National Infrastructure Commission:

Rail Needs Assessment for the Midlands and the North

'Call for evidence'

Joint Response of Leicestershire County Council and Leicester City Council, May 2020

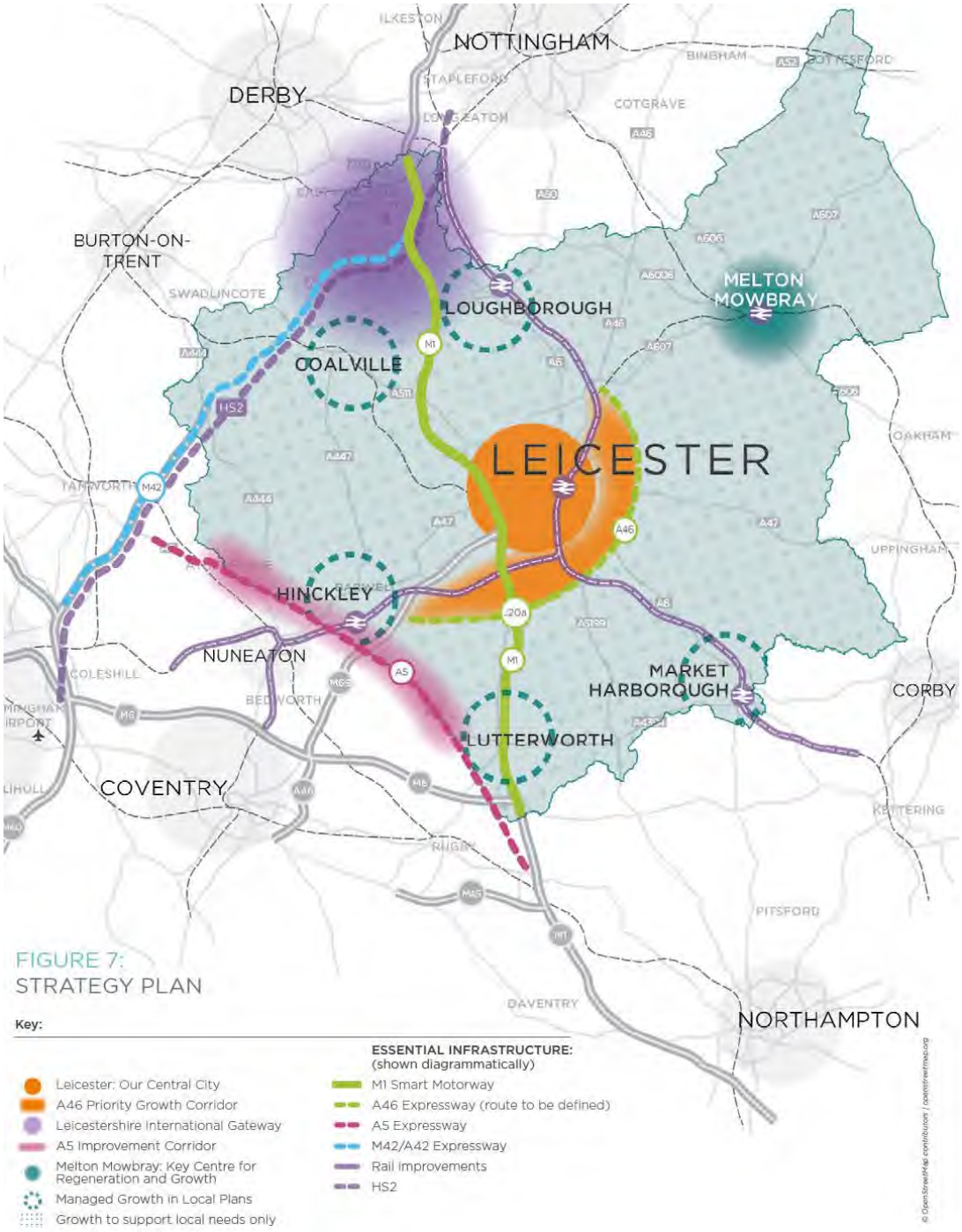

Figure. 1: Extract from the Leicester and Leicestershire Strategic Growth Plan, 2018 (p.22)

Executive Summary

In March 2017, Leicestershire County Council and Leicestershire City Council published the "Leicester and Leicestershire Joint Rail Strategy[1]". This strategy recognised the role of rail investment in economic growth and set out how Leicester and Leicestershire currently have relatively poor rail connectivity between major centres of economic activity.

Subsequently in December 2018, a Strategic Growth Plan for Leicester & Leicestershire[2] was published. This is an overarching plan, setting out aspirations for delivering growth (housing, infrastructure and the economy) across the geographic regions of Leicester and Leicestershire. Significantly, the plan was, prepared and published jointly by all nine local authorities (all districts, along with the City and County councils) as well as the Leicester and Leicestershire Local Enterprise Partnership (LLEP).

Both these plans highlight the role that rail infrastructure has to play in wider transport connectivity, meeting future demand, and enabling growth in the long term. This response to the National Infrastructure Commission (NIC) 'call for evidence' to inform the planned Integrated Rail Plan sets out how rail, and HS2, play a key role in delivering these plans.

This joint submission to the National Infrastructure Commission reinforces the need for rail investment that benefits the residents and businesses of Leicestershire and Leicester (and the region and country more widely), as part of an integrated approach to HS2 and Midlands Connect developments.

This joint submission also sets out the key priorities as the Councils see them, building on and consistent with the response of our partners in Midlands Connect and TfEM. These priorities are listed in a sequential order given delivery inter-dependencies - it should not be

[1] https://www.leicester.gov.uk/media/180873/rail-strategy-march-2017.pdf
[2] https://www.llstrategicgrowthplan.org.uk/wp-content/uploads/2019/01/Final-LL-SGP-December-2018-1.pdf

interpreted that an item lower on the list is of a lesser priority to the Councils than those higher on the list:

1. providing a direct rail link between HS2 and the Midland Main Line at the HS2 East Midlands Hub (Toton)
2. investing in Leicester station to improve both capacity and quality
3. completing full electrification of the Midland Main Line
4. improvements to wider rail services as proposed by Midlands Connect.

These priorities will deliver rail network resilience. They will provide opportunities to free up capacity both on road and rail networks through increased freight movements and improved passenger connections from much further afield – links connecting Scotland to Europe via London St Pancras. Improved connections and capacity to local commuter routes will bring prosperity to towns and settlements along the existing Midland Mainline, connecting them cross country via East West Rail and opening opportunities to the vast ThamesLink network via Bedford[3]. In addition, the opportunity these investments create to provide a modal shift from road to rail and make a sustained difference to decarbonising the transport system has never been more tangible.

All these improvements hinge on the direct link with HS2 and Midland Main line which is key to unlock these future opportunities. The ability to run high speed trains onto the classic rail network will ensure the benefits of HS2 are distributed as widely as possible.

The questions, asked by the NIC 'call for evidence, are answered on the following pages.

[3] https://www.emcouncils.gov.uk/write/Case-for-Upgrading-Electrifying-Midland-Main-Line251111.pdf

Contents / Compendium of responses to 'call for evidence' questions

Q1. What potential investments should be in scope of the Commission's assessment ?
- In answering this question, please consider the terms of reference for the Integrated Rail Plan, particularly that HS2 Phases 1 and 2a are out of scope.

The follow investments are key to the future delivery of quality rail services within the Midlands region and Leicester and Leicestershire Councils would commend the NIC include these within their assessment:

- a classic compatible link at the HS2 East Midlands Hub (Toton)
- investment and improvements to Leicester station
- completing full electrification of the Midland Main Line (MML)
- delivery of Midlands Connect rail hub projects.

More detail can be found in paragraph 1.3

Q2. Which set of rail investments do you believe would, together: a. best unlock capacity and b. improve connectivity – within the Midlands and the North?

a) Capacity would be most effectively unlocked by the development of HS2 in its entirety and providing linkages between the high-speed network and the classic compatible network to provide greatest flexibility for passengers. Adding the classic compactible link between Leicester and Toton would have a profound positive effect on capacity in the Midlands region and much wider across the UK, with countless benefits to Leicestershire and its neighbouring counties.

b) As above, providing the link between the classic compatible network and HS2 East Midlands Hub at Toton will hugely improve rail connectivity. It will provide much needed high-speed connections between the midlands and the Northern cities, and also links south through Leicester towards London, making connections to the Thameslink network and East West Rail via Bedford and then south to St Pancras where there are the benefits of rail connections to continental Europe. In addition, it will provide resilience to the HS2 network through provision of this additional route to London from Toton.

More detail can be found in section 3

Q3. Within the set of investments you identified, which individual investment(s) should be the highest priority?
- Please explain your rationale for this and how this would affect the phasing and sequencing of the full set of investments you identified.

Leicester and Leicestershire view the following investments in this order of priority (further detail can be found in the sections referenced under each bullet point):

- a classic compatible link at the HS2 East Midlands Hub (Toton) to enable high speed rolling stock to access the Midland Main Line (section 3)
- investment and improvements to Leicester station – to allow increased capacity, better quality customer interface and improved rail connections (section 4)

- electrification of the Midland Main Line (MML) – to allow classic compatible high-speed trains to run on the both the HS2 and classic network (section 5)
- delivery of Midlands Connect rail hub projects – to provide a robust and accessible train service throughout the region which complements and benefits from HS2 (section 6).

Delivery of the HS2 East Midlands Hub station at Toton to include the classic compatible link must be progressed at the earliest possible opportunity to ensure these elements are included within the HS2 design. Ideally this link, along with Midland Main Line Electrification, should be operational from day one of HS2 Ph2b operation, to maximise the benefits it would bring. Nevertheless, improvements to Leicester station must me made first to ensure that operation of the electrified line doesn't need to be curtailed while these critical improvements are made. The Midlands Connect rail hub projects are also key to regional rail improvements but do not share the same construction dependencies as the link to HS2 at Toton, Leicester station improvements and the MML electrification. See section 1 onwards for more detail.

Q4. What supporting policies need to be in place to deliver the benefits of the investments you identified? If there are any dependencies with other investments/policies, how confident are you that these supporting policies will be put in place?

The above key investments carry a number of dependencies between them and as described, sequencing will be key to achieve the greatest benefits. Midland mainline electrification will also allow links between the North and London which will provide resilience to the HS2 network.

Leicester station development is crucial to resilience to enable this station to act as a critical hub and interchange for passengers and freight, such upgrades are dependent on works to improve Wigston junction (section 6).

Q5. What impact would the investments you identified have on greenhouse gas emissions? In particular, how would they affect the UK's ability to meet its domestic and international targets, including the Paris Agreement and net-zero?

- In answering this question, it would be helpful if you could consider the expected decarbonisation of road transport, as set out in the Commission's National Infrastructure Assessment and Freight Study.

Linking the MML to HS2 at Toton will provide additional connectivity and flexibility to passengers through the linkages south from Leicester to Bedford/St Pancras and then north between Leicester and Leeds via HS2. It will also bring significant journey time reductions as well, particularly north bound, through linking to the high-speed services to Leeds. This will widen the distribution of passengers across the highspeed and classic networks thus freeing up capacity on board trains and encouraging people to choose rail travel over road or domestic flights. The construction of HS2 will also provide additional line capacity for both passenger and freight trains. Currently Leicester is poorly connected to other cities via rail links. Improving rail connections is a genuine opportunity to make the modal shift in transport from road to rail which is vital in the countries carbon reduction plan. In addition, the provision of electric trains on the HS2 line and electrification of the MML will be key in reducing emissions associated with diesel trains. See paragraph 5.3.

Q6. In addition to greenhouse gas emissions, what are the potential environmental effects (positive and negative) of the investments you have identified?

There will be a high carbon footprint associated with the construction of HS2, MML electrification and Leicester Station re-development linked to the construction process, materials, quarrying etc. The Councils would urge the Government to set stringent targets for all developers which will require them to conduct their construction processes in the most carbon efficient way.

There will also be effects of the construction process and completed HS2 on the natural environment particularly linked to severance of key habitats and in some cases destruction of habitat. However, the County Council is working positively with HS2 Ltd to ensure they consider mitigations for Leicestershire's natural environment at all stages of the railway development. We would urge to government to consider pressing HS2 Ltd to achieve biodiversity net gain along the route rather than a neutral balance – this should be achievable along the green corridor that the new railway provides.

Q7. Aside from those delivered by improved connectivity and greater capacity, what broader impacts on people's quality of life could the investments you identified have?

These rail investments would bring economic investment to Leicester and Leicestershire through the new connectivity and capacity the railway bring. The county is currently very poorly connected by rail links to other major economic centres (paragraphs 2.5 & 2.6). Better rail connections will encourage more key businesses to locate in Leicester and it will bring employment opportunities to people from outside of the County. It will also open up the employment market outside of Leicestershire to its residents through improving rail commuter routes to other major cities.

Q8. How would the costs and benefits of the investments you identified be distributed economically, socially and geographically

The additional connectivity provided when HS2 will allow jobs and employment to spread upwards from the South and contribute to balancing the economy further North. This coupled with the additional regional connectivity provided by the classic rail network will distribute these benefits even wider across the country. It will allow more people better access to quality rail services into the major economic centres.

Q9. Which set of investments would best improve rail connectivity with Scotland?
- If these are different to the investments you identified above, please explain why.

Provision of the classic compatible link at the HS2 East Midlands hub (Toton) and the MML electrification will open up connections between the south and north as it will allow classic compatible high-speed trains to run on both networks. Therefore, there will be faster services between Leicester and Leicestershire stations and the North via the Toton HS2 junction which will allow more efficient onwards connections to Scotland (sections 3 & 5).

Q10. What would be the impact of the investments you identified on connectivity between the Midlands and the north, and other parts of the UK?

- Please explain where and how impacts would occur.

As described above the impacts of the investments would greatly improve connectivity between the Midlands and the North and other parts of the UK. The positive impact of integrating the high-speed network with the classic rail network will allow greater connectivity options for passengers, increased capacity for both passengers and freight and opens up greater employment options to a wider market. The economic effects of improving connection options between London and the North aids rebalancing the economy and future investment in a wider variety of economic centres.

Q11. What would be the impact of the investments you identified on international connectivity across the Midlands and the north?

These investments would provide direct connections from the HS2 network at Toton via Leicester to the Eurostar services at London St Pancras, providing faster and increased connections to continental Europe. In addition, the integration of HS2 and the classic rail network will provide better connections to regional airports e.g. East Midlands and Manchester, therefore relieving pressure on London Airports (section 5).

1. Introduction and Purpose

1.1 HS2 is important for Leicestershire. Phase 2b is planned to pass through the County along the M42/A42 corridor. Although no stations are proposed along this route, its construction and operation is expected to support significant improvements to transport connectivity for County and City residents.

1.2 This document sets out the Councils view of how an integrated rail plan could be developed so that the full potential of an integrated rail network can contribute to the economic, social and environmental wellbeing of the East Midlands, the wider United Kingdom, and beyond - to London St. Pancras International and via the Thameslink network to Luton Airport and Gatwick Airport. It evidences how an integrated rail network can be maximised to improve efficiency and value for money.

1.3 The key areas where these benefits can be realised, in deliverability priority order, are:

- A classic compatible link at HS2 East Midlands Hub (Toton). This link (in conjunction with the following two points) is fundamental to introducing service enhancements enabled by HS2 that directly benefit Leicester and Leicestershire, as well as many other locations (section 3)
- Investing in the capacity and quality of Leicester station - along with the infrastructure serving it - to ensure that these benefits (and possibly opportunities for other more localised benefits) can be delivered (section 4)
- Completion of full electrification of the MML (section 5)
- Securing the benefits of the Midlands Connect proposals to enhance the connectivity of the East Midlands to a wide range of poorly-connected regional and national centres (section 6).

1.4 As set out in the Executive Summary, the Councils actively engage on rail planning and strategy matters in collaboration, recognising rail transport as a key driver for economic growth, vital to improve connectivity and as a contributor to social inclusion. In addition, improved passenger rail connectivity and greater capacity for rail freight will help to reduce road travel and domestic flights, thereby bringing about overall transport de-carbonisation benefits.

1.5 The Councils are active as members of Midlands Connect and of Transport for the East Midlands (TfEM), supporting and influencing planning functions of those bodies. The Councils' active engagement with these bodies is also a reflection on Leicestershire's relatively poor rail connectivity to key regional and national hubs.

1.6 The Councils work with Midlands Connect on local and regional improvements. These improvements are vital and complementary to the delivery of HS2. We have strongly supported and engaged with Midlands Connect's work on the business cases for Midlands Rail Hub, new services between Coventry and Leicester and on classic compatible services between Bedford, Leicester and Leeds via the Eastern leg of HS2. We are also engaging with Network Rail's study into future capacity needs in the Leicester area through their Continuous Modular Strategic Planning (CMSP) process which is currently underway.

2. Policy and Strategic Background

2.1 As described in the executive summary, the Councils published Leicester and Leicestershire Joint Rail Strategy in March 2017. The strategy sets out five key priorities:

- to maximise benefits from Midland Mainline services
- to maximise benefits from of HS2
- to improve connectivity to major economic centres
- to ensure rail access and economic development are planned together
- to support modal shift from road to rail.

2.2 The Rail Strategy supports The Leicester and Leicestershire Strategic Growth Plan[4], published in 2018, by the area's local authorities and Leicester and Leicestershire LEP (LLEP). The Strategic Growth Plan sets out:

- how expected population and economic growth will be accommodated and supported
- how existing problems can be resolved
- what type of development is needed and by when
- what is the most appropriate location for these developments
- which environmental assets should be protected and enhanced
- what investment in services and infrastructure is required where and by when.

2.3 It forecasts a need for 96,600 additional homes by 2031, and a potential need for 187,100 by 2050. Similarly, large scale increases in land allocated to employment are also projected. The Plan also clearly states the need for investment in infrastructure to support this growth, for example, page 6 says:

- "*We are very clear that significant new development cannot be accommodated within Leicester & Leicestershire without significant investment in infrastructure and services. We welcome government's recognition of this problem at a national and regional level…."*

2.4 The map on the front cover (**Figure 1**), taken from the Strategic Growth Plan, shows the current thinking on where and how this growth will be accommodated and the essential infrastructure required to support it.

2.5 The Leicester and Leicestershire Rail Strategy identifies that, despite their location in the centre of the UK, Leicester and Leicestershire are poorly connected to many of the key regional economies of growth - especially compared to other economies of similar size in the Midlands. For example, Leicester has no direct services to Manchester, Leeds, the North East, Coventry, the Thames Valley or the South West. The service between Leicester and Birmingham is slow – between 48 and 56 minutes for a journey of 40 miles. Connectivity to East Anglia and the east coast ports is also slow and infrequent.

[4] https://www.llstrategicgrowthplan.org.uk/wp-content/uploads/2019/01/Final-LL-SGP-December-2018-1.pdf

2.6 Research by *The Independent* in August 2019, and reported widely in the press, showed that Leicester is “the worst-connected big city in Britain in terms of rail links”; and that “the East Midlands city has a narrower range of train services than a village in Cornwall”.

2.7 The strategy focuses on targets for improved services both in the medium and longer term. Local services, especially between Leicester and Birmingham are currently crowded at peak times, and in the future inter-city services on the MML between Leicester and London will also face similar challenges if HS2 Phase 2b is not delivered. This is illustrated in **Figure 2**.

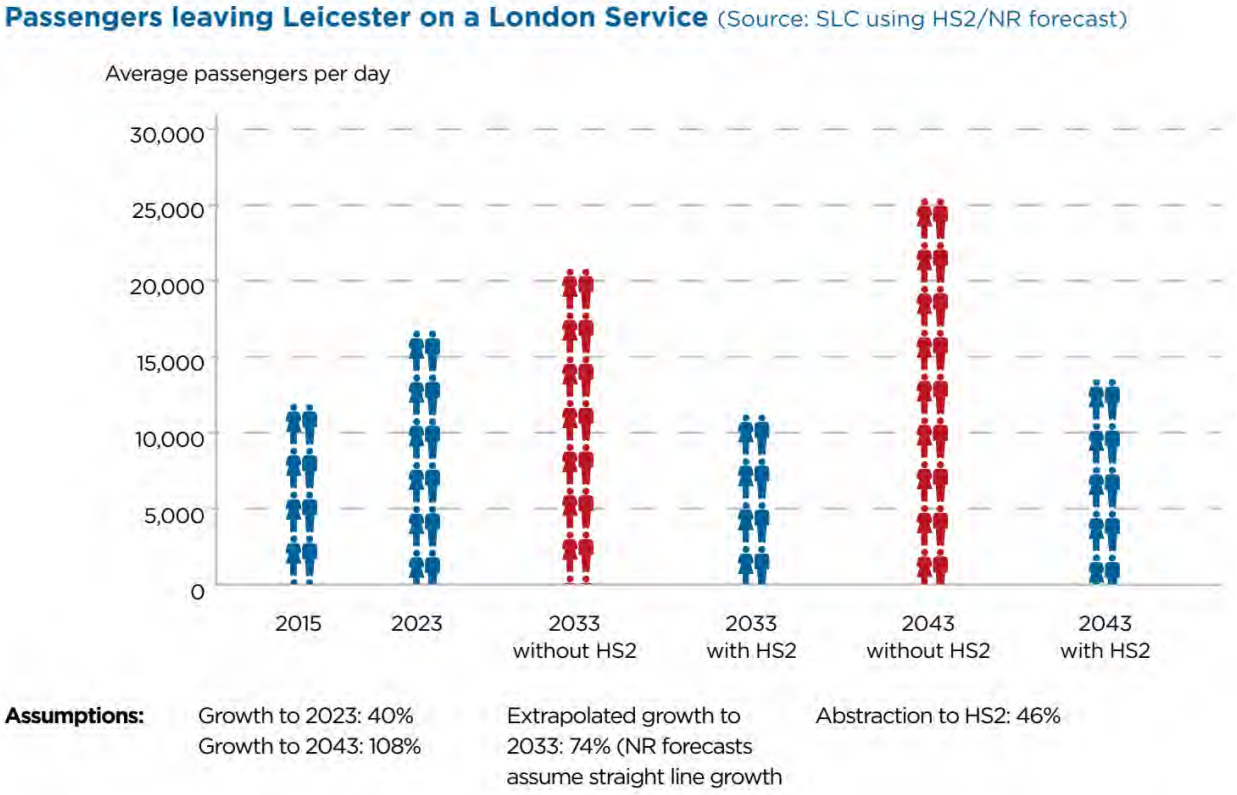

Figure 2: Passengers leaving Leicester on a London service

2.8 Leicester City Council declared a ‘Climate Emergency’ in February 2019, and Leicestershire County Council did so in May 2019. Detailed environment strategies will emerge to addresses this emergency. This strategy has sets a commitment to reduce Carbon Emissions for Leicestershire to nett zero by 2050.

2.9 The Government is developing an ambitious plan to accelerate the decarbonisation of transport in the UK. Its recently published document published document ‘Decarbonising Transport’ (March 2020)[5] sets out 6 strategic policies for transport decarbonisation which include ‘Accelerating modal shift to public and active transport; Decarbonising how we get our goods; and Reducing carbon in a global economy. All of these objectives can be supported by improved rail connectivity and capacity through a less carbon intensive (electrified) rail network. The document identifies passenger and freight rail travel as less carbon intensive and having less greenhouse gas emissions than road or air travel.

[5] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/878642/decarbonising-transport-setting-the-challenge.pdf

2.10 A better connected rail transport system with increased opportunities to travel locally and over long distances by rail (including links abroad via London) will cut down our reliance on roads and flights as a mode of transport and support this modal shift which our National and Local Climate Change policies advocate.

3. Direct rail link between the Midland Main Line and the HS2 East Midlands Hub Station at Toton

3.1 The Councils welcome the economic benefits from HS2 which will be felt not only by the residents of Leicestershire but also by the wider region and on a national scale. Whilst HS2 phase 1 will bring some benefits to those at the south end of the county who may currently use the West Coast Main Line, the principal benefits of the new railway for Leicester and Leicestershire will derive from HS2 phase 2b. The MML is likely to remain more attractive for most London-bound journeys from the County.

3.2 The construction of a junction at the East Midlands Hub to enable connection of the MML and HS2 is critical to connectivity and maximising the benefits of the rail network. This connection supports the Bedford-Leeds business case developed by Midlands Connect and actively worked on by DfT and HS2 Ltd.

3.3 Though the main benefits this connection at Toton are will only be realised in conjunction with electrification of the Midland Mainline, at a minimum, this link should be included within the HS2 design as early as possible to allow this option to progress. The design of HS2 is already underway for phase 2b and the addition of the junction at Toton within this design process will allow the future MML link to be added when the electrification project is ready to progress, this removing its dependency on the timelines for HS2 delivery.

3.4 This link to HS2 will also be key to future transport efficiency allowing classic compatible high-speed trains to run seamlessly from the HS2 line onto the MML – removing the need for passengers to change trains between these networks.

3.5 The best result for Leicestershire and Leicester is for the Eastern leg of HS2 to be built and opened in its entirety as soon as possible and include this connection at Toton. This is because for most residents of the county the principle benefit will be for northbound travel (to Sheffield, Leeds and the North East) and this will require the Eastern Leg to be built in full. The Councils would not be adverse in principle to the concept of a phased construction, providing that this:

- is delivered in the context of an ongoing commitment to complete the Leg in its entirety
- does not result in delays to the completion of the Leg
- aids the integrated delivery of the Leg with other projects, especially where such integration brings forward the earlier realisation of benefits
- phasing does not adversely impact the delivery of wider growth and economic strategies aligned to, and dependent on, delivery of the Eastern Leg.

3.6 The Councils would wish to see an end to planning blight and uncertainty for homeowners and business along the course of the proposed route through Leicestershire as soon as possible. We are urging Government, therefore, to resolve the continuing uncertainty regarding the route, the legislative process and a commitment to construction. Certainty is needed at the earliest opportunity, to allow investors to make appropriate and timely business decisions.

3.7 If the junction at East Midlands Hub is not included in the scope of HS2 then significant connectivity gains would be lost. Recent work by Network Rail for the CMSP Project forecast an improvement in Generalised Journey Time[6] of 94 minutes, along with similar significant improvements for other stations on the MML in Northamptonshire and Bedfordshire.

3.8 One of the key connectivity "gaps" for Leicestershire and Leicester is to Manchester. The indicative service pattern for the MML after the Eastern Leg of HS2 has opened is included in the HS2 business plan documentation[7]. This shows that a consequence of HS2 is likely to be the curtailment of one of the two trains per hour between London St. Pancras and Sheffield at Derby, because HS2 service will provide the London – Sheffield link. A significant potential benefit of an integrated approach is that this service could be extended to Manchester, delivering direct connectivity between Leicestershire and the North West that is currently lacking.

3.9 As described above, the classic compatible connection to the HS2 East Midlands hub station at Toton must be included with HS2 designs at the earliest opportunity. Similarly, upgrades to Leicester station must be completed before electrification of the MML takes place otherwise there is a risk to the fundamental operation of the station to allow electric trains to pass through.

[6] Generalised Journey Time is a measure of perceived journey time for passengers, including "in vehicle" time, a frequency penalty and an interchange penalty.
[7] PfM V8.0

4. Leicester Station capacity and quality improvements

4.1 Leicester Rail Station has been passed over for investment for over thirty years. It is now no longer adequate in terms of capacity or quality to support the demand that is forecast or the future expectations of passengers.

4.2 All of the Midlands Connect projects and the proposed shuttle services between Leicester and the East Midlands Hub will put additional pressure on the operation of Leicester station and the rail infrastructure supporting it. It will therefore be vital to address much needed improvements to Leicester station to enable the wide-ranging connectivity benefits to be realised. Such improvements will rely on upgrades to:

- the station itself – its capacity, its quality, and its ability to function as a high-quality gateway
- the infrastructure – its capacity in terms of approach tracks and platforms to cater for the additional trains envisaged.

4.3 Leicester City Council, East Midlands Railway and Network Rail, with the support of all other industry stakeholders, are determined to address this, and during 2019 worked to develop a Masterplan for the station and the area around it. The Masterplan seeks to make the station a high-quality gateway to the City, support regeneration of the area around it, and make it a destination in its own right.

4.4 The Masterplan has the following features:

- a widened entrance from the platforms with more ticket gates to cater for future demand and reduce journey times
- an opened out and refurbished ticket hall with a new entrance to the city centre
- development of the attractive Victorian Porte Cochere into a retail and eat and drink destination
- better arrangements for transport interchange and enhanced public realm
- a multi-storey car park to replace the current at-grade station car park, with more capacity and with the use of the released land for office development, of which there is shortage in Leicester city centre.

4.5 A visualisation of the scheme is shown in **Figure 3.** The scheme has a BCR of 2.7:1, and a scheme to develop a first phase of the Masterplan was the subject of an unsuccessful Transforming Cities Fund bid in late 2019. However, the fundamental need for the scheme as part of an integrated rail plan for Midlands remains unchanged. The Strategic Outline Business Case developed for the scheme will be submitted to the NIC along with this response document. The CMSP project being led by Network Rail (see paragraph 1.6 above, and the following two paragraphs) will include a more detailed analysis of forecast passenger movements around the station and is expected to confirm that the on-station capacity works incorporated into the Masterplan will be needed in any event.

Figure 3: Visualisation of an improved Leicester Station

4.6 The CMSP project is also reviewing the other central requirement to facilitate the improvements in connectivity described in this document: namely, enhancement of track and signalling on the approaches to and within the station area. Also critical is a need to accommodate future rail freight traffic. Some of this traffic originates in Leicestershire (quarrying and increasingly logistic) and is important to the county's and region's economy. Leicester is also a hub where long distance freight from the East Anglia ports such as Immingham - crosses the MML to reach logistic terminals in the West Midlands. The recent development of the 'East Midlands Gateway' inland port at Junction 24 of the M1 also critically relies on smooth passage of rail freight through Leicester.

4.7 The CMSP work is still underway at the time of writing, but the initial conclusions confirm that to achieve the train services proposed under the Midlands Rail Hub, Coventry-Leicester, the HS2 projects and projected rail freight requirements an enhancement scheme between Wigston Junction and the north end of Leicester station will be required.

4.8 As briefly mentioned in paragraph 3.9, the timing of the required improvement works at Leicester station and in the surrounding area is critical to the other investments the Councils seek as part of this Integrated Rail Plan. The improvement works, particularly to track and passenger capacity will need to be undertaken before the MML electrification progresses. If progressed in reverse order, i.e. electrification first, at best there is the likelihood of potentially significant abortive works (e.g. electrification equipment having to be moved to allow for the improvements) or at worst the location of equipment imposes insurmountable constraints on the scope / scale of the improvement works, leading to the delivery of sub-optimal solutions.

5. Midland Main Line electrification

5.1 Leicester – along with other locations not directly served by to the high-speed network – may see conventional services suffer with frequency and journey times being diluted by the transfer of long-distance passengers to HS2. Services may become more outer-suburban in nature, resulting in more intermediate stops and longer journey times to and from various destinations on the Midland Mainline. However, it has been estimated[8] that each additional call made between Leicester and St. Pancras (for example) would adversely affect Leicester's economy by some £4m GVA, or about £1m per minute.

5.2 The electrification proposal has a BCR of over 2:1 and is sufficiently robust to support the electrification of the relevant route sections identified in paragraph **Error! Reference source not found.**. Such a service would integrate many HS2 and classic network related benefits, including:

- journey time reductions from towns and cities at the Southern End of the MML to Leeds
- greatly improved connectivity between Leicester and West Yorkshire
- connectivity between the proposed East West Rail Oxford-Cambridge route and the East Midlands and West Yorkshire via interchange at Bedford
- improved international connectivity to continental Europe via the Leicester connection to St Pancras.

5.3 Electrification is also vital to delivering de-carbonisation (paragraph 2.9). and efficiencies in operating costs. Operating under electric power is likely to save c.50% in vehicle operating costs per vehicle mile compared to a current Class 222s used on MML services, and c.30% compared to the proposed bi-mode trains[9].

5.4 Electrification is currently underway as far north as Kettering. A phased completion of electrification is recommended, integrated with plans for HS2, as shown in **Figure 4**, on page 17.

5.5 By completing this work, the benefits of electrification can be shared by both MML and HS2 customers and operators as both projects gain from the same investment. Fully electrifying the MML would enable bi-mode trains to be converted to all-electric, and would:

- reduce carbon emissions through a reduction in diesel option
- provide resilience to the wider rail network, including HS2, through the provision of electrified diversionary routes (giving a secondary route to London for HS2)
- make possible additional journey time improvements on the MML, not viable with the heavier bi-mode trains
- substantially reduce operating and maintenance costs.

5.6 Electrification of the Midland Mainline would also allow classic compatible high-speed rolling stock to make direct passenger journeys, with no changes, from Leeds (and beyond from the North-East and Scotland), to destinations such as Bedford (joining

[8] GVA modelling by Systra in 2016

[9] Analysis by SLC Rail

Thameslink services, including Luton and Gatwick airports), and to London St Pancras International (for onward Eurostar services). Though slightly longer in journey time than going to Euston, the convenience of less changes for some passenger destinations (i.e. to Eurostar services) could make this their preferred route.

Phasing	Miles	Cumulative % of Route	Comment
As currently existing and being built	79	47%	Under construction for opening in 2020. Requires a new power supply at Market Harborough.
Kettering – Market Harborough	11	53%	Subject to current business case being developed by Network Rail for delivery by 2023.
Market Harborough – Leicester	16	63%	Market Harborough power supply sufficient to electrify to Leicester. Required for HS2 classic compatible Bedford – Leeds services, ultimately allowing the HS2 'classic compatible rolling stock to make end-to-end journeys between Glasgow and ultimately London St Pancras International, via the HS2 eastern leg through Toton, with no passenger changes.
Leicester – Trent Junction – Nottingham	24	77%	Required for HS2 classic compatible services, including Bedford – Leeds (proposed).
Clay Cross – Sheffield	16	86%	Required for HS2 Phase 2b (proposed).
Trent Junction – Derby – Clay Cross	24	100%	Remaining gap (proposed).

Figure 4: Phased completion of Midland Main Line electrification, planned and proposed

5.7 The Councils accept that it is likely that the construction of the HS2 station at Leeds will be one of the more difficult and time-consuming elements of Eastern Leg construction and that it may be difficult to accommodate the Bedford – Leeds service in the existing Leeds station. However, if Northern Powerhouse Rail identify that early delivery of the HS2 station is essential for delivery of their projects, then the Councils would urge for this service to be introduced as soon as the station is opened.

6. Wider rail improvements

6.1 Demand for services on the conventional network is expected to continue to grow over the next 20 years[10]. When HS2 Phase 2b is completed, passengers from Nottingham, Derby and further north are expected to transfer to the new high-speed service. This will free up capacity from Leicester and further south to accommodate expected increases in demand, as shown in Figure 2 in paragraph 2.7 above.

6.2 Therefore, a key consideration of an integrated rail plan for the Midlands should be to improve and develop inter-city services on the MML in advance of HS2 Phase 2b. These services, once operational, will then act as a bedrock for further future service development. To develop the MML sufficiently to provide such services, the Councils view is that it is key to complete electrification of the route at the earliest opportunity.

6.3 In order to deliver on connectivity priorities from the Council's Rail Strategy, the Councils have been supporting Midlands Connect in the development of the following projects[11]:

- the Midlands Rail Hub project, which for Leicestershire will deliver two additional fast services per hour between Leicester and Birmingham
- Leicester-Coventry connection. This project will see the introduction of direct fast services between these two cities. They are the only large cities at a similar distance not connected by direct trains in the country
- Classic Compatible Bedford-Leeds, utilising the connection between Leicester and the HS2 East Midlands hub as discussed in section 3 above.

6.4 Additionally, the opportunity for release of capacity on the MML after HS2 opens to provide new Leicester – Manchester connectivity, as identified in paragraph 3.8.

6.5 These proposals address the key weaknesses in Leicester and Leicestershire's connectivity highlighted in the Councils' Rail Strategy. The current slow and poor connectivity on these routes does not support modal shift and de-carbonisation, a strategic priority as set out in the Governments 'Decarbonising Transport' document (as refenced in paragraph 2.9). **Figure 5** illustrates the current and potential rail connectivity gains.

6.6 **Figure 5**, on the next page, does not show the full matrix of potential connectivity benefits arising from these integrated proposals. Others include:

- links to the comprehensive Thameslink network connecting with large parts of Kent and Sussex via interchange at Bedford
- a wide range of connectivity benefits through interchange at Bedford between classic compatible Leeds-Bedford services and East West Rail (e.g. Leeds – Cambridge c.134 minutes compared by 171 minutes today)
- improved connectivity between Leicester and the Thames Valley either via East West Rail or via interchange at Coventry

[10] For example, Network Rail East Midlands Route Study 2015 forecasted an increase in passenger numbers in the East Midlands as a whole of between 53% and 114% by 2043.

[11] The business cases for these have been submitted to DfT and we understand that Midlands Connect will provide these to the NIC.

- improved connectivity between Leicester and the South West via an enhanced service to Birmingham.

6.7

Between Leicester and:	Current Frequency and Faster Journey Time	Potential Including Estimated Journey Time	Comment
Birmingham	2 tph[12] 48 mins	4 tph 44 mins	Midlands Rail Hub project
Coventry	No direct trains 48 mins	2 tph 38 mins	Midlands Connect project
Leeds	No regular direct trains 2 hours 27 mins	1 tph 50 mins	Midlands Connect proposal: HS2 Classic compatible
Manchester	No direct trains 1 hour 58 mins	1 tph 95 mins	Potential benefit of HS2 released capacity

Figure 5: Current and proposed train frequency between Leicester and illustrative cities

6.8 Improved connectivity will also increase rail freight capacity in the Midlands region. As mentioned above (paragraph 0) the new East Midlands Gateway Rail Freight terminal near junction 24 of the M1 greatly increases the opportunity to move more goods by rail and reduce reliance on road haulage. In 2013/14 the rail freight sector delivered £0.5 billion worth of benefits to the UK in terms of congestion reduction, environment and safety[13]. Rail freight produces 76% less carbon dioxide per tonne of cargo relative to road haulage[14] and each freight train removes up to 76 lorries from the road.

6.9 In addition to the above, any opportunities to improve rail connectivity within Leicester and Leicestershire to support future growth, such as reintroducing passenger services to the Leicester to Burton line (the Ivanhoe Line) should be actively considered. HS2 legacy works that could provide a platform to help facilitate this would be welcome.

[12] Tph = trains per hour each way
[13] https://www.networkrail.co.uk/wp-content/uploads/2017/04/Freight-Network-Study-April-2017.pdf
[14] Network Rail (2013) Value and importance of rail freight

7. Conclusion

7.1 The delivery of the benefits from investments in HS2 Eastern Arm, Leicester station improvements, completion of MML electrification and Midlands Connect projects carry a number of key dependencies between them, but as a package represent an integrated rail plan that the Councils commend to the NIC.

7.2 This document has set out the requirements the Councils believe are essential for achieving an integrated rail plan that meets the needs of its residents and businesses, as well as delivering wider benefits to the Midlands Region and the United Kingdom over the next 20 years.

7.3 In summary the Councils would wish to see included in the integrated plan:

- earliest delivery of the HS2 Ph2b Eastern arm in full
- a direct rail connection at the HS2 East Midlands hub at Toton to enable classic compatible services to operate between HS2 and MML
- investment in the quality and capacity of Leicester station to ensure these benefits can be delivered
- phased completion of full MML electrification associated with, or in advance of, the delivery of the Eastern Leg of HS2, along with the carbon benefits that this will bring
- delivery of the Midlands Rail Hub projects, phased as necessary to deliver the widest possible maximum benefits at the earliest practical opportunities.

7.4 A key point is that investments in the HS2 Eastern Arm (including the classic compatible link), Leicester station, MML electrification and Midlands Connect projects should come forward in this order of priority to enable a practical sequence of deliverable projects. In this order, they can deliver the most benefits for; connectivity and capacity, for rail users, for the environment, and for the operational efficiency of the rail network.

7.5 The Councils stand ready to assist NIC with its work in any way that would be helpful.

May 2020
Leicestershire County Council
Leicester City Council

Questions / Clarification, please contact:
Leicester City Council - Garry Scott garry.scott@leicester.gov.uk
Leicestershire County Council - Bernard Evans bernard.evans@leics.gov.uk

Attachment:
Strategic Outline Business Case for Leicester Station.

Leicester
City Council

Leicester Rail Station

Strategic Outline Business Case

In Support of Theme 1 of Transforming Cities Fund Tranche 2 Bid to DfT

November 2019

Contents

Table of Figures

1. Executive Summary

Leicester Rail Station has been passed over for investment for over thirty years. It is now no longer adequate in terms of capacity or quality to support the demand that is forecast or the future expectations of passengers.

Leicester City Council, East Midlands Railway and Network Rail, with the support of all other industry stakeholders, are determined to address this, and over the last year have been working together to develop a Masterplan for the station and the area around it. The Masterplan seeks to make the station a high-quality gateway to the City, support regeneration of the area around it, and make it a destination in its own right.

As part of Leicester City's Transforming Cities Fund Tranche 2 Bid, the first phase of this Masterplan has been identified as a project that has strong deliverability for 2023 and which achieves the TCF objectives. In summary, in the station building the scope includes clearing and refurbishing the historic Porte Cochere as a destination zone, stripping back clutter from the ticket hall and widening the gate-line. At the north end of the station the project includes replacement of the platform footbridge with a wider, covered bridge with lifts leading straight into a multi-storey car park constructed on part of the existing station car park site, which will raise quality and passenger security and reduce access times. Taxis and drop off are relocated to the west of the site next to a refurbished rear entrance to the station, and with direct sight lines to a much-enhanced public transport offer close by. Hence, the scheme links directly to other parts of Theme 1 within the City Council's TCF Bid, including better walking routes into the City, and better bus provision at the station including a new electric bus route to the key hubs in the City.

The proposal meets the TCF objectives by:

- Improving capacity throughout the station
- Improving accessibility for passengers travelling by rail and to employment zones
- Encouraging modal shift to rail, supporting train services being planned by Midlands Connect in the longer term, and improving air quality
- Creating a sense of place at the station, and facilitating regeneration of the area around it, in support of wider social and community benefit

The capital cost estimate for the station is £36.7m in today's prices. The scheme is high value for money, with a BCR of 2.75, and remains robust in all downside sensitivities tested. Private sector match funding of £4.3m has been committed.

In addition, the scheme requires no ongoing revenue subsidy, and is financially sustainable. Over 60 years the scheme is cash positive.

Leicester City has identified a robust procurement strategy using its own Framework contractors, and early contractor engagement has taken place, giving confidence that the scheme will be delivered within the TCF funding backstop of March 2023. A strong consultancy team, which has been working on the Masterplan from the beginning, complements the Council's in-house resources.

The Governance arrangements, overseen by the elected City Mayor, and supported by the strong Station Board comprising industry stakeholders, has been in place and working effectively for many months.

We look forward to working with the DfT to take this project forward as the first phase of an exciting Masterplan to give Leicester the station it needs.

2. Strategic Case

2.1 Introduction

The purpose of this document is to support the Tranche 2 Transforming Cities Fund bid being made by Leicester City Council.

"Connecting Leicester" is the over-arching vision of the City Mayor to provide a better-connected city, creating an attractive environment for residents, businesses, shoppers, students and visitors. Since 2012 £60m has been invested to deliver 25 high profile improvements to the city centre.

The ambition is now to extend that programme out from the centre and incorporate other sustainable modes of transport. A key part of Theme 1 of the TCF bid is to deliver significant improvements to the connectivity of and environment around the station. This forms the first phase of delivery of a Masterplan for the station.

This Strategic Case describes the Masterplan and the place of the TCF bid within it, including the strategic need and the rationale for selecting the preferred scheme for the TCF. We also describe how the scheme meets the objectives set out for the TCF scheme by the DfT, and how it is intended to measure the success of the programme.

2.2 The Strategic Need

The Leicester Rail Station elements of this TCF bid form the first phase of the delivery of a Masterplan for the station and its surrounding area, and should be seen in that context.

Leicester station has 237 train services per day, and caters for c.17,000 passengers per day – or 5.4m pa . In terms of the East Midlands cities, this makes it busier than Derby (at 4.1m pa) but much less so than Nottingham (at 7.9m). However, it is underperforming in its contribution to the growth and prosperity of the city: for example its urban population is 40% higher than Nottingham's, but its rail use is 30% lower. The graph below shows that over the last 10 years usage of Nottingham and Derby stations has significantly outstripped that at Leicester.

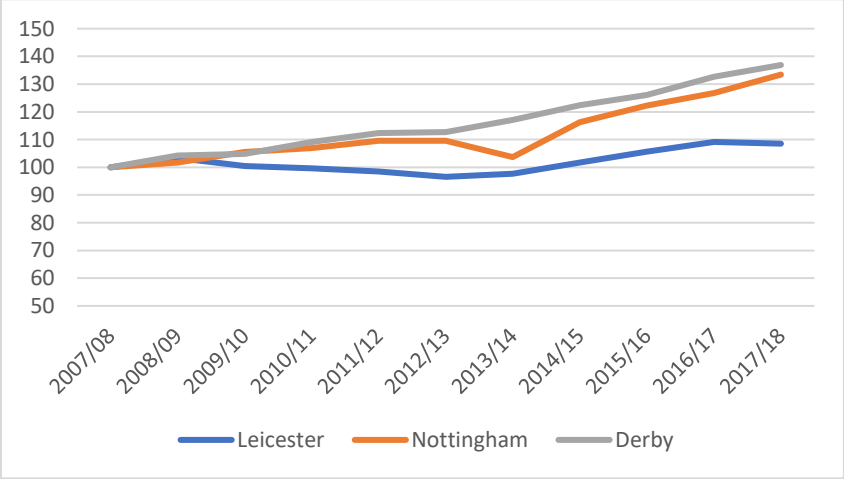

Figure 1 - Growth in passenger usage (2007/08=100)

The Leicester and Leicestershire Rail Strategy, adopted and published by the City and County Councils in March 2017, identified that Leicester's poor connectivity by rail, except to London, was a key factor that needed to be addressed to support the City and County's economic growth. This is reflected in the key priorities identified in the Strategy:

- To maximise the benefit from the Midland Main Line services
- To achieve the best result from the implementation of HS2 Phase 2
- To improve radically direct fast connectivity to key regional and national destinations, recognised as currently poor
- To ensure that rail access and economic development are planned together
- To support modal shift from cars and lorries to sustainable transport

Midlands Connect in their strategy published in April 2017 also identified improved connectivity between Leicester and Birmingham and Coventry as a key priority for train service development, and business cases for these improvements are at various stages of discussion with the DfT. Midlands Connect, HS2 and the DfT are also working on options for services to connect Leicester into the HS2 network on the opening of Phase 2b. All this means that the train services at Leicester station are likely to be significantly increased over the next decade and a half, addressing the City's current poor connectivity. The table below illustrates the potential change.

TODAY		2033	
From South	To North	From South	To North
4 from London	4 to Nottingham and Sheffield	4 from London	4 to Nottingham and Sheffield
2 from Birmingham	1 to Stansted	4 from Birmingham	1 to Stansted
	1 to Lincoln	2 from Coventry	2 to East Midlands Interchange
			1 to Lincoln
1 freight	1 freight	2 freights	2 freights
7	**7**	**11**	**9**

Figure 2 - Potential improvements in services at Leicester

These improvements will mean that Leicester's residents will be much better connected by rail to other key economic centres – especially in the West Midlands and the north (via HS2) – than currently, and demand for rail travel is likely to grow significantly as a consequence. Even without these additional services, forecasting work for this SOBC has shown that unconstrained demand, with any external factors taken into account would be an additional 1.8m passengers by 2035 and 3.3m more by 2045 (see Figure 17 in the Economic Case).

Network Rail is undertaking on behalf of the industry a Continuous Modular Strategic Planning Study (CMSP) for the Leicester area, which will be complete in Spring 2020. This will identify capacity enhancements to the operational infrastructure necessary to support the proposed services in Figure 2.

However, the station itself does not have the capacity to accommodate the unconstrained “base line” demand let alone the additional demand arising from new and improved services. Without investment demand will be suppressed below these levels by constraints on access through the station and in links for inward/onward travel.

In addition, the quality of the station is insufficient for it to act as a high quality gateway for the City to support a move to sustainable transport through the City and its economic development.

There has been no significant investment in the station since 1978 when levels of demand were less than half their current level. By contrast, the comparable stations in cities on the Midland Main Line at Derby, Nottingham and Sheffield have all seen major investment over the last 20 years in quality, facilities, capacity and in their interaction with the cities they serve. The results of this under-investment at Leicester are that:

- The area around the station forms an island dominated by cars, meaning that accessing the station by sustainable means is unpleasant and difficult.
- Wayfinding and sight lines between the station and the City Centre are poor.
- The station itself, despite having some fine 19th century architectural features, presents a cramped and dingy image of the City.
- The capacity of parts of the station is unlikely to be sufficient to cater for future growth, even under a scenario where there are no service improvements
- This constraint would become even more of a problem if Midlands Connect is successful in delivering the service in the scenario presented in Figure 2 above.

The photographs in Figure 3 below illustrate just some of these problems, in comparison to Sheffield and Nottingham stations.

According to the latest Indices of Deprivation (2019) dataset, Leicester is the 32nd most deprived local authority in England, and the areas that surround the railway station are all amongst the most deprived 20% of areas nationally. Income deprivation is a particular issue around the railway station with two areas featuring in the most deprived 5% in the country. Access for people with disabilities at Leicester, whilst possible, is convoluted and unattractive. Any scheme at the station should seek to address problems of wider access, through creating more opportunity for public transport connectivity, and more employment in the vicinity.

Figure 3 - Leicester station compared poorly to other on the Midland Main Line

2.3 Developing the Station Masterplan

In order to address these weaknesses, the City Council with its partners in the rail industry established a Station Board with agreed terms of reference in February 2019. A Station Working Group was also established, reporting to this Board, and undertook a master-planning exercise for the station and its surrounding area, linking directly to and integrating with the connectivity development work being undertaken throughout the City for this TCF bid. The Station Board includes a cross-functional team from the City Council, specialist rail advisors and architects, Network Rail, East Midlands Railway, Cross Country Trains and Midlands Connect.

Initially a set of objectives for the Masterplan was developed, as below.

- *Meet growing needs of rail business – Midlands Connect Plans*
- *Improved customer experience both in and around the station*
- *Improved station building and entrance, better related to the city centre gateway*
- *More efficient and effective station building layout*
- *Better connectivity and integration between rail transport and buses, cyclists, pedestrians and taxis*
- *Improved commercial use of the station building, including the Porte Cochere*
- *Enhanced car parking provision in the form of a multistorey car park, freeing significant space for commercial development*
- *Act as a catalyst for regeneration in the immediate area, including new Grade A office space*

Figure 4 - Masterplan objectives

It was quickly recognised that:

- Some of these objectives would take time to develop and deliver, and would fall beyond the timeframe of the TCF Tranche 2 process. For example, significant work to the station buildings would require multiple rail industry consents and complex funding assembly.
- Some of the City's wider objectives go beyond those set out for TCF Tranche 2. For example, the development of additional office space close to the station, whilst an important strategic objective, is not a TCF objective, although it is complementary to it.

For these reasons it was decided to take the Masterplan forward in a phased way as a long-term plan. This is summarised on the graphic below.

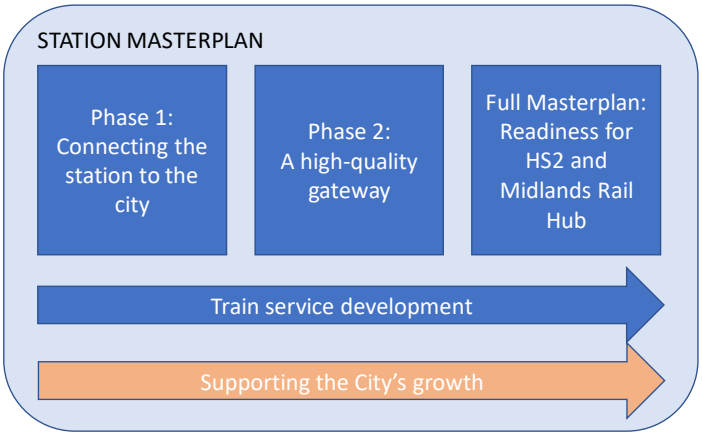

Figure 5 - Station Masterplan long-term plan

As shown in Figure 5 there are three main phases to the Master Plan:

Phase 1 brings the station visually closer to the city, improves public realm and connectivity between rail and all other modes, reduces passenger transit times through the station, and creates a high-quality public space inside the Porte Cochere. Phase 1 is the subject of this TCF bid.

Phase 2 – envisaged to be delivered after 2023 - significantly enhances the ticket hall and creates a new "gateway" entrance to the city. It also includes redevelopment of the old Royal Mail sorting office outside the station.

The full Masterplan is dependent on the results of the CMSP study in preparation for the introduction of new and improved train services for Midlands Connect and HS2. The earlier phases make passive provision for additional platforms that may be required. It also includes development of office space on part of the station car park.

The selection of the preferred scheme for Phase 1 needed to be in the context of a preferred scheme for the whole of the Masterplan, so that the right solution for that phase was achieved. The process undertaken for developing a preferred scheme is described in detail in the Concept Design Feasibility Report included at Appendix A.

A number of potential scheme solutions were developed iteratively by a Railway Station Working Group, and then an option selection process was undertaken, marking each attribute of the options against the objectives of the Station Masterplan set out in Figure 4.

From this process a number of potential options for the Station Masterplan were eliminated. These are briefly described in the table below.

Option Description	Reason for Elimination
Rebuild of the station	The current station building has significant heritage value, and parts are listed. The building can be re-purposed. A re-build is unlikely to offer value for money.
Use of Porte Cochere as main station concourse, accessed directly from the platforms	Whilst this is the approach taken in Sheffield (see photographs above), the proximity to London Road – a busy artery into the City – would make this difficult. It would also increase access times from the station to the City and to onward means of transport longer and less intuitive.
Relocation of some station facilities and car parking to east side of the station	This would place these facilities in the opposite direction for passengers from the City. There are also potential land ownership problems

Figure 6 - Options discounted

Following the optioneering and assessment process described in the Concept Design Feasibility Report at Appendix A, the Station Board approved a preferred option (Called Option A1 at that point) in June 2019, shortly before the submission of the draft SOBC under TCF Tranche 2. The graphics below illustrate the key features of the preferred Masterplan option.

Figure 7 - Leicester Rail Station Masterplan

2.4 Process for Identifying TCF Bid Preferred Option

Since submission of the draft SOBC to the TCF team in June 2019, the work – overseen by the Station Board – has focussed on identifying a preferred option for the station for inclusion in the wider Leicester TCF bid. The objectives of this work have been to identify a scheme that:

- Achieves the TCF objectives
- Can be delivered with confidence by the conclusion of TCF funding in March 2023
- Is proportionate in cost to the rest of the City's proposals for the bid
- Works as a first phase of delivery of the Station Masterplan

The table below identifies which parts of the Masterplan have been included/discounted for inclusion in the preferred TCF bid based on the above objectives.

Element of Masterplan	Reason for Including/Excluding in TCF Bid	Included/Excluded
Widening gate-line	This is important in order to improve capacity for passenger flows and release suppressed demand through reduction in journey times through the station. In order to achieve this a "light refurbishment" and removal of two retail units to the Porte Cochere is required.	INCLUDED
Refurbishing Porte Cochere	This is important in order to create wider social and economic benefits for the community of a new destination space in this part of the city. The uplift in the quality of the station environment it will bring will encourage more people to use the station.	INCLUDED
New taxi rank/drop off area	The removal of the taxi rank and drop off space from the Porte Cochere is necessary in order to free it for refurbishment and re-purposing. It also solves a congestion problem with the current arrangement whereby taxis have to start their journey heading south before looping and heading north.	INCLUDED
Improved rear entrance to station	This facilitates passenger access to taxis, drop off area,cycle store, walking routes and the new bus ranks and services being created on this side of the station.	INCLUDED
Multi-storey car park, including EMR committed increase, and new footbridge at north end of station	This greatly improves accessibility for all modes through the new footbridge and lifts that will provide level access to the parking bays for passengers with impaired mobility. It will also reduce journey times for passengers to reach their carsand provide a better passenger experience. The proposal increases parking to 683 spaces from the current 472. However, EMR have a franchise commitment to increase this by 186, and this	INCLUDED

	match funding has been incorporated into the scheme.	
Office development	Whilst the creation of additional office space in the area around the station is an important objective of the City Council and of the Station Masterplan, it would not meet the objectives for TCF Tranche 2. However, by funding improvements to station car parking as part of the match funding for the bid, space can be created close to the station for future office development.	EXCLUDED
Redevelopment of passenger concourse	Whilst this forms a key part of the Masterplan, and is entirely consistent with the TCF objectives, it is unlikely that this could be achieved within the TCF timeframes or cost proportionality. It does, however, form phase 2 of the Masterplan proposals.	EXCLUDED
Acquisition and demolition of Parcel Yard buildings in order to create new high quality entrance to station	These buildings occupy the corner of the station complex facing the city. Whilst the preferred option for the Masterplan (see below) does include this in order to enhance public realm and the relationship between the City and Station further, it was felt that this element of the Masterplan could not be achieved within the TCF timeframes or cost proportionality.	EXCLUDED
Construction of car parking required to meet a 30 year forecast of demand	The construction of a larger car park to cater for future forecast demand (883 spaces as identified in the Economic Case) is facilitated by the proposed design of the 683 space car park through the ability for it to be extended sideways. We are mindful of TCF Guidance about futureproofing (either that the extra car parking will be required in the future, or that changes in gig-economy services and widespread use of on-demand autonomous vehicles mean that it will not be required).	EXCLUDED
New platforms to accommodate new services	These services are not yet committed, although they are under development. However Network Rail's CMSP will confirm whether new platforms are required, and this reports in Spring 2020. It would be premature, therefore, to include these, although our designs will provide passive provision for future platform construction.	EXCLUDED

Figure 8 - Elements included/discounted for inclusion in TCF bid

2.5 Description of TCF Bid Preferred Option

The process detailed in section 2.4 then enabled the Station Board to settle on and formally approve a preferred option for TCF submission on 13th November 2019. This is called Phase 1 Option a, and

forms the “LOW SCENARIO” bid under the TCF guidance. The “MEDIUM SCENARIO” is the same as this but includes the larger car park (this is called Phase 1 Option b), and the “HIGH SCENARIO” includes all elements of the Masterplan save for the office development and new platforms (ie it includes both Phase 1 and Phase 2.

The graphics below show the preferred TCF option – Phase 1 Option a.

Figure 9 - Leicester Rail Station - Preferred TCF Option (Phase 1 Option a)

The table below describes the scope of the preferred option in more detail. The Concept Design Feasibility Report attached at Appendix A includes more detail on the other two options.

Area Location	Preferred TCF Bid - Phase 1 Option a (LOW COST)
Taxi rank/public realm	• Taxi Rank – including extending along-side of MSCP to accommodate a 30 space taxi rank (existing 15 spaces in Porte Cochere and 15 spaces along Conduit St) • Loop road to taxi rank and access road along old sorting office • Relocate grade II listed pillars
Rear entrance to station	• Covered housing and cover bin store including ventilation • New stair access and form improved entrance to ground level ticket office • Allowance to make station entrance more attractive • Canopy/ cover to new taxi rank area • New staircase from taxi rank to gate-line – either external adjacent bin store (move bin store location) or internal from lower ground to ground floor • Glazed screening to the external façade, creating a new external wall which encompasses the stairs and bin store
Porte Cochere	• Complete strip out of existing building and refurbishment to correct poor state of repair to fabric (refer building condition survey) • New glazed roof covering • Rationalise ramps and stairs to entrance to make them sympathetic with the future retail and the potential pub/Food & Beverage offer • Provide an internal secure bike store circa 100 bike spaces • Glazing to entrance doorways/arches • New tiled flooring • Relocated pop up retail units • Pop up retail for the remainder of the porte cochere (modular single storey build) • Services to all retail units
Ticket office, gate line and concourse	• Reconfigure ticket office and waiting area to accommodate new gate line of total 12 gates within ticket office area - 2 of which to be wide gates • Allowance for light refurbishment of the existing bridge where gates removed • Modify and re-align existing ticket office and relocate ticket machines as required • Relocate some existing retail space to Porte Cochere to achieve number of gates • No demolition of existing bridge or ticket office
Station Street	• NOT INCLUDED • Resurface Station Road as public realm. This cost sits in Theme 1 road and links for Phase 1a
MSCP & Car park	• MSCP (Option 1a – 683 parking spaces) • Short stay, drop-off and parking for people with disabilities • Surface Car Park 1a - allowance for taxi entrance for taxi rank at rear of MSCP plus allowance for Bus Replacement Service stacking/parking within this area and NR access to platform and tracks

	• Access Road to Car Park - between MSCP and future office development • Demolish existing footbridge • Provide new footbridge/lifts and stairs • 2 nr gates, 1 wide and 1 normal • Electric vehicle charging points • Associated public realm and surfacing works • Retention of platform zero zone and taxi rank line adjacent to MSCP • Provide external secure bike store and storage to ground floor of MSCP

Figure 10 - Detailed scope of preferred TCF option

2.6 How Preferred Option Meets TCF Objectives

The following table shows how the rail station elements which are the subject of this TCF bid meet the objectives set out for the TCF scheme.

TCF Objective	Contribution to TCF Objectives
Focus on improving capacity on commuting trips, access to employment centres, enterprise zones and developments sites, improving reliability and supporting economic growth	The scheme will improve access by rail to a wide number of locations throughout the City, including the City Centre, by bus, walking and cycling. The scheme increases the capacity of the throughput of passengers by increasing the width of the gate line, and thus reduces journey times. The new Multi-Storey Car Park will also reduce journey times for passengers. The quality uplift at the station, including the Porte Cochere and car park, will encourage more people to travel by train, and facilitate (for example through retail/leisure in the porte cochere) the station becoming a destination in its own right. The scheme will facilitate significant future office development (Campbell Street and old station car park) which will bring employment right next to the station, enabling people to directly access their jobs.
Reducing carbon emissions	The scheme will encourage more people to make connecting journeys onto/from a rail journey by sustainable means, with easier access to bus and cycle storage/hire, and more intuitive and desirable walking routes. By improving these means and through an uplift in station quality, more people will be encouraged to travel by rail rather than to make their whole journey by car. When longer term train service improvements being developed by Midlands Connect and HS2 are introduced,

	this trend will accelerate, as new journey opportunities will be available by rail which are now generally made by car (such as Coventry to Leicester).
Help to deliver wider social and economic benefits for the community	The scheme will support social inclusion through enabling people from poorer families to access the rail network more easily, as well as enabling interchange between public transport modes (eg through using the free electric bus from the station to Leicester's hubs, including St. Margaret's Bus Station. The creation of an attractive zone around and in the station will support regeneration of the area and allow people more access to local facilities as a "destination".
Support housing delivery	The scheme will facilitate more journeys that can connect new housing development to places of employment in and outside the city. The city centre apartment market is a major contributor of housing supply, which will increasingly rely on demand from city centre office workers, and the station scheme facilitates the delivery of that office space.
Bring about improvements to air quality	The scheme will encourage more people to make connecting journeys onto/from a rail journey by sustainable means, with easier access to bus and cycle storage/hire, and more intuitive and desirable walking routes. Many of the buses proposes will be electric. Cumulatively, therefore, this will improve air quality around the station area. The removal of taxis and drop-off vehicles from the Porte Cochere will remove fumes from this semi-internal part of the station and significantly improve air quality within it.
Align to Future of Mobility Grand Challenge	The creation of public realm and new transport interchange points around the station will enable the rail industry and the City Council to adapt service provision to cater for new modes of mobility, including connected and autonomous vehicles. The creation of the station quarter as a destination (including cafes in the Porte Cochere) will facilitate connected lifestyles, so people can meet at the station

	with full access to the internet, supporting urbanisation at the same time.
Represent good value for money and deliver additional benefits over LTP/already funded	The approach to rail appraisal in the Economic Case of this SOBC describes how the preferred option has a high value for money case with a BCR of 2.75. By taking an integrated and phased approach to the rejuvenation of the station and the area around it, the TCF scheme forms the first phase of a Masterplan that will enable new and multiple sources of funding to be brought together for future phase, delivering an uplift which each individual element of the scheme on its own could not do. For example, the inclusion of new office space in the Masterplan is complementary to the creation of the station area as a destination, and to the proximity of the station to employment, allowing people to travel by train to work. The BCR of the increment between the Masterplan and the TCF proposal for the station also has a high value for money business case, as can be seen from Figure 37 in the Economic Case.
Be financially sustainable	As demonstrated in the Finance Case section within this SOBC, the TCF proposal for the station is revenue positive in every year, meaning that the proposal does not require subsidy or any ongoing support from the Government.
Incorporate a credible delivery plan	The Management Case within this SOBC shows how the scheme has a credible programme, with a full Governance Structure in place. The Commercial Case within this SOBC shows how Leicester's proposed procurement strategy using its own Framework Contractors, and the early contractor engagement it has already undertaken, will minimise delivery risk. This TCF bid takes a cautious and robust approach for how much of the Master Plan can be delivered within the TCF Tranche 2 funding timeframe.
Be affordable in relation to the overall funding available	The station elements of Leicester's TCF bid are £36.7m in 2019 prices out of a total bid of £116.5m (in the LOW scenario).

Include a commitment to make a sizeable private and/or local contribution towards overall costs	Of the station elements, the committed private sector match funding contribution is £4.3m.

Figure 11 - How the Leicester Rail Station elements of the TCF bid meet the TCF objectives

The DfT also issued separate guidance on additional objectives for station developments that were being included in TCF bids. The table below illustrates how our preferred TCF scheme meets these additional objectives.

Additional TCF Objective for Station Development	Contribution to TCF Objectives
Ensure safety and security	The replacement of the current large surface car park with a high quality, well-lit, patrolled multi-storey with CCTV monitoring will greatly improve security for passengers. The re-purposing of the Porte Cochere will also bring that area to life throughout the darker evenings as an attractive destination, bring greater security (and also a perception of security). The additional station staff included in our operating costs (5 FTEs for the gate-line and for security) will provide more reassurance to passengers. The improvements to public realm – with better lighting and longer sight-lines will also help. We have already consulted with the Counter-Terrorism Unit and will build their recommendations into the final designs. An overall Threat and Vulnerability Assessment will be undertaken as part of the detailed design process as per Network Rail's requirements for a Category B station.
Improve journeys	As described in Figure 11 our TCF proposals will: • Reduce journey times through the station for passengers through the provision of a wider gate line and more car parking capacity • Provide a highly quality environment for passengers through refurbishing and re-purposing of the Porte Cochere, through a better quality walk to the car park, with lifts and a covered footbridge
Drive long-term efficiency and greater commercialisation	The TCF scheme for the station requires no subsidy as described in the Financial Case to this SOBC, and therefore is financially sustainable.

	The re-purposing of the Porte Cochere will create a net increase of 377 sq m of retail space in the Porte Cochere. Initial market informal soundings have been taken of retailers/food and beverage firms in Leicester and interest has been expressed. Further phases of the Masterplan will create more retail opportunities in the area around the station, and the multi-story car park has the benefit of creating space on the old station car park for office development to support over 2,000 jobs. Our plans support the additional services being actively planned by Midlands Connect, DfT and HS2 by providing more capacity for these passengers, and releasing suppressed demand. Our plans make passive provision within the Masterplan for additional platforms that may be proposed by Network Rail in their CMSP study.
Be environmentally sustainable	Our TCF plans make it easier for passengers to access and egress the station by environmentally friendly forms of transport. This includes better walking routes into the City, closer bus ranks and the new electric bus routes connecting to the station, and better provision for cycle storage. The additional car parking spaces will reduce the number of journeys undertaken the whole way by car, as reflected in the Marginal External Congestion Cost values including in the appraisal in the Economic Case in this SOBC.
Integrate with local place and foster "place-making"	The re-purposing of the Porte Cochere will make it a destination in its own right, enabling people to meet to socialise or do business. It will also support the Leicester Road night-time economy. The creation of a public realm and new walk routes will bring the station closer to the City. The creation of a MSCP will facilitate a future stage of the Masterplan with the construction of new office development on the site of the old car park, strengthening the quality and sense of "place" of the area

	around the station. Office workers will naturally gravitate to the Porte Cochere for lunchtime and afterwork social time.
Help create wider social and community benefit	The TCF proposal creates a community space within the Porte Cochere. By raising the quality of the station environment we want Leicester's communities to have a sense of pride in their rail station as a civic amenity.

Figure 12 - How the Rail Station elements of the TCF bid meet the additional requirements for station developments

We have also taken account of the advice provided by the DfT on futureproofing TCF schemes, including:

- Phasing the Masterplan project so that commitment to future phases can be made in the context of future developments and trends.
- Not building all the car parking requirement forecast for 30 years, but providing for future expansion instead if it is needed.
- Developing the Station Street area, taxi rank and the circulatory space around the car park as a flexible space which can be re-purposed in future to adapt to future trends such as autonomous hail and ride cars.
- Making passive provision for future rail infrastructure development in response to service demand.

2.7 Impact of Programme on Rail Network

As described throughout this Strategic Case, the impact of the proposal on the rail network is expected to be wholly positive, as it provides more capacity and better quality environments for passengers, improves the ongoing financial and commercialisation position of the railway, and facilitates future service enhancements that are being planned for the long term by Midlands Connect and others.

2.8 Evidence of Stakeholder Support

The Station Board has given this TCF proposal its full support, and the key industry stakeholders who are on it – EMR, Network Rail, Cross Country Trains and Midlands Connect – are keen and ready to work with us on bringing these plans to fruition.

In addition, Leicester City Council has consulted with the Retail Forum, representing all the main retailers in the City, and the Leisure of Tourism Forum, representing hoteliers and tourist attractions in the City. There has been universal support for the TCF proposal as part of the Masterplan for the station.

Letters of support are included at Appendix B as follows:

- East Midlands Railway

- Network Rail
- Cross Country Trains
- Midlands Connect
- Leicester Retail Forum
- Leicester Leisure and Tourism Forum
- East Midlands Chamber of Commerce

Public consultation will follow confirmation of funding.

Throughout the development process we have welcome DfT's engagement on our emerging proposals, and their attendance at the Station Board. Our responses to the DfT's feedback and questions is included at Appendix C.

2.9 Measuring the Success of the Programme at Leicester Station

The key measures of success for the Leicester Rail Station elements of the proposal will be:

- Whether more passengers using the train will access the station by sustainable modes
- Whether the scheme facilitates growth in passengers using the railway
- Whether the station area becomes a destination in its own right
- Whether the scheme supports through its success the ongoing delivery of future phases of the Station Masterplan

The following table identifies how the Partners on the Station Board propose to measure the success of the rail station elements of the TCF proposal.

Impact/Outcome	Measures of Success	Proposed Data Source/Analysis
More rail passengers will access station by sustainable modes and passenger flows will be smoother	Percentage of passengers by mode accessing/egressing the station	Annual survey of passengers accessing the station and speed of access through the gate line EMR Season Ticket Data
Facilitates growth in passengers using the station and more access to employment	Passenger growth meet or exceed projections	EMR journey data from Lennon
Station area becomes a destination in its own right	Number of people using facilities (eg cafes) in the area	Footfall data from retails
Supports the delivery of future phases of Station Master Plan	Future phases are delivered	Progress in delivering plans

Figure 13 - Measures of success

3. Economic Case

3.1 Introduction

In August 2019 SYSTRA was commissioned by SLC Rail on behalf of Leicester City Council to develop the economic case for a Transforming Cities Fund (TCF) bid for a series of improvements to Leicester station.

Leicester station is located on the Midland Mainline and has direct services to London, Sheffield, Nottingham, Birmingham, Lincoln and Stansted Airport. Over the last 20 years demand at the station has grown by approaching 70%, however the station facilities have remained largely unchanged. The current station was largely constructed in 1894 to the design of Midland Railway's Chief Architect Charles Trubshaw. However, the station was heavily rebuilt in 1978 to a design largely unsympathetic to the previous buildings. This rebuild including the construction of a new ticket hall and footbridge, which over time has become more congested and ultimately will have the effect of suppressing demand for the station.

Three scheme options have now been developed to improve the station facilities which are outlined below:

- Phase 1 Option a (low cost) – TCF scheme with 683 space car park
- Phase 1 Option b (medium cost) – as Option 1a plus increase in spaces in MSCP to 883
- Phase 1 and Phase 2 (high cost) – masterplan scheme with 883 space car park

The TCF bid relates only to Phase 1 Option a, whilst Phase 2 could be delivered in the long term building on the benefits in Option 1a. Phase 1 Option 1b was also appraised as part of the process of identifying the most suitable option. The table below summarises the components of the scheme.

	LOW Phase 1 Option a	MEDIUM Phase 1 Option b	HIGH Phase 1 and 2
683 space car park & new north footbridge	✓		
883 space car park & new north footbridge		✓	✓
Taxi & Public Realm works	✓	✓	✓
Refurbished rear entrance to station	✓	✓	✓
Porte Cochere refurbishment & retail	✓	✓	✓
Gate line relocated to concourse	✓	✓	✓
Concourse light refurbishment	✓	✓	
Concourse heavy refurbishment			✓
Demolition of parcel office building			✓
Statement entrance to station			✓

Figure 14 - Options tested in economic modelling

This Economic Case sets out the approach to assessing the costs and benefits for the options set out above. Detailed results have only been presented for Option 1a which is the focus of the TCF bid. We begin with an explanation of the approach to assessing future demand at Leicester station without

the scheme, before moving on to discuss the approach to assessing the benefits of the scheme and appraising it.

3.2 Base Scenarios

3.2.1 Introduction

Within this section we present the approach taken to establishing background demand growth at Leicester station. Understanding this was essential to understanding how changes at the station would impact on trip making especially in relation to understanding how the station will act as a barrier to delivering this demand growth through the suppression of demand when car parks and statins facilities become constrained.

3.2.2 Base Demand

Base demand data was provided by East Midlands Railway (EMR). EMR provided LENNON data for trips and revenue for all origins and destinations to / from Leicester by ticket type.

LENNON data was used in preference to MOIRA as it provides greater granularity around ticket types, revenues and origin and destinations than data contained within MOIRA and in any case background growth would have to be assessed outside of the MOIRA programme.

A multi-stage process was applied to clean the data. The first step was to make the data easier to manage and to ensure the data could be effectively processed within the later stages of the analysis, therefore an exercise was undertaken to group some stations together. All stations which were likely to be affected by service improvements (discussed in section 3.2.4) were kept as individual flows, all other flows were assigned to their Government Office Region. A suitable proxy station was then chosen for each government office region based on the highest flow station for that region according to ORR Station Usage Data (for example for the North East this is Newcastle). Where the station with the highest usage was already listed as an individual flow (and therefore impacted by service improvements) the next highest station was chosen to avoid overestimating the impact of service improvements. This data cleaning resulted in all trips being assigned to a total of 53 stations for the analysis.

The total trips given in the East Midlands Railway (EMR) data (5.15m) was lower than the ORR station usage data for Leicester. Therefore, the EMR data was used to calculate the trip distribution and then was inflated to 5.39m total passengers to align with ORR data.

To prepare the data for demand forecasting and appraisal, each origin-destination pair and ticket type combination was split into ‘commute’, ‘business’ and ‘other’ trips using TAG table A5.3.2 Journey Purpose / Ticket Type Splits by Flow Category. To do this, each origin-destination pair was assigned to an appropriate TAG databook flow category for example a trip between Leicester and Sheffield was categorised as ‘Outside South East 25 to 100 miles’.

The data sources and assumptions for the base demand calculations are summarised in the table below.

Data	Value / Detail	Source
Base passengers trip distribution	-	East Midlands Railway LENNON data
Total base passengers	5,392,710	ORR Station Usage Data 2017-18
Journey purpose splits	-	TAG Table A5.3.2

Figure 15 - Base demand data sources

3.2.3 Background Growth

Background growth was calculated following the PDFH v6 Simplified Framework (sections B2.6 and B2.7). The following datasets were used in the calculations:

Framework Parameter	Data Source
GVA per capita	TAG forecast GDP
GJT trend	PDFH Table B2.6
Population	NTEM forecasts (from TEMPro 7.2 dataset)
Employment	NTEM forecasts (from TEMPro 7.2 dataset)
Car cost	TAG fuel and non-fuel costs combined with UK government office region average speeds
Car time	Forecast average speeds by region and area type (large urban, urban or rural)
Bus travel time and headway	N/A = Assumed to stay the same

Figure 16 - Background growth data sources

30 sets of background growth rates were calculated (15 for season ticket trips and 15 for other trips).

Four sets of these growth rates were based on Leicester origin trips:

- Leicester to / from London
- Leicester <25 miles
- Leicester 25 to 100 miles
- Leicester over 100 miles

The other 11 sets of growth rates were calculated for Leicester destination trips. Season and other growth rates were calculated for each Government Office Region.

For each OD pair in the dataset an average of the Leicester origin and Leicester destination trip rate was applied. For example, for a trip to Birmingham an average of the West Midlands regional rate and the Leicester to destinations 25 to 100 miles away rate was used. For London trips, only the Leicester origin trip rate was applied to avoid overestimating the growth in rail trips.

The table below summarises the forecast growth in base demand for the station.

	2018	2025	2035	2045
Total demand at station	5.39m	5.93m	7.17m	8.66m

Figure 17 - Demand growth

3.2.4 Service Improvements (Sensitivity Test)

A second base scenario was developed as a sensitivity test to account for additional (currently non-committed train services), all of which are under active development by Midlands Connect or as part of the reference case for HS2. The potential services are shown in the table below.

Future	Date
London-Leicester-Derby-Manchester	2033
Birmingham-Leicester	2030
Birmingham-Leicester	2030
Coventry-Leicester-Nottingham	2030
Coventry-Leicester-Nottingham	2030
Bedford-Leicester-East Midlands Hub-Leeds	2033
Leicester-East Midlands Hub-Nottingham	2033
Leicester-East Midlands Hub-Derby	2033

Figure 18 - Additional service aspirations

To determine the impact of these changes, generalised journey times (GJTs) were first calculated for the do minimum scenario. These GJTs were calculated based on journey time, frequency and interchange (from the National Rail journey planner). Interchange and headway penalties were then applied from PDFH Table B4.11 and B4.13.

Next, timetables were created for the 2030 and 2033 scenarios based on publicly available information (including Sectional Running Times for existing services from Real Time Trains). A 'do something' GJT was then calculated using the journey times for the new timetable and interchange and headway penalties.

Elasticity values specific to each OD pair were then acquired from PDFH Tables B4.2 to B4.6. For example, for a trip between Leicester and London the 'Rest of Country to and from London Travelcard Area' elasticity was used. The generalised journey times and elasticities were then combined into the formula below to calculate the demand uplift.

$$\%\ Change\ in\ demand = \left(\frac{GJT_{new}}{GJT_{base}}\right)^{\wedge\ elasticity}$$

Lags were then applied from table B4.8 Demand by period resulting from lags to the resultant demand uplift for four years following the introduction of each group of services.

The data used for the service uplift improvements is summarised in the table below:

Data	Source
Base journey times, interchanges and frequencies	National Rail journey planner
Frequency / interchange penalties	PDFH Tables B4.11 and B4.13
GJT elasticities	PDFH Tables B4.2 to B4.6
Demand lags	PDFH Table B4.8

Figure 19 - Data sources for service improvements

All calculations described in this section were carried out in an excel spreadsheet.

3.3 Demand Forecasts

3.3.1 Introduction

Having identified the level of unconstrained demand growth at Leicester over the period to 2043 we then considered what the impact would be of the investment in the station. This took two forms. The first related to positive improvements in demand at the station and benefits to new users arising from improvements to the quality of the station. The second group relate to the impact of releasing suppressed demand. The demand figure calculated in the previous section assume no constraints on the delivery of the forecast growth. In practice the delivery of forecast demand at Leicester will ultimately be constrained by the lack car parking and capacity constraints in the station building most notably around the gate line.

The following sections describe our approach to considering these issues.

3.3.2 Station Quality Improvements

The uplift in demand as a result of station quality improvements was calculated following guidance in PDFH Chapter B8 Station Facilities. Table B8.1 Recommended Demand Uplifts for Station Quality Improvements gives percentage uplifts for different flow types for various station quality attributes. The Urban Regional and Intercity values were used for Leicester. A proportion of the uplift percentage for the following attributes was taken:

- No CCTV -> CCTV in station and surrounding area
- Some litter in station -> no litter
- Vending machine(s) -> small shop
- Wind shelters in some places, providing some protection -> waiting room, providing all round protection

Whilst the attributes given in the list above do not directly relate to the proposed scheme they have been considered to be suitable proxies for demand uplift as a result of the station scheme. However, as the uplift percentages were generally given on a scale of no or low provision (e.g. 'No CCTV') to high provision ('CCTV in station and surrounding area'), only a percentage of the total uplift value was claimed. For example, for waiting facilities only 25% of the uplift factor was claimed as there are

already waiting rooms at the station but there will be improvements to the concourse waiting areas as a result of the scheme. The following demand uplifts were calculated for the scheme.

Trip Purpose	Demand Uplift
Business / leisure	1.94%
Commute	1.20%

Figure 20 - Station improvement uplift

These uplifts were applied to both the base and sensitivity test forecasts.

3.3.3 Car Park

The basis for the car park demand forecasting was a car park survey undertaken over three days at Leicester station from Tuesday 10th September to Thursday 12th September 2019 (not in a school holiday). The data was provided to SYSTRA for the full 24-hour period in each day and split into 15-minute segments. For each 15-minute segment the number of arrivals, departures, average occupancy, maximum occupancy and minimum occupancy was provided.

Background growth was then applied to the car park occupancy figures in line with PDFH guidance as described in section 3.2.3. Based on the forecast occupancy values, and the current car park capacity of 472 spaces, it was then estimated within which year the car park would breach its capacity. From this calculation it was also possible to determine the minimum number of spaces that would be sufficient for the predicted occupancy levels. The table below summarises the projected car park usage and the number of spaces that would be required. The capacity required is based on a maximum 85% operating capacity.

	2023	2028	2033	2043
Max occupancy	420	458	517	690
Capacity required	495	539	608	812

Figure 21 - Car parking capacity required

3.3.4 Ticket Gates

Pedestrian and cycle count surveys were undertaken for all station entrances between 7am and 7pm between Tuesday 10th September and Thursday 12th September 2019. The data was provided to SYSTRA in 15-minute time segments.

SYSTRA used this data to calculate the total arrivals and departures to the station in each hour. These were split across the two footbridges at the station using travel survey data. Those arriving by car were assumed to use the footbridge at the back of the station whilst those using other modes were assumed to use the main footbridge.

The ticket gate calculations were undertaken in accordance with the Network Rail Station Capacity Assessment Guidance. The equation for gate lines for through platforms (section 2.4.2.2 was used, as detailed below):

$$roundup\left(\frac{5\ minute\ EntryFlow}{25\ x\ 5}\right) + roundup\left(\frac{Total\ number\ of\ exiting\ passengers}{25\ x\ 2}\right) + X$$

This guidance states that the calculation for the number of ticket gates should be based on the peak level of usage, therefore all calculations were based on the 5-6pm arrivals / departures. For the purpose of the calculation passengers were grouped into 5 minute and 15 minute periods depending on the direction of the flow. To do this, the total number of arrivals and departures in the peak hour was divided by the total number of trains arriving and departing to give an average number of arrivals / departures per train. The peak 15 minutes within the peak period was then identified based on the segment with the highest number of trains (17:08 – 17:23). The total number of arriving and departing passengers for this period was then calculated.

The arrivals and departures were then grouped into the required time slices (5 minutes for departures and 15 minutes for the number of exiting passengers as per section 2.3.1 of the guidance). Following the guidance, the alighting load of the busiest train was also increased by 25% to factor in delays.

The number of ticket gates required was forecast to 2043 based on a forecast of the number of arriving and departing passengers based on PDFH background growth guidance.

Suppressed demand

The demand at the station suppressed by the current ticket gate provision was also calculated. First, a percentage of passengers currently required to wait at the ticket gates in each year during the peak 15 minutes was calculated based on the number of gates required and the current provision at the station. From this, the average wait time per passenger was calculated by determining the number of minutes required to clear all passengers (based on the Network Rail Station Capacity Assessment Guidance calculation given above) and taking the mid-point.

To spread this analysis across the day the percentage of passengers waiting and the average time a passenger would need to wait was proportioned across all hours based on the passenger arrival and departure surveys undertaken by LCC. An average wait per passenger across the whole day was then calculated and corrected for less busy weekend use.

The average wait per passenger was then added to the GJTs described in section 3.2.4. The GJTs with and without the additional wait were then used within the demand equation to determine the percentage of passengers suppressed each year by destination and ticket type.

3.3.5 Data Sources

The data sources used in the demand forecasting exercise are given in the table below:

Data	Source
Station quality uplifts	Table B8.1
Car park usage	LCC surveys
Ticket gate usage	LCC surveys

Figure 22 - Demand forecasting data sources

All calculations described in this section were carried out in an Excel spreadsheet.

3.4 Appraisal

3.4.1 Introduction

This section sets out the approach to scheme appraisal for the various scheme components.

Where required, all benefits were converted to market prices using a factor of 1.19. All appraisal values were discounted using the discount rates given in TAG table A1.1.1.

3.4.2 Station Refurbishment

Three sets of benefits were calculated based on the station refurbishment element of the scheme: willingness to pay, marginal external cost and revenue. The methodology used to calculate these is described below.

Willingness to pay

Willingness to pay values were taken from PDFH Table C8.4 Rail package valuations. For Option 1a the value for the 'ticket hall' was used, for Phase 2 the value for the 'ticket hall' and the 'station environment' were combined. The original research from which the values were derived was published in 2008, therefore inflation (based on RPI) and the GDP deflator was applied to the values to align them with the 2010 base year. The original tables from PDFH C8.4 are shown in the table below.

Station **I**mprovement	Willingess to **P**ay **V**alue
Ticket hall	£0.362
Station environment	£0.211

Figure 23 - Willingness to pay values

Existing passengers received the full willingness to pay benefit, whilst new passengers (based on the demand uplifts described in section 3.3.2) received half of the willingness to pay value.

Marginal external cost

To calculate the marginal external cost impact, diversion factors from car to rail were first acquired from TAG Table A5.4.5. Each OD pair was assigned one of the categories in the TAG table, for example a trip from Leicester to Sheffield was categorised as 'Non-London Inter-Urban' with a diversion factor of 30%. Rail distances which had been calculated for the GJT analysis were used as a proxy for car distances to determine the total distance abstracted from car each year.

Marginal external cost values were acquired from TAG Table A5.4.4 Marginal external costs by region and time of day up to 2035. For each OD pair, an average marginal external cost for the origin and destination region was applied to the total abstracted distance.

Revenue

The LENNON data provided by EMR included revenue in addition to trips. It was therefore possible to calculate an average revenue for each OD pair and ticket type. The average revenue was combined with the uplifted passengers to calculate the total additional revenue as a result of the

scheme. The revenue forecasts were inflated using values from TAG table A5.3.1 and then rebased to 2010 using GDP deflator values from the TAG databook.

3.4.3 Car Park Expansion

Willingness to pay

Willingness to pay values were applied to the new car drivers accessing the station using the values outlined in paragraph 3.4.2. However, as these are new users they received only half of the benefit.

Rail revenue

The new car park users were assumed to have the same trip distribution as existing passengers at Leicester station, therefore the trip distribution referenced in section 3.2.2 was applied to the new passengers. Average revenues were then applied to uplifted demand along with inflation and GDP deflator values as outlined in section 3.4.2.

Marginal external cost

The marginal external cost benefit for the new car park users was calculated following the methodology outlined in section 3.4.2.

Car park revenue

Additional revenue as a result of car park expansion was calculated based on the car park usage forecasts described in section 3.3.3. As with rail revenue, the car park revenue values were inflated by RPI and deflated using the GDP deflator.

Scenario differences

For Option 1a the car park is expected to reach capacity in 2034, therefore for this option the benefits have been held constant after 2034, for all other options the capacity requirements was calculated to 2043.

3.4.4 Ticket Gates

Value of time

Using the analysis outlined in section 3.3.4 the value of time benefits as a result of the additional ticket gates were calculated using the forecast average additional wait times per passenger. Forecast market price values of time were applied from TAG table A1.3.2, these were weighted based on the purpose split for each flow. Base passengers received 100% of the value of time benefit whilst new users (based on station refurbishment and ticket gate suppression) received half of the benefit.

Revenue

Additional rail revenue was calculated for additional passengers using Leicester station who previously would have been suppressed under the current ticket gate provision. The suppressed passengers were split across the flows using the Leicester trip distribution and then average revenues were applied. As per section 3.4.2 revenue was inflated and the GDP deflator was applied.

Marginal external cost

The marginal external cost benefit for the suppressed demand was calculated following the methodology outlined above.

Willingness to pay

Willingness to pay values were applied to the new users using the values outlined in paragraph section 3.4.2. As these are new users the rule of a half was applied and they received only half of the benefit of an existing user.

3.4.5 Retail Revenue

There were two parts to the retail revenue appraisal: new revenue as a result of new units and lost revenue as a result of loss of retail space from the concourse area. The total lost revenue provided to SYSTRA was £45,000 per annum whilst the additional revenue was £160,000 per annum. As with the other revenue calculations the revenue figures were inflated using RPI and deflated using the GDP deflator.

3.4.6 Data Sources

The table below summarises the data sources that have been used in the appraisal.

Data	Detail	Source
Price base and discount year	2010	TAG guidance
Market price conversion	1.19	TAG guidance
Discount rates	-	TAG table A1.1.1
Appraisal period	60 years	TAG guidance
Willingness to pay	Ticket hall £0.362 Station environment £0.211	PDFH Table C8.4
Inflation		TAG Table A5.3.1
GDP deflator		TAG 'Annual Parameters'
Diversion factors	Flow specific	TAG Table A5.4.5
Marginal external cost	Regional values	TAG Table A5.4.4
Rail revenue	Average revenues	EMR data
Values of time		TAG Table A1.3.2
Retail revenue		SLC

Figure 24 - Appraisal data sources/assumptions

3.4.7 Costs

Capital costs were developed by Arcadis whilst additional station operating costs were developed by SLC Rail. A summary of the costs is given in the table below.

Option	Capital Cost	Operating Cost (Per Annum)
Phase 1 Option a	£39.63m	£504,265
Phase 1 Option b	£43.67m	£538,172
Phase 1 and 2	£60.25m	£572,078

Figure 25 - Cost summary

In line with the appraisal of benefits, all costs were converted to market prices using a factor of 1.19.

Two different rates of optimism bias were then applied which are shown in the table below.

Description	Rate	Source	Application
Building projects – stations and terminal buildings	51%	TAG Unit A1.2	Capital costs
Operational expenditure	41%	TAG Unit A5.3	Operating costs

Figure 26 - Optimism bias

Operating costs were inflated using RPI over the 60 year life of the appraisal. All costs were deflated to the DfT base year of 2010.

The capital cost of the scheme is to be funded through a combination of the Transforming Cities Fund and a £4.3m contribution from Abellio as part of their commitments in the East Midlands Railway franchise. The impact of the Abellio contribution is to reduce the Present Value of Costs as the contribution can be netted off form the total investment costs, but also to reduce the Present Value of Benefits as the costs can be deducted from the private sector provider benefits.

Similarly the operating costs have been treated as a negative benefit (cost to private sector provider). The exception to this is the change to the Station Long Term Charge (LTC) which although appearing as a cost to the private sector provider is transferred to the Present Value of Costs as this is where additional costs associated with Network Rail sit.

A summary of the total discounted costs for each option is provided below.

Cost	Phase 1 Option A	Phase 1 Option B	Phase 1 and 2
Capital Costs	£38.94m	£42.90m	£59.14m
Operating Cost	£17.27m	£18.43m	£19.59m
TOTAL PVC	**£56.21m**	**£61.33m**	**£78.73m**

Figure 27 – Discounted capital and operating costs (2010 PV £m)

The table below presents the costs to the broad transport budget for the options.

Cost	Phase 1 Option A	Phase 1 Option B	Phase 1 and 2
Costs to Broad Transport Budget	£34.47m	£38.43m	£54.67m

Figure 28 - Costs to broad transport budget (£m)

3.5 Appraisal Results

The results of the appraisal are set out in the section below. Detailed results have only been presented for Option 1a as this is the focus of the TCF bid.

3.5.1 Summary of Benefits

A breakdown of the present value of benefits for Option 1a is given in the table below.

Scheme Component	Benefit Type	Value (£m)
General station refurbishment	Revenue	£29.79
	Additional passengers WTP	£0.28
	Original passengers WTP	£33.25
	MECC	£6.08
Additional ticket gates	Base demand VoT	£10.67
	TCF2 VoT	£0.10
	Suppressed revenue	£11.22
	Suppressed WTP	£0.08
	Suppressed VoT	£0.03
	Suppressed MECC	£1.90
Car park expansion	Rail revenue	£9.91
	WTP	£0.05
	MECC	£1.99
	Car park revenue	£9.11
Retail	Additional retail	£2.93
	Lost retail	-£0.82

Figure 29 - Benefits breakdown (Option 1a)

3.5.2 Appraisal Results

Using the information described in this Economic Case, a scheme appraisal has been generated using the present values of costs and benefits. The table below presents the appraisal for the three options.

	Phase 1 Option A	Phase 1 Option B	Phase 1 and 2
PVC	£34.47m	£38.43m	£54.67m
PVB	£94.83m	£107.07m	£146.37m
NPV	£60.36m	£68.63m	£91.69m
BCR	**2.75**	**2.79**	**2.68**

Figure 30 - Scheme appraisal - method 1

The table above shows that all scenarios represent high value for money with a BCR in excess of 2.00.

The appraisal presented above is based on the assumption that revenues generated are treated as a benefit to the private sector provider, however DfT TAG Unit A5.3 Rail Appraisal requires a more

nuanced approach for the treatment of rail revenues. It requires that when the franchise for the train operator running a service is completed the revenues generated after that point flow to DfT rather than a private sector provider. The rationale for this is that when a franchisee is in place there is an agreed flow of subsidy or premia between the train operator and DfT and the additional revenues generated from the scheme are essentially a windfall to the train operator. When the franchise is completed then there is no certainty about the flow of subsidy and premia, and DfT therefore assume that revenues run to Central Government as the overseeing body. The approach taken to this is to assume that the revenues transfer from the train operator (private sector provider) to DfT as a deduction from the Present Value of Costs. Operating costs also transfer to DfT. The impact of this in the context of the scheme presented here is that the Present Value of Costs become negative as the revenues more than offset the costs, in the process rendering the BCR meaningless.

The implication of the appraisal below is that the scheme is cash positive over 60 years.

	Phase 1 Option A	Phase 1 Option B	Phase 1 and 2
PVC	-£10.40m	-£17.24m	-£17.21m
PVB	£49.96m	£51.39m	£74.48m
NPV	£60.35m	£68.63m	£91.69m
BCR	**N/A**	**N/A**	**N/A**

Figure 31 - Scheme appraisal - method 2

We note that the PVC is negative indicating that the revenues generated by the scheme offset the scheme costs. This means that across the whole project the scheme generates more revenue than it costs to deliver, however this may not necessarily mean that the scheme would be commercially viable due to the way in which the costs and revenues accrue to different organisations and different parts of the proposal.

3.5.3 Appraisal Results with New Services

As discussed in section 3.2.4 a sensitivity test was carried out to understand the impact of potential future services on the appraisal. The results of this are presented in the table below.

	Phase 1 Option A	Phase 1 Option B	Phase 1 and 2
PVC	£34.47m	£38.43m	£54.67m
PVB	£97.68m	£100.04m	£154.07m
NPV	£63.21	£61.61m	£99.40m
BCR	**2.83**	**2.60**	**2.81**

Figure 32 - Scheme appraisal with new services

3.5.4 Sensitivity Tests

In addition to the tests presented above, we have also undertaken a number of sensitivity tests to consider the robustness of the results. These tests are:

- An increase in capital costs of 20%
- A reduction in revenue of 20%
- An increase in capital costs of 20% with new services
- A reduction in revenue of 20% with new services

The results of these tests are presented in the tables below.

	Phase 1 Option A	Phase 1 Option B	Phase 1 and 2
PVC	£41.36m	£46.11m	£65.60m
PVB	£94.83m	£107.07m	£146.37m
NPV	£53.47m	£60.96m	£80.77m
BCR	**2.29**	**2.32**	**2.23**

Figure 33 - Scheme appraisal - cost increase of 20% (without new services)

	Phase 1 Option A	Phase 1 Option B	Phase 1 and 2
PVC	£34.47m	£38.43m	£54.67m
PVB	£82.79m	£92.25m	£146.37m
NPV	£48.32m	£53.82m	£91.69m
BCR	**2.40**	**2.40**	**2.68**

Figure 34 - Scheme appraisal - revenue decrease of 20% (without new services)

	Phase 1 Option A	Phase 1 Option B	Phase 1 and 2
PVC	£41.36m	£46.11m	£65.60m
PVB	£97.68m	£100.04m	£154.07m
NPV	£56.31	£53.93m	£88.47m
BCR	**2.36**	**2.17**	**2.34**

Figure 35 - Scheme appraisal - cost increase of 20% (with new services)

	Phase 1 Option A	Phase 1 Option B	Phase 1 and 2
PVC	£34.47m	£38.43m	£54.67m
PVB	£84.79m	£84.05m	£150.70m
NPV	£50.32m	£45.62m	£96.03m
BCR	**2.45**	**2.18**	**2.75**

Figure 36 - Scheme appraisal - revenue decrease of 20% (with new services)

The tables above show that in all of the tests the BCR remains above 2 meaning that the scheme would still represent high value for money.

3.5.5 TAG Appraisal Worksheets

Attached at Appendix D to this document are TAG appraisal worksheets for Phase 1 Options a, b and Phase 1 and 2, covering the following:

- Analysis of Monetised Costs and Benefits (ABCB) Table
- Public Accounts (PA) Table
- Economic Efficiency of the Transport System (TEE) Table

3.6 Summary and Value for Money Statement

Within this Economic Case we have considered and assessed the impacts of three options to improve Leicester station.

The table below summarises the appraisal values for each option.

	Phase 1 Option A	Phase 1 Option B	Phase 1 and 2
PVC	£34.47m	£38.43m	£54.67m
PVB	£94.83m	£107.07m	£146.37m
NPV	£60.36m	£68.63m	£91.69m
BCR	**2.75**	**2.79**	**2.68**

Figure 37 - Summary of value for money

We have demonstrated that Option 1a, the focus of this TCF bid, is expected to deliver high value for money with a BCR of 2.75.

4. Commercial Case

4.1 Initial Procurement Considerations and Strategy for SOBC

During the course of the project development from the June 2019 submission, the governance and delivery has been considered with emphasis on the RNEP process which has been agreed as the preferred route of project delivery for this Third-Party Scheme. This broadly aligns to both the GRIP stage engineering process, and the RIBA stages for design for sign off by all interested parties.

The scheme proposal (Phase 1 Option a) has been agreed and ratified as the preferred option for the TCF submission by the Leicester Train Station Project Board on 11 November 2019.

The scheme development has been based on the Client Brief and Client Requirement Documentation (Appendix H), which form the basis of the scheme design and proposals. There have been numerous meetings with key stakeholders and LCC procurement including Early Contractor Involvement (ECI) based on the TCF key requirements and objectives focusing on project delivery by March 2023.

During the next stages of the project development there will be a full detailed review of the procurement strategy and approach with further ECI, detailed consideration of routes to market and compliance with public procurement and state aid regulations.

The delivery programme timescales are considered by all parties consulted to be achievable with careful programming and a schedule of works to de-risk the next phase of design have been identified. These predominantly survey works will take place between December 2019 and March 2020 in order to achieve the key milestones throughout the proposed programme.

The following commentary has been written in support of the objective to achieve time, cost and quality with key emphasis on the Benefit Cost Ratio BCR and phased approach to meet the March 2023 completion date.

4.2 Project Elements

The station project consists of a number of elements including demolition, new build, heritage refurbishment, retail pop up units, public realm and highways works.

The location of works may be categorised as either:

- Directly affecting rail infrastructure and impacting on the operation of the railway
- Within operational areas of the station where works will disrupt passenger and station staff areas
- Potentially non-operational areas where passengers and station staff can be readily excluded without significantly affecting the management of the station

4.3 Potential Contracting Parties

There are three parties involved in the project who could potentially procure delivery of the proposed works:

- Network Rail (NR) as owner and manager of the rail infrastructure
- East Midlands Railway (EMR) as operator of the station and principal customer-facing organisation for rail users
- Leicester City Council (LCC) as third-party promoter of the development scheme

LCC, as recipient of the funding, will need to decide whether it contracts directly for the (design and/or construction) works, or whether it contracts with a third party to procure the works on its behalf (i.e. NR or EMR). The detailed Procurement review will enable a full assessment of the benefits of each contracting route and the selection of the mechanism that delivers both value for money and the programme milestones.

4.4 Relative Strengths of Contracting Parties

The three potential contracting bodies have relative strengths in different aspects of project management and stakeholder management which will inform decisions about which organisation is best placed to procure different construction elements. In summary:

Network Rail are equipped to undertake major infrastructure works around the tracks and platforms. They have extensive experience in infrastructure provision in a live-rail context which is heavily regulated by the rail industry's own processes and procedures. LCC has no relevant experience, and EMR's experience is limited. All works on NR land is governed by these processes.

EMR have extensive experience in managing refurbishment construction works in live station environments, and in managing rail users around those construction environments, for example, ensuring a clean and safe customer environment is maintained during construction works and crucially, that strong communication / high quality information is provided to customers about the works and impact they may have on travel. EMR would however have to undertake this role for any party undertaking the works, and re-charge accordingly. EMR would have key representation at project level meetings and Project Board meetings for compliance.

LCC have extensive experience in managing construction and development projects in non-rail settings. The Council has a deep understanding of managing contracts for works to the highway and public realm. With in-house conservation expertise and close links to key stakeholders such as Historic England and local interest groups, the Council has demonstrable strengths in delivering heritage-based development schemes. The Council also has access to Framework Agreements that both NR and EMR do not.

Considering the relative skill sets of the three organisations there may be a prima facie case to explore the option of commissioning Network Rail for example to procure delivery of the proposed footbridge and associated lifts to the platforms, given the interface with the track; and, for EMR to undertake procurement and management of the booking hall refurbishment and gate-line works, as an extension to their committed works on the platforms.

The Council plans to discuss the potential arrangements with Network Rail and EMR and finalise the procurement route and strategy jointly in more detail at the next stage of the project development as part of the de-risking activity prior to March 2020. The form of agreement in respect of cost risk will be crucial to the Council.

Should NR or EMR be able to commit to managing works on a fixed-price basis there may be a clear rationale for progressing as described above. However, should NR or EMR seek an implementation agreement structured on an emerging costs basis the Council will need to assess if it is better able to manage the cost risk on all aspects of the project itself, whilst working closely with its rail industry partners via a formal alliance.

LCC as an experienced highway and public realm contractor are best placed to undertake those works, including new highway provision within the rail station car park (car park access and taxi loop). The importance of co-ordinating these works with construction of the Multi-Storey Car Park suggests that the MSCP should also sit within a package of works procured by the Council.

The Porte Cochere, subject to alternative or partitioned access to the ticket office and removal of the taxis, would be a non-operational space, and heritage-led refurbishment. Works could be procured by any of the potential contracting parties.

It is understood that management and communication with key heritage stakeholders presented some challenges during the previous (2012) refurbishment and in this respect the City Council may be better suited to manage those relationships to deliver a better outcome than EMR or NR.

The Porte Cochere is, however, a structure over the railway. Any works of a structural nature which could affect the integrity of the arch supports over the tracks would be beyond the Council's scope of experience. This is a significant engineering risk.

Subject to the scope of works, there is a case for the City Council to lead on, or support EMR in, the Porte Cochere refurbishment with the caveat that Network Rail will need to be engaged for any structural elements.

4.5 Procurement Option Considerations

This Commercial Case does not consider the procurement routes that may be used by either EMR or NR. Both organisations have their own processes and procedures for procuring works. The Council can put either organisation in funds to procure the works to improve the station should it wish to, and subject to the requirement that any procuring party should comply with the relevant public procurement regulations and State Aid regulations.

Where the Council lets contracts for works itself, such works would be a public procurement and procurement rules and processes will apply. The Council has the option to use contractors from a pre-procured panel (framework contractors) or to use an open or restricted tender procedure.

Contract values will exceed OJEU thresholds for the work packages; therefore, OJEU-compliant routes will be used should a framework agreement not be appropriate, applicable or unsuitable.

Framework agreements are likely to be more expedient than either an OJEU open or restricted tender, which could extend procurement timescales by at least three months. An open OJEU tender broadens the range of contractors that may engage in the process and potentially increases competition to secure best value. The form and speed of appointment will be weighted against the TCF spending deadlines and construction phase sequencing. Swift appointment may be more important for early phase works such as the highways infrastructure and MSCP, with more time

being available (and therefore more procurement options) for later phase element such as the more complex Porte Cochere works.

The following options have been reviewed at high level against deliverable timelines to minimise programme risk:

- OJEU – timelines considered prohibitive to achieve March 2023 completion
- Other frameworks – strategic review required on other framework routes, but likely to be costly and timescales may be tight. The contractor must be NR approved.
- LCC PAN1068 – LCC-owned and managed framework, readily available for use on major capital projects, OJEU compliant and two of the main contractors are NR approved. Lot 4 of the framework is for large projects (over £1.8m).

Using PAN1068, LCC have a well understood and detailed process and timeline which will allow an earlier tender and appointment process (compared to OJEU or alternative framework routes). This full procurement process would be led and managed by LCC Procurement via e-tendering process and be evaluated and awarded based on both cost and quality.

The Framework Agreement call off Contract Conditions use the JCT suite of contracts, with either the:

- JCT Standard Form of Building Contract, or
- JCT Design and Build Contract, 2016 Edition

The PAN1068 framework agreement was set up to be ERDF compliant and each contractor is required to comply with the Living Wage Foundation as well as the Employment Skills Platform which are embedded within the framework agreement.

4.6 Form of Appointment and Market Response to Risk

Consideration will be given to the form of appointment and the inherent transfer or acceptance of risk for the different construction elements, particularly for any elements delivered by NR or EMR.

The highways and MSCP packages do not, from the Council's perspective need to be highly specified. They need to comply with NR standards under the Asset Protection Agreement process and EMR requirements, both of which are largely performance-criteria based. There is scope to transfer construction risk to the contractor and achieve a competitive price via a fixed price design and build form of contract. The Council may limit its risks around construction co-ordination conflicts by letting all works in this area of the site under one main contract.

The Council as promoter of the scheme, will be exposed to claims for disruption to the operation of the station under the Station Change process regardless of the procurement route. Consideration will need to be given to the extent to which these claims can be minimised via back-to-backed arrangements with the appointed contractor and will be considered during ECI prior to tender stage.

In addition, early contractor involvement to book necessary possessions will also be key to minimising associated claims and costs from NR and EMR.

The Council may limit its expenditure on fee by appointing a professional team to planning consent stage only. The Porte Cochere is a Grade II listed building. Works will require a full planning application and listed building consent. There will be a requirement to engage Historic England and the local conservation officers. The nature of these approvals demands detailed specification and named products and materials. Following approval there will be virtually no scope for a contractor to negotiate with suppliers (as there is little scope to use alternative products), denying the Council as client potential cost-saving benefits. In addition, Contractor advice during Early Contractor Involvement discussions suggests that due to the nature of the building and works in the Porte Cochere, contractors would seek to apply an enhanced risk premium under a fixed price design and build route, resulting in potentially unnecessary increased costs at tender.

For these reasons, a traditional JCT form of contract may be more appropriate for the Porte Cochere and Concourse works. This form of contract will require the Council to procure its own professional team (architect, engineer etc) to produce construction issue drawings.

At this point in time, it is considered appropriate to split the project between two construction routes, firstly for D&B route under a JCT Design and Build Contract for the rear section of the project which comprises the MSCP, taxi rank and rear portion of the building under the LCC PAN1068 framework.

Secondly the Porte Cochere, ticket hall refurbishment and gate line under a traditional route of JCT Standard form of Building Contract.

Construction risk mitigation would require the Fox Street and Campbell Street works being completed in advance of the Train Station contract to ensure ease of access during construction and immediate access to the MSCP and taxi rank on completion. The highway works could be completed internally by LCC City Highways within these timeframes.

LCC's 2018 Sustainable Procurement Strategy has an adopted Social Value Charter, which identifies how the procurement process will help deliver, social, environmental and economic priorities for Leicester, such as improving air quality and tackling climate change. Contractors will be required to adopt the Charter for their works.

4.7 Market Engagement During Development of this SOBC

Following advice from LCC Procurement the above route to market via the LCC PAN1068 framework is deemed the most appropriate option for speed and with a known supply chain.

The Council is currently engaging in an Early Contractor Involvement (ECI) exercise with a number of major contractors from its own construction works framework agreement.

These contractors have extensive experience of, and are accredited to work on, projects on Network Rail land. It is anticipated this exercise will give sufficient assurance around likely cost levels to make a determination of the value of pursuing a framework agreement route, at least for the early construction phase elements to expedite an earlier start on site.

There have been a number of ECI meetings with two of the LCC framework contractors, who have both provided detailed advice on sequencing proposals and phasing, construction advice including:

logistical planning; timeline sequence planning; aligning an indicative delivery and construction programme; and, phasing plan.

The two contractors have been engaged jointly and are both aware that any advice is free of charge for assistance with the TCF bid and the support has not applied any future renumeration or rights on the project.

Both contractors have confirmed that they would be willing to tender the project through the LCC PAN1068 framework.

4.8 Proposed Procurement Route

During the next stages of the project development there will be a full detailed review of the procurement strategy and approach with further ECI and detailed procurement strategy with route to market and focus on delivery and agreement with both NR and EMR.

However, analysis of the options and contractor feedback to date, has resulted in the following initial procurement proposal to fully support the project is as follows:

- Proceed with the appointment of the design team through LCC's existing PAN1069 Construction Professional Services framework agreement for the next stage of the design (for goods and services). The initial design and continued survey work will need to commence early January 2020 to de-risk the programme dates.
- The Highways works to be designed by LCC Highways design team and constructed utilising MHA framework prior to the construction contact being awarded for start on site and site clearance January 2021.
- The MSCP and associated works to the taxi rank and rear entrance to be procured via LCC PAN1068 framework with JCT Design and Build Contract.
- The grade II listed Porte Cochere and associated ticket hall refurbishment including increased gate-line, being procured using the PAN1068 framework on a JCT Standard of Building Contract
- This will allow early access to the MSCP and rear entrance and allow detailed design and surveys of the Porte Cochere including relevant approvals.

5. Management Case

5.1 Delivery Plan, Programme and Implementation Strategy

5.1.1 RNEP Develop Stage (December 2019 – March 2020)

To maintain momentum, retain team knowledge and to mitigate known programme risks, design work will need to commence in January 2020.

During this phase, whilst funding decisions are pending, no public announcements will be made and commitment to spend will be minimal, in the context of the overall programme of works.

Regulatory requirements will be confirmed by developing Preliminary System Definition and Significance Test for submission to Network Rail Assurance Panel (NRAP) for endorsement under Implementing Regulation (EU) 402/2013 on the Common Safety Method for Risk Evaluation and Assessment (CSM) and the extent to which the Railway (Interoperability) Regulations 2011 (Interoperability Directive 2008/57/EC) must be applied to the works.

Stakeholder engagement will continue, to refine Requirements, secure match funding and develop Delivery Strategy for Railway Access Planning, enabling works and road closures or traffic diversions required. As described in section 2.7, the Station Board has given the TCF proposal its full support, including Network Rail, EMR, Cross Country Trains and Midlands Connect. Letters of support from a range of organisations is included as Appendix B of the SOBC, including business leaders, retailers and leisure and tourism operators. Once funding has been secured, Leicester City Council will widen the consultation about the scheme, and undertake public engagement through the process of scheme development and delivery. Section 8 of the Planning Feasibility Statement included at Appendix F to this SOBC describes specifically the pre-planning application stakeholder engagement planned. The initial Land and Consents Strategy is included at Appendix E.

5.1.2 RNEP Design Stage (April 2020 – September 2020)

Following confirmation of funding decisions, including the outcome of the TCF Bid and confirmed commitments on Match Funding, announcements will be made and Public Consultation commenced.

Designs will be progressed to Approval in Principle and assurance undertaken by Network Rail and other stakeholders, where required.

Delivery resources will be secured post-funding. Tendering will be undertaken through existing Leicester City Council Frameworks with delivery of works split into two workstreams to achieve best value delivery of the works. The Main Station works, including the footbridge, multi-storey car park and new station entrance, will be tendered as a Design & Build contract, whilst the Porte Cochere will progress through Detailed Design with the existing framework design team and will be tendered as a Construction only contract once the design risks have been closed out.

5.1.3 RNEP Deliver Stage (October 2020 – March 2023)

The Design & Build Contractor will undertake Detailed Design followed by Construction, broadly following the sequence of Footbridge, Multi-Storey Car Park then New Station Entrance to facilitate construction logistics including access for construction plant and materials. Construction logistics will consider any temporary arrangements that may be required to facilitate continued safe operation of the station on a day to day basis.

The Porte Cochere will form a separate workstream due to the Listed status and the anticipation that a significant proportion of the currently perceived risks may be closed out during the design process, leading to a better value Construction-only contract. Works on the Porte Cochere will follow relocation of the taxi rank to the new taxi loop constructed as part of the new Station Entrance.

5.1.4 Programme

A Primavera P6 programme has been developed to demonstrate the deliverability of the scheme and is attached as Appendix G. As part of the preparation work, the project team consulted with Contractors and they have provided an indicative programme to show how the construction can be undertaken. The construction will be split into two contracts, the works on the Port Cochere will be procured as a traditional contract and the works for the main station will be procured as Design and Build. These programmes have set the agenda for the start times for the design works and hence work will need to commence on the design of the works in January 2020.

The programme utilises the Rail Network Enhancement Pipeline (RNEP) process to provide progressive assurance through the scheme through the governance of LCC led project boards. The project is currently completing RNEP 'Determine' with elements of the 'Develop' Phase already being undertaken. It is proposed that in the period to March 2020, the RNEP 'Develop' is completed. In this phase an Asset Protection Agreement (APA) will be agreed with Network Rail to enable the suitable levels of engagement during this phase. As part of this, the team will continue discussions with Network Rail over the possession times. These will need to be booked well in advance and to the agreement of all concerned. East Midlands Railway (EMR) who have been actively engaged to date will continue to be so through the arrangement of a cooperation agreement which will help guide the Entry Into Service (EIS) process well in advance to ensure the design work is acceptable to them and sits in line with their Operational and Maintenance strategies well in advance of construction.

In the 20 weeks from March to September 2020, the LCC appointed design team are mobilised to undertake the Approval in Principal (AIP) Design works (RNEP Design). This will involve the Client, Network Rail, EMR and key stakeholders in agreeing and providing acceptance of the designs. These designs will be utilised by the Architects to provide planning documents used for public consultation and submitted to planning for approval in the later months of 2020. After completion of the AIP, the project will split into the two areas – Port Cochere and the Main Station. The works for the Port Cochere will continue with the Detailed Design works being undertaken by the same consultant design team to enable a traditional contract to be procured and in place by July 2021. In parallel, the AIPs will be used to form the basis of a Design and Build Contract for the Main Station and the Detailed Design will be undertaken by the Contractor's Designers after the contracts are agreed. The completion of the detailed design for the main stations is planned for April 2021.

Through all phases the Project Management team will have monthly Project Reviews, undertake Stakeholder Engagement including but not exclusively Network Rail, carry out the Common Safety Method (CSM) process (starting with determining whether the scheme is significant or not) and appointing relevant bodies as required. In addition, the property team will supervise the planning process and ensure that the relevant legal agreements are in place both in a regulatory capacity on the railway through Station Change but also in terms of the local landowners.

The Concept Design Feasibility Report at Appendix A includes sketches showing the construction works in their relevant phases.

5.2 Project Assurance

5.2.1 Contract Management and Asset Protection

The proposed works are designated as Third Party works and will be managed in accordance with Network Rail Company Standard NR/L2/INI/CP0043 Management of Third-Party Works on Network Rail Infrastructure.

The services of Network Rail to undertake the required Asset Protection role will be engaged through appropriate contract mechanisms, which may include;

- Basic Services Agreement (BSA)
- Basic Asset Protection Agreement (BAPA) for design phases
- Asset Protection Agreement (APA) for construction or design& construction phase

Contracts with Network Rail will be between Network Rail and the Client (Leicester City Council). SLC Rail will provide support to develop and negotiate appropriate contract terms and scope between the parties.

5.2.2 Requirements Management

To ensure value for money and control of the project scope, Requirements Management will be adopted to clearly identify stakeholder needs, wants and desires and to prioritise and support effective decision making regarding the need, cost and benefits of each element of proposed scope. The Client Requirements Document endorsed by the Station Board on 13th November 2019 is included at Appendix H.

To align with the required Railway Assurance processes, the Network Rail Requirements Management processes will also be adopted:

- NR/L2/INI/P3M/104 Network Rail Requirements
- NR/L3/INI/P3M/126/01 The Network Rail Requirements Framework
- NR/L3/INI/P3M/126/02 Requirements Development and Management
- NR/L3/INI/P3M/126/03 Project Delivery Standard Specification (PDSS)

5.2.3 Engineering Assurance

Engineering Assurance for assets associated with the Railway Network will be undertaken in accordance with Network Rail Company Standard NR/L2/INI/02009 Engineering Management for Projects.

Assets outside the Railway Network (e.g. car parks) may not require to adhere to the full process (e.g. may not require formal approval by Network Rail). Note that some assets that may fall within the Railway Boundary may still require formal approval from Network Rail if either the construction or failure of the asset could adversely impact the Railway Network. Such items may include bridge over the railway or building immediately adjacent to the railway. Therefore, it is intended that all designs will follow a broadly similar process for consistency and to ensure that any asset that may impact the Railway is identified and managed appropriately.

5.2.4 Regulatory Assurance

Compliance will be required with NR/L2/RSE/100/03 The Application of the Interoperability Regulations for Infrastructure Projects, including submission of an application to Network Rail Assurance Panel (NRAP) to confirm whether the project is deemed to be Significant under CSM-RA, relating to EU 402/2013 the Regulation on a Common Safety Method for Risk Evaluation and Assessment (known as CSM-RA or CSM).

NRAP will also confirm whether the project might be interoperable and required to be approved under the Railway Interoperability Regulations (RIR). It is anticipated that the project will be required to comply with RIR for all new or altered assets. In particular, the following Technical Specifications for Interoperability should be considered:

- EU 1299-2014 Technical Specification for Interoperability relating to the Infrastructure subsystem of the rail system in the European Union (known as INF TSI)
- GIGN7608 Guidance on the Infrastructure Technical Specification for Interoperability
- EU 1300-2014 Technical Specification for Interoperability relating to accessibility of the Union's rail system for persons with disabilities and persons with reduced mobility (known as PRM TSI)
- EU 1301/2014 Technical Specifications for Interoperability relating to the Energy subsystem of the rail system in the Union
- GLGN1600 Guidance on the Energy TSI

For the avoidance of doubt, EU Regulations will be transposed into UK law during the Brexit process. It should therefore be assumed that such Regulations will continue to apply regardless of the date or terms of the UKs exit from the EU.

The adoption of robust Requirements Management is supportive of the approvals process should the project be deemed as Interoperable and/or Significant under CSM.

5.3 Governance

5.3.1 Leicester Station Masterplan Board

The project will have Governance provided by a Project Board known as the Leicester Station Masterplan Board, operating to agreed Terms of Reference.

The Board will draw membership from representatives of key stakeholders and funding partners, as detailed in the Terms of Reference document.

The role of the Board is to provide oversight and direction on key issues relating to the development of proposals and to establish a clear timeline for interventions.

The Project Board met on 15th October 2019 and 13th November 2019 to ratify the TCF Project Objectives for the station and the Client Requirements.

5.3.2 Process

The proposals for this phase of the project were developed on the assumption that the Rail Network Enhancements Pipeline (RNEP) process would be applied. The outputs to enable the Decision to Develop are defined as follows:

RNEP Determine Stage required documents:

- 1EN2 Alternative Enhancement Assurance
- 1PM2 Specification and Procurement Strategy to Develop Phase
- 1PM3 Indicative Cost of the enhancement with proposed investment delivery model
- 1BC3 Benefits Report
- 1BC4 Strategic Outline Business Case

Discussions between key stakeholders and the Project Board have concluded that the project will follow the governance principles of RNEP to manage the overall project delivery and the GRIP engineering principles/processes (see Section 5.2.3 Engineering Assurance) to manage the assurance of engineering deliverables.

Following the award of funding, governance of the Project Board will be enhanced to fulfil the requirements of the RNEP Governance Process Principles and also where required the engineering elements of the project will be managed in accordance with the GRIP engineering principles and deliverables.

5.4 Risk Management Strategy

In the initial Masterplan Estimate 66% was applied to the sum of all the other Project Costs to generate an allowance for Risk and Contingency. This is in line with the DfT guidance for risk and contingency for projects that are at GRIP 1 stage.

However, for the preferred TCF scheme (Phase 1 Option a) a draft risk register has been developed, based upon currently identified risks, and this is included at Appendix I to this SOBC. At this early stage in the development of the scheme, it was not considered appropriate to run a full Monte Carlo risk simulation. The risk register does generate an “expected value” however, which is £4,782,000 and equates to 15% of the other Project Costs excluding inflation.

In addition to the 15% risk allowance, 51% Optimism Bias has been added in the appraisal in the Economic Case of this SOBC.

Given that risk registers have not been developed for either Phase 1 Option b or Phase 2, we have applied the same 15% of the Other Project Costs to generate the risk allowances in each of these two estimates.

An early task in the next stage of work will be to involve key stakeholders in a joint risk workshop. The scoring matrix would be agreed specific for the project. The risks would be evaluated quantitatively and risk contingency calculated using Monte Carlo analysis. Each risk will be allocated between the Client and the contractor so that it is clear how the risk contingency would be shared by the two parties. The revised risk register and quantification would be the basis for managing the risks to ensure that the risks are mitigated by appropriate parties.

The process we will use for risk management is shown at Figure 38.

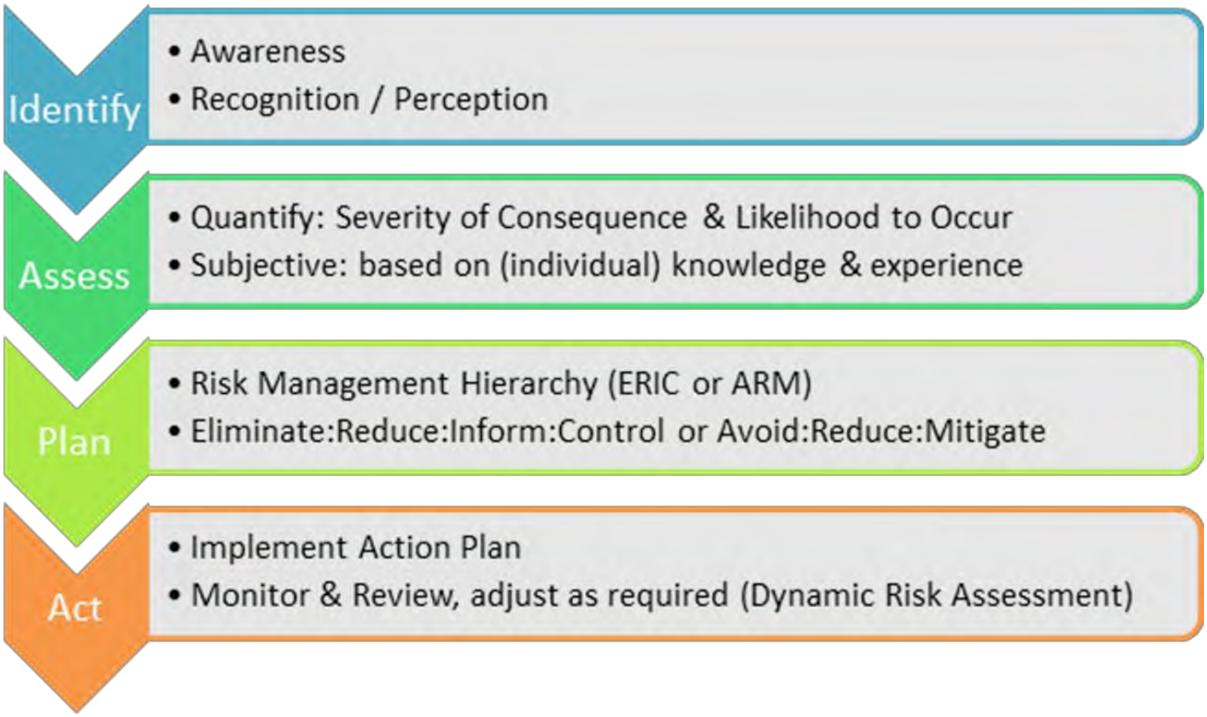

Figure 38 - Risk management approach

5.5 Monitoring and Evaluation

Our proposals for monitoring and evaluation of the benefits realisation are set out in section 2.9 above.

6. Financial Case

6.1 Detail Capital Cost Breakdown

The detailed breakdown of the capital costs for the Low, Medium and High Options is included in the Concept Design Feasibility Report attached as Appendix A.

The table below summarises the costs for our preferred (low) option (Phase 1 Option a).

Ref	Description	Estimate (£m)
1	**Construction Works Costs**	
1.01	Car Park Option 1	12,877,000
1.02	Taxi Rank/Public Realm	546,000
1.03	Rear Entrance to Station	550,000
1.04	Porte Cochere	5,602,000
1.05	Ticket Office, Gate line and Concourse	1,536,000
	CONSTRUCTION COST (A)	**21,111,000**
2	**Preliminaries, Overheads and Profit**	
2.01	Preliminaries 20% of Direct Construction Costs	4,276,000
2.02	Overheads and Profit 8% of Direct Construction Costs and Prelims	2,045,000
	Correction of Rounding Error	3,000
	INDIRECT CONSTRUCTION COSTS (B)	**6,324,000**
3	**Project/Design Team Fees and Other Project Development Costs**	
3.01	Design Team Fees 8% of Direct Costs	1,690,000
3.02	Project Management 5% of Direct Costs	1,060,000
3.03	Client Indirect Costs	1,692,000
	EMPLOYER DIRECT COSTS (C)	**4,442,000**
4	**RISK (D)**	**4,782,000**
	POINT ESTIMATE AND RISK (A+B+C+D)	**36,659,000**
5	**Inflation to Mid-Point of Construction (Q2 2022) (E)**	**2,970,000**
	ANTICIPATED FINAL COST (A+B+C+D+E)	**39,629,000**

Figure 39 - Summary of capital cost estimate

Details of the QS assumptions and estimating methodology can also be found in the Concept Design Feasibility Report.

The line “Client Indirect Costs” includes estimates of fees and disruption costs to Network Rail and EMR as a result of the works. These have been reviewed and commented on by Network Rail and EMR.

6.2 Funding Profile and Contributions

The TCF funding profile for each of the Leicester TCF Bid Themes can be found in the overarching TCF bid SOBC which this document for Leicester Rail Station supports.

Prior to the commencement of the new East Midlands Railway (EMR) Franchise in August 2019, East Midlands Trains had been an active Member of the Project Board and integral to the initial development of operational and customer requirements for the overall Station Masterplan.

EMR have remained highly engaged with the Masterplan and all of their requirements have been captured in both the Client Requirements Document (CRD) and in the concept designs for Phase 1 option a, including the majority of their Franchise Committed Obligations (COs) for Leicester Station, which will make a substantial contribution to the transformation of the Station. The works proposed to the station also coincide with the planned introduction of new rolling stock for services to and from Leicester Station, which will serve to maximise the benefits to the overall customer experience.

The table below details the COs that are planned to complement the Phase 1 option a elements of Masterplan and as such have been reflected in the concept designs and the cost base utilised to generate the BCR, as EMR plans to use their CO funding allocation, as a Private Sector Match Contribution to the TCF bid. Work has already commenced with both the DfT and EMR to understand how the LCC and EMR planned works can be fully integrated to deliver maximum value for money and minimise the overall disruption to passengers. This approach to the integration of the planned activity will also enable a number of customer benefits such as the additional cycle storage and multi-modal customer information screens to be delivered ahead of the planned dates shown in the table below.

The details are as follows:

EMR Committed Obligation	Deliver by Date
Car park (186 spaces)	31.3.2027
EV parking (6 spaces)	31.3.2023
Anpr	31.03.2022
Interchange enhancements	31.5.2025
Cycle spaces (85 spaces)	18.8.2027
Multi modal cis	31.3.2025
Water fountain	31.03.2022
Refurbished toilets	31.03.2022
Wifi	31.03.2022
Commercial retail scheme	31.03.2023
Changing places toilets	31.03.2022

Figure 40 - EMR relevant Committed Obligations

This results in a £4.3m match funding contribution to the TCF scheme, subject to the DfT agreeing that the EMR Committed Obligations for Leicester Station can be utilised as match funding and that the delivery dates can be flexed to accommodate the TCF spending profile.

6.3 Operating Costs and Financial Sustainability

The operating costs have been compiled by SLC Rail from a detailed understanding of similar schemes and from an analysis of EMR's actual costs for the station provided by them. EMR has reviewed and commented on these.

The annual incremental revenues from the scheme have been estimated by Systra as part of their development of the Economic Case in this SOBC.

The table below shows a breakdown of annual incremental operating costs.

System / Service	Notes	Annual Cost
Additional Non-Staff Costs		
Electricity/Gas	Assumed current annual cost of £100k per annum. Current costs to increase by 30% as a result of the interventions	£30,000
Water	Assume small increase from more retail activity @ £2k per annum	£2,000
Cleaning and Cleaning Materials	Includes water, water monitoring, cleaning and cleaning materials. Assumes current cleaning costs £120k per annum and additional space requiring cleaning only increases by 20%. £24k per annum	£24,000
REACTIVE MAINTENANCE (This includes all reactive works within public areas of the stations that are eligible for QX. The reactive cost includes contractor, materials and artisan labour costs)	Assumes existing cost £30k per annum. 5% increase in years 1-3 and 10% beyond year 3	£1,680
PLANNED MAINTENANCE (This column includes all the costs for internal maintenance team to conduct planned maintenance on the public areas)	Assumes current cost of £20k per annum and would increase by 5% per annum	£1,000
Additional Car Park Ticket Machine costs	Assumed marginal and EMR cost as part of Committed Obligation	£5,000
ANPR Maintenance Costs	No ANPR at present and assume included within Committed Obligation	£0
Gate line maintenance contract (Cubic)	Assumes current cost of £7k per annum and would double	£7,000
Gate line call-out (Cubic)	Assume high now as gates are very old, so may be reduction	£0

Emergency Lighting Maintenance	Assume cost of £1k per annum now and this would double with MSCP	£1,000
PAT Testing	Assume current cost £2k per annum and increases by 10% per annum	£200
Auto Doors	Assume no new planned	£0
Roller Shutters Maintenance	Assume no new planned	£0
Fire Alarms & Equipment Maintenance	Assume minimal	£200
Waste Management	Assume current annual cost of £30k and retail would increase by 50% £15k	£15,000
Additional Radio Provision	Assume two new handsets	£600
Additional Rental Costs to Cross Country		£1,000
Additional Long-Term Charge (LTC) Cost payable to NR for their increased maintenance liabilities	10% uplift	£67,813
Sub Total		**£156,493**
HQ Admin Costs	Assume 10.6% of sub-total £83k per annum	£83,000
Local Overheads	Assume 5.6% of sub-total £44k per annum	£44,000
Increased insurance costs	Assume 1% of sub-total	£7,824
EMR Management Fee on total non-Staff Costs	Assume 6% of sub-total	£46,948
Total non-staff costs		**£338,265**
Staff Costs		
Additional Security Check Costs for a Cat B Station	Assumed current cost of £80k per annum and increase requirement of 5% per annum	£4,000
Additional Gate-line Staff	Assumed £34k per annum x 3 FTE= £102k	£102,000
Additional Staff as a result of MSCP	Assumed £30k per annum x 2 FTE= £60k	£60,000
TOTAL		**£166,000**
GRAND TOTAL		**£504,265**

Figure 41 - Breakdown of annual operating costs

The graph below shows the forecast incremental revenue (excluding inflation) from the scheme for the first five years after completion. It can be seen that this revenue is substantially higher than the

annual incremental operating costs of £504K. This net revenue benefit can accrue to the rail industry, or it could be used to help fund the next phase of the Masterplan.

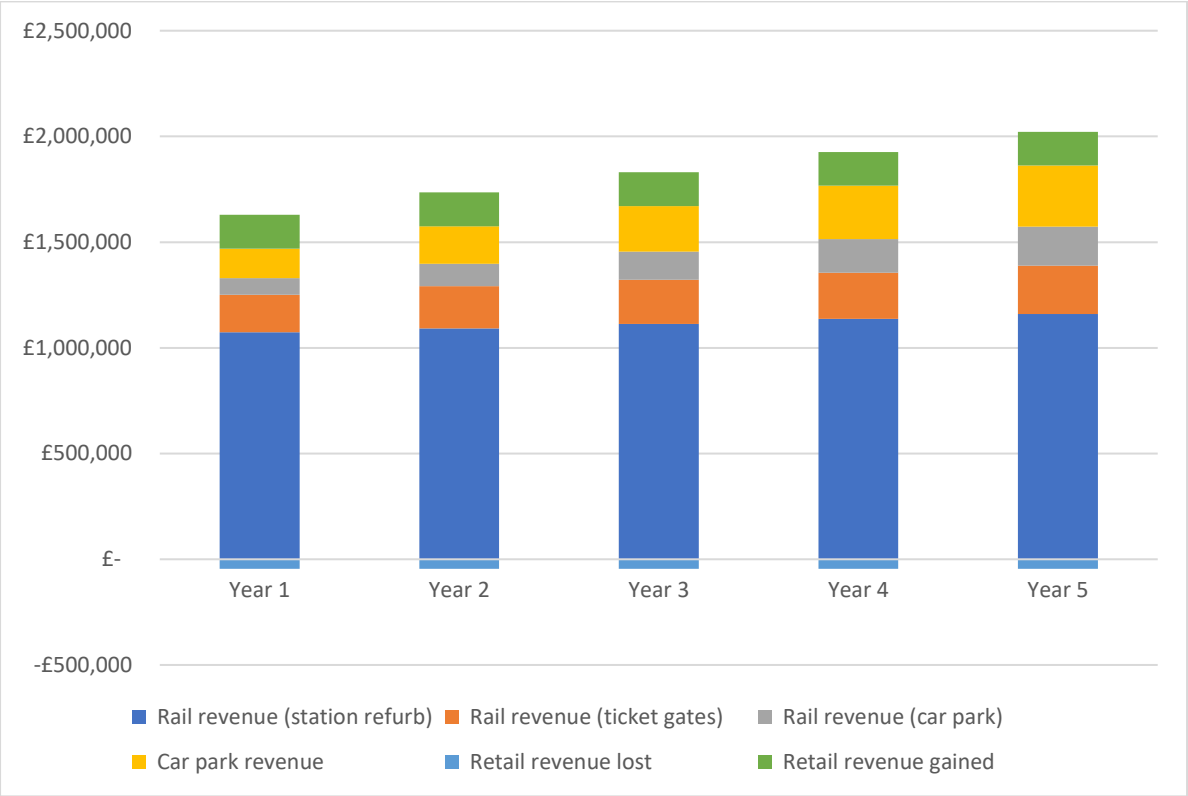

Figure 42 - Incremental revenue from the scheme

Appendices

All included as separate documents

A – Concept Design Feasibility Report

B – Letters of Support

C – Responses to DfT Questions

D – TAG Appraisal Worksheets

E - Land and Consents Strategy

F - Planning Feasibility Statement

G - Project Programme

H - Client Requirements Document

I – Risk Register