided into manageable and controllable stages.</p>

Management Case Summary

The project will be managed in line with the principles of PRINCE2.

A project specific governance structure has been created. This structure is based on established and operating governance arrangements for schemes currently being delivered by LCC, adapted to reflect the specific requirements of devolved Local Major Scheme governance.

An indicative delivery programme for the scheme has been created. It is expected that the overall scheme duration would be approximately 24 months, with 52 weeks durations for construction phase.

A Risk Register containing mitigation measures has been produced and this will be monitored throughout scheme delivery.

The success of the scheme and the associated benefits will be measured against a set of identified metrics and reported in line with the funding organisations requirements for monitoring and evaluation of schemes.

Appendix A – Scheme Location Plan



Appendix B – Quantitative Risk Assessment

Appendix C – Letters of Support

Appendix D – Cost Benefit Analysis Report

Appendix E – Delivery Programme