Kepax Bridge Draft Strategic Outline Business Case

Based on Annex B (to Appendix A): WLTB Local Major Scheme Outline Business Case Pro-forma

Diglis bridge and approach, Aug 2019

Gheluvelt Park (www.worcester.gov.uk)

Prepared by Jacobs using information provided by Worcestershire County Council, September 2019.

worcestershire county council

Worcester CITY COUNCIL

JACOBS

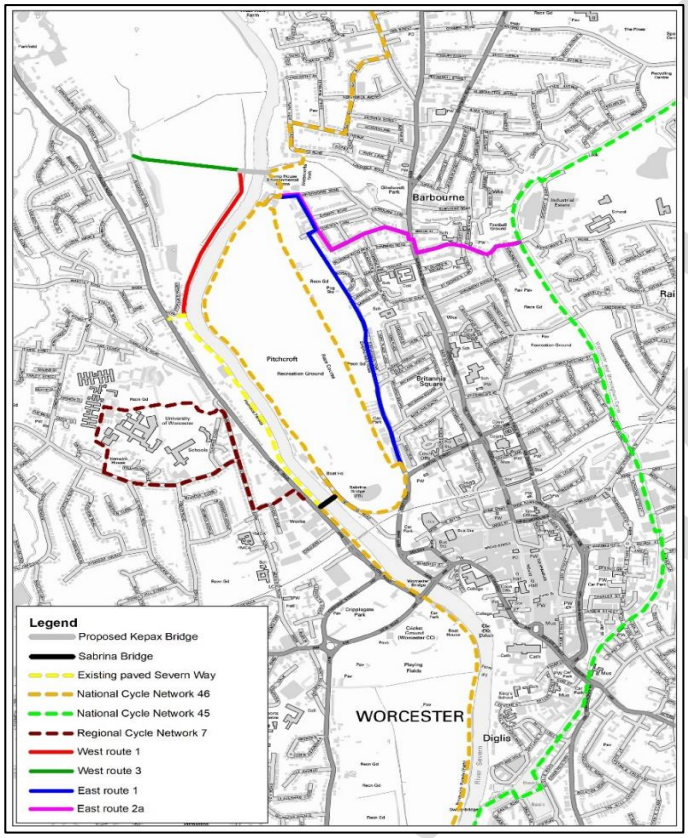
Executive Summary

Worcestershire County Council (WCC) is working in partnership with Worcester City Council in the delivery of a new pedestrian and cycle bridge across the River Severn in Worcester from Gheluvelt Park to the Kepax site in St Johns.

The scheme comprises of a number of improvements to the network in addition to constructing a new river crossing (see Figure 1), including:

- A new access path provided over the Kepax site.
- Improvements to the existing Severn Way path to the south of the bridge (Figure 2).
- Improvements to a route to the east of the river from Gheluvelt Park to the City Centre (Figure 3).
- Providing pedestrian/cycle links from the bridge to the National Cycle Network, route 45.

Figure 1: Kepax Bridge crossing and wider improvements



The scheme will open up the opportunity for people to walk and cycle much more quickly between the Henwick Park area (and further afield like Hallow\Broadheath) on the west and Barbourne, Claines and associated areas in the east. In addition, improvements to the existing adjoining walking and cycling network will connect residents to wider leisure, employment and education opportunities via the National Cycle Network.

A step change in the levels of walking and cycling in north Worcester will be facilitated and opportunities for riverside leisure walks and access to a Green Flag Park will be enhanced. Improved leisure and tourism opportunities will increase visitor spending in the area and expand the number of jobs offered in this sector.

The scheme will encourage the use of active modes for journeys around the city generally. This mode shift will result in improved health and wellbeing, reduced levels of congestion and improved safety and air quality.

Figure 2: Severn Way (June 2019)

Figure 3: Sabrina Avenue and Pope Iron Road

Policy background

Strategic Transport Schemes within the Local Transport Plan 4 for WCC include 'Active Travel Corridors' which comprise investment in walking and cycling links along corridors to create a safe, comprehensive, integrated network linking residential areas with key trip attractors. Two Strategic Active Travel Corridor Schemes require Kepax Bridge; SWAT12 (Worcester North East - North West Active Travel Corridor) and SWAT13 (Worcester River Severn Active Travel Corridor).

The scheme proposal builds upon the huge success experienced at Diglis Bridge (Figures 4 and 5) which has seen far more use than was originally forecast and would provide a welcome addition to the family of bridges already in place in the City.

Figure 4 (left): Footpath to west of River Severn (between Diglis and Sabrina)
Figure 5 (right): Diglis Bridge (source: Discoverworcestershire.co.uk)

Scheme Benefits and Outcomes

Expected benefits of the scheme are:

- Increased use of active modes resulting in improved physical health and mental wellbeing of residents, reduced congestion, improved local air quality and improved accessibility and transport choice.
- Reduced severance and increased network resilience through the provision of an additional river crossing.
- Increased leisure use of the riverside area.
- Increased tourism and visitors to attractions such as Worcester racecourse and the Pump House Environment Centre.
- Increased use of Green Flag park which includes a splash pad and open fields to the west.
- A safer pedestrian and cycle network in the north of Worcester, with more off-road provision.
- A more legible cycling network from the north of Worcester to destinations such as the canal, city centre and university.
- Improved connections to National Cycle Network Routes 45 and 46.
- Improved connections to Regional Cycle Network Routes 3 and 7.

Outcomes from delivering the scheme include:

- The scheme represents **medium** value for money, with a BCR of **1.7** (based on a total scheme cost of £8.9 million (2019 prices)).

- The scheme delivers a present value of benefits of **£15.5 million** (2010 prices). These benefits are derived from the Department for Transport's Active Mode Toolkit and include increased physical activity, reduced absenteeism, reduced accidents and improved journey quality.
- An additional gross annual visitor expenditure of over **£690,000** and the creation of **17** new tourism **jobs** would be realised if day visitors increase by 1% as a result of the scheme.
- Construction of the scheme creates **182 FTE jobs** and a **GVA uplift of £6,819,943** (2019 prices).

Costs and funding

The total scheme cost is **£8.9 million** (2019 prices). Of this £8.9 million, £1.5 million is for wider improvements and £0.6 million is for the access path across the Kepax site. Kepax Bridge itself therefore costs £6.7 million (construction plus preparation and design). Total scheme costs are at 2019 prices and do include for indexation. Wider improvement costs are based assuming a do minimum option, this cost could however rise if alternative options are taken forward or the scope of improvements for the wider links is enhanced.

Additional funding of **£6.54 million** needs to be secured in order to deliver the scheme. This could be from one source (e.g. additional internal funds) or made up from various different sources focusing on external opportunities such as S106 contributions.

Commercial and Management Cases

In advance of construction, the following consents will need to be granted:

- Exercising powers under Section 106 (3) of the Highways Act 1980 to construct the bridge to form a footpath/cycle track (with a right of way on foot) over the navigable waters of the River Severn
- Full Planning Consent
- Environment Agency Consent
- Fields in Trust Consent

In addition to the above, the following may be required in relation to access and wider links:

- Traffic Regulation Orders
- Compulsory Purchase Orders
- Creation of Rights of Way

Relevant timescales have been incorporated into the bridge programme and key milestones are outlined below:

- Feasibility and Strategic Outline Business Case - Present – Winter 2019
- Design Development: Autumn 2019 – Autumn 2020
- Planning application Submission: Summer 2020
- Land and Legal Agreements: Winter 2019 – Summer 2020
- Planning application determined: Winter 2020/21

- Procure Construction Contract: Winter 2019 – Autumn 2020
- Final Cabinet Approval: Spring 2021
- Award construction contract: Spring/Summer 2021
- Start on Site: Summer 2021

It is recognised that the bridge may need to be funded in advance of the wider linkages aspect of the scheme. However, if this is the case, not all of the economic benefits of the scheme will be realised from day one. Once the funding profile is complete, the Economic Case will need to be refreshed.

Strategic Outline Business Case

Scheme Name:	Kepax Pedestrian and Cycle Bridge
Promoter:	Worcestershire County Council & Worcester City Council

Purpose of this Document:

This document presents the Strategic Outline Business Case (SOBC) for Kepax Bridge. It presents:

- The Strategic Case– why the scheme is needed, the objectives and fit with wider policy ambitions;
- The Economic Case – whether the scheme demonstrates value for money;
- The Commercial Case – that the scheme is commercially viable;
- The Financial Case – this will outline whether the scheme is affordable, and what are the financial risks but is awaiting confirmation on funding sources;
- The Management Case – whether the scheme is achievable.

Not all elements of the business case are robust at this stage as certain tasks are ongoing (e.g. detailed design). Where this is the case this is outlined in the relevant section of the document. The SOBC has been prepared for presentation to WCC Cabinet and staff to inform recommendations such as:

- Authorisation of a Full Business Case, and the necessary funds to complete this;
- Authorisation of the preparation of a Planning Application for the scheme, and the necessary funds to complete this;
- Authorisation of the submission of funding bids to third parties for the completion of the scheme;
- Authorisation to complete a pre-planning public engagement exercise; and
- Receipt of a further report and consideration as to whether to proceed with the project and authorise the procurement of a construction contract following the outcome of the Planning Application.

Once relevant surveys (e.g. GI) have been completed and the bridge design has been finalised, costs will be revised, and the Economic Case will be refreshed. A further, more detailed Full Business Case report will be provided to Cabinet and a Planning Application and subsequent construction of the scheme will be progressed.

1. Headline Description:
Worcestershire County Council (WCC) is working in partnership with Worcester City Council in the delivery of a new pedestrian and cycle bridge across the River Severn in Worcester from Gheluvelt Park to the Kepax site in St Johns. Provision of the bridge, access path and improvement of wider links is hereafter referred to as the scheme. The scheme proposal builds upon the huge success experienced at Diglis Bridge (which has seen far more use than was originally forecast) and would provide a welcome addition to the family of bridges already in place in the City. The scheme will provide a vital link bringing two parts of Worcester closer together, reducing severance caused by the River Severn. It will open up the opportunity for people to walk and cycle much more quickly between the Henwick Park area (and further afield like Hallow\Broadheath) on the west and Barbourne, Claines and associated areas. In addition, improvements to the existing adjoining walking and cycling network will connect residents to wider leisure, employment and education opportunities via the National Cycle Network. A step change in the levels of walking and cycling in north Worcester will be facilitated and opportunities for riverside leisure walks and access to a Green Flag Park will be enhanced. Improved leisure and tourism opportunities will increase visitor spending in the area and expand the number of jobs offered in this sector. The scheme will encourage the use of active modes for journeys around the city. This mode shift will result in improved health and wellbeing, reduced levels of congestion and improved safety and air quality.

2. Geographical Area:
The proposed bridge is to be built spanning between Gheluvelt Park (East of the River) and the capped landfill at Hallow, formally known as Kepax (West of the River). OS Grid Reference: SO840565 Post Code: WR1 3EZ (Pump House Environment Centre), WR2 6BZ (Hallow Recycling Centre). A location plan is attached in Annex 1.

3. Strategic Case: *(Please append supporting documents and evidence as required)*
3.1 Scheme description: Kepax Bridge is a proposed pedestrian and cycle bridge over the River Severn which is approximately 110m in length.

Scheme Overview

With the success of the Connect2 Diglis Bridge (opened in 2010 linking Diglis and St Peters with Lower Wick) and the subsequent opening up of the riverside area for walking and cycling, there is ambition to improve the riverside to the north of the Sabrina Bridge towards the vicinity of Gheluvelt Park and the Waterworks Road/land near to Riverview Close.

The scheme comprises of a number of improvements to the network in addition to constructing a new river crossing. These improvements include the following:

- A new access path provided over the Kepax site, linking the new bridge to Hallow Road.
- Improvements to the existing Severn Way path to the south of the bridge location to where it meets the existing paved section by the A443 link.
- Improvements to a route to the east of the river from Gheluvlet Park to the City Centre
- Providing pedestrian/cycle links from the bridge to NCN45.

A map of all of the proposed improvements is included as Annex 2.

Scheme Rationale and History

The location for the proposed structure has been determined by Worcester City and Worcestershire County Councils to improve walking and cycling routes to the north of Worcester City in accordance with the plans set out in Worcestershire's Local Transport Plan 4 (LTP4) 2018-2030, including Active Travel Corridors.

Any future east-west link and possible pedestrian and cycle crossing of the River Severn would have utility value in this location with the employment (east) and residential (east and west) areas being linked. A new crossing point would also enable circular leisure walks and bike rides from the existing Sabrina Bridge and beyond making Worcester a more attractive riverside destination. This would create transport, health and tourism opportunities.

Residents would also be linked with the university and open green spaces, including green fields to the west and Gheluvelt Park which is a Green Flag Park and War Memorial. The nearest existing pedestrian crossing of the River Severn is Sabrina Bridge approximately 1 mile south of the proposed location and the nearest northern river crossing is at Holt Fleet approximately 5 miles away. Figure 1 details the existing waling and cycling routes in the vicinity of the structure.

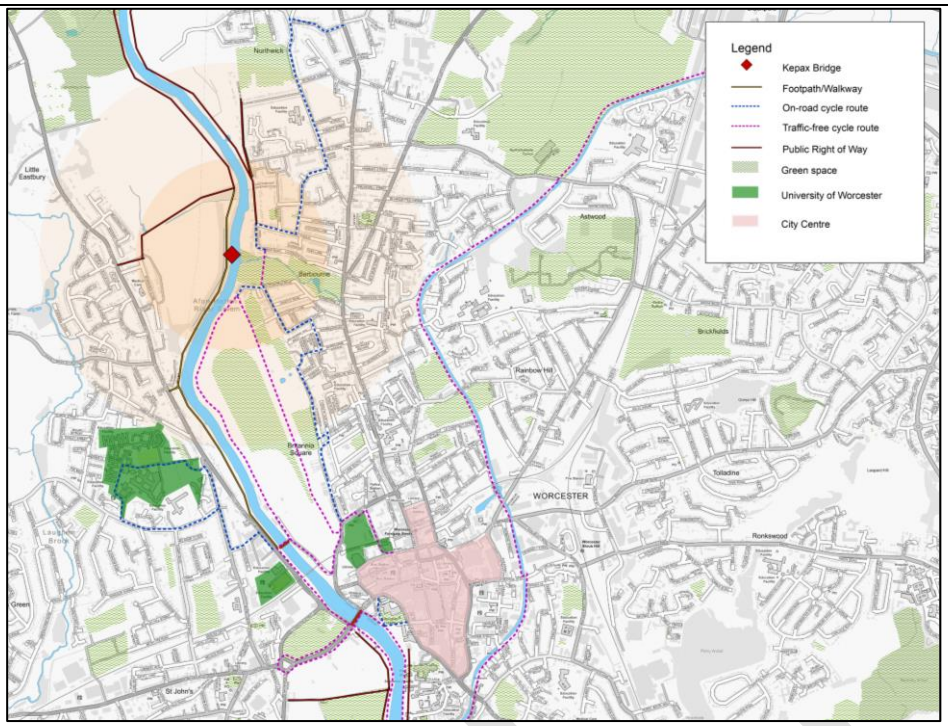


Figure 1: Existing walk and cycle routes (© Crown Copyright Ordnance Survey Open Data 2019)

Scheme Objectives

The primary objective of the scheme is to improve the connectivity within Worcester, and in particular facilitate east-west movements in the north of the city. Other objectives and benefits of the scheme are:

- Improvements to the physical health and wellbeing of north Worcester residents, employees and visitors by affecting a mode shift from car to walking and cycling.
- Provision of a direct route for short journeys over the river and to provide a link into the wider network for longer trips. This will improve access to jobs, services and leisure activities.
- Provide an alternative walk and cycle link over the river thus increasing transport resilience.
- Increase visitor numbers to Worcester, through the provision of new walking and cycling infrastructure and routes, resulting in additional visitor spend and an increased number of visitor economy jobs.
- Creation of an additional riverside leisure 'loop' (walk and cycle), via Sabrina Bridge or Diglis Bridge).
- Contribute to improving the public realm and public spaces around the bridge and help to activate these areas.

3.2 Description of problems to be *addressed:* *(Quantified wherever possible, e.g. poor access to specific locations/markets, increasing journey times and costs and growing variability in journey times etc.)*

The South Worcestershire Development Plan 4 (SWDP4, 2016) is the adopted local plan for the areas of

Malvern Hills, Worcester City and Wychavon and sets out growth in the area up to 2030. It outlines that "*Integrated investment in transport infrastructure, services and Smarter Choices measures (Choose How You Move) across all modes of transport will be required to accommodate the growth in travel demand without increasing travel times, congestion and costs and thereby undermining economic performance… This will require… high-quality cycle and walk routes for shorter distance journeys, particularly in urban areas.*"

The scheme will provide a new high-quality cycle and walk bridge, a new off-road access path and the upgrade of a number of existing routes within north Worcester, including around the riverside. Problems to be addressed by the scheme include:

- Poor connectivity within north Worcester – The River Severn acts as a barrier to movements in an east-west direction. Provision of a pedestrian and cycle bridge could make some journeys by these modes more attractive than by car.
- Poor connectivity for pedestrians and cyclists - The nearest existing pedestrian crossing of the River Severn is Sabrina Bridge approximately 1 mile south of the proposed location and the nearest northern river crossing is at Holt Fleet approximately 5 miles away.
- Congestion experienced within Worcester City – This is partly attributed to limited crossings across the River Severn.
- Safety for cyclists and pedestrians will be enhanced through provision of a new off-road bridge and improvements to existing links - One of the objectives of LTP4 is to contribute towards better safety.
- Poor legibility of the cycling network - Improvement of wider links, including those alongside the river to the south of the bridge will connect residents in the north of Worcester to destinations such as the city centre and University.
- 'Pinch points' on the existing network to be improved for pedestrians and cyclists - For example crossing the Barbourne Road to get between Gheluvelt Park and the canal network.
- Riverside paths are susceptible to flooding (see Figure 2) – Wider improvements to walking and cycle links in the north of Worcester will offer alternative routes and improve resilience of the network.
- The riverside is an important area of leisure and tourism for Worcester – There has been investment to the south due to Diglis and surrounds but now there is a need for focus to shift to the northern area of Worcester.
- Lower levels of walking and cycling in Worcestershire (see Table 1) – The scheme will promote active modes generally across Worcestershire, reducing the proportion of residents driving to work in car (only 66% in England but 80% in Worcestershire).

Area	Cycling to work (%)	Walking to work (%)	Driving or passenger in car
Worcestershire	2%	10%	80%
England	3%	11%	66%

Table 1: Walking and cycling to work in Worcestershire (Source: 2011 census)

Figure 2: Flooding of paths on the Severn riverbank (June 2019)

1.3 Options Considered:

Location:

A Kepax Bridge Pre-Feasibility Study was prepared in June 2018. This outlined constraints and requirements, construction issues, design criteria and presented the preferred location for the bridge on both the east and west sides.

Two locations have been considered for the location of the proposed structure as discussed briefly below in Table 2:

Location	Advantages	Disadvantages
Location A *Gheluvelt Park/St. Johns*	Existing connections Close to centres of Population Landownership held by Local Authorities	Construction Access Restrictions Landfill site and contaminated land Connections to west bank problematic
Location B *Northwick*	Good access for construction Potential for further links Opportunity to incorporate public education regarding wildlife and ecology	Ecological concerns in SSSI area Negotiations required with private land owners at a higher cost Limited connectivity on west bank

Table 2: Advantages and Disadvantages Summary of Location Options

Following a review of the Pre-feasibility Study conducted by Worcestershire County Council, Location A was chosen for a number of reasons. On the east side, the structure can be sited on the higher ground near the retaining wall for two reasons; it is less likely to cause obstruction during flood and the height corresponds more closely with the land to the west bank, limiting the requirement to raise the abutment and approaches by importing fill material to make up the ground to a suitable height. Additional made up ground and lower headroom clearance over the River Severn could present numerous difficulties and have a negative effect on the land drainage both locally and increase the flood risk downstream through Worcester City centre.

On the west side, the option to move the structure location south to avoid the area of landfill has been

considered however, access would still be required via the landfill site. There are concerns about the height difference between the ground levels either side of the river and the requirement for ramp design. The incorporation of ramps will significantly increase the cost of design and construction and would land the structure in, or very close to the race track of Pitchcroft and will open many security issues with the racetrack.

Location A comprises the least design and construction constraints and can be easily tied into the existing footpath network in Gheluvelt Park.

Structure:

It was determined that due to plant access and risks to flooding that the structure would need to span the river along with the wooded marsh area, know as the willow carr adjacent to it. It is estimated that the span of the structure will be approx. 110 m (depending on the results of the Ground Investigation).

The air draft for boats travelling under the structure will need to be confirmed by the Canals and Rivers trust, however from a review of the surrounding structures it is anticipated to be the greater of either 8 m above summer river level, or the 1 in 100 years flood level (5.74 m) with an additional 600 mm (6.34 m).

Three types of structure were considered in depth as part of the Pre-Feasibility Study, as these were the only types capable of spanning the required distance (110m) in a single span. These were a tied arch bridge, truss bridge and cable stayed bridge. Following analysis within the Flood Risk Assessment report, it has been identified and initially agreed with the Environment Agency subject to their final review of the assessment that structure piers can be located within the willow carr. Although this would not change the recommendation of the structure types it offers greater flexibility with the span arrangement across the river and negates the need for a single span.

Table 3 below compares the suitable options.

Design factor	Tied Arch	Truss	Cable Stayed
Temporary Works	• Foundations required for lifting machinery. • Temporary structure support towers to be erected if constructed in two or more segments. • Excavation supports may be required	• Foundations required for lifting machinery.	• Foundations required for lifting machinery.

Foundation Requirements	• Large amounts of excavation required for large foundations and large number/diameter of piles on both sides of the river. • High risk of releasing leachates from the landfill site and working in contaminated land. • Deep and bulky foundations to be able to take large forces and turning moments at connections.	• Medium amount of excavation required on both sides of the river. • Deep foundations required both sides of the structure. • High risk of releasing leachates from the landfill site and working in contaminated land.	• Large foundations only required on the side of the pylon. • Minimal excavations required in landfill. • Foundations still required on the western side of the river but can be limited due to the construction type • Minimal risk of exposure to contaminants
Construction Machinery and equipment	• Large cranes required both sides of the river if constructed in segments. • Large pile driving/boring machinery	• Large crane on one side of the river required. • Large cranes require large temporary works foundations • Site access for crane machinery and delivery vehicles; turning radius and weight limits on the existing network.	• Large crane on one side of the river required. • Large cranes require large temporary works foundations • Site access for crane machinery and delivery vehicles; turning radius and weight limits on the existing network.
Foundations	• Largest foundations required	• Strong foundations required on both sides of the river	• Pile foundations required • Large foundations on the east side of the river.
Maintenance	• Low maintenance • Long lifespan with minimal repairs • High level of difficulty performing maintenance • Option to install more dampers at a later date usually designed in.	• High maintenance • High level of difficulty performing maintenance	• Medium maintenance requirements. • Specialists required to inspect the tension cables
Construction Type Specific Risks	• Working at height • Working over fast flowing water • Bolting/fixing techniques causing sparks • Lifting large sections and wind movement • Installation of tensioned hangers	• Bolting/fixing techniques causing sparks • Lifting large sections and wind movement • Working at height • Working over fast flowing water	• Lifting of sections and wind movement • Installation of cables and tensioning • Working at height • Working over fast flowing water

Aesthetics	• Most attractive form • Open view over the river from the structure • Large and eye-catching form	• Most intrusive • View over the river obscured by members • Working at height • Working over fast flowing water	• Attractive form of construction • Open view over the river from the structure • Working at height • Working over fast flowing water • Least intrusive form
Ease of inspection	• Specialist inspection equipment required to inspect the arch and hangers • Loading for inspection machinery to be included in design calculations	• Difficult to inspect thoroughly if protective paint systems are used.	• Specialist inspection equipment required to inspect the pylon • Loading for inspection machinery to be included in design calculations

Table 3: Options Comparison

Three types of structure were considered in depth, as these were the only types capable of spanning the required distance in a single span. These were:

- Tied Arch Bridge – Discounted due to large foundations required which substantially increase the total cost of the structure
- Truss Bridge– Discounted due to large foundations required which substantially increase the total cost of the structure
- *Cable Stayed Bridge – Preferred Option*

A single pylon (east side) cabled stayed bridge will be able to either span the full distance or alternatively span the main river with the addition of a secondary structure over the willow carr. This will reduce the required foundations on the west side of the river within the landfill area. It is anticipated the foundations will need to be piled, with the potential of an end bearing pile as the made ground on both sides of the river will not be able to provide sufficient shaft friction. An estimate of the depth and size of the piled foundation has not been determined, however they are expected to be wider and deeper than the Diglis footbridge foundations.

1.4 Expected benefits / outcomes: *(Drawn from the economic and financial assessment)*

Expected benefits of the scheme are:

- Increased use of active modes, particularly in north Worcester, resulting in:
  - Improved physical health of residents
  - Improved mental wellbeing of residents
  - Reduced congestion
  - Improved local air quality
  - Improved accessibility and transport choice
- Reduced severance and increased network resilience through the provision of an additional river crossing.
- Increased leisure use of the riverside area.
- Increased tourism and visitors to attractions such as Worcester racecourse and the Pump House

Environment Centre.

- Increased use of Green Flag park which includes a splash pad and open fields to the west.
- A safer pedestrian and cycle network in the north of Worcester, with more off-road provision.
- A more legible cycling network from the north of Worcester to destinations such as the canal, city centre and university.
- Improved connections to National Cycle Network Routes 45 (Chester to Salisbury via Worcester and Birmingham Canal) and 46 (Bromsgrove to Neath) via Gheluvelt Park and the Racecourse).
- Improved connections to Regional Cycle Network Routes 3 and 7.

Outcomes have been drawn from the Economic Case (see Annex 3 for more details) and include:

- The scheme represents medium value for money, with a BCR of **1.7** (based on a total scheme cost of £8.9 million (2019 prices) – more details on costs is given in Section 8, in particular Table 8.3.1).
- The scheme delivers a present value of benefits of **£15.5 million** (2010 prices). These benefits are derived from the DfT's Active Mode Toolkit and include increased physical activity, reduced absenteeism, reduced accidents and journey quality. Decongestion and associated environmental benefits are also monetised.
- An additional gross annual visitor expenditure of over **£690,000** and the creation of **17** new tourism **jobs** would be realised if day visitors increase by 1% as a result of the scheme.
- Construction of the scheme creates **182 FTE jobs** and a **GVA uplift of £6,819,943** (2019 prices).

Diglis Bridge to the south of Worcester opened in 2010 and exceeded expectations in terms of demand for walking and cycling. The Gov.uk website outlines that:

"Before it was built, surveys indicated we could expect about 31,000 trips annually to pass the west bank riverside where the bridge was proposed. Surveys after the bridge was built gave a figure of 465,000, showing just how important the intervention is to the area. Convenience was a major factor in people using the facility – 90% of users said they used the bridge because it was the most convenient option[1]."

It is anticipated that with the provision of a new high-quality bridge and improvements to the supporting wider network, this success will be replicated in the north of Worcester.

1.5 Project Scope:

The scheme includes:

- Provision of a new cycle and walking bridge over the River Severn. This will be 4m wide and 110m long (either single or multiple span).
- A direct access path to be provided over the Kepax site. This will connect users to the west side of the river via Hallow Road.

[1] https://www.gov.uk/government/case-studies/new-cyclist-and-pedestrian-bridge-diglis-bridge-worcester

- Upgrade (surfacing, street lighting, signage and vegetation clearance) of the Severn Way to the south of the bridge. To create a riverside loop (via Sabrina or Diglis bridges).
- Walk and cycle improvements to routes on the eastern side of the river. This includes:
    - Enhancements to the existing alternative NCN 46 route (Stephenson Road, Stephenson Terrace - vegetation clearance, some footpath widening, signage and street lighting).
    - Upgrade of connection from the scheme to NCN 45 (Gheluvelt Park to Pipe Iron Road and Somer's Road – upgrade of existing A38 crossing facility and signage).

1.6 Related Activities:

Consent will be needed from the Planning Authority, Environment Agency and Fields in Trust before construction can commence.

Additional permissions may be required for improvement of the wider links, for example Compulsory Purchase Orders and Traffic Regulation Orders.

Consultation on the scheme will be undertaken with key stakeholders including the Canals and River Trust and Natural England.

1.7 Consequences of funding not being secured: *(Quantified wherever possible)*

A northern pedestrian and cycle bridge is not viable in any other location available. Therefore, if funding for this scheme is not provided, a crossing of the River Severn in north Worcester will not be provided.

The consequences of a northern pedestrian and cycle bridge not being provided include:

- Continued severance in Worcester, particularly in the north of the city.
- Stagnated levels of walking and cycling within the city, and a lack of travel choice for north Worcester residents.
- Limited opportunities for encouraging mode shift from private car.
- Constrained economic growth in the north of Worcester.
- Key assets within Worcester will not reach their full potential, such as the riverside, Gheluvelt Park and the Racecourse.
- Constrained growth in use of the NCN and RCN by north Worcester residents.

4. Fit with Strategic Policy & Objectives: ***(****Please append supporting documents and evidence as required)*

4.1 Fit with over-arching economic objectives: ***(****In particular any LEP, Economic Strategy objectives etc.)*

Worcestershire's Strategic Economic Plan (SEP) was published in 2014. It outlines that the region is committed to delivering an additional 25,000 jobs and increase GVA by £2.9 billion by 2025 by implementing the SEP.

The SEP's objectives are:

- Create a World Class business location
- Provide individuals with World Class Skills
- Develop World Class competitive and innovative businesses

In order to deliver these objectives, there are a number of initiatives including:

- Development for Growth
- Transport Investment Programme
- Connecting Schools and Businesses

The scheme supports sustainable growth within the city of Worcester, which is a key economic centre. As previously outlined, accessibility will be improved to a number of education, residential and employment sites with severance from the River Severn being reduced.

4.2 Fit with local policy objectives: ***(****In particular; adopted Local Transport Plan; Local Plan, Development Plan; other relevant plans / strategies etc.)*

The LTP4 for Worcestershire covers the period 2018 to 2030 and sets out the issues and priorities for investment in transport infrastructure, technology and services to support travel by all relevant modes of transport.

Strategic Transport Schemes include 'Active Travel Corridors' which involve systemic investment in walking and cycling links along corridors to create a safe, comprehensive, integrated network linking residential areas with key trip attractors.

In South Worcestershire, Strategic Active Travel Corridor Schemes that require Kepax Bridge include:

- SWAT12 - Worcester North East - North West Active Travel Corridor (Lower Broadheath to Worcester Six, via new river bridge); and
- SWAT13 - Worcester River Severn Active Travel Corridor (Sabrina Bridge to Kepax).

The location of Kepax Bridge is presented in LTP4 in relation to the other Strategic Active Travel Corridor Schemes in South Worcestershire.

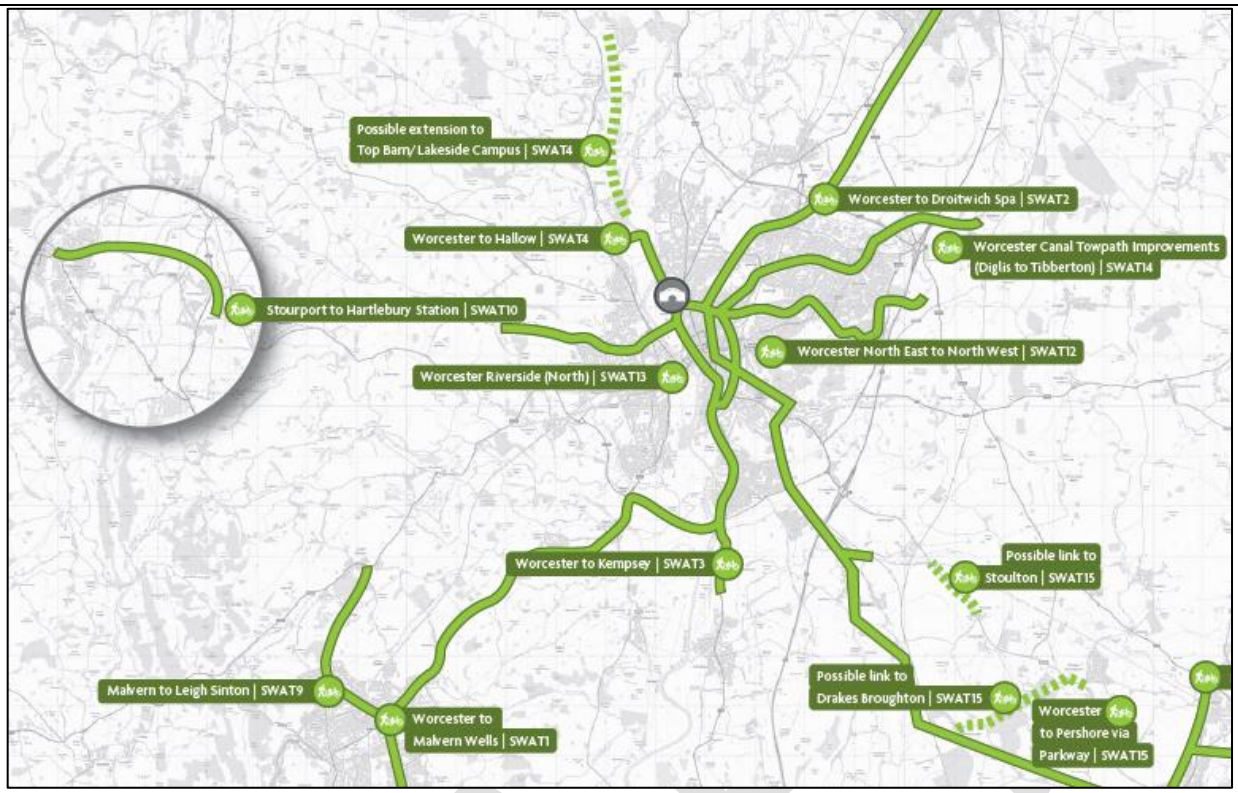


Figure 3: Strategic Active Travel Corridors (SWDP, 2016)

LTP4 Objectives	Worcestershire Corporate Objectives	SEP Objectives
To support Worcestershire's economic competitiveness and growth through delivering a reliable and efficient transport network. **The Economic Objective**	**Open for Business**	**Create a World Class business location**
To reduce the impacts of transport in Worcestershire on the local environment, by reducing noise and transport-related emissions of carbon dioxide and other greenhouse gases, with the desired outcomes of tackling climate change and reducing the impacts of transport on public health. **The Environment Objective**	**The Environment**	**Develop World Class competitive & Innovative businesses**
To contribute towards better safety, security, health and longer life-expectancy in Worcestershire, by reducing the risk of death, injury or illness arising from transport and promoting healthy modes of travel. **The Health and Safety Objective**	**Health & Wellbeing**	**Provide Individuals with World Class Skills**

Table 4: LTP4 Objectives

The scheme supports the objectives in LTP4 through the provision of a new safe and convenient walk and cycle crossing of the River Severn. This will encourage use of active modes, reducing congestion and improving physical health and mental wellbeing.

An additional crossing will also ensure Worcester is 'open for business' by contributing to a resilient network. Journeys between areas adjacent to the bridge

In addition, improvements to wider links will provide improved connections to trip attractors such as the city centre and University and connect residents to the NCN and RCN.

5. Deliverability:

5.1 Details of any previous work undertaken:

	Please tick as appropriate
Concept Study	
Feasibility	✓
Preliminary Design	
Detailed Design	
Risk Register	✓
Detailed Work Programme	
Quantified Risk Assessment	
Environmental Appraisal	
Member Approval	Via LTP4
Commitment of Partners	✓ Worcester City Council are fully supportive
Consultation with Key Stakeholders	Via LTP4
Strategic Business Case	✓
Business Case with BCR	✓
Other	✓ • Early discussions with Environment Agency and Planning Authority about permissions required •

5.2 Dependencies and risks / barriers to delivery: (*Please provide a bullet point brief commentary as per below)*

5.2.1 Land Ownership

The proposal has been designed with the objective of delivering enhancements within land controlled by either Worcestershire County Council or Worcester City Council. For the majority of the scheme this has been achieved.

However, there are some exceptions where works are proposed on land that falls outside of the controlled land. The land to the south east of the bridge, where the proposed upgrades to the Severn Way, are either privately owned or leased to the county council from private landowner and therefore would require permission before developed.

5.2.2 Requirement for Compulsory Purchase

As stated above the majority of land required is within the existing highway boundary. In cases where land will be required from outside the highway boundary, it is envisaged that this will be acquired by negotiation and that should this be unsuccessful then Compulsory Purchase may be required.

5.2.3 Land Type (e.g. all highways, presently occupied etc.)

This is as detailed in section 5.2.1 and its associated plan.

5.2.4 Requirement for major statutory instruments (e.g. TWA, Side Road Orders etc.)

Exercising powers under Section 106 (3) of the Highways Act 1980 to construct the bridge to form a footpath /cycle track (with a right of way on foot) over the navigable waters of the River Severn

Traffic Restriction Orders may be required in relation to wider access improvements.

There may also be a requirement for a statutory instrument in relation to upgrade of the Severn Way to the south of the scheme.

5.2.5 Requirements for planning consents

- Planning permission is required for the scheme.
  - It is assumed as this stage that the scheme will fall under Category B development (…*Other built development, or changes of use, where the site area (red line boundary) is 1 hectare or more, or greater than 1,000 square metres in floorspace (in total)* …).
  - A number of reports will need to be prepared to support a planning application for the scheme, including a Design and Access Statement, Planning Statement, Heritage Statement and Consultation Statement.
  - An Environmental Impact Assessment (EIA) screening opinion will be sought and at this stage it is felt that the screening will suggest that an EIA is not required. If it is determined that an EIA is not required, then an Environmental Assessment Report will be produced to support the planning application.
- In parallel to planning permission, permits will be required from the Environment Agency, for both permanent works and any temporary works (e.g. scaffolding in the channel).
  - A bespoke permit for 'Flood Risk Activities' would be required, which involves submitting a number of forms, documents including a Flood Risk Assessment and Environmental Risk

Assessment.

- Gheluvelt Park to the east of the River is a space protected by Fields in Trust. Therefore, their consent will be required[2] facilitate the bridge landing and wider connections to Barbourne Road.

A discussion has already been held with the relevant Planning officer and Environment Agency staff.

5.2.6 Known environmental impacts (e.g. SSSIs, Ancient Monuments, Green Belt etc.)

The proposed scheme area is all sited within Environment Agency (EA) flood zone 3 (the 1 in 100 year fluvial floodplain), as published on the EA website. Both the River Severn and the Barbourne Brook are designated as main river.

Kepax Bridge will be designed to be resilient to flooding by raising it above the flood level. Flooding will also be considered in relation to the design of the infrastructure approaching the footbridge (steps, ramps, approach footpaths etc.) which are to be integrated into the existing landscape.

The River Severn is a designated wildlife site and the proposed structure location is within the "buffer" zone of Biodiversity Action Plan (BAP) habitat.

The east side of the bridge lands within Gheluvelt Park, the park historically was a water filtration works and therefore the ground conditions are currently regarded as suspect until a full ground investigation is carried out.

The west landing point sits within the boundary of the old Kepax Landfill site. The landfill site was capped in 1985, however due to complaints over haulage lorries during the capping operation (whereby a clay layer is placed over the landfill), the thickness of the clay cap is expected to be circa 2 inches (55 mm).

Ground Investigation (GI) to both the east and west of the river is programmed to commence on the 7th October 2019. The results of the GI allow better understanding of the environmental issues and inform the design of the structure.

5.2.7 Other

- Severn Trent Water (STW) is present to the west of the river.
- Western Power Distribution (WPD) overhead high voltage electrical apparatus crosses the river in close proximity to the proposed location and continues underground both sides of the river.

6. Timescales

6.1 Earliest start on site

The earliest start on site will be summer 2021. The high-level programme is included as Annex 5.

[2] http://www.fieldsintrust.org/FieldSite/Gheluvelt-Park

6.2 Scheme delivery date assessment

Delivery period	Overall Deliverability (Tick only one row)					
	Highly Deliverable	Readily Deliverable	No Major Barriers	Moderate Delivery Risks	Significant Delivery Risks	Highly Deliverable
2016/17 to 2018/19 (inclusive)	N/A					
2019/20 to 2023/24 (inclusive)			✓			
Beyond 2023/24	N/A					

6.2 Approximate duration of the scheme (please append supporting programme)

The approximate length of the scheme up to the commencement of construction is 23 Months (September 2019 – July 2021). See programme in Annex 5 which sets out the details of the activities running through the bridge design and approval, planning and procurement processes.

7. Delivery Agency: *(Please append supporting documents and evidence as required)*

7.1 Proposed delivery agency

The proposed delivery agency is Worcestershire County Council.

7.2 Partnership bodies (if any) you plan to work with during design or delivery

The scheme will be developed and provided in conjunction with Worcester City Council. Due to the location of the scheme with the proposed structure spanning the River Severn, the Environment Agency (EA) and Canals and Rivers Trust (CRT) will be kept informed.

As the scheme includes access to the bridge from Gheluvelt Park, Fields in Trust will be consulted about the scheme.

Other stakeholders may include:

- Landowners
- Local residents
- Local businesses
- Natural England
- English Heritage

- Emergency services
- Local Members
- City Councillors
- Worcester City Conservation Officers
- Worcester City Parks
- WCC Waste Management

8. Costs & Funding: ***(****Please append supporting documents and evidence as required)*

The costs presented within this section are estimates only, this is due to the scheme being early within its development with areas of the bridge design and ground conditions remaining unknown (ground investigation commencing onsite 7th October 2019).

8.1 Cost

Specific estimate if available	
£5-15m	✓ £8.9 million
£15-30m	
£30-50m	
Over £50m	
Unknown at this stage	

8.2 Proposed sources of funding

Source	**Contribution (tick)**	**Approx amount**
Worcester City		£875,000
WCC Capital		£1,500,000*
WCC Borrowing		
S106 / CIL		
Integrated Transport Block		
LEP (to be discussed)		
Other External Funding Opportunities (to be discussed)		

Funding gap (to be discussed)		*£6,540,000*

* Worcestershire County Council have committed £4 million to the construction of the Kepax bridge and refurbishment of Sabrina bridge. The current estimate for the refurbishment of Sabrina bridge is £2.5 million, however this is dependent on funding sources and is therefore subject to change. It is therefore envisioned that the minimum amount available for the bridge would be £1.5 million.

8.3 Project Costs

Full details of the estimated costs of the Major Scheme package are presented within Annex 6. The overall total costs, including contingency is £8.9 million.

The costs in Table B are based on the following assumptions:

- No indexation
- Preparation – Actual costs as of 20th September 2019
- Design Costs – The design costs are split into subtasks (Business Case, Prelim/Architectural Design, Planning, Bridge Detailed Design, Spec and Contract Documents, Tender Documents and Stakeholder management / pre planning engagement)
- Bridge and Foundations – The costs of the structure is based on the footprint of the bridge and has been determined using published historical bridge costs and inflated to 2019 costs.
- Other Construction Costs – The other construction costs are split into subtasks and are based on % costs of the bridge construction costs (Preliminaries including contractors profit and overheads – 30%, WCC Officer input – 2%, Supervision – 5%)
- Access Path and Wider Improvements -
    - Costs based at Q3 2022. However it must be noted that future changes in costs are not certain at the time of projection, therefore, this estimate should be viewed bearing this uncertainty in mind.
    - All works will be competitively tendered.
    - Assumed no works to carriageway with the exception of West Option 2 and works associated with signalised crossings
    - Assumed no existing hardstanding to footway, dirt track only along Severn Way unless specified.
    - Assumed no existing or new furniture to be removed, replaced or included unless specified
    - Allowance for lighting columns included where specified.
    - Assumed no works to new or existing bridges including aligning footpaths with proposed or existing bridges
    - Nominal allowance for drainage and minor utility connections

8.3.1 Table B: Cost estimates (Nominal terms)		
Cost heading	**Cost (£000s)**	**Status (e.g. target price)**
Preparation *Actual costs as of 20th Sept 2019*	297	Feasibility Estimate
Design costs	612	Feasibility Estimate
Bridge and foundations*	4,340	Feasibility Estimate
Other construction costs	1,606	Feasibility Estimate
Access path	570	Feasibility Estimate
Wider improvements	1,491	Feasibility Estimate
TOTAL	8,916	

(2019 prices)

Wider improvement costs are taken from a 'Wider Links' report (Jacobs, August 2019) and can be broken down as follows:

- West Option 1 (improvement of Severn Way south of Kepax Bridge) - £881,703
- East Option 1 (improvement of link to the east of the Racecourse including Stephenson Road and Stephenson Terrace) - £472,302
- East Option 2a (connecting Kepax Bridge to the canal network via a crossing over Barbourne Road) - £136,622

Wider improvement costs are based assuming a do minimum option, this cost could increase significantly if alternative options are taken forward or the scope of improvements for the wider links is enhanced.

The wider link improvements are to form a follow-on phase to the bridge works, depending on when these are taken forward, indexation will result in increased costs.

8.4 Funding profile

Additional funding of £6,540,000 needs to be secured in order to deliver the scheme. This could be from one source (e.g. additional internal funds) or made up from various different sources. In order to secure additional funding, internal WCC discussions and discussions with external funding providers need to commence. Discussions need to include when funding would be available, and when it would need to be spent.

Possible funding sources which could be explored include:

- Local Enterprise Partnership monies
- S106 contributions
- Community Infrastructure Levy
- National bidding opportunities, for example:
  - Department for Transport Pinch Point fund[3] (deadline for EPI is 31 January 2020)
- Lottery / Sustrans (funded Diglis Bridge, unsure of recent availability)

Once funding sources are confirmed, the funding profile can be completed. This will indicate what proportion of funding is to come from which sources, and during which years this is to be spent.

It is recognised that the bridge may need to be funded in advance of the wider linkages aspect of the scheme. However, if this is the case, not all of the economic benefits of the scheme will be realised from day one. Once the funding profile is complete, the Economic Case will need to be refreshed

[3] https://www.gov.uk/government/publications/apply-to-the-local-pinch-point-fund/local-pinch-point-fund-guidance-for-applicants-2019

9. Economic Assessment: *(Please append supporting value for money assessment if available)*

Complete the following table:

Transport Economic Efficiency (VfM)	**Economic** (Note: VfM: BCR is Poor<1; Low 1-1.5; Medium 1.5- 2.0, High 2.0-4.0;Very High>4)						
	BCR = 1.7						
Attributes (Tick one column for each of the attributes below)							
	Large / High Beneficial	Moderate Beneficial	Slight Beneficial	Neutral	Slight Adverse	Moderate Adverse	Large / High Adverse
Reliability							
Wider Economic Benefits		✓					
Environment							
Noise			✓				
Local Air Quality			✓				
Greenhouse Gasses			✓				
Landscape / Townscape			✓				
Heritage *TBC*							
Biodiversity *TBC*							
Water Environment *TBC*							
Social							
Physical Fitness		✓					

Journey Quality		✓					
Accidents				✓			
Security				✓			
Access to Services			✓				
Affordability			✓				
Severance	✓						
Option Values		✓					

Provide a brief bullet point summary of justification for the above WebTAG appraisal based on each of the three main headings only:

Economy	• Construction of the bridge will create 91 direct and 91 indirect jobs (see Annex 3). • Kepax bridge will attract more visitors to Worcester, and in particular the riverside area. With the upgrade of the Severn Way and footpaths adjacent to Worcester Racecourse a riverside loop will be created (Via Sabrina bridge, Worcester bridge or a longer loop via Diglis bridge). • The average day visitor spend in Worcester is £18.60 (2018 prices, source "Strengthening Museums and the Visitors Economy in Worcester" published by TSE Research in 2014). If the annual number of day visitors to Worcester increases by just 1% (felt to be a conservative estimate), the additional annual spend would be £690,523. This would equate to 17 new tourism jobs being created in Worcester. • Certain businesses are likely to benefit from a large increase in visitor numbers and spend, for example the Pump House Environment Centre in Gheluvelt Park. • An increase in walking and cycling levels will reduce congestion. This will encourage economic growth in Worcester. • An active workforce will lead to reduced sickness and absenteeism. • Residents, particularly in north Worcester will be able to access employment opportunities on either side of the river more easily. For example, cycle and pedestrian journeys from north west Worcester to large employment and retail areas in Blackpole and Brickfields will be largely off road via Kepax bridge and the canal.

Environment	• Improvement in walking and cycling infrastructure, resulting in an uplift in use of active modes across north Worcester. • This in turn will result in a reduction in congestion and noise and an improvement in local air quality. • The east side of the bridge lands within Gheluvelt Park, which was historically a water filtration works and therefore the ground conditions are currently regarded as suspect until a full ground investigation is carried out. • The west landing point sits within the boundary of the old Kepax Landfill site. The landfill site was capped in 1985, however due to complaints during the capping operation, the thickness of the clay cap is expected to be circa 2 inches (55 mm). • The proposed scheme area is within Environment Agency flood zone 3 (the 1 in 100 year fluvial floodplain). Both the River Severn and the Barbourne Brook are designated as 'main river', however the implementation of the bridge is thought to have minimal impact on current fluvial flood risk. • Pollution during the construction phase of the scheme will be mitigated through the employment of a CEMP and standard best practice measures being implemented. • Further ecological studies are required to describe the likely impact and appropriate mitigation will be developed.	
Social	• Provision of a new bridge across the river will reduce severance. Currently, residents in north Worcester who wish to make east-west movements must first travel to the centre of Worcester to Sabrina bridge, which is approximately 1 mile south. • Additional walking and cycling links will improve accessibility across north Worcester. • Improved access to green space, in particular a Green Flag Park (Gheluvelt Park). • Increased use of active modes will improve physical and mental health and should reduce absenteeism. • Journey quality will be improved by the provision of new infrastructure and wider links. • The bridge will be lit in order to ensure security of users but will also be sympathetic to any local wildlife.	

10. Financial Case – Affordability & Risk: *(Please append supporting documents and evidence as required)*
Provide brief bullet point summary of the Financial Case for the scheme, including development, construction and

ongoing costs

The Financial Case must include information on risk allowances and cost overruns. This will be completed as the scheme progresses, and once funding sources have been confirmed.

11. The Economic Case – Value for Money (*Please append supporting value for money report)*

Provide a brief summary of the costs and benefits of the scheme

The most up to date costs (included some nominal maintenance costs) and average Diglis Bridge demand figures (felt to be an appropriate benchmark) were used to calculate the potential Value for Money of the Kepax scheme.

66% Optimism Bias has been applied to the costs of constructing the bridge. 44% Optimism Bias has been applied to all other costs, including improvements to the wider network, preparation and design. These levels of Optimism Bias are recommended in WebTAG Unit A1.2.

The resultant BCR for the scheme is found to be **1.7**, which represents **medium** value for money.

In addition to the main Value for Money Statement, a sensitivity test has been undertaken. Traditional appraisal techniques are used to determine the demand for Kepax Bridge and the access path, without provision of any wider improvements. This discounts the option of a riverside circular walk, and value for money of the scheme is therefore determined only by east-west movements across the river.

Results of the sensitivity test are summarised in Table 5 below.

Scenario	Kepax scheme including:	Cost (2019, millions)	PVC (2010) (millions)	PVB (2010) (millions)	BCR
	• Kepax Bridge and Kepax site access • Maintenance • Proposed wider improvements • Diglis bridge demand	£8.9	£9.115	£15.506	1.7
Sensitivity test 1	• Kepax Bridge and Kepax site access • Maintenance • Kepax forecast demand	£7.289	£7.749	£3.582	0.5
Sensitivity test 2	• Kepax Bridge and Kepax site access • Maintenance • Proposed wider improvements • Kepax forecast demand	£8.78	£9.115	£3.582	0.4

Table 5: Scheme BCR and sensitivity test

Sensitivity testing indicates that provision of the bridge and access path only (no wider improvements) could result in a BCR of 0.5 (based on a cost of £7.3 million (2019 prices)).

The BCR figures support implementation of the full scheme despite the higher cost implications. Delivering the full scheme results in the full benefits being realised. Provision of the bridge and access path in isolation result in more modest benefits being realised.

It is important to note that the benefits derived from the DfT Active Mode Toolkit are sensitive to

increased costs and reduced demand. Once scheme design and costs have been refined, the BCR can be refreshed.

In terms of wider benefits produced by the scheme, if day visitors to Worcester increase by 1% there will be an additional gross annual visitor expenditure of over £690,000 and the creation of 17 new tourism jobs. Construction of the scheme will create 182 FTE jobs and result in a GVA uplift of £6,819,943 (2019 prices).

Please refer to Annex 3 for the supporting Value for Money report.

12. The Commercial Case: *(Please append supporting documents and evidence as required)*

Provide a summary of the proposed procurement strategy that will be used to achieve construction of the project

The absolute procurement avenue is to be determined, the options available are design and build (D&B), or design and then build. Design then build would involve early contractor involvement and use of our professional services contract for progression of design work to enable the preparation of all planning documentation.

Worcestershire County Council has an Infrastructure Engineering Term Contract (IETC) to deliver highway improvement and civil engineering projects. This project, which has an estimated civil engineering works value of circa £5m, falls firmly within the nature and scope of projects for which this IETC contract is intended.

The contractor, being a term contractor, is familiar with the Council's aims and objectives, the Local Transport Plan and the Worcestershire Economic Plan and works collaboratively to achieve those goals.

The IETC is an NEC4 Engineering and Construction Contract, with main Option C Target Cost. This contract is designed to deal effectively with risk by using contractor experience early in projects to mitigate risk and allocate it to the party most able to control it. This directly and beneficially affects outturn costs and the programme. An extract from the IETC contract describing what is expected from ECI is reproduced at the end of this Commercial Case section.

The IETC contract is in place and is with a single supplier tendered in compliance with the Public Contract Regulations and EU Directives.

Target Prices are derived using tendered prices and a basket of Labour, Equipment and Materials rates. This basket of prices is benchmarked against prices and inflation indices agreed at the outset of the contract to ensure they remain competitive and maintain cost-effective pricing. Contract performance is driven by KPIs. The Contractor's Share is 50% below 110%, which means that the employer's liability is limited to 5% above target prices and both the Employer and Contractor equally share gains below 100%. Cost control is therefore incentivised. For each project under the IETC, an Individual Project Integrated Management System (IMS) Plan is prepared by our contractor and reviewed and accepted by Worcestershire County Council's Scheme Project Manager. This details the significant site risks, that are best controlled by the Contractor, which typically include:

- Services including Temporary Electrical Installation
- Traffic Routes and Vehicle/Pedestrian Segregation
- Storage of Hazardous Materials
- Hazard Risk Register

- Reducing Noise and Vibration
- Using Hazardous Materials & Monitoring Health
- Dealing with Contaminated Land
- Removal of Asbestos
- Work on Excavations and Work where there are Poor Ground Conditions
- Work on or Near Water where there is a Risk of Drowning
- Accommodating Adjacent Land Use
- Removal of Waste
- Delivery & Removal of Materials and Work Equipment

Extract from A5.09 Scope - Appendix 09 - Early Contractor Involvement (ECI) in the IETC Contract:

Early Contractor Involvement (ECI)

Early Contractor Involvement (ECI) involves the creation of a Contractor/Consultant/Client team, led by the Project Manager, which caters for the consideration of buildability and value issues earlier in the design process, leading to shorter construction periods and reduced impacts during construction.

The benefit of ECI is that it utilises contractors' unique understanding of construction processes to optimise the design and delivery process. The difference is, as the name implies, that ECI involves the contractor far earlier. With ECI, the contractor joins the team early and is involved with planning, assessing buildability, cost estimating and value engineering.

ECI is the key to ensuring both programme and cost certainty for WCC. The Contractor is expected to be involved in a project as early as possible. A strong team ethos is critical in producing the most cost-efficient project.

The goal of ECI is to provide the possibility for forecasting project results with more certainty. It should prepare all parties to jointly solve problems, address unknowns in difficult environments and avoid or resolve conflicts more effectively.

Range of benefits gained by participating in ECI

- Early creation of delivery team
- More scope for innovation
- More flexibility and better value
- Integrated and incentivised supply chain
- Improved risk management with fair allocation of risks
- Improved Health and Safety
- Shorter construction periods and reduced impacts during construction
- Maintaining a competitive and sustainable supply chain
- Clear points of responsibility, no unnecessary layers of supervision
- Good and appropriate quality of design to meet project objectives
- Partnership approach and team ethos based on long-term relationships
- Performance measurement with continual improvement targets
- Improved communications and liaison with the key stakeholders during consultation and construction

13. The Management Case – Delivery: *(Please append supporting documents and evidence as*

required)

13.1 Development and Construction milestones

- Feasibility and Strategic Outline Business Case - Present – Winter 2019
- Design Development: Autumn 2019 – Autumn 2020
- Planning application Submission: Summer 2020
- Land and Legal Agreements: Winter 2019 – Summer 2020
- Planning application determined: Winter 2020/21
- Procure Construction Contract: Winter 2019 – Autumn 2020
- Final Cabinet Approval: Spring 2021
- Award construction contract: Spring/Summer 2021
- Start on Site: Summer 2021

Details taken from the overall strategic programme as detailed in Annex 5.

13.2 Previous delivery performance

WCC has considerable experience of:

- Delivering major transport schemes on time and on budget;
- Successfully obtaining consents for major infrastructure schemes;
- Developing and maintaining good working relationship with key partners and stakeholders; and
- Internal resourcing and governance requirements for major schemes.

Previous bridge schemes successfully delivered by WCC include:

- Eastham Bridge (£2.5 million) – Grade II listed Eastham Bridge collapsed in May 2016 after one of the bridge piers was victim of scour.
  - Two pairs of steel beams, 33m (108ft) long and weighing 84 tonnes, were lifted across the river as part of the new bridge's construction.
  - The bridge reopened to traffic in April 2017 and construction was fully completed in September 2017.
- Hoobrook Link Road (£8 million) - The Hoobrook Link Road is situated within the South Kidderminster Enterprise Park which is one of Worcestershire's Local Enterprise Partnership's (WLEP) Strategic Employment sites.
  - Pre-existing traffic congestion was a barrier to economic growth in the immediate and wider Kidderminster area.
  - The new link road provides improved access, connects two key employment corridors, promotes much needed economic growth and relieves traffic congestion.
- Diglis Bridge - Single span cable stayed bridge over the River Severn to the south of Worcester City which has opened up the riverside. The structure is seen as a success as the current usage is higher than anticipated at construction.
- Broomhall Way - Delivery of new footbridge over Broomhall Way to connect a new development to St Peters and local services.

14. Statutory Powers and Consents*: (Please append supporting documents and evidence as required)*
Please list separately each statutory power / consent required. In advance of construction, the following consents will need to be granted: • Full Planning Consent • Environment Agency Consent • Fields in Trust Consent In addition to the above, the following may be required in relation to access and wider links: • Traffic Regulation Orders • Compulsory Purchase Orders • Creation of Rights of Way Relevant timescales have been incorporated into the bridge programme.

15. Governance: (*Please append supporting documents and evidence as required)*
Provide a summary of the proposed organisation of the project The project management for the major scheme is based on the structure and processes that have been successfully applied by WCC on other major schemes, for example on the Worcester Southern Link Road and is illustrated on Figure 4.

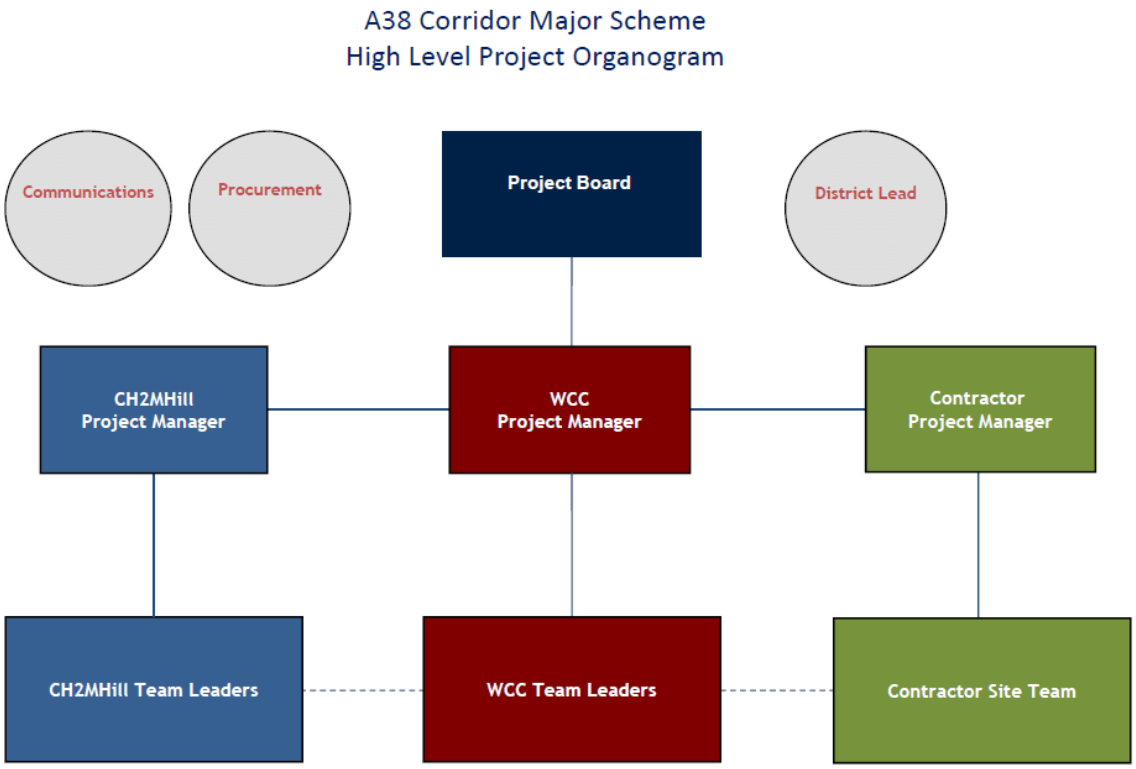


Figure 4: Project Structure

The structure is based on PRINCE2 principles and the Project Management Handbook for Local Authorities, Version 5: Programme, Project and Change Management. It also considers the Office of Government Commerce (OGC) guidelines for delivering projects. Specific attention has been given to governance, to provide a clearly defined structure for the role of the Cabinet, Project Board, Project Manager and Project Teams. Specific attention has been given to Governance, to provide a clearly defined structure for the role of the cabinet, project board and project team.
Worcestershire County Council's Cabinet has ultimate authority for the project. The Cabinet meets on a monthly basis.

The scheme will be overseen by a Project Board. Membership of the Project Board is summarised in Table 6. The Project Board will meet at key milestones throughout the life of the project to ensure Project Assurance objectives are met. The Project Board will also specifically meet at key milestones during the project, tying in with their role in procurement, design and financial approval in the next stages of the project.

Name	Organisation	Role
Rachel Hill	WCC	Member / Senior Responsible Officer
Lynsey Keir	WCC	Member/Project Office
Andy Maginnis	WCC	Member
Nick Twaite	WCC	Member / Procurement and Contract
Kristy Thomas	WCC	Member / Land and Waste
Richard Woodward	WCC	Member / Land and Waste
Sophia Geoghegan	WCC	Project Support
Nick Kay	Worcester City Council	Member / Partner

Anthony Rich	Jacobs (Seconded)	Member / WCC Project Manager
Martyn Booth	Jacobs	Member/Consultant Project Manager

Table 6: Project Board Membership

The Senior Responsible Officer is Rachel Hill. The role of the Senior Responsible Officer is to lead the management and delivery teams and provide the interface with the executive team.

16. Risk Management: *(Please append supporting documents and evidence as required)*

Provide a brief summary of the proposed Risk Management Strategy outlining how risks will be managed and referencing the Risk Register

Annex 7 details the Qualitative Risk Register for the project. The main risk as of 20th September 2019 is:

- Unknown Ground Condition, requiring extensive ground improvements and increased foundations – Ground Investigation are programmed for the 7th October 2019 to both east and west of the river.

A full Quantified Risk Assessment (QRA) will be progressed and presented within the FBC.

17. Stakeholder Management: ***(****Please append supporting documents and evidence as required)*

Provide a brief summary of your strategy for managing stakeholders

Key stakeholders have been engaged at a strategic level though a range of previous wider engagement activities, in particular, as part of the development of the fourth Local Transport Plans (LTP4).

As the project progresses this will be worked up into a detailed Stakeholder Management and Engagement Plan. The Plan will outline a process for engagement which will help to:

- Increase the number of stakeholders aware of the proposals and allow them early opportunity to comment so that any reasonable requests for mitigation measures can be considered at an appropriate time
- Ensure that the need for the scheme and the expected benefits are understood within the context of wider improvements – this will be achieved through managing key messages effectively
- Promote advocacy for the proposals from key external stakeholders
- Ensure users and residents are aware of any planned disruption as a result of the works, in good time to be able to plan alternative travel if necessary, and within the context of the wider improvements;
- Ensure that there is an opportunity for stakeholders to feedback about the effectiveness of the implementation of the major scheme. This will serve to provide one of the baseline measurements required to determine the success of the project post-delivery and will also help underpin any future funding applications for further phases.

It will be vitally important to keep all relevant parties informed about the progress of the project, in a timely and appropriate manner that is suitable for their level of involvement.

The Plan will also cover in detail who the stakeholders are and also which communication channels will be used to most effectively communicate with them.

The key stakeholders fall into a number of categories, as follows:

- **Project Partners** - stakeholders who have a high level of both influence and interest in the scheme and ultimately have the ability to decide whether it goes ahead. This includes those organisations who hold the funding, those who will approve the spending and those that will ultimately approve any statutory process.
- **Key consultees** – stakeholders who are directly affected and likely to have strong views or have the ability to significantly influence either the design of the scheme or the approvals process. The Major Scheme could go ahead without the agreement of these stakeholders, but if they do not input or their support is not secured there could be cost or programme implications.
- **Wider community** – These stakeholders may not be directly impacted by the scheme but are likely to take a broader interest and would appreciate regular communication.

The Stakeholder Management and Engagement Plan will be developed further as part of the Business Case.

18. Benefits Realisation, Monitoring and Evaluation*: (Please append supporting documents and evidence as required)*

WCC's commitment to monitor and evaluate the impact of the major scheme once implemented is based on WebTAG guidance to bidders for major transport schemes. The guidance requests details on the likely benefits and how they will be measured and reported. It is proposed that this will broadly follow the 'standard monitoring' approach set out in the 'Monitoring and Evaluation Framework for Local Authority Major Schemes', although this effort will be adjusted accordingly, to be appropriate, proportionate and cost effective. "Standard monitoring" should include measures covering inputs, outputs, outcomes and impacts of the scheme.

For the purposes of this scheme, it is proposed to consider the following questions:

- Was the scheme delivered to cost and timescale?
- Has the scheme delivered the type and scale of benefits forecast? As outlined in Section 3.4
- Has the scheme delivered the desired outcomes, including increased tourism and job creation?
- What lessons can be learnt to help shape future investment strategies for the County?

Costs and Delivery

The scheme build would be monitored, covering procurement, achievement of timescale and key milestones, risk outcomes, and stakeholder feedback. The actual scheme as delivered would be assessed, including success of the design and materials used. Outturn costs will be compared to forecasts and on-going maintenance costs, ensuring the scheme remains affordable and

demonstrates value for money. This could include indicative outturn BCR based on final costs and benefits outcomes.

Benefits, Impacts and Monitoring

As no link currently exists over the River Severn in the Kepax area, 'before' monitoring at this location would yield a nil result. Instead, it will be necessary to understand the level of abstraction from existing alternative bridge crossings (specifically, the Sabrina Bridge to the south) to clarify how much 'new' demand the construction of a bridge at Kepax would release. It is recommended that any new bridge is fitted with permanent walking and cycling traffic counters, so that monitoring can be undertaken on all east-west movements in the area, to understand changes to uplift in demand. Comprehensive monitoring should be undertaken 1 year before scheme opening, 1 year after scheme opening, and five years after scheme opening for a single calendar month (June may be the most appropriate for this) as a minimum, but continuous monitoring would be far preferable to understand the pattern of demand throughout the year. Funding should be set aside from the construction funding to allow for this essential monitoring to take place. The results of this monitoring should be prepared in a short report and made available to the Project Office for scrutiny and for use in evidencing delivery of benefits to project funders.

It may be appropriate to use a specialist benefits management tool for active travel, to quantify the socio-economic benefits that have been derived from investment.

In addition to monitoring the use of Kepax Bridge, impact on wider objectives will also be monitored as outlined in the Table below:

Overarching Objective	Delivery of objective	Data collection	Timescales
Mode shift to walking and cycling	• Provision of new bridge and improved walking and cycling connections • Improved safety for pedestrians and cyclists • Better east west connections in north Worcester •	• Pedestrian and cycle counts - On bridge - On NCN 45 - On NCN 46 - Along riverside	• Annually
Increase visitor numbers	• Creation of riverside loop in north Worcester • Improved access to Gheluvelt Park and green fields to west • Increased visitor numbers to local attractions such as Environmental Pumphouse and Racecourse	• Business visitor numbers • Riverside pedestrian and cycle counts	• To tie in with reviews of visitor economy

Increased transport resilience	• Use of Kepax Bridge and parallel use of Sabrina and Diglis Bridge	• Pedestrian and cycle counts	• Annually
Improved public realm	• Appropriate signage, street furniture and paving palate choice. • Increased visitor dwell times (e.g. in Gheluvelt Park)	• Satisfaction survey	• One year after opening

Table 7: Monitoring against objectives

19. Equality Analysis: *Please append supporting documents and evidence as required*
An Equality Impact Assessment (EIA) was carried out for the LTP4 in 2016, as per Worcestershire County Council's standard template. This is included within Annex 8. A specific EIA will be produced if the scheme the requires an Outline Business Case, this is dependent on the funding of the bridge.

20. Senior Responsible Owner DECLARATION	
As Senior Responsible Owner for Kepax Bridge I hereby submit this request for funding consideration to the Worcestershire Local Transport Body.	
Name:	Signed:
Position:	
21. Contact Details for Further Enquiries	
Lead Contact: Position: Telephone Number: Email:	
Alternative Contact: Position: Telephone Number:	

Email	