

**Bedminster Bridges  
Outline Business Case**

**Section A:**

**Strategic and Economic  
Dimensions**

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# 1. Strategic Dimension

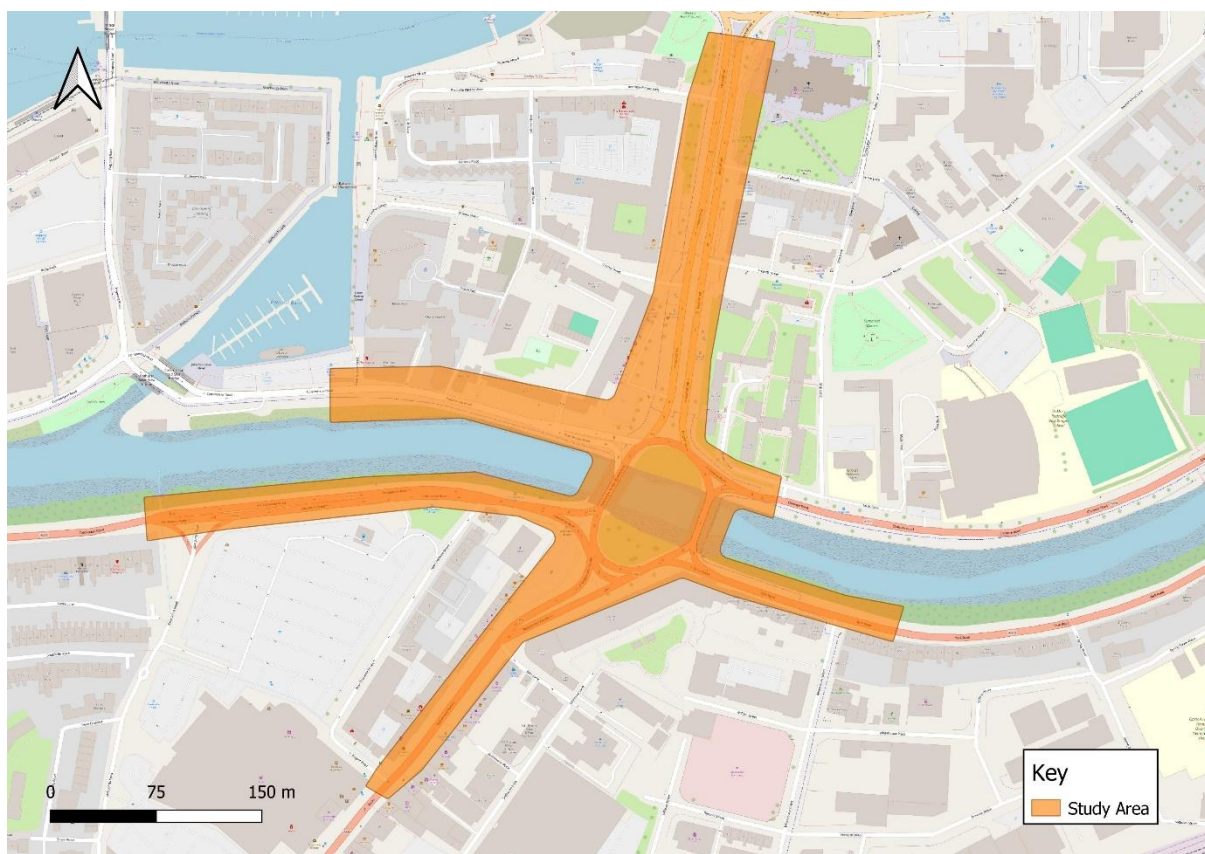
## 1.1 Introduction

This strategic dimension makes the case for investment in a complete redesign of the Bedminster Bridges Roundabout through the implementation of a series of bus priority measures and active travel improvements, with the strategic goal of facilitating improved sustainable travel into and through the city and, in the long-term, enabling future provision of a mass transit system.

The scheme, being taken forward by Bristol City Council (BCC) forms part of the Bristol City Centre programme, which will collectively deliver bus priority on routes through the city centre. The scheme is one of five schemes, which collectively will provide bus priority and active travel improvements on the existing city centre bus loop. The scheme is seeking funding from the West of England Combined Authority via the City Region Sustainable Transport Settlement (CRSTS).

The study area consists of the Bedminster Bridges Roundabout, and adjoining roads including Bedminster Parade, Redcliff Hill, Commercial Road, Clarence Road, York Road and Coronation Road. Figure 1-1 outlines the extent of the study area, which spans the Redcliffe and Bedminster areas of central and south Bristol.

Figure 1-1: Study area.



The proposed scheme includes the installation of new segregated cycle tracks with signalised crossings, allowing cyclists to safely cross the roundabout between Bedminster Parade and Redcliffe Hill. Additionally, signalised crossings and segregated cycle tracks will be provided from Clarence Road to Commercial Road. A new cycle track will also be implemented on Commercial Road.

The Bedminster Bridges roundabout will undergo remodelling, with the western bridge converted into a two-way bus lane and active travel route. Consequently, only the eastern bridge will be accessible to private vehicles.

As part of the case for change, this section sets out how the project aligns with organisational priorities, key strategy, and policy objectives. It summarises the key interdependencies with other ongoing projects and the impact of not changing and outlines the emerging scope of the project.

## 1.2 Organisation Overview

The project is being taken forward by Bristol City Council (BCC), the Local Highway Authority for the study area.

As the West of England Mayoral Combined Authority (henceforth known as the Combined Authority) is the Regional Transport Authority who hold responsibility for the devolved local transport budget, the OBC must be submitted to the Combined Authority which encompasses Bristol, Bath and North East Somerset and South Gloucestershire councils.

## 1.3 Business Strategy and Wider Strategies

### 1.3.1.1 National, Regional and Local Policies and Strategies

A review of the relevant national, regional and local policies and strategies has been undertaken to establish the strategic context for the scheme. The policies reviewed are outlined in Table 1-1, with Table 1-2 outlining the schemes contribution to these policies. The project strongly aligns with these documents.

Table 1-1: National, Regional and Local Policies and Strategies.

<b>National</b>	<b>Regional</b>	<b>Local</b>
Bus Back Better - National Bus Strategy (2021)	West of England Local Cycling and Walking Infrastructure Plan (2020-2036)	Bristol Development Framework – Core Strategy (2011)
Gear Change: A Bold Vision for Cycling and Walking (2020)	West of England Joint Local Transport Plan (JLTP4) (2020-2036)	Bristol Transport Strategy (2019)
Local Transport Note 1/20: Cycle Infrastructure Design Guidance (LTN 1/20) (2020)	West of England Climate and Ecological Strategy and Action Plan (2022)	Bristol City Council – Corporate Strategy 2022-2027

<b>National</b>	<b>Regional</b>	<b>Local</b>
Clean Growth Strategy (2017)	West of England Local Enterprise Partnership Strategic Economic Plan (SEP) (2015-2030)	One City Plan (2023)
Decarbonising Transport Plan: A Better, Greener Britain (2021)	West of England Joint Green Infrastructure Strategy (JGIS) (2020-2030)	
Cycling and Walking Investment Strategy (2017)	West of England Bus Service Improvement Plan (update of December 2022)	
National Planning Policy Framework (NPPF) (2021)	West of England Bus Strategy (June 2020)	
Local Transport Note 1/24: Bus User Priority (2024)	City Region Sustainable Transport Settlement	
The National Bus Strategy: Bus policy in England outside London (2022)		

Table 1-2: Scheme contribution to Policies and Strategies

<b>National Planning Policy and Strategies</b>	
<b>Policy / Strategy</b>	<b>Scheme contribution to policy/strategy</b>
Bus Back Better – National Bus Strategy (2021)	This scheme supports the improvement of bus services, as the easiest, cheapest and quickest way to improve transport. The scheme will deliver faster and more reliable services which is in line with the goals of the National bus Strategy.
Gear Change: A Bold Vision for Cycling and Walking (2020)	This scheme aligns with the Gear Change vision to deliver the step change in cycling across England. It will provide segregated cycling infrastructure along a popular route from South Bristol to the city centre via Bedminster Bridge roundabout. Additionally, it will improve cycling infrastructure on an east-to-west route and provide a connection between existing routes.
Local Transport Note 1/20: Cycle Infrastructure Design Guidance (LTN 1/20) (2020)	The proposed scheme has been designed in line with the guidance from LTN 1/20 and fully complies with its standards, particularly regarding cyclist protection. As a result, the scheme qualifies for DfT funding. The routes included are partially outlined in the West of England LCWIP, supporting a network-based approach to cycle infrastructure provision.

<b>National Planning Policy and Strategies</b>	
<b>Policy / Strategy</b>	<b>Scheme contribution to policy/strategy</b>
Clean Growth Strategy (2017)	The scheme will contribute to achieving the UK Clean Growth Strategy through encouraging uptake in sustainable transport through improvements to the bus priority infrastructure, cycling and walking network. This will create modal shift, reducing the number of private car users and carbon emissions on the road network.
Decarbonising Transport: A Better, Greener Britain	The scheme will contribute to decarbonising transport in the UK by providing high-quality bus priority infrastructure as well as cycling and walking routes to enable an increase level of sustainable travel. High-quality infrastructure, will improve the bus service reliability and journey times which in combination with other low-carbon transport modes, can provide competitive journey times to private vehicle use and lead to a step change reduction in transport carbon emissions.
Cycling and Walking Investment Strategy (2017)	The scheme is proposed in accordance with the principles for cycling and walking outlined in the Cycling and walking Investment Strategy. Part of the scheme is mentioned in the West of England LCWIP.
National Planning Policy Framework (NPPF) (2021)	The creation of new bus priority corridors, cycling and walking infrastructure in Bristol City Centre will allow for greater uptake of sustainable travel to and from the centre of Bristol but also for wider public transport and active travel accessibility to the wider region, in accordance with the principles of the NPPF. It will afford greater priority to public transport users, pedestrians and cyclists compared to the current situation in accordance with the transport hierarchy outlined in the NPPF.
Local Transport Note 1/24: Bus User Priority (2024)	The scheme will follow the newest guidance on how to deliver bus priority infrastructure.
The National Bus Strategy: Bus policy in England outside London (2022)	The scheme will enhance journey times and service reliability for a considerable number of services that use the Bedminster bridge. The user experience will improve as will the competitiveness of public transport to private vehicles.

<b>Regional Planning Policy and Strategies</b>	
<b>Policy / Strategy</b>	<b>Description</b>
West of England Local Cycling and Walking Infrastructure Plan (2020-2036)	The scheme will provide improved walking and cycling infrastructure identified in the West of England LCWIP as well as providing segregated cycling infrastructure through the Bedminster Bridges. Inclusion of part of this scheme in the LCWIP as well as the recognition of the strategic importance of providing segregated infrastructure at the bridges provides a strong impetus for the provision of the infrastructure.
West of England Joint Local Transport Plan (JLTP4) (2020-2036)	The scheme is provided in accordance with the vision and objectives of the JLTP4, by enabling low-carbon transport within Bristol along with improvements to user health and wellbeing and transport equality through the provision of accessible infrastructure for all.
West of England Climate and Ecological Strategy and Action Plan (2022)	The scheme is in accordance with the West of England Climate and Ecological Strategy and Action Plan as it will enable an increase in the uptake of sustainable transport in Bristol. This will help achieve the goal to create a net carbon zero region by 2030 by creating mode shift away from private vehicle travel.



<b>Regional Planning Policy and Strategies</b>	
<b>Policy / Strategy</b>	<b>Description</b>
West of England Local Enterprise Partnership Strategic Economic Plan (SEP) (2015-2030)	The scheme will enable local, low-carbon travel within Bristol as well as reducing journey times for public transport. The scheme will also deliver economic benefits to the local community.
West of England Joint Green Infrastructure Strategy (JGIS) (2020-2030)	The scheme will encourage sustainable travel use to create an attractive and healthy place, delivering economic benefits to Bristol.
West of England Bus Service Improvement Plan (update of June 2024)	The scheme contributes to Delivery Plan B of the West of England BSIP, which has the goal of delivering bus priorities that will deliver journey times which are reliable and comparable to or better than car travel.
West of England Bus Strategy (June 2020)	The scheme will improve journey times and reliability which will help to deliver buses that are dependable, quick and reliable as well as addressing congestion delays caused by car travel as set in the strategy.
City Region Sustainable Transport Settlement	The scheme will improve sustainable travel infrastructure to improve connection within Bristol.

<b>Local Planning Policy and Strategies</b>	
<b>Policy / Strategy</b>	<b>Description</b>
Bristol Development Framework – Core Strategy (2011)	The scheme will help delivering the objectives of Policy BCS10 through the reshaping of junctions to improve accessibility and connectivity.
Bristol Transport Strategy (2019)	The scheme will help deliver on the objectives of the Bristol Transport Strategy through enabling reliable journeys by minimising the negative impacts of congestion and increasing resilience and efficiency of the network. It will also support the sustainable growth of the region, by enabling efficient movement of people and goods through sustainable transport solutions.
Bristol City Council – Corporate Strategy 2022-2027	The scheme will contribute to achieving transport priority TC2 by enhancing bus journey reliability. Additionally, it will support transport priority TC3 by improving infrastructure for active travel and reducing air pollution.
One City Plan (2023)	The transport vision for the plan includes a mass transit network across the city and an attractive walking and cycling network. The vision for both of this transport modes becomes closer to be achieved through the implementation of the scheme.

### **1.3.1.2 City Region Sustainable Transport Settlement**

The scheme would be delivered with funding from CRSTS. This is an allocation of £5.7bn of government funding given to the West of England subregion in 2022 to implement transport schemes by March 2027 which:

- Reduce greenhouse gas emissions.
- Level-up and transform deprived areas.
- Reduce blockers to productivity and connects jobseekers to employment.
- Delivers high-quality, interconnected transport options for everyone.

The Bedminster Bridges proposal forms part of Work Package 1 (Improving our strategic public transport corridors) as part of the Bristol City Centre corridor programme. The works also contribute to the long-term aspirations in relation to work package 5 (Mass Transit) through enabling a rapid transit route for the M2 metrobus service.

### **1.3.1.3 Planning policies summary**

The proposed project integrates key planning policies that enhance Bristol's transport infrastructure, sustainability, and urban environment. It aligns with the Bristol Development Framework – Core Strategy (2011), the National Planning Policy Framework (NPPF) (2021), and the City Centre Development and Delivery Plan, all emphasising accessibility, sustainable travel, and connectivity.

Policy BCS10 and the NPPF focus on improving accessibility and promoting sustainable travel. The project supports these goals by reshaping junctions, introducing bus priority corridors, and developing infrastructure for cycling and walking. These measures prioritise public transport users, pedestrians, and cyclists, reflecting the NPPF's transport hierarchy.

Additionally, the City Centre Development and Delivery Plan promotes transforming the urban environment into a hub for active travel and green infrastructure. By enhancing public spaces and connectivity, the project advances these goals, contributing to a more sustainable and vibrant Bristol.

## **1.4 Existing Arrangements**

### **1.4.1.1 Highway Network**

Bedminster Bridges roundabout (presented in Figure 1-2) is a major signalised roundabout junction located just to the south of Bristol City centre, which provides an intersection between Bedminster Parade, Coronation Road, York Road, Clarence Road, Commercial Road and Redcliff Hill. The junction spans the River Avon via two separate bridge structures. The nearest alternative bridges open to traffic are at Bath Bridge roundabout, located ½ a mile to the east. The roundabout experiences a substantial traffic volume of traffic, with 35,000 vehicles passing through it in a 12-hour period (as of 2019), emphasising its significance as a key intersection.

Bedminster Bridges is an important link to and from the south of the city for all modes of transportation. Journeys across the New Cut are naturally concentrated at the main crossing points over the river, and Bedminster Bridges is one of these locations.

Some of the most important journeys through Bedminster Bridges will be the north to south movement linking the city centre with south Bristol, as this will be the majority of both work and leisure trips and a key focus for journey time savings and active and sustainable travel due to the relatively short overall distance of these trips. Other local trips will also be made at the junction, as well as longer trips towards the Strategic Road Network with the M4, M5

and M32 relatively nearby. The proposals retain all bus, cycle and pedestrian movements which can currently be made, whilst a small proportion of private car trips may need to re-route onto other nearby road such as Clarence Road and Redcliffe Hill to achieve the additional priority, comfort and resilience proposed for active and sustainable modes.

Figure 1-2: Satellite photo of Bedminster Bridges highway infrastructure.



Source: Google Earth Pro (2022)

The junction is currently used by around 260 buses per day (estimated at 13,750 daily passengers) including the M1 and M2 metrobus services, the A1 Airport Flyer and services 75, 76 and 24. However, journey time reliability through the junction is poor for all traffic due to congestion in the morning and evening peaks and buses are affected by this unreliability due to the lack of segregation from traffic through the junction. This especially affects the outbound M2 which needs to take a long route around the roundabout to turn right from Redcliffe Hill on to Commercial Road (taking up to three and half minutes).

Table 1-3 provides a description of how each bus route navigates the roundabout.

Table 1-3: Bus routes navigation of Bedminster Bridges roundabout.

Bus Service	Usage of the roundabout
A1 Airport Flyer, 75, 76, M1	Travel north-south, connecting Redcliff Hill to Bedminster Parade in both directions.
24	Southbound buses use Redcliff Hill to access Coronation Road. Northbound buses heading to the city centre use the south-to-north link from Bedminster Parade to Redcliff Hill.
M2	Travels in both directions, navigating from Commercial Road to Redcliff Hill.

Figure 1-3 to Figure 1-5 visually display the bus delays in the study area for the AM, PM and interpeak, based upon data collected by onboard GPS transponders from the First bus fleet. The data presents aggregated data from the fleet by link of road and presents this as delay per metre, with delay measured as the difference between the fastest and slowest pace on that road section. The data shows that the junction is a significant cause of delays for all services that use it due to the number of traffic signals (without bus priority) which buses have to pass through alongside general traffic. Queues are common during the AM peak at Bedminster Parade and on the west bridge of the roundabout (northbound). In the PM, congestion shifts to the east bridge of the roundabout, affecting traffic heading toward Bedminster Parade (southbound) and Coronation Road. IP delays are like those in the PM but tend to be less severe.

Figure 1-3: AM Peak bus delays in the study area.

[Redacted map showing delays to buses through Bedminster Bridges from First Group]

Source: First Bus 'FirstMove' Data – October to December 2023 Average for the AM Peak – 8:00 to 9:00 (average delay per vehicle)

Figure 1-4: PM Peak bus delays in the study area.

[Redacted map showing delays to buses through Bedminster Bridges from First Group]

Source: First Bus 'FirstMove' Data – October to December 2023 Average for the PM Peak – 17:00 to 18:00 (average delay per vehicle)

Figure 1-5: IP Peak bus delays in the study area.

[Redacted map showing delays to buses through Bedminster Bridges from First Group]

Source: First Bus 'FirstMove' Data – October to December 2023 Average for the IP Peak – 12:00 to 13:00 (average delay per vehicle)

#### 1.4.1.2 Cycling Infrastructure

The cycling infrastructure surrounding the roundabout presents several challenges. On the west-side bridge, which is not designated as shared space for cyclists, northbound cyclists are required to dismount and share pavements and crossings with pedestrians due to the lack of dedicated cycling provision. This results from safety concerns on the main carriageway and

the inconvenience of crossing the roundabout to use the eastern bridge. This not only impacts the safety of cyclists and pedestrians but also contributes to poor journey quality. Furthermore, the study area, one of the busiest links in Bristol, has no dedicated safe bicycle parking and only 18 Sheffield stands.

In the summer of 2024, daily pedestrian counts of 8,500 and cycling counts of 3,300 were recorded in both directions, highlighting the junction’s importance to active travel users. The main destination for these users is Bristol city centre, which serves as the region’s primary hub for work, amenities, and leisure.

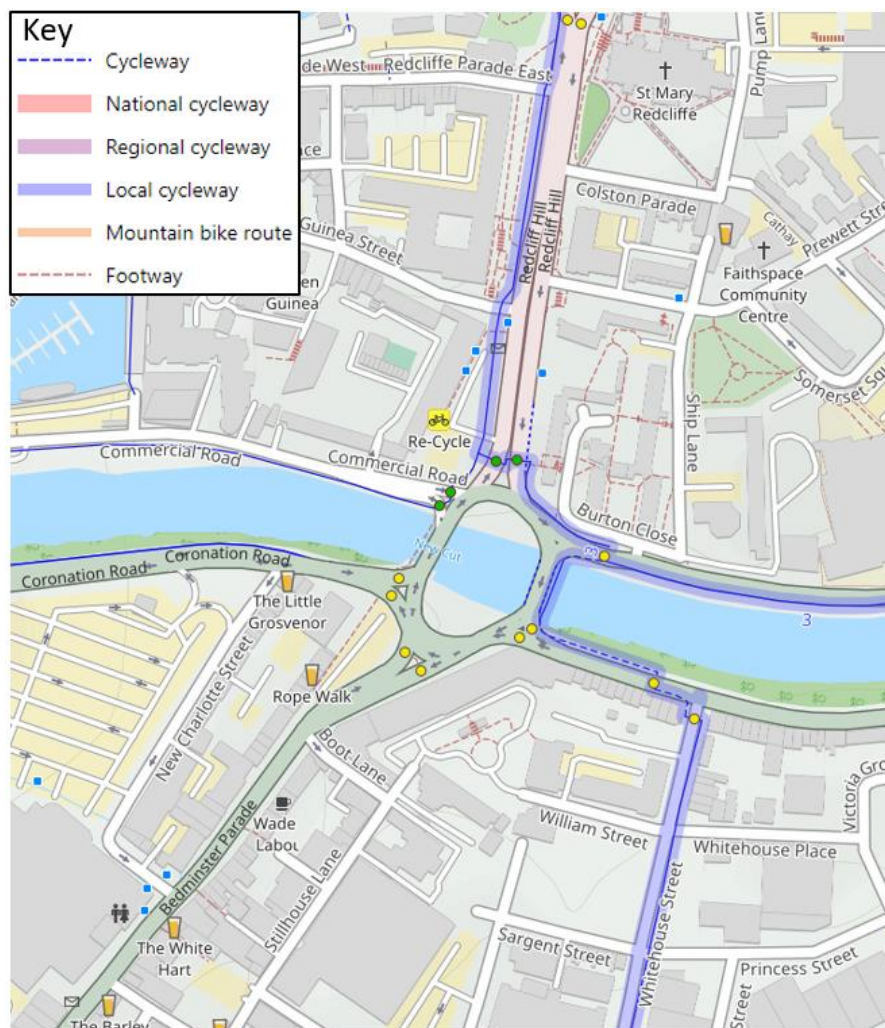
These counts show that the number of active travel users exceeds the number of passengers in cars for the AM and PM peak periods.

Heading northward on Redcliff Hill, the cycling infrastructure varies. Some sections offer shared spaces for pedestrians and cyclists, while others feature dedicated cycle lanes. Additionally, Clarence Road comprises a segregated two-way cycle track, providing cyclists with a high-quality route.

When navigating the roundabout in the southbound direction, cyclists can use a narrow, dedicated cycle lane on the east side, unsegregated from traffic. Furthermore, the east side of the bridge offers a shared pavement for pedestrians and cyclists, but the width of this is also substandard.

However, there remains a noticeable gap in cycling infrastructure along Bedminster Parade. Figure 1-6 illustrates the current cycling infrastructure in the study area.

Figure 1-6: Cycling infrastructure in and around Bedminster Bridges.



*Source: OpenStreetMap*

Evidence from stakeholder engagement is provided in Sustrans 'Walking and Cycle Index 2023' report<sup>1</sup>, which found that 74% of people would cycle more if additional traffic-free cycle paths away from roads were introduced.

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<sup>1</sup> [Walking and Cycling Index 2023: Bristol](#) [Last accessed 13/01/2025]

## 1.5 Interdependencies

The scheme is not contingent on any other developments. While Bedminster Bridges is part of Phase 1 of the City Centre Programme (one of five bus priority interventions being taken forward in the city centre) to improve the city centre bus loop and, in the long term, enable delivery of a mass transit system, the scheme remains a standalone proposal of benefit to the local area in isolation.

However, there are several related projects that are ongoing or planned near the study area. Table 1-4 gives an overview of the projects that may impact or be impacted by the Bedminster Bridges scheme.

Table 1-4: Schemes that may be impacted/have an impact on the proposed scheme.

Scheme Name	Expected Opening Year	Description
Bedminster Bridges refurbishment	2027	Refurbishment works to both the Bedminster old bridge (western side) and Bedminster new bridge (eastern side) will take place as part of these works, under the same contract. By undertaking both the maintenance work to the bridges and surface level layout changes at the same time, there will be a cost saving and a reduction in total time of the construction work, minimising disruption to the public
Temple Quarter	Regeneration project running until 2050	The Temple Quarter development brings employment, housing and mixed-use spaces to Bristol City Centre. Temple Quarter is located near Temple Meads Railway Station and is to be one of the UKs largest urban regeneration schemes. An initial part of the scheme started with a new eastern access to Bristol Temple Meads station, allowing a higher volume of passengers to enter and exit the station to the east of the city.
Bedminster Green	2027	Bedminster Green is a development area for housing and mixed-use schemes across five plots. The site is centred on Hereford Street car park and is located close to Bristol City Centre. As part of this framework, the new residential developments will also offer workspaces and pedestrian and cycle infrastructure connecting it the new neighbourhood to the city centre.
Cumberland Road Modal Filter	2024	The modal filter is located on the inbound lane on Cumberland Road to improve the public transport provisions in Bristol and has been in place since September 2023. The modal filter restricts private vehicles access and permits buses, cycles, taxis and motorcycles. By reducing the volume of traffic, it will help reduce bus journey length and improve their reliability. This is likely to have affected both the volume and nature of traffic using Bedminster Bridges, with traffic counts currently being conducted.



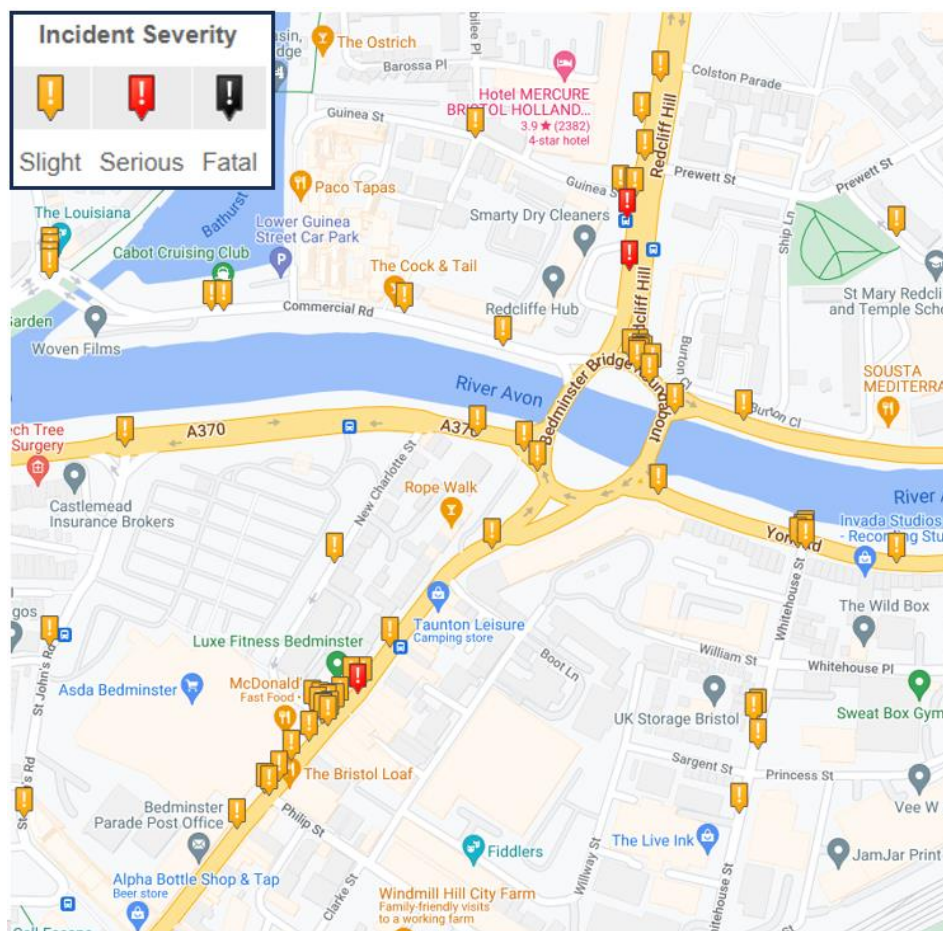
New Cut Bridges	To be confirmed	New Cut Bridges development package encompasses the restoration of six bridges spanning the river Avon, to be restored over the next five years. These bridges comprise Gaol Ferry Bridge, Vauxhall Bridge, Spark Evans Park Bridge, Langton Street Bridge, Bedminster Bridge and Bath Bridge. As of 2024, restoration work has been completed for Gaol Ferry Bridge and work has started on Langton Street Bridge, Vauxhall Bridge and Sparkle Evans Park Bridge <sup>2</sup> .  The package involves maintenance work on the newer (1960s) bridges at Bath bridges and Bedminster Bridges.
New Cut River Walls	2026	In 2024 it was ascertained that the New Cut river wall adjacent to York Road was starting to become unstable and required urgent action to stabilise it with subsequent works to commence the installation of a new river wall. The current phase of work, which requires a full motor vehicle closure on part of York Road, is due to finish in Spring 2025. Following Spring 2025, one lane of York Road will re-open to traffic while the works continue for approximately one year. Completion for this work is estimated Spring 2026.
Redcliff Quarter	2025	Redcliff Quarter is a development project being taken forward in two phases. Phase 1 comprised of 128 residential apartments completed in 2018. Phase 2 is underway and comprises residential units, hotel, café/restaurants, retail/food hall and office space.
Redcliffe Way	To be confirmed	The car park located on Redcliffe Way, between Redcliffe Roundabout and Portwall Lane, is planned to be redeveloped. The proposed plan offers 120 housing and mixed-use spaces with biodiverse landscaping. The site includes community and commercial units which include rentable community spaces/kitchen, restaurants, retail, and cafe.
Redcliff Wharf	2027	The site is located next to Redcliffe Caves and Redcliffe Bascule Bridge. The site includes housing, retail and commercial use developments. The retail/ restaurant spaces are planned in several of the buildings with some units offering office/workshop spaces. The development will improve the existing space which will include new mooring facilities for house boats and a ferry landing site.

## 1.6 Reported personal injury.

Figure 1-7 displays the casualties resulting from accidents between 2018 and 2022 based upon Police incident records. Out of the 55 data points within this period, 24 involve cyclists, all of which were classified as slight injuries. It is important to note that the analysis includes data from the Covid-19 pandemic period.

<sup>2</sup> [Restoration of New Cut bridges \(bristol.gov.uk\)](https://www.bristol.gov.uk/restoration-of-new-cut-bridges) [Last accessed 01/05/2024]

Figure 1-7: Traffic incidents in the study area.



Source: Crashmap.co.uk

Table 1-5 presents the total number of incidents broken down by casualty type and vehicle type.

Table 1-5: Table with total incidents between 2018 and 2022.

Casualty Types	Cyclist	Pedestrian	All Vehicle Types
Slight	24	8	52
Serious	0	2	3
Fatal	0	0	0
<b>Total</b>	<b>24</b>	<b>10</b>	<b>55</b>

It is important to note that 43% of accidents in the Bedminster Bridges area involve cyclists (24 out of 55), highlighting the urgent need to improve cycle infrastructure. A noticeable hotspot for accidents appears to be the junction where Redcliffe Hill meets the Bedminster Bridges roundabout and the intersection between Regent Road and Bedminster Parade.

The three serious casualties in the study include two pedestrians and one motorcyclist. One pedestrian incident occurred on Redcliffe Hill near the junction with Guinea Street, a location where jaywalking is common due to poorly positioned crossings. The second pedestrian casualty was on Bedminster Parade. The motorcyclist incident also took place on Redcliffe Hill.

## 1.7 Business Needs and Service Gaps

As outlined earlier in this document, to meet the policy objectives of BCC, the Combined Authority and National Government, there is a need to implement measures which will improve journey times and reliability for bus services as well as encourage higher modal share for buses and active travel and encourage modal shift away from car journeys. This will contribute to several wider policy goals including:

- Reducing carbon emissions in response to the Climate Emergency.
- Improving local air quality.
- Improving health and wellbeing, reduce the number of traffic accidents and reducing the burden on the National Health Service, amongst others.

## 1.8 Problem Identification and Impact of Not Changing

The key problems identified in the study area are summarised below:

- **Traffic Congestion:** As one of only three main crossings of the river Avon, Bedminster Bridges experiences heavy traffic congestion and acts as a bottleneck as one of the most highly trafficked junctions in Bristol centre. Currently, congestion in the region is having a £300m impact<sup>3</sup> on the economy and accounting for Bristol being the 6<sup>th</sup> most congested city in England, although the congestion economic impact is expected to rise to £800m by 2036<sup>4</sup>.
- **Poor Air Quality:** In recognition of the impacts that traffic congestion has on air quality an Air Quality Management Area (AQMA) was identified in 2001 for NO<sub>2</sub> and PM<sub>10</sub> emissions which covers the main transport links and the city centre of Bristol including all the extents of the scheme. Subsequently, a Clean Air Zone has been implemented in the city centre to reduce the numbers of the worst polluting vehicles entering the zone. Bedminster Bridges is within the AQMA and Clean Air Zone.
- **Unsafe:** The Bedminster Bridges roundabout is a complex junction with fast moving traffic connecting six arms of traffic, with parts of the roundabout accounting for four lanes of traffic. Accidents involving pedestrians and cyclists have occurred at this location and due to the lack of cycling infrastructure, pedestrian infrastructure is being used by cyclists, resulting in conflicts and poor journey quality for both modes.
- **Lack of facilities for cycling:** As a bottleneck, the Bedminster Bridges roundabout does not provide appropriate infrastructure for the safe crossing of cyclists when taken into account the complexity, size and flow of motorised vehicles, including a high proportion of HGVs.
- **Low share of public transport commuters:** 1 in 11 commutes are by public transport<sup>5</sup> in the West of England while 2 in 3 commutes are by car. Improved journey times and bus reliability are necessary to make bus services able to compete with private vehicles.
- **Poor bus punctuality:** As the road network suffers from high levels of congestion, bus services get 'stuck' in the congestion where bus priority is not present, affecting the journey times and the reliability of bus services in the region. In 2017, less than 80% of services were running on time with delays up to twenty minutes, making the West of England one of the worst performing city regions in the UK for bus services<sup>6</sup>. The

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<sup>3</sup> [Joint Local Transport Plan 4 2020-2036 \(westofengland-ca.gov.uk\)](#) [Last accessed 24/04/2024]

<sup>4</sup> [West-of-England-Combined-Authority-CRSTS.pdf \(westofengland-ca.gov.uk\)](#) [Last accessed 24/04/2024]

<sup>5</sup> [Joint Local Transport Plan 4 2020-2036 \(westofengland-ca.gov.uk\)](#) [Last accessed 24/04/2024]

<sup>6</sup> [West-of-England-Combined-Authority-CRSTS.pdf \(westofengland-ca.gov.uk\)](#) [Last accessed 24/04/2024]

M2 metrobus is significantly delayed because of the indirect routing around Bedminster Bridges junction that is currently required.

The identified problems mean that the study area is less conducive to sustainable transport than it could be. Without changing this situation there will be a continued reliance on car use which exacerbates associated environmental and social inequality issues and results in a failure to meet identified policy objectives. Improvements are therefore required to ensure this does not happen.

## 1.9 Scheme Objectives and Measures for Success

A set of objectives have been identified for the scheme as part of the development to date. The objectives are as follows:

- **OB1:** To increase the number of bus passenger journeys trips along the A370 and A38 corridors (Bedminster Parade, Commercial Road and Redcliff Hill).
- **OB2:** To reduce the number of car journeys along the A370 and A38 corridors (Bedminster Parade, Commercial Road and Redcliff Hill).
- **OB3:** To improve the air quality on the A370 and A38 corridors (Bedminster Parade, Commercial Road and Redcliff Hill).
- **OB4:** To improve the quality and safety of cycle routes along the A370 and A38 corridors (Bedminster Parade, Commercial Road and Redcliff Hill) and provide benefits to active travel users.
- **OB5:** To provide an improved interchange facility for bus to bus and bus to active and micromobility along the A370 and A38 corridors (Bedminster Parade, Commercial Road and Redcliff Hill).
- **OB6:** To improve levels of punctuality for all bus services along the A370 and A38 corridors (Bedminster Parade, Commercial Road and Redcliff Hill); and
- **Strategic Objective:** Deliver interventions to support Bristol City Centre mass transit plan for a better punctuality service.

These objectives will be used to appraise the success of the project throughout its lifecycle and will form a key part of the monitoring and evaluation plan. All objectives are timebound through the monitoring and evaluation period 3 years after the scheme opens. The measures and indicators of the objectives are given in Table 1-6. A greater focus will be given within the evaluation of the scheme to the impacts against objectives 4 to 6, than for objectives 1 to 3. This is because the first three objectives will be influenced by a variety of external factors in addition to the Bedminster Bridges scheme itself.

Table 1-6: Objectives, targets and indicators.

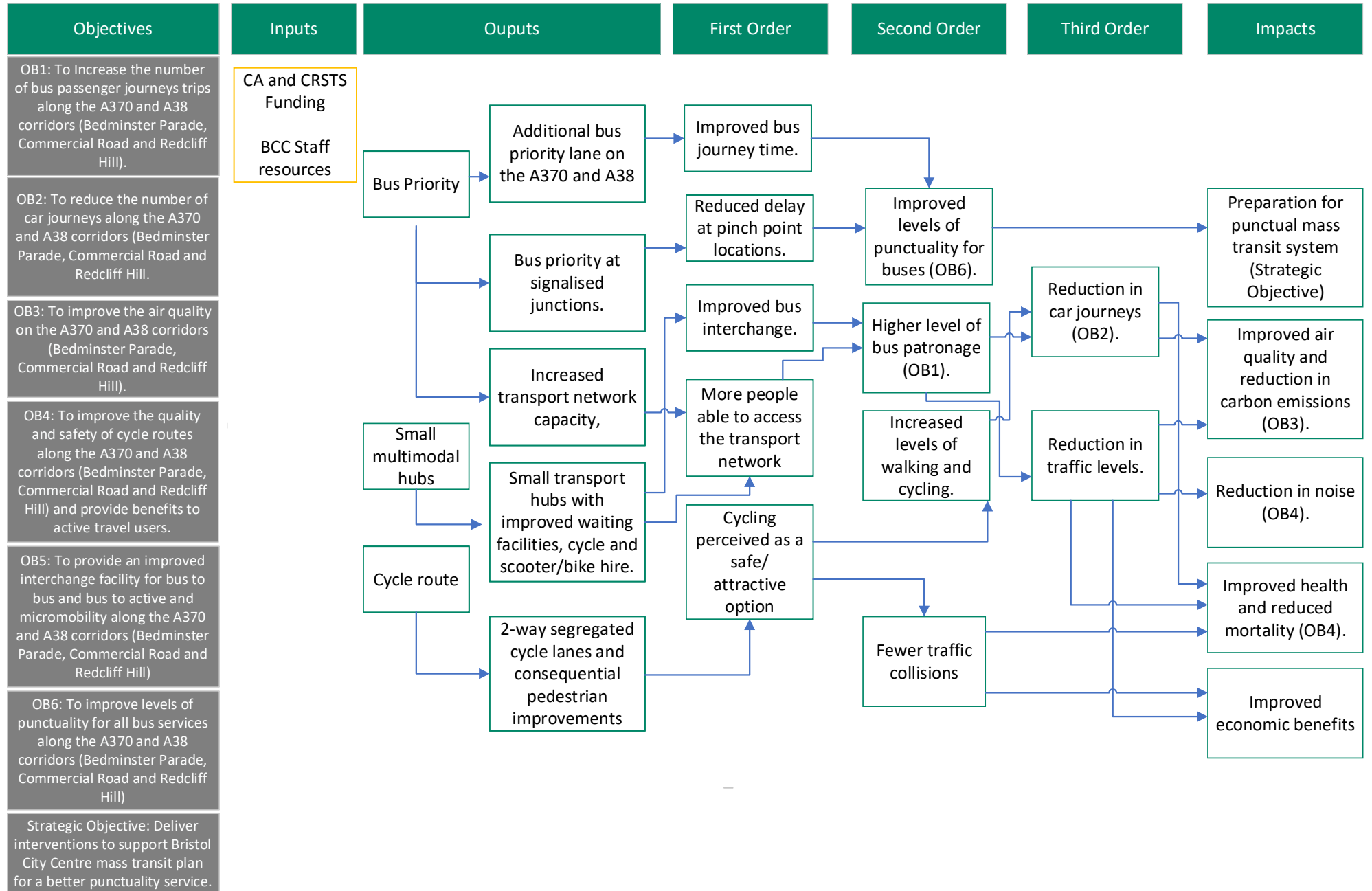
Objective	Objective Summary	Targets and Indicators
OB1	Increase bus journeys	Reduce average journey times for the outbound M2 service by 1.5 minutes in the AM peak. Change in bus passenger journeys per year from 2027 to 2029.
OB2	Reduce car journeys	Change in traffic volumes using the junction from 2027 to 2029.
OB3	Improve air quality	Change in traffic volumes using the junction from 2027 to 2029.

Objective	Objective Summary	Targets and Indicators
OB4	Walking and cycling benefits	<p>846m of segregated provisions aligned with cycle infrastructure design LTN1/20 within the study corridor by 2027.</p> <p>Assuming the scheme opens in 2027, there will be a 9.81% increase in cycle trips in the study corridor with the implementation of the scheme (calculated using ATF Uplift Tool with the assumption that 24% of new cyclists come from car)</p>
OB5	Improved multimodal interchanges	<p>1100m of new and or improved routes to multimodal bus hubs within the study corridor by 2027</p> <p>An increase in bus interchanges at multimodal bus hubs [Results from intercept survey]</p> <p>An increase in active and/ or micromobility interchanges at multimodal bus hubs [Results from intercept survey]</p>
OB6	Improved punctuality	<p>10% increase in bus punctuality along Bedminster Bridges (within study corridor) with bus trips no earlier than 1 minute and no later than 5 minutes, by 2029 compared to the 2023 baseline.</p> <p>310m of new bus priority lanes within Bristol City Centre by 2029.</p>

## 1.10 Logic Map and Planning for Delivery

Figure 1-8 displays a Logic Map that outlines how the *objectives* of the scheme will be achieved through the *inputs* (scheme financing and staff resource), *outputs* (the physical infrastructure delivered), and the first, second and third order *outcomes* of these. The map shows the logical steps through which these outcomes will lead to long term *impacts* for users. The numbered boxes are used to show how the individual scheme objectives map into the logic steps and the process by which these benefits will be delivered. Monitoring and Evaluation, and Benefits Realisation Plans will be finalised as part of the next stage of business case development, building upon this logic mapping to plan for how the scheme impacts will be assessed, monitored and delivered.

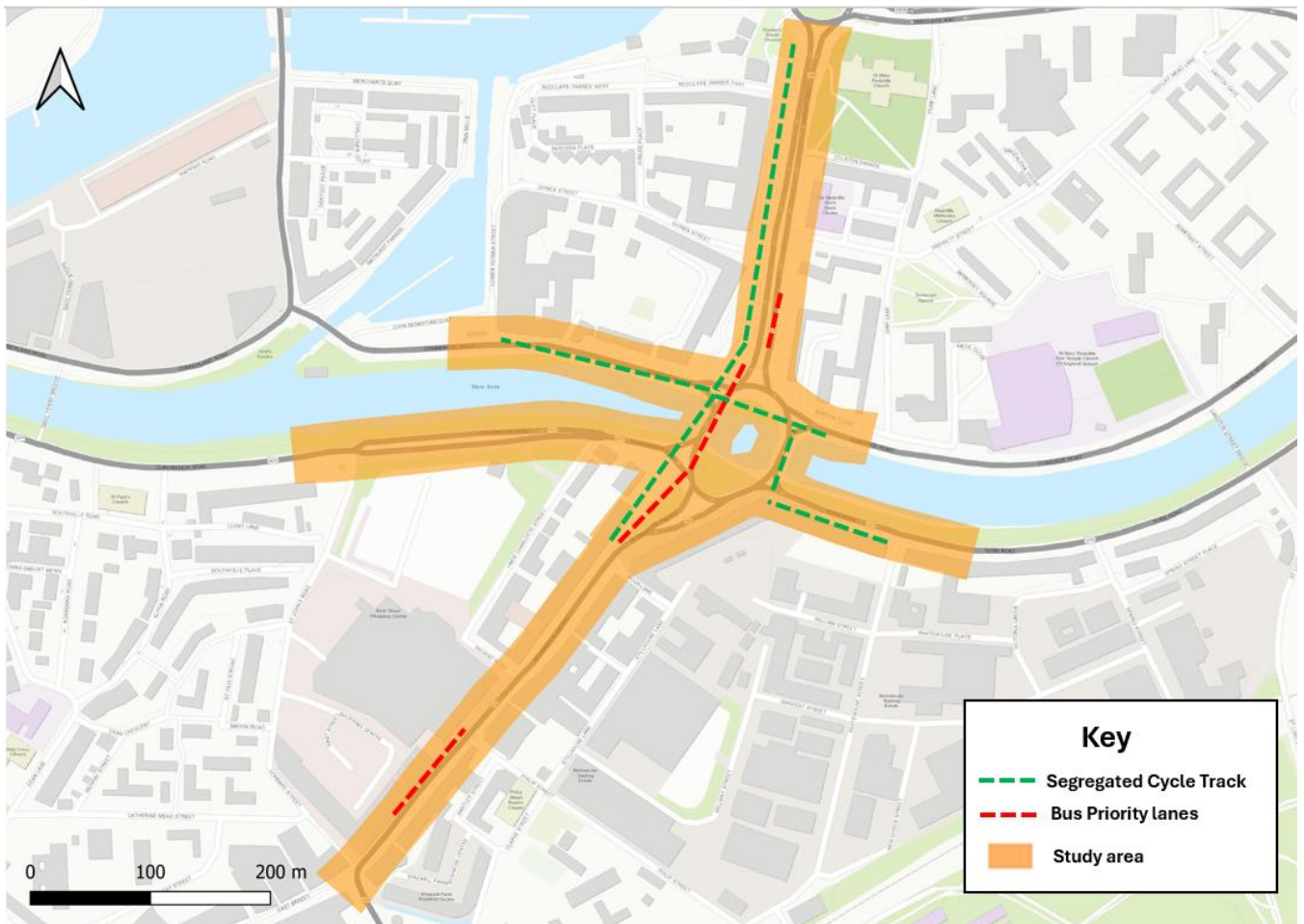
Figure 1-8: Logic Map.



## 1.11 Scope

Figure 1-9 shows the study area and the main proposed interventions. The provisions proposed by section are discussed below. Detailed design drawings can be found in Appendix H1.

Figure 1-9: Study area and main scheme interventions.



### 1.11.1.1 Proposed bus infrastructure

The proposed scheme includes the following bus infrastructure improvements:

- Some parking spaces will be removed to extend the bus lane by 35 meters south of the current location on East Street/Bedminster Parade.
- A two-way bus lane will be introduced on the west bridge of the Bedminster Bridges roundabout, supported by a signal-controlled priority junction. This will involve a complete redesign of the junction, including lane reductions and restrictions on turning options for private vehicles (full details available in Appendix H1). The following traffic movements will no longer be permitted:
  - Private vehicles (except public transport and active travel) using the western bridge.
  - Traffic from Commercial Road will only be allowed to turn left onto Redcliff Hill.
  - Traffic from Clarence Road turning left; vehicles may only proceed straight ahead to Commercial Road or Redcliff Hill.
  - Traffic from Bedminster Parade turning left onto Coronation Road.
- A bus-only lane will be created on Redcliff Hill in the southward direction to allow buses to access Commercial Road and the two-lane bus corridor.



- Bus stops on Redcliff Hill will be relocated and enlarged.
- The characteristics and positions of the bus stops on Redcliff Hill will be changed.
- Bus lane widths will be modified to comply with LTN 1/20 and LTN 1/24 guidance to accommodate combined bus and cycle use where no segregated provision for cyclists is proposed.

#### **1.11.1.2 Proposed active travel improvements.**

The proposed scheme includes the following active travel improvements:

- The current shared space and cycle lane on Redcliff Hill will be redesigned and upgraded to a segregated cycle track running in both directions along the entire length of Redcliff Hill.
- A cycle track will be introduced along the Bedminster Bridges, with signal-controlled junctions running parallel to the two-way bus corridor.
- A cycle track with signal-controlled junctions will connect Clarence Road to Commercial Road.
- A new cycle track will be implemented on Commercial Road.
- A new cycle track on York Road will link the junction with the existing infrastructure on Whitehouse Street.
- Changes will be made to the streetscape, public realm, and pedestrian infrastructure, particularly on Redcliff Hill.
- Connections provided to Redcliffe Roundabout and to Cumberland Road cycling routes and the wider area cycle network south of the Bridge through Whitehouse Street.

#### **1.11.1.3 Multi-modal infrastructure**

The proposal includes bus stop improvements to deliver small multimodal hubs. The hubs are improved bus stops with cycling parking, additional bus bays to increase bus capacity and real time passenger information (RTPI). These proposals will improve the user travel experience at the bus stop and improve the opportunity for multimodal trips between cycle and bus. The cycle parking, cycle infrastructure and along Redcliff Hill will improve the access to the bus stops via active travel. The combination of components will provide the opportunity for multimodal trips.

#### **1.11.1.4 Optioneering process**

The optioneering process was conducted directly by Bristol City Council. A detailed document has been created to outline the options considered and rationale for the selection of the current proposal. Appendix H2 summarises the optioneering process.

The project is currently at final preliminary design stage and has passed Bristol City Council's Quality Assurance stage 3. The design has been submitted to Active Travel England for scrutiny, and was subsequently subject to further discussion at WECA's Benefits and Outcomes Panel (BOP). There are not critical issues, and no significant matters for concern. Matters to be amended after ATE comments and the BOP are:

- Modification to lane widths at Bedminster Parade to comply with LTN 1/20 recommendations.
- Changes to pedestrian zebra crossing across cycle tracks
- Changes to the joining / exiting arrangements of the cycle track on Coronation Road, near St John's Lane
- Ideas were shared for the combined off-peak loading / peak footway arrangement proposal at Bedminster Parade – this was supported and ATE provided supported examples
- The BOP also discussed sustainability proposals for SUDS and respective planting, and this will

be assessed with the detailed design

The outcome from the BOP was 'endorse with conditions,' and we currently await the formal list of conditions from WECA.

## 1.12 Strategic Benefits and Impacts

With the implementation of the scheme, it is anticipated that the following strategic benefits and impacts are anticipated:

- The scheme will lead to journey time savings for buses (1.5 minutes for the M2 bus service) and will make bus services more reliable and able to be an attractive alternative to private vehicles. It is therefore expected that bus patronage will increase as a result, reducing congestion by positively changing the modal share of public transport to aid local and national government targets on carbon emissions and air quality.
- The scheme is one of several measures aimed at enhancing bus priority infrastructure in the city centre, which aligns with the local authority's strategic long-term aspiration of developing a mass transit bus network for Bristol. This will facilitate the sustainable and efficient mass movement of people, ultimately enhancing productivity in the region.
- The scheme aims to boost active travel by creating a more pedestrian-friendly environment and adding segregated infrastructure for cyclists. This will facilitate safe passage, reduce the number of traffic collisions through a busy intersection and thereby increasing the modal share of active travel. This is anticipated to result in a 10% increase in cycling and 1.4% increase in pedestrian usage of the junction as estimated by the ATF4 Uplifts tool. Additionally, the roundabout serves as a gateway, improving connectivity to the wider cycling network via Redcliffe Roundabout and Cumberland Road, and extending connectivity to cycling infrastructure south of the bridge, particularly through Whitehouse Street.
- As the scheme will increase the modal share of sustainable transport, it is expected a localised air quality improvement that will particularly benefit residents and active travel users.
- The active travel upgrades proposed, which will include the implementation of segregated infrastructure for cyclists to safely cross this junction, are expected to reduce traffic incidents in the study area, yielding £42,820 in monetary benefits.
- The scheme is likely to result in some local rerouting. There is predicted to be a significant reduction in traffic eastbound on the A370 Coronation Road heading towards Bedminster Bridge and westbound on Commercial Road heading away from Bedminster Bridge. There is predicted to be an increase in traffic on Bedminster Parade in both directions to/from Bedminster Bridges roundabout. There is a predicted reduction in traffic westbound on the A370 York Road heading towards Bedminster Bridges roundabout. There is also a predicted reduction in traffic on Redcliff Hill in both directions between Redcliffe roundabout and Bedminster Bridges roundabout.
- In the wider Bristol area, there is rerouting predicted to the north along Anchor Road and towards the Bearpit and to the south along Saint John's Lane onto Bedminster Road near to Parson Street station. There is also an increase in trips predicted on Whitehouse Street northbound onto York Street, which is parallel to Bedminster Parade.

## 1.13 Risks and Constraints

A risk register has been created as part of the scheme development. Key strategic risks and proposed

mitigation are summarised below, with a comprehensive quantified risk register including mitigation provided within the Management Dimension:

- Stakeholder and public disagreement or objections
- Capacity limitations of civil construction industry
- Inflation increasing the cost of materials and construction.
- Tender outcome is challenged causing a delay in awarding contract to start construction.
- Restoration work may be required on the bridge structure and new cut river walls.

A review has been undertaken of environmental constraints within the vicinity of the scheme.

Key identified constraints include:

- The Bristol Air Quality Management Area.
- The scheme falls within the Noise Important Area number 265; and
- The study area falls within Flood Zone 2 and Flood Zone 3 and is susceptible to flooding.
- Bedminster Bridge is a Grade II listed structure; therefore, construction will need to be undertaken in a way considerate to this status.
- The River Avon New Cut is a Site of Nature Conservation Interest; therefore, construction will need to be undertaken in a way considerate to this status.

Key risks that will impact on the success of the scheme because of design constraints have also been identified as part of the project’s progression and optioneering. At this stage, the risks to success identified are detailed in Table 1-7.

Table 1-7: Key risks because of Design Constraints and Mitigation Measures

<b>Key risks</b>	<b>Mitigation Measures</b>
Challenges and concerns regarding the unorthodox design for private vehicles and whether a safe introduction and long lasting solution is feasible.	The designs have referred to LTN 1/24 guidance and feedback from stakeholders during the design process will ensure that risks regarding safety and design constraints are minimised. Furthermore, road safety audits have been progressed to identify potential safety concerns, and no concerns have been found.
Increased congestion and lower local air quality because of the reallocation of road space	Traffic modelling of the proposals is currently being undertaken. This will assess the impacts on congestion and air quality generated by the scheme and wider proposals for traffic arrangements in the city centre.

## 1.14 Stakeholders Views and Requirements

Consideration has been given to the key stakeholders affected by the project, the ways they have or will be able to contribute to the scheme and their anticipated views or key concerns, see Table 1-8. Full information about stakeholder views and engagement is presented in the Management Dimension.

Table 1-8: Stakeholder Views and Requirements

Group	Contribution to the development of the scheme	Views and any conflicts between groups
Local Authority Officers	Option development and selection, provided designs for comment and discussion at all stages of the BCC QA process.	Supportive of proposals. Extensive input into the design to develop the plans from a range of internal departments and disciplines. Any issues and conflicts raised discussed and addressed. A significant part of these proposals is the co-ordination with the Bridges and Highways Structures team to refurbish the two Bedminster Bridges and in-fill the Redcliffe Hill subway to reduce overall disruption and costs compared to these works being carried out independently of each other.
Local Elected Members	Briefed ahead of plans publication. Will be consulted on emerging designs.	Supportive of the scheme. Discussions around improving lighting and personal safety will feed into the detailed design process. Comments around speed limits, cycle connections and the sub-way infill have resulted in changes to the final preliminary design.
Affected Local Residents	Will be consulted as part of public consultation.	Some concerns have been raised about how some local traffic routing will be affected due to some of the banned turn movements. At drop-in events at Bedminster Library, officers explained all car journeys are still possible, and demonstrated alternative routes (if necessary) and this helped to address concerns. Two of the banned turn movements have been removed following the consultation to further address these concerns.
General Public	Will be consulted as part of public consultation.	54% of respondents to the public consultation agreed with the overall proposals for Bedminster Bridges, and 39.7% disagreed. The item with the lowest level of agreement (the Guinea Street 'no entry') at 46.9% agreement has been removed from the proposals.
Bus Operators	Consulted as part of design development process and future operation plans.	Specific liaison with First Group and Stagecoach has taken place. Supportive of the City Centre proposals, which includes these proposals for Bedminster Bridges. An open dialogue will be maintained about the routing of the 24 service with First, which could be modified to make use of the new bus priority facilities.
Bus users	Will be consulted as part of public consultation	Supportive of the proposals. The bus priority and reliability has been improved further since the consultation to take account of bus user comments and transport modelling. This has included extending the bus lane beyond Bedminster Parade and into East Street.

Cycling and walking Groups	Will be consulted as part of public consultation	Supportive of the proposals. Additional cycle connections have been added to the proposals following comments received to provide additional benefit and comfort for cycles.
Accessibility Groups	Will be consulted as part of public consultation.	A report was commissioned from WECIL and this has resulted in a number of changes to the design including modification to the cycle track on York Road to reduce the risk of cycles using the pavement, the addition of more blue badge parking bays, and additional pedestrian crossings over the cycle track. Further detail on the WECIL audit can be found in the EQIA (Appendix B).

## 1.15 Consultation Findings

Public engagement was conducted in relation to proposals for Bristol city centre as part of the Development and Delivery plan (DDP). The engagement set out the interventions for the future regeneration of the city centre. The DPP is endorsed by the BCC Cabinet so that future schemes within the city centre must recognise the DDP public engagement analysis for future projects and schemes.

The engagement process started in 2021 with proactive informal engagement. Feedback from this engagement was used to help shape the visions and principles for the city centre. The second phase of engagement involved a ten-week formal consultation period running from 24th July to 1st October 2023. The second phase was hosted on the council's website and was supported by a series of events including surveys, written correspondence (emails and letters), briefs, drop-ins and walkabouts. Some of the key stakeholders and groups are highlighted below:

- The Mayor of Bristol and Mayors Office.
- West of England Combined Authority.
- Local Councillors.
- General public via online survey which was widely publicised.
- Community and civic groups; and
- Groups representing people with protected characteristics including WECIL, Bristol Disability Equality Forum, Bristol Older Persons Forum and Bristol Women's Voice.

The findings from the consultation were reviewed and analysis to enhance the DDP and direct future planning schemes. The engagement covered seven categories, which included movement and connectivity- the relevant findings from the engagement which relate to the scheme are summarised in Table 1-9.

Table 1-9: Engagement findings.

Request raised in engagement	Engagement evidence	DDP's engagement shaping the scheme
Improve cycling and walking routes and public transport to encourage people to leave the car at	82% of respondents agree with improved pedestrian connectivity and accessibility at key sites [n=310] 79% agreed with new segregated cycle routes in the city centre (examples	Provide cycle infrastructure to increase active travel commuter trips. Cycle routes will improve connectivity for trips in and around the city centre. Bus priority will improve the public

home.	given were Union Street, Penn Street) [n=308]	transport through quicker bus journey encouraging a mode shift from car.
Ensure a high quality, efficient, reliable and affordable public transport system	68% of respondents agree with the creation of new bus lanes and laybys [n=310] 69% of respondents agree with the approach to support delivery of the first phase of mass transit [n=310]	The scheme will provide bus priority lanes to supports WECA aspirations for a transit system
Create more low traffic areas where these help to create attractive city centre spaces.	79% of respondents agree, of which 51% of respondents strongly agreed to the statement of rerouting buses and consolidate bus stops to support pedestrian areas	The scheme will provide bus priority lanes to supports WECA aspirations for a transit system with a which will entail a reroute
Manage and restrict access or private vehicles and taxis	66% agree with approach to restrict general traffic with 15% strongly disagreeing [n=308]	New bus infrastructure will provide priority to buses over general traffic.

The public engagement evidences the support for additional bus and cycle infrastructure for the city centre. The public engagement results highlight the demand for increased connectivity with improved public transport and active travel options. This scheme provides high-quality cycle infrastructure and bus priority infrastructure which aligns with the city centre engagement.

Future engagement is planned for all five City Centre work packages and will be held over an 8 week period. The engagement activities will include:

- A set of web pages containing the programme information, short videos about the programme and key aims.
- Press release, newsletters, posters, and social media posts.
- Workshops and drop in sessions.

The engagement will be quantified using five separate surveys, 1 survey for each work package.

## 2. Economic Dimension

### 2.1 Introduction

The aim of the economic dimension is to outline the expected impacts of the Bedminster Bridges scheme, how it will contribute to the objectives and whether the scheme will provide value for money. The social, environmental and economic costs and benefits of the intervention are considered. This stage also includes detailed data on the revenue and capital implications through a quantified cost-benefit analysis.

The economic case presents the approach and assessment of the impacts of the proposed scheme. These are assessed against the Department for Transport (DfT) Transport Appraisal Guidance (TAG) appraisal criteria under the headings of social, environmental and economic impacts and an evidence-based assessment of the following:

- What will the impacts be?
- The scale of those impacts?
- Where will they occur? And
- Who / what will experience them.

### 2.2 Shortlist Appraisal

A single preferred option has been selected for appraisal at the OBC stage (the options previously identified and assessed are discussed in the Strategic Dimension). This consists of the following elements:

#### Bus Priority

- Extension of the bus lane on East Street/Bedminster Parade by 35 meters south of the current location. This will involve the loss of some parking.
- A two-way bus lane will be introduced on the west bridge of the Bedminster Bridges roundabout, supported by a signal-controlled priority junction. This will require remodelling of the roundabout, including reducing lanes and reductions in the turning movements available for private vehicles.
- A bus-only lane will be created on Redcliff Hill in the southward direction to allow buses to access Commercial Road and the two-lane bus corridor.
- Bus stops on Redcliff Hill will be relocated and enlarged and minor characteristics changed.

#### Walking Provision

- Changes will be made to the streetscape, public realm, and pedestrian infrastructure, particularly on Redcliff Hill.
- The existing underpass on Redcliff Hill is to be infilled.
- Sections of Bedminster Parade and Redcliff Hill footway to be widened.
- Segregated road crossings for pedestrian and cyclists will reduce conflict.
- Crossings on Redcliff Hill next to the underpass to be widened.
- Crossings to be simplified by removing islands.

#### Cycle Provision

- The current shared space and cycle lane on Redcliff Hill will be redesigned and upgraded to a segregated cycle track running in both directions along the entire length of Redcliff Hill.
- Two cycle tracks will be introduced along the Bedminster Bridges, one for each bridge with signal-

controlled junctions.

- A cycle track with signal-controlled junctions will connect Clarence Road to Commercial Road.
- A new cycle track will be implemented on Commercial Road.
- Connections provided to Redcliffe Roundabout and to Cumberland Road cycling routes and the wider area cycle network south of the Bridge through Whitehouse Street.

#### **Multi-modal infrastructure**

- The proposal includes bus stop improvements to deliver small multimodal hubs. The hubs are improved bus stops with cycling parking, additional bus bays to increase bus waiting capacity and real-time passenger information (RTPI).

The designs are available in Appendix H1.

#### **Highway network**

- Car parking along Nelson Parade is to be removed.
- Redesign of the roundabout, including lane reductions and limiting turning options for private vehicles.
- The west bridge of the roundabout will be restricted to buses only, with no access to private vehicles.
- Eastbound traffic on Commercial Road will be required to turn left onto Redcliff Hill only.

## **2.3 Methodologies, Assumptions and Data**

This section outlines how scheme costs and benefits have been calculated and the respective process according to the DfT's TAG criteria. The impacts considered and the means of assessment for each are summarised as follows:

- Social Impacts – The social impacts have been assessed with reference to the guidance in TAG Unit A4.1<sup>7</sup>.
- Environmental Impacts – The environmental impacts appraisal for this OBC report is based on TAG Unit A3<sup>8</sup>.
- Economic Impacts – The economic appraisal is based upon a quantified assessment of scheme impacts using the DfT's Small Schemes Appraisal Tool (SSAT) and the DfT's Active Mode Appraisal Toolkit (AMAT). This is supported by a qualitative assessment of the dimensions not covered by the two quantified assessments.

A combination of both quantitative and qualitative assessments has been completed. Table 2-1 outlines the appraisal areas where qualitative and quantitative appraisals have been undertaken, and the tools used for quantification.

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<sup>7</sup> [TAG Unit A4.1 - Social-impact-appraisal 2022\\_Accessible\\_v1.0 \(publishing.service.gov.uk\)](#) [Last accessed 30/05/2024]

<sup>8</sup> [TAG unit A3 environmental impact appraisal \(publishing.service.gov.uk\)](#) [Last accessed 30/05/2024]



Table 2-1: Appraisal Overview

Appraisal Impacts	Category	Active Travel	Bus Priority
Economy	Business users and transport providers	Qualitative	SSAT
	Reliability impact on business users	Qualitative	Qualitative
	Regeneration	Qualitative	Qualitative
	Wider Impacts	Qualitative	Qualitative
Environment	Noise	Qualitative and AMAT	Qualitative and AMAT
	Air Quality	Qualitative and AMAT	Qualitative and SSAT
	Greenhouse Gases	Qualitative and AMAT	Qualitative and SSAT
	Townscape	Qualitative	Qualitative
	Historic Environment	Qualitative	Qualitative
	Biodiversity	Qualitative	Qualitative
	Water Environment	Qualitative	Qualitative
Social	Commuting and other users	AMAT	SSAT
	Reliability impact on commuting and other users	Qualitative	Qualitative
	Physical activity	AMAT	Qualitative
	Journey quality	AMAT	SSAT
	Accidents	AMAT	SSAT
	Security	Qualitative	Qualitative
	Access to Services	Qualitative	Qualitative
	Affordability	Qualitative	Qualitative
	Severance	Qualitative	Qualitative

### 2.3.1 Qualitative Appraisal

For the appraisal of the elements that have no monetised benefit or disbenefit associated, or for aspects that were not appropriate to assess quantitatively at this stage, a qualitative appraisal has been carried out. The TAG seven-point assessment scale (Table 2-2) has been used.

Table 2-2: TAG seven-point assessment scale

Large Beneficial	Moderate Beneficial	Slight Beneficial	Neutral	Slight Adverse	Moderate Adverse	Large Adverse
+++	++	+	0	-	--	---

### 2.3.2 Quantitative Appraisal

To assess the monetary impact, the DfT's monetisation tools; the SSAT,<sup>9</sup> which assesses the impact on private vehicle and bus users, and the AMAT<sup>10</sup>, which assesses the impact on active travel users, are used.

As part of the Appraisal Specification Report (ASR) for the scheme it was agreed that because the scheme may lead to wider rerouting it was appropriate to undertake an initial assessment using the West of England Regional Transport Model (WERTM) to assess the strategic rerouting impacts of the scheme. WERTM is a strategic transport model, which considers both the rerouting and mode shift impacts associated with the scheme. The outputs of WERTM were then used in a smaller, microsimulation model which provides a greater level of detail of the road network in the study area (only) and can quantify the journey time benefits of the scheme for buses. The microsimulation model assessed the journey time impacts of the scheme for road and bus users with the outputs fed into the DfT SSAT to quantify the scheme impact. Detailed information about the SSAT inputs can be found in Appendix H6.

## 2.4 Scenarios and Assumptions

Two scenarios have been considered when assessing the scheme: the Do Minimum and Do Something. The Do Minimum is the likely situation in the future should the scheme not progress. The Do Something scenario is the same as the Do Minimum but additionally includes the proposed scheme. The following sub-sections display the modelling and appraisal assumptions used in this economic appraisal.

### 2.4.1 Network Modelling

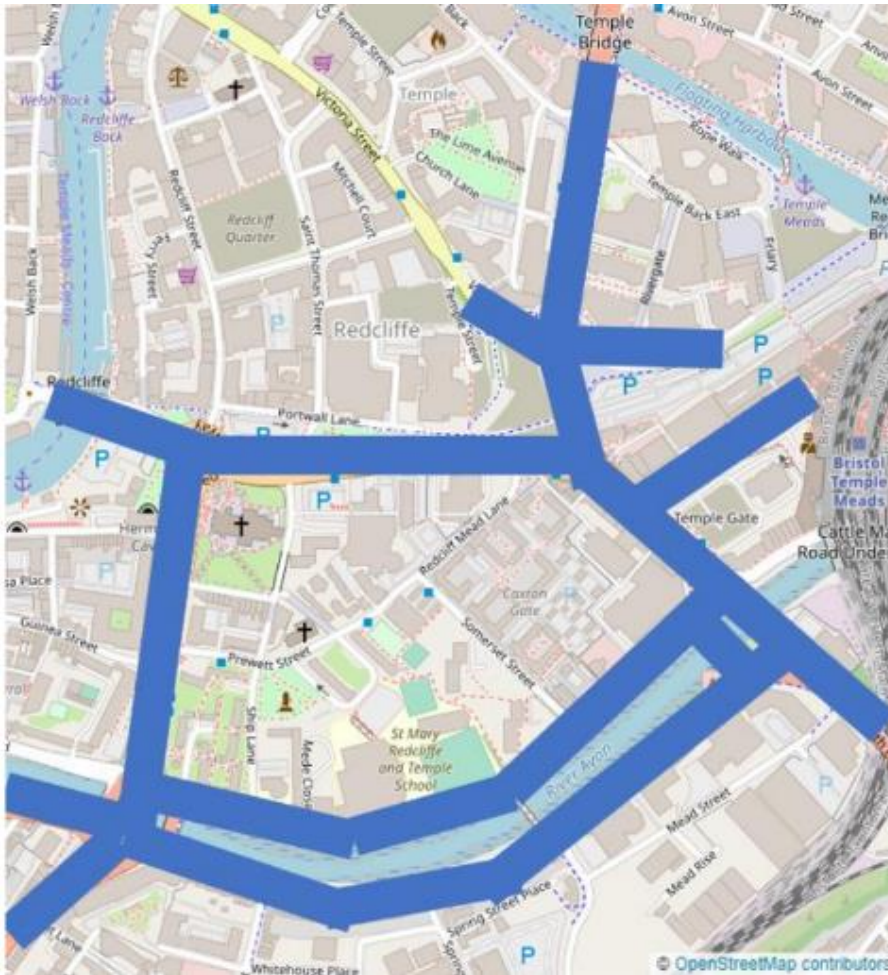
Due to the significant changes to the junction design, WERTM has been used to assess traffic rerouting impacts. The scheme has been assessed in WERTM's 2029 forecast year foundation case, which is considered a suitable proxy for the scheme opening year of 2027. WERTM assesses the impact of the scheme on rerouting and mode shift, and the full model report showing these assessed impacts is included in Appendix H3. The outputs from WERTM have then been fed into a microsimulation model of the local network. The microsimulation model, developed using VISSIM software, assesses the journey time impacts of the scheme for bus and general traffic users. The outputs of the VISSIM process are summarised in Appendix H4. The microsimulation study area is shown in Figure 2-1.

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<sup>9</sup> [Small scheme appraisal toolkit user guide - GOV.UK \(www.gov.uk\)](https://www.gov.uk) [Last accessed 30/05/2024]

<sup>10</sup> [Active Mode Appraisal Toolkit User Guide \(publishing.service.gov.uk\)](https://publishing.service.gov.uk) [Last accessed 30/05/2024]

Figure 2-1: Microsimulation model study area.



Microsimulation modelling has been undertaken to assess the change to journey times for buses and private vehicles in the study area. The forecast journey time and distance for general traffic have been outputted from the modelling for the Do Minimum and Do Something scenarios and inputted into the DfT's SSAT for the purposes of economic appraisal.

SSAT (version 3.0) has been used to capture the monetised impacts of the bus improvements and associated impacts on general traffic. To provide estimates for bus demand, observed passenger data has been sourced using First Bus' FirstMove data system. FirstMove uses passenger data from ticketing information and can be localised at specific bus route sections. This data was collected from October to December 2023 and identifies the number of bus passengers using sections of the road network within the study area. The inputs and outputs used in the SSAT assessment are provided in Appendix H6.

#### 2.4.1.1 Active Travel Appraisal

AMAT is an economic appraisal toolkit used to assess cycling and walking interventions in accordance with TAG Unit A5-1<sup>11</sup>. The latest version of AMAT at the time of this study, November 2023, has been used to quantify and monetise the key impacts of the pedestrian and cycling scheme. To calculate scheme impacts, AMAT uses details of existing and proposed pedestrian and cycle infrastructure as inputs. The existing pedestrian and cycle demand in the study area has been obtained from traffic survey and count data collected from the 18th of November to the 1st of December 2019 and on the 12th of December 2019, shown in Table 2-3. To note, active Travel counts from the summer of 2024 indicated up to 8,500 daily pedestrian movements, with cycling flows of 3,300. These more recent datasets were

<sup>11</sup> [TAG unit A5-1 active mode appraisal - GOV.UK \(www.gov.uk\)](https://www.gov.uk/guidance/tag-unit-a5-1-active-mode-appraisal) [Last accessed 30/05/2024]

produced after the appraisal of this scheme was completed and are therefore not accounted for in subsequent analysis.

The Active Travel Fund 4 Uplifts tool (ATF4) has been used to estimate the pedestrian and cycle growth because of the scheme. Active Travel England developed this tool to provide consistent growth estimates based upon evidence from delivered cycling and walking schemes in England. The tool produces three growth cases, with the tool advising on which scenario to take forward in the core assessment. In this case, the middle growth case has been taken for the core economic assessment (with the low and high growth cases used in sensitivity testing). Table 2-3 presents the baseline and the forecast uplift in pedestrian and cycle demand because of the scheme. The inputs and outputs of the AMAT process are provided in Appendix H5.

Table 2-3: Active Travel Forecasts – Number of Trips per Weekday With and Without the Proposed Intervention (Core Assessment)

Mode	Without the Proposed Intervention	With the Proposed Intervention	Difference
Cycle	1,581	1,736	+155
Pedestrian	5,536	5,615	+79

#### 2.4.1.2 Assumptions

The assumptions made in the respective toolkits have been summarised in Table 2-4.

Table 2-4: Quantitative Economic Dimension Assumptions.

Assumptions	AMAT	SSAT
Appraisal year	2024	2024
Intervention opening year	2027	2026*
Appraisal period	40 years	60 years (20 years for bus quality)
Demand forecast	Cycle and pedestrian uplift because of the scheme has been estimated using the ATF tool. Note, no growth has been applied to background active travel levels between 2019 and 2027.	Observed bus patronage data from 2023 has been uplifted by 18% (to produce a 2027 forecast) to reflect an assumption that patronage growth will return to the levels experienced during the 2010-2019 pre-pandemic period
Optimism Bias	46%	46%

\*The SSAT was developed by the Department for Transport (DfT) to proportionately assess the impacts of small road, bus improvement, and maintenance schemes under the Levelling Up Fund Round 2. Since this Fund is intended to be spent by 31 March 2025 (or exceptionally by 2025-2026), the SSAT excludes schemes with an opening year beyond 2026. For this intervention, which opens in 2027, the closest available opening year, 2026, has been selected. Because the tool does not allow 2027 to be included as an option, a factor of 0.966 has been applied to the SSAT results to replicate the effect of selecting 2027. Appendix H6 contains the SSAT spreadsheet, which includes all the inputs, results and related data.

The appraisal period has been agreed upon with the Combined Authority. The period for bus infrastructure schemes remains at 60 years, as stated in the SSAT Toolkit guidance<sup>12</sup>, while the Journey Quality benefits are capped at 20 years as it is expected for it to deteriorate over time while the appraisal period for active travel infrastructure schemes has been set to 40 years.

## 2.5 Monetised Benefits and Costs

To assess the monetary impact, the DfT’s monetisation tools; the SSAT, which assesses the impact to private vehicle and bus users, and the AMAT, which assesses the impact of active travel users, are used. The toolkits provide an estimate of the Present Value Benefits (PVB), Present Value Cost (PVC) and Benefit Cost Ratio (BCR) of a scheme by comparing Do Minimum and Do Something scenarios. Each toolkit assesses different impacts of the scheme, and when combined give the total quantified impact of the scheme:

- The SSAT monetises the impacts of road and bus priority interventions on the private vehicle and bus users; and
- The AMAT monetises the pedestrian and cycling impacts resulting from active travel interventions.

The scheme costs have been calculated by Bristol City Council and are reported within the Financial Dimension. The costs include construction cost estimates, as well as planning and design costs. As part of the cost forecasts, a 9% inflation and a 40% contingency assumption are included. Table 2-5 breaks down the project costs of the scheme in 2024 prices. For the purpose of economic appraisal, the contingency costs have been excluded and replaced with an Optimism Bias of 46% to account for the relatively early stage of scheme development and associated risk.

Table 2-5: Project Costs in 2024 prices

Detailed Cost breakdown Redacted – Commercially Sensitive	Scheme Costs
[Redacted]	

## 2.6 Qualitative Impacts

The below section outlines the qualitative impacts of the scheme and incorporates monetised values where available from the quantified assessment.

### 2.6.1 Social Impacts

<sup>12</sup> [Small scheme appraisal toolkit user guide - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/100000/small_scheme_appraisal_toolkit_user_guide.pdf) [Last accessed 28/05/2024]

## Commuting and Other users

- The proposed active travel infrastructure provides high-quality segregated infrastructure and enhances the crossing of a busy and unsafe roundabout. The active travel intervention is expected to lead to a mode shift to active travel, and the rerouting of existing active travel trips to the new infrastructure. This is estimated to result in **155** additional cycling trips and **79** additional walking trips a day in the scheme extent, and a decongestion benefit of **£258,320**.
- The bus priority enhancements will improve journey times for users of the services affected by the scheme. The implementation will lead to bus user journey time benefits of **£4,580,010**.
- Significant journey time benefits for general traffic were identified within the VISSIM modelled area (the extent of the quantified assessment), however, these monetised benefits do not account for wider rerouting anticipated outside of this assessment area. For this reason, benefits associated with general traffic have not been accounted for in the core economic appraisal and Benefit Cost Ratio.
- Further impacts identified within the wider WERTM assessment (but not monetised) include an overall reduction of 1,576 daily car trips, a 0.06% increase in regional bus volumes, and a forecasted rise in new bus trips in the areas surrounding Bristol City Centre. More detailed information is available in Appendix H3.

## Reliability impact on Commuting and Other users

- The proposed active travel infrastructure is anticipated to have a **slight beneficial** impact on reliability with the provision of direct segregated infrastructure through Bedminster Bridges, reducing the impacts of traffic unreliability on active travel users.
- The bus priority enhancements are expected to increase reliability for public transport users through reducing the exposure of buses to general traffic delays. The impact is expected to be **moderate beneficial**.

## Physical activity

- The provision of high-quality cycle infrastructure is anticipated to have a **£2,959,160** impact towards improving physical activity levels. The active travel interventions encourage more journeys to be undertaken by active travel which results in a reduction in absenteeism levels and reduced risk of mortality.
- Increased bus patronage can positively affect physical activity levels when people switch from using private vehicles to public transportation. However, this benefit has not been monetised and is assessed as neutral given the modest scale of additional bus trips estimated in the WERTM assessment.

## Journey quality

- The active travel improvements are expected to contribute **£3,685,390** of benefits to journey quality by reducing frustration, fear of accidents, and route uncertainty, by providing segregated, direct and high quality routes through the study area.
- Bus stop improvements are expected to increase journey quality and improve passenger experience for users of the improved stops provided as part of the scheme. Monetary benefits of **£817,043** are estimated in relation to this.

## Accidents

- Improved active travel infrastructure through the study area are anticipated to have a monetary benefit of **£42,820**, due to the reduction of vehicle kilometres associated with mode shift. It is also anticipated to have a **moderate beneficial** impact on reducing the collisions involving pedestrians and cyclists due to the segregated nature of the proposed scheme.
- Changes to network assignment and modal share are expected to **moderate beneficial** impact on private vehicle accident rates in the study area due to reduction in vehicle mileage travelled.

- According to Department for Transport figures, the valuation of the benefits of prevention of accidents (in 2010 prices) are as follow:

Table 2-6: Average value of prevention per reported road accident casualty in Great Britain (2010 prices)

Casualty type	Cost per Casualty
Fatal	£1,632,892
Serious	£183,491
Slight	£46,890

- As the average is skewed by motorised vehicle accidents, a 50% reduction has been applied to estimate the potential benefits of eliminating all active travel casualties. Preventing active travel casualties in the study area could result in an average annual benefit of £186,746. This analysis is intended solely to inform the reader of the potential benefits of removing accidents in the study area and has not been included in the BCR.

### Security

- The proposed active travel infrastructure is anticipated to have a **slight beneficial** impact on security due to the increase in active travel users, which will lead to security improvements through 'safety in numbers' and the concept of 'informal surveillance'.
- The implementation of bus priority measures is expected to have a **slight beneficial** impact on passenger security due to the proposed new bus stops.

### Access to services

- The planned improvements to bus infrastructure are expected to improve journey times for services using the Bedminster Bridges and thus it is expected a **slight beneficial** impact in relation to access to city centre facilities will occur. The services set to benefit will be the M1 and M2 metrobus services, the A1 Airport Flyer and the services 70, 75, 76 and 24.

### Affordability

- The scheme will not significantly influence the cost of travel and is therefore assessed as a **neutral** impact.

### Severance

- Implementation of the proposed active travel infrastructure will have a **Large beneficial** impact on community severance, especially at the improved pedestrian and cycle crossing at Bedminster Bridges.

## 2.6.2 Environmental Impacts

### Noise

- There are two Noise Important Areas within 300m of the scheme, NIA 265 and NIA 264. Noise receptors within 300 m of the scheme include residential receptors, local businesses, four schools, users of Public Rights of Way (PRoW), recreational users of the Victoria Park public greenspace, ecological sites and heritage assets. The scheme may encourage the use of public transport and PRoW, by improving transport networks and creating more desirable walking and cycling ways. In turn traffic flows may be reduced, decreasing noise levels in the area of Bedminster Bridge. First Bus are in the process of electrifying their fleet which would reduce noise levels produced from buses travelling through the area.
- Uptake in active travel is forecast to provide **£2,850** of noise benefits associated with modal shift impacts at the junction.
- The implementations of changes to the highway network and subsequent new network

assignment will have **slight beneficial** impacts to users and residents within the study area.

### Air Quality

- The scheme is located within Air Quality Management Area (AQMA) 10. AQMA 10 was declared for exceedances in the 24-hour mean targets for Particulate Matter (PM10) and annual mean targets for Nitrogen Dioxide (NO2). PM10 and NO2 emissions are expected to reduce due to increased uptake of private vehicle commuters choosing to travel by bus bicycle or foot. However, a large modal shift is not guaranteed and emissions from private vehicles may not be reduced. First Bus are in the process of electrifying their fleet<sup>13</sup> which is expected to reduce emissions produced by buses. The impact is therefore expected to be **neutral**.
- Uptake in active travel is forecast to provide **£1,270** of air quality benefits.
- The implementations of changes to the highway network and subsequent new network assignment will have **slight beneficial** impact on local air quality to users and residents.

### Greenhouse Gases (GHG)

- GHG emissions are expected to be reduced as commuters choose to travel by bus, bicycle, or foot, thereby reducing journeys taken by private vehicles. However, a large modal shift is not guaranteed. First Bus are in the process of electrifying their fleet, therefore, reductions in GHG emissions from the bus fleet will happen over time. The impact is therefore expected to be neutral.
- Uptake in active travel is forecast to provide **£1,745** of GHG benefits.
- The implementations of changes to the highway network and subsequent new network assignment will have **slight beneficial** impact on greenhouse emissions.

### Townscape

- The local townscape is urban, comprising road infrastructure, non-motorised pathways, local businesses and amenities and public greenspaces. There will be a local loss of trees because of the scheme. However, opportunities for landscape planting have been identified to mitigate the loss of green infrastructure. The changes to the local infrastructure are not anticipated to greatly alter the urban form. Improving biodiversity, in addition to reducing the volume of motorised traffic, improving the streetscape appearance and giving consideration of material choices will assist in enhancing and complementing the existing townscape. Therefore, a **slight beneficial** impact is expected.

### Water Environment

- The River Avon and Bristol Feeder Canal are in close proximity to the scheme, with the River Avon flowing adjacent to the A370 and underneath Bedminster Bridge. There are significant areas of Flood Zone 2 and 3 intersecting the boundary of the scheme and in the wider area. Increases in area of impermeable surface could lead to increased flood risk because of surface run-off. However, the increases in impermeable area are not anticipated to be large and opportunities for landscape planting have been identified which may reduce surface run-off. Therefore, the impact is expected to be **neutral**.

### Historic Environment

- Ten Scheduled Monuments, a considerable number of listed buildings and two Conservation Areas are located within 2km of the scheme, see Figure 2-2. Bedminster Bridges itself is a Grade II listed structure, and therefore protection of the structure will be required during the construction process. A large modal shift is not guaranteed. However, a greater number of commuters travelling by bus or bike could lead to lower vehicle flows and in turn reduced light spill and noise levels, improving the setting for heritage assets. The provision of landscape

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<sup>13</sup> <https://news-wew.firstbus.co.uk/news/zebra2>



planting and complementary materials would offset the loss of urban trees and enhance the Conservation Areas. The impact is therefore expected to be **neutral**.

Figure 2-2: Historic Assets



## Biodiversity

- The Avon New Cut Local Nature Reserve (LNR), Narrowways Millennium Green LNR, Manor Woods Valley LNR, Tree Preservation Order (TPO) trees, the River Avon, the Bristol Feeder Canal, Deciduous Woodland and Traditional Orchard priority habitats are located within 2km of the Scheme. There will be a local loss of trees because of the Scheme. However, opportunities for landscape planting have been identified to mitigate the loss of green infrastructure. A large modal shift is not guaranteed. However, a greater number of commuters travelling by bus or bike may lead to lower vehicle flows. In turn, noise levels and harmful pollutants produced by cars may be reduced. Improving the environment for ecological receptors. The impact is therefore expected to be **neutral**.

## 2.6.3 Economic Impacts

### Business users & transport providers

- Business users are less likely to utilise active travel infrastructure, although that has been changing. The modal share expected from private vehicle to active travel is not expected to have a significant impact on traffic flows and journey times. Therefore, a **neutral** impact is expected for business users travelling by car.
- Public transport infrastructure improvements will provide a significant benefit to transport providers through journey times savings through changes to Bedminster Bridges. Business users utilising public transport will therefore also benefit from journey time savings. The implementation of the scheme will lead to a bus user journey time benefits of **£160,631**.
- Changes to network assignment and modal share are expected to lead to a journey time

**moderate beneficial** impact to private vehicle business users.

#### Reliability impact on business users

- The improved active travel infrastructure will slightly reduce the number of cars on the road, however the impact on business users is considered to be **neutral**.
- Bus priority enhancements would positively impact the reliability for public transport business operators, resulting in a **slight beneficial** impact on bus services.
- Changes to network assignment and modal share are expected to lead to a journey time **moderate beneficial** impact and therefore improve the reliability of business users' journeys.

#### Regeneration

- The scheme will improve connectivity to the city centre, enhancing access for the populations of Bedminster, Southville, Knowle West, and other communities in South Bristol. Areas with higher levels of deprivation, including Redcliffe, Bedminster, Bedminster Down, and Knowle West, are located near the proposed scheme and are expected to benefit from increased access to employment opportunities and services. Consequently, a **slight beneficial** impact is anticipated.

#### Wider Impacts

- The scheme is part of a wider strategy to develop a public transit network in Bristol, which is expected to positively contribute to the wider region. However, when assessing the scheme in isolation, the scheme is expected to be too small to provide wider impacts to the region.
- The scheme will serve two major regeneration areas, Bedminster Green and Whitehouse Street, which are closely tied to the scheme's success. These regeneration projects are planned as low car developments and therefore depend on the sustainable transport element provided by the scheme. Overall, the impact for the active travel element of the scheme is expected to be **moderate beneficial**.

### 2.6.4 Public Accounts

#### Cost to Broad Transport Budget

- The Present Value of Costs (in 2010 prices) totals **£5,073,750** which includes 46% optimism bias.
- Indirect Tax Revenues
- The active travel element of the scheme is forecast to have an indirect tax revenue impact of **-£2,437**.
- The bus element of the scheme is forecast to generate an indirect tax revenue impact of **£65,770** while the highway element is also expected to have a **slight adverse** impact on indirect tax revenues due to a reduction in car trips within the area of monetised appraisal.

### 2.6.5 Appraisal Summary Table (AST)

Table 2-7 presents the Appraisal Summary Table (monetised values in 2010 prices) which summarises the monetised values and qualitative scores discussed above by intervention type. Significant quantified benefits associated with Highway trips have been excluded from this table as they are considered disproportionate as they do not account for rerouting impacts outside of the appraisal area. A full DfT style AST is also provided in Appendix H7.

Table 2-7: Appraisal Summary Table

Impacts		Active Travel	Bus Priority	Highway
Economy	Business users and transport providers	0	£160,631	++

Impacts		Active Travel	Bus Priority	Highway
	Reliability impact on Business users	0	+	++
	Regeneration	+	+	+
	Wider Impacts	++	0	0
Environmental	Noise	£2,850	-9,606	+
	Air Quality	£1,270	-9,787	+
	Greenhouse gases	£1,745	-16,031	+
	Townscape	+	+	+
	Historic Environment	0	0	0
	Biodiversity	0	0	0
	Water Environment			
Social	Commuting and Other users	£258,320	£4,580,010	++
	Reliability impact on Commuting and Other users	+	++	++
	Physical activity	£2,959,160	0	N/A
	Journey quality	£3,685,390	£817,043	N/A
	Accidents	£42,820	-£56,469	++
	Security	+	+	N/A
	Access to services	N/A	+	N/A
	Affordability	+	0	N/A
Severance	+++	N/A	N/A	
Public Accounts	Cost to Broad Transport Budget	£5,073,750		
	Indirect Tax Revenues	£65,648		--

## 2.7 Distributional Analysis

A DfT distributional impacts assessment screening assessment has been undertaken based upon the assessed scheme impacts to determine which areas of distributional impact assessment are within scope, presented in Table 2-8. Based upon this screening assessment, accidents/collisions, air quality, noise and severance are the four areas considered within scope and hence it is recommended that a full distributional impact assessment of these areas is undertaken at the FBC stage.

Table 2-8: Distributional Impact Appraisal Screening Proforma

Indicator	(a) Appraisal output criteria	(b) Potential impact (yes / no, positive/negative if known)	(c) Qualitative Comments	(d) Proceed to Step 2
<b>User benefits</b>	The VISSIM software or an equivalent process has been used in the appraisal; and/or the value of user benefits Transport Economic Efficiency (TEE) table is non-zero.	Yes	User benefits are expected to not be significant.	No
<b>Noise</b>	Any change in alignment of transport corridor or any links with significant changes (>25% or <-20%) in vehicle flow, speed or % Heavy Duty Vehicle (HDV) content. Also note comment in TAG Unit A3.	Yes	SSAT and the WERTM modelling allow suitable disaggregation to assess distribution.	Yes
<b>Air quality</b>	Any change in alignment of transport corridor or any links with significant changes in vehicle flow, speed or %HDV content: <ul style="list-style-type: none"> <li>• Change in 24 hour Annual Average Daily Traffic (AADT) of 1000 vehicles or more</li> <li>• Change in 24 hour AADT of HDV of 200 HDV vehicles or more</li> <li>• Change in daily average speed of 10kph or more</li> <li>• Change in peak hour speed of 20kph or more</li> <li>• Change in road alignment of 5m or more</li> </ul>	Yes	AMAT does not allow suitable disaggregation to assess distribution. WERTM model results provides changes in flows for specific links in the network. The model also provides results in daily car trips reduction.	Yes
<b>Accidents/collisions</b>	Any change in alignment of transport corridor (or road layout) that may have positive or negative safety impacts, or any links with significant changes in vehicle flow, speed, %HDV content or any significant change (>10%) in the number of pedestrians, cyclists or motorcyclists using road network.	Yes	Road alignments will change, and levels of pedestrians / cyclists will increase significantly.	Yes
<b>Security</b>	Any change in public transport waiting/interchange facilities including pedestrian access expected to affect user perceptions of personal security.	No	Changes to two bus stops will be delivered as part of the scheme.	No

Indicator	(a) Appraisal output criteria	(b) Potential impact (yes / no, positive/negative if known)	(c) Qualitative Comments	(d) Proceed to Step 2
<b>Severance</b>	Introduction or removal of barriers to pedestrian movement, either through changes to road crossing provision or through introduction of new public transport or road corridors. Any areas with significant changes (>10%) in vehicle flow, speed, %HDV content.	Yes	New and improved pedestrian and cycle crossing facilities and significant changes to traffic flows due to the introduction of bus-priority infrastructure are proposed.	Yes
<b>Accessibility</b>	Changes in routings or timings of current public transport services, any changes to public transport provision, including routing, frequencies, waiting facilities (bus stops / rail stations) and rolling stock, or any indirect impacts on accessibility to services (e.g. demolition & re-location of a school).	Yes	No significant changes to public transport provisions are anticipated.	No
<b>Affordability</b>	In cases where the following charges would occur; Parking charges (including where changes in the allocation of free or reduced fee spaces may occur); Car fuel and non-fuel operating costs (where, for example, rerouting or changes in journey speeds and congestion occur resulting in changes in costs); Road user charges (including discounts and exemptions for different groups of travellers); Public transport fare changes (where, for example premium fares are set on new or existing modes or where multi-modal discounted travel tickets become available due to new ticketing technologies); or Public transport concession availability (where, for example concession arrangements vary as a result of a move in service provision from bus to light rail or heavy rail, where such concession entitlement is not maintained by the local authority[1]).	No	No changes to charges, fares or significant impact on operating costs.	No

## 2.8 Placed Based Analysis

As noted in The Green Book (2022)<sup>14</sup>, place-based analysis is required for two categories of proposals:

- Proposals with an objective that is specific to a particular place or area, or type of area.
- Proposals which do not have geographically defined objectives, but which appear likely to have different implications, either positive or negative, for parts of the UK that decision-makers will need to understand and may need to consider.

This OBC is specific to the Bedminster Bridges and connecting roads, south of Bristol city centre. The Strategic Dimension highlights the objectives that the proposals align with within relevant policies of the area.

Given the proposals are for a specific geographic area, and that the impacts of the proposals are limited to the travelling in and around that area, the economic analysis is intrinsically place-based and includes impacts on physical well-being, so no additional analysis is required.

## 2.9 Value for Money

The BCR informs the value for money (VfM) assessment and is one of many criteria used to inform the decision on whether to proceed with a proposed intervention.

The BCR is informed by the quantified areas of appraisal only and does not account for the areas of appraisal which have been assessed qualitatively. A full economic appraisal for the scheme was undertaken in line with the DfT's Value for Money framework. The monetised impacts from the AMAT and the SSAT have been combined to calculate the PVB, PVC, and BCR of the scheme.

The PVB includes:

- User time savings.
- Non-user time savings (decongestion benefits).
- Benefits of modal transfer from car (noise, air quality, greenhouse gases, accidents).
- Journey ambience.
- Physical activity and health benefits include reduced work absenteeism; and
- Indirect taxation impacts.

The PVC includes:

- Direct investment costs; and
- Infrastructure maintenance costs.

The BCR is a measure of value for money for government expenditure and is of principal value when the government is considering the allocation of scarce funds. It is calculated by dividing the PVB and PVC. VfM guidance has set six categories for calculating VfM as outlined in Table 2-9.

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<sup>14</sup> <https://www.gov.uk/government/publications/the-green-book-appraisal-and-evaluation-in-central-government/the-green-book-2020> [Last accessed: 15/08/2024]

Table 2-9: DfT Value for Money Categories

<b>Very Poor</b>	<b>Poor</b>	<b>Low</b>	<b>Medium</b>	<b>High</b>	<b>Very High</b>
BCR is less than or equal to 0	BCR is between 0 and 1	BCR is between 1 and 1.5	BCR is between 1.5 and 2	BCR is between 2 and 4	BCR is greater than or equal to 4

### 2.9.1 Benefit Cost Ratio

The scheme is forecast to generate a BCR of 2.46 (excluding highway benefits within the VISSIM modelled area), which represents High value for money against the DfT categories. The monetised impacts of the scheme and value for money category are summarised in Table 2-10.

Table 2-10: Monetised Impacts of the Scheme

<b>Monetised Benefits</b>	<b>£000s in 2010 prices</b>
<b>Present Value Benefits (PVB)</b>	<b>£12,501</b>
<b>Present Value Cost (PVC)</b>	£5,073
<b>Benefit Cost Ratio (BCR)</b>	<b>2.46</b>
<b>Value for Money Category</b>	<b>High</b>

## 2.10 Uncertainty Analysis

To understand the potential variability in the scheme's outcomes, sensitivity testing was conducted to assess how changes in key factors, such as bus demand and active travel uplift might influence the results.

Two scenarios were tested against the "Do Something" core scenario. The first, termed the Low Demand scenario, assumed no growth in bus usage between 2023 and 2027, which contrasts with the 18% growth assumed in the Core scenario which is based on the Combined Authority assumptions. As a result, the Low Growth scenario indicates an 18% decrease in bus demand, along with the low estimate from the ATF uplift tool, which translates into a 3.65% decrease in cycling numbers and a 0.49% decrease in pedestrian numbers.

The second, termed the High Growth scenario, assumed a 58% increase in bus demand compared to 2023 levels (or a 40% increase compared to the Core scenario), along with the high estimate from the ATF uplift tool. This translates into a 9.83% increase in cycling numbers and a 0.89% increase in pedestrian numbers. The results are detailed in Table 2-11.

The -18% range was chosen to account for the assumption applied to the Core scenario for bus background growth, providing insights into how the scheme performs if no growth were to occur. The 58% increase (or 40% compared to the Core scenario) reflects a more optimistic outlook aligned to BSIP targets which assume a return to pre-pandemic levels of bus usage by 2025 and growth of at least 24% from that level by 2030.

Table 2-11: Low and High Demand Scenarios for Sensitivity Testing

<b>Monetised Benefits</b>	<b>Core Scenario</b>	<b>Low Demand Scenario</b>	<b>High Demand Scenario</b>
Present Value Benefits (£000s in 2010 prices)	<b>£12,501</b>	<b>£4,503</b>	<b>£16,319</b>
Benefit Cost Ratio	<b>2.46</b>	<b>0.89</b>	<b>3.22</b>
Value for Money Category	<b>High</b>	<b>Low</b>	<b>High</b>

The results of this sensitivity testing show that in the High Demand scenario the scheme value for money is likely to stay in the 'High' category. In the Low Demand scenario, this could move into the 'Low' category which would mean lower benefits than the costs incurred.

In terms of switching values benefits could need to reduce by £2.5m or 20% for the scheme to drop from High to Medium value for money. Costs would also have to increase by £1.27m or 26% for the scheme to drop into Medium value for money.

## **2.11 Value for Money Statement**

The overall scheme in the core assessment is forecasted to achieve a BCR of 2.46. This corresponds to 'High' Value for Money. As a cautious approach the monetised assessment has been presented excluding significant highway benefits that were assessed to be accrued within the VISSIM modelled study area as wider rerouting impacts were observed in the wider WERTM assessment area, which would not have been accounted for in the benefits monetised.

The above analysis of uncertainty indicates that should bus and active travel levels be significantly lower than forecast (e.g. no growth in bus patronage between now and 2027) then the scheme value for money will drop just into the 'Low' category, indicating lower benefits than the scheme costs incurred. In a high-growth scenario the scheme would achieve 'high' value for money.

Consideration has also been given to whether the results of the qualitatively appraised areas merit adjustment of the above core scenario monetised value for money category. Qualitative benefits have also been identified in relation to regeneration (slight beneficial), townscape (slight beneficial) and reliability (moderate beneficial). No qualitatively assessed areas have been identified as disbenefits.

Based upon the above and as a cautious approach a value-for-money category of High is considered to be the most appropriate category for the scheme.



# Appendices

Appendix H1- Scheme Design

Appendix H2 - Summary of Options Development Process

Appendix H3 - WERTM Model Report

Appendix H4 - VISSIM Model Report

Appendix H5 - Active Travel Appraisal

Appendix E2 - Small Schemes Appraisal Toolkit  
REDACTED

Appendix H7- Appraisal Summary Table

**Bedminster Bridges  
Outline Business Case  
Section B:**

**Financial, Commercial & Management  
Dimensions**

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### 3. The Financial Dimension

This section presents the financial case of the Bedminster scheme Outline Business Case (OBC). The purpose of the financial case is to demonstrate the affordability and funding of the preferred option, including the support of stakeholders and customers, as required.

#### 3.1 Capital and revenue requirements.

The Combined Authority is the promoting body of the scheme and has financial signoff. Bristol City Council has the responsibility for delivery of the scheme.

The sunk cost occurred before the submission of the OBC is outlined below in Table 1.

Table 12: Pre- OBC costs.

<b>Item</b>	<b>Amount</b>
<b>BCC Costs ex. PM time</b>	£178,821.94
<b>External Consultancy</b>	£2,871.00
<b>External Surveys</b>	£168,109.25
<b>Contingency</b>	£34,980.22
<b>Total</b>	<b>£384,782.40</b>

A breakdown of costs yet to occur is provided in Table 2 and 3 based on the expenditure at each business case milestone. The methodology used to estimate the costs was proportionate to the level of design and project lifecycle stage. These have been estimated by benchmarking against comparable previously delivered projects.

Schemes used for benchmarking are highly relevant to this project, and these were Bedminster Green bus priority, cycle track and public realm works and Park Row segregated cycle route. Both these benchmarked projects are in their final stages of completion with an excellent understanding of real delivery costs and are highly applicable due to the works being delivered (cycle and bus priority) and their location on major route corridors in the city. Knowledge from other projects such as the A4018 Passage Road (tender awarded) and Hengrove Park junctions (near completion) were also factored into the estimates, but these are less applicable as they have a lower level of complexity and fewer constraints due to their location comparatively further away from the city centre. To account for the future start date of the Bedminster Bridges project and to retain the accuracy of the benchmark an inflationary figure is added to the cost estimate. To provide further breakdown and clarity, where there is strong certainty of cost and quantity – even at this early stage – this is used in favour of the

benchmarking method. Examples would include the cost of a traffic regulation orders, traffic enforcement cameras, and additional bus shelters which are all itemised in Appendix C. Finally, percentage rates were applied for items such as design fees and site supervision, these percentages were based on recently completed schemes and sense checked; for example, after a percentage of construction costs was to calculate design time, the project team calculated how many design hours this equated to and whether that was reasonable.

Cost estimates will increase in accuracy as the project develops and the Bill of Quantities estimates at the next stage will be more accurate. For example, many items such as drainage, ducting and cabling are not completed for the OBC stage, so these quantities are not known until the detailed design is completed following OBC approval.

Inflation has been added at a rate of 9%, derived from BCC Engineers professional experience based on recent projects. Inflation has not been applied to costs between OBC and FBC as these costs will occur in the next year.

Contingency has been evaluated via a Quantitative Risk Assessment completed by Aecom. Each of the 47 active risks on the register were assessed in terms of Cost Impact Estimate, Delay Impact Estimate, and Likelihood. These values were then used in the model to determine a Mean Outcome and a Risk Exposure for each risk and for each iteration. The 80th Percentile risk value, referred to P(80), is then applied to the project, this has been split 20% for pre FBC and 80% for post FBC.

It is noted that most operational, maintenance and renewal costs are not included in the scheme costs as these will be funded through BCC’s existing highways maintenance budget. Landscaping costs will be funded by the scheme for an initial bedding-in period of 6 years, after which time BCC’s landscaping team will take on the maintenance of these areas. These costs are captured within the BCR for the scheme, as detailed in the Economic Case, and can be found in Appendix E1.

Table 13: Post OBC, Pre FBC-Anticipated Expenditure

Detailed costs Redacted – Commercially sensitive	Amount
[redacted]	

Table 14: Post FBC Forecast Expenditure

Detailed costs Redacted – Commercially sensitive	Amount
[redacted]	

In sum, the overall estimated cost, following OBC total is **£14,157,150.0** for the scheme. The expected breakdown across financial years is in Table 4. It is noted that this includes a nominal allowance for monitoring and evaluation.

Table 15: Annual Expenditure

Year	Percentage	Amount
<b>23/24</b>	0.005	£70,785.75
<b>24/25</b>	0.025	£353,928.75
<b>25/26</b>	0.36	£5,096,574.01
<b>26/27</b>	0.61	£8,635,861.51
<b>Total</b>	1	£14,157,150.02

### 3.2 Revenue Support Costs

Revenue funding streams that will support the benefits realisation of this project include the existing BCC Highways Maintenance budgets, which will support the ongoing maintenance of the new highway assets.

### 3.3 Spend Profile and Funding Sources

The funding source for scheme delivery is CRSTS and construction is due to be complete in March

2027. The scheme also has match funding sourced from Section 106 agreements between the council and developers. Section 106 is money that developers pay to assist the funding of community infrastructure under the Town and Country Planning Act 1990 and is only used for capital projects. The breakdown of Funding sources is seen in Table 5 below.

Table 16: Funding Sources

-	CRSTS	Section 106
<b>Bedminster Bridge area</b>	£14,088,656.84	£68,493.18

Table 6 includes a breakdown of all the s106 contributions, and a summary of the status and the purpose of the contribution.

Table 17: Section 106 match funding sources for the Temple Way scheme.

Development (if applicable)	Status	Purpose of contribution	Amount
<b>06/00221 / Phoenix House, Redcliffe Hill, Redcliffe / ZCD</b>	S106 already collected by council & ready to be spent.	Towards the cost of designing, procuring and implementing environmental enhancements to the public realm and highway space of Redcliffe Hill and Redcliffe Way	£57,077.64
<b>06/00221 / Phoenix House, Redcliffe Hill, Redcliffe / ZCD</b>	S106 already collected by council & ready to be spent.	Towards the cost of long-stay Coach Parking within the central area of Bristol	£11,415.54
<b>Total</b>			<b>£68,493.18</b>

### 3.4 Chief Financial Officer Sign Off

The OBC and all associated documentation is reviewed and approved on the BCC decision pathway. This includes sign off by the Executive Director of Growth and Regeneration at Executive Directors Meeting (EDM) and Chief Financial (section 151) Officer at Capital Improvement Board (CIB). It will then be formally approved by the Transport and Connectivity Committee, and this is expected to happen in March 2025.

Once it has been approved by Bristol City Council for submission to the West of England Combined Authority, it will then be reviewed and approved on the WECA decision pathway, including Regional Director Team (RDT) and Infrastructure Directors and CEO approval (delegated approval from the Committee).



## 4. Commercial Dimension

The commercial case covers the following topics which consider the operational and commercial viability of the proposed scheme, sets out the process that BCC will take in procuring services and materials to deliver the project. It also covers the approach for contract and risk management to ensure the achievement of the commercial outcome.

### 4.1 Procurement

To complete the operation of this project, services which are required (and may require procurement) can be split into 2 broad categories. These are:

- Project Development which covers detailed design, site investigations, road safety audits, the TRO process and Full Business Case drafting, including modelling and appraisal.
- Construction which includes changes to, in no order, highway layouts, installation of new traffic signals, alterations to streetlights, alterations to and installation of signage, new public seating and landscaping, alterations to drainage and alterations of bridges, bus stop upgrades, utility diversions, on site supervision / NEC4 project management.

#### 4.1.1 Project Development

The project will obtain internal resources to complete the work in the first instance. Where the skillset or resource capacity does not exist within Bristol City Council, the project will seek support from framework suppliers. Should the knowledge and skillset not exist amongst the framework suppliers, the project will look to secure support externally in line with the Bristol City Council procurement guidelines.

#### 4.1.2 Construction

A variety of existing framework contracts will be used to procure the works, specifically:

- Bristol Highways Asset Management and Associated Works Framework 2021-2025 with multiple suppliers
- The Supply, installation and maintenance of equipment and infrastructure for the control and management of traffic and related services (WoEITS2) with Yunex Traffic
- Street Lighting Contract with Centregreat.
- Framework contract with Chroma for BNET install and connection of devices to the Bristol Network.
- Bus stop upgrades contract with shelter supplier Clear Channel UK Ltd.

Other services to be procured not through existing frameworks are:

- Landscaping. The council are currently in the process of tendering a landscaping framework contract that will be used across the CRSTS programme. To understand the value of these works each project has provided an estimated area of landscaping & number of trees.

- On site supervision / NEC4 project management. To augment the reach of BCC's Engineering Design team, this service has recently been successfully procured via the Constellia framework. This project could use this route to market if it cannot be resourced in-house.

BCC will manage this procurement process internally, with their Procurement team.

More detail on each contract is given below.

#### **4.1.2.1 Bristol Highways Asset Management and Associated Works Framework 2021-2025**

The Transport Team for BCC has a Highways Asset and Associated Works Framework' (HAAWF) in place to ensure that the Department can draw upon the services of contractors via an OJEU compliant process. The framework allows the council to ensure value for money through a mini-tender process and specification set by the client.

It is proposed that the project would principally procure services through the Bristol Highways Asset Management and Associated Works Framework 2021-25 (BHAMA WF) through 'Lot 6' that applies to projects over £150,000 in value. The council will choose a winning bidder based on price, quality, and social value. There are four contractors on the Lot 6 framework based, and all have secured a place on this framework by fulfilling a series of selection and competence criteria.

To procure the wider project under lot 6 of the existing HAMAWF the tender process must be completed, and the contract signed by the end of Sept 2025. However, if this is not achieved then the wider project would be delivered by the new HAMAWF which begins on 1 Oct 25 and will have six contractors on the framework.

#### **4.1.2.2 Street Lighting contract with Centregreat**

Street lighting infrastructure and works will be procured through the framework for Street Lighting, the current contractor is Centregreat. The management of the contract and calling off the contract lies with the Bristol City Council Highways Electrical Asset Team, with support from the BCC Procurement Team. The council have identified that the current contract value £29.99m will not be sufficient for all works due between now and the contract end (July 2029) and the team will be procuring another contract running side by side with the term contract, which deals specifically with enhancement works.

#### **4.1.2.3 WoEITS2 with Yunex Traffic**

Traffic signals assets will be procured through the Yunex, WoEITS traffic signals maintenance and installation contract. BCC will manage this procurement process internally, with support from their Procurement team.

#### **4.1.1.4 Payment Mechanism**

Payments will be paid in line with existing agreements between BCC and our suppliers. This will include our suppliers invoicing BCC in regular increments, either monthly or at key milestones, up to and not exceeding the maximum total for the Scheme. Along with monitoring the cumulative totals of invoicing for the Scheme, BCC will monitor the invoicing against the detailed cost estimates for each element to ensure payments remain on track to avoid overspend. The Combined Authority will require evidence of invoices to release the funding to BCC.

#### **4.1.2.5 Risk Management Strategy**

BCC will adopt a similar approach to its previous highway construction schemes with regards to risk allocation. Within the tender process BCC will set out that all bids submitted will be for a 're-measure' contract with regards to risk. This means that BCC accepts most of the risk, for example if the contractor comes across utilities that were not mapped out in the utility process, there will be a requirement for BCC Engineering Design to re-measure the works and cost of mitigating these utilities. There is a risk and contingency allocation included in the total project costings, as seen above in the Financial Case.

## **4.2 Operation and Financial Viability**

Business Case for schemes are either required to identify source of funding required for ongoing operation or confirm self-sustaining by providing the likely revenue projections along with measures which could be taken if these revenue targets are not met.

### **4.2.1 Infrastructure financial viability**

Operational, maintenance and renewal costs are not included in the scheme capital costs as these will be funded through BCC's existing highways maintenance budget. There will not be an increase in operational, maintenance and renewal costs associated with the infrastructure because the overall area of infrastructure is not changing, only the layouts.

## **4.3 Social Value Act**

BCC note the importance of the Social Value Act and wishes to demonstrate its commitment in the principles of the Act and to achieving the top 10 priorities below: -

- 1) Promote the local economy using local suppliers and the voluntary and community sector to create and sustain new local jobs and apprenticeships.
- 2) Contribute to carbon reduction targets and use resources wisely.
- 3) Conserve and enhance the environment, supporting biodiversity, minimising pollution and waste and making best use of the environmental opportunities of work undertaken by our suppliers.
- 4) Promote the personal and physical health and the mental and emotional well-being of people within Bristol and the rest of the West of England.
- 5) Support schools and colleges e.g., through new work placements schemes, providing mentors or assisting in mock interviews.
- 6) Increase participation in the Children's 6 Commissioner Takeover Challenge, find details here: [Takeover Challenge | Children's Commissioner for England \(childrenscommissioner.gov.uk\)](https://www.childrenscommissioner.gov.uk/takeover-challenge/)
- 7) Provide training, workplace experience and/or employment opportunities for:
  - i) People with Disabilities,
  - ii) People with Learning Difficulties,
  - iii) Care Leavers,

- iv) Young People who are not in Education, Employment, Training, or Others who may find access to employment more challenging or who may be under-represented in the workforce e.g., ex-offenders.
- 8) Support schools through the provision of business support services.
- 9) Reduce health and social care inequalities across the Bristol area.
- 10) Achieving a service delivery model which uses, engages, or supports the local community and voluntary sector including ideas such as adopting a local voluntary organisation as the provider's 'charity of the year.'

To achieve these priorities, during the development of the scheme BCC has a [Social Value Policy](#) which requires all suppliers to seek to apply these principals in the Act to all decisions. Focussing specifically on reducing poverty and inequality, enhancing community economic and social wellbeing, and increasing the city's resilience and environmental sustainability. Part of supplier evaluation during a procurement exercise is the supplier's commitment to Social Value.

To achieve these priorities, during the construction of the scheme, it has been agreed that the framework sourced contractors will:

- Continue to achieve priority 1 through its procurement framework – any commissions or purchases for this project will contribute to priority 1.
- Continue to achieve priority 2 through its day-to-day operations – meaning that activities under this project will contribute to this priority.
- Continue to achieve priority 3 through its day-to-day operations – so activities under this project will contribute to priority 3, however, it is to be noted that all bullet points above could not be easily quantified.

## 5. Management Dimension

The management case covers how the project will be delivered. This section discusses the proposed governance structure, delivery programme, how the risks will be managed and plans for stakeholder engagement, as well as plans for monitoring and evaluation.

A very brief introduction to the status and maturity of the project is given below, this is then expanded upon in much more detail in this dimension.

Infrastructure changes:

- The project has completed advanced preliminary designs, which have been signed off at stage three of the BCC Quality Assurance process, where stage four would give authorisation to build the scheme. This has included significant design reviews from internal and external stakeholders. The project drawings are provided in Appendix H1 of the Strategic Case.
- Public consultation on the specific plans for this project was completed in summer 2024. Feedback from this has been collated and designs are being reviewed and updated in response to the feedback.
- GPR surveys are completed, and this has informed the preliminary design already. C3 searches are currently awaited from utility providers.
- Drainage surveys are completed, and this is currently being assessed.
- Carriageway core investigations will be commissioned shortly.
- Drafting of TRO drawings has commenced.
- A tree survey has been undertaken to ascertain the type and health of existing trees in the study area. More information is given in section 3.7.3.
- The impact of the cumulative impacts of construction from this and other projects has started to be mapped by the project team and a commissioned consultant, work to identify mitigations to 'keep Bristol open for business' has begun.

### 5.1 Promoter and Delivery Arrangements

The Combined Authority is the promoting body and sponsoring organisation. It has responsibility to ensure that the funds allocated are managed effectively to ensure that the benefits of the scheme are realised. BCC is seeking funding for the delivery of this Scheme from the CRSTS fund. BCC has responsibility for the development of this OBC and has the responsibility to deliver the Scheme, which will include responsibilities for development of the designs, technical approvals, and cost estimates.

BCC has been delivering these types of transport schemes, as the Local Highway Authority, for many years and is well placed, in terms of capacity and capability, to continue this rollout. Well-established in-house and third-party arrangements for the identification, design, procurement, and delivery of schemes of this type are in place.

### 5.2 Project Governance

The project will be governed by BCC's Transport Programme Delivery Board (TPDB), with day-to-day management from the Transport Development Team (TDT). The roles are as follows:

- Project Sponsor/Director: Redacted
- Senior Responsible Owner: Redacted
- Project Manager: Redacted

The project manager is responsible for tracking progress of the project against the programme, review risks and issues and track spend against the cost forecast. This is done via weekly meetings with team members overseeing parts of the project. The frequency of meetings varies depending on the task. There is a weekly meeting with the design lead due to the significance of this workstream and ad-hoc meetings and calls, as necessary. Fortnightly meetings are held with the consultant undertaking modelling. Specific workshops are convened when necessary to discuss modelling and design implications. Other team members are brought into these as necessary for example traffic signals engineers.

Monthly meetings are held with the TRO work package lead as this work is currently less critical. Fortnightly meetings are held with the consultation work package lead, this was increased to weekly during consultation and will be reduced in frequency once this round of consultation is complete and closed out.

The PM is also responsible for arranging resource for work streams which are soon to start but have not yet begun, for example street lighting design and, along with the programme manager, look to arrange resource so that there is resource available as soon as the task can start.

Any issues unable to be resolved by the Project Manager will be escalated first to City Centre Project Board. The board meets weekly and includes the project SRO and the Transport Delivery Manager for the City Transport team. Issues that cannot be resolved at the board are then escalated to the Transport Management Team, whose attendees are Transport Heads of Service, including the project SRO. Following this, more serious risks and issues will be escalated to the Capital Delivery Board, and then onto the Growth and Regeneration Board if necessary.

Where it is identified a change to agreed programme milestones or budgets are needed, the change control process will mirror the above, with change requests of scope, time, or budget escalated to the necessary level of the BCC decision pathway depending on the scale of the change. In addition, budget changes will be required to follow the BCC Financial Scheme of Delegations. This specifies the level of approval needed to action changes on the Finance System, from Project manager, up through Head of Service, Service Director, and Executive Director.

All the above governance is supported by BCC's PMO who have a dedicated Transport resource who sits in the Transport Programme Delivery Team.

An organogram is provided.

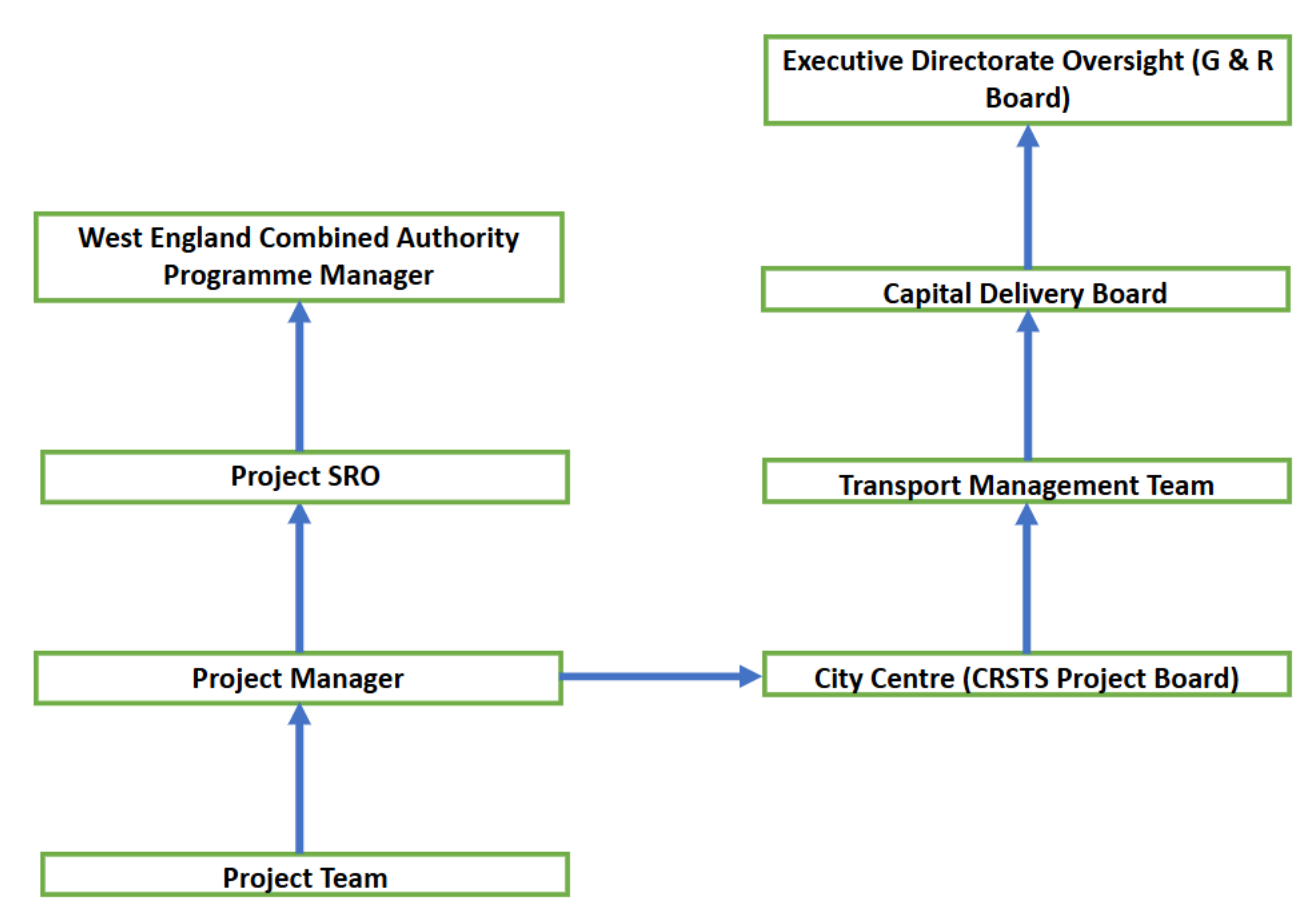


Figure 3: Organogram.

### 5.2.1 WECA governance

As the project promoter and funder is WECA, BCC report progress to and follow governance set by WECA. This includes a monthly highlight report which presents progress against programme and spend in month. There is also an agreed change control process between BCC and WECA to change scope, programme milestones or budget.

Due to the complex nature of the CRSTS programme there is also significant liaison between BCC and WECA programme managers who track progress, spend and risks at a programme level.

## 5.3 Examples of organisational competence

BCC has a proven track record of delivering major transport infrastructure alongside considerable experience in:

- Delivering major transport schemes
- Successfully obtaining consents for major infrastructure schemes
- Developing and maintaining good working relationships with key partners and stakeholders
- Internal resourcing and governance requirements for major schemes

A few examples of BCC's successes in delivery of transport infrastructure schemes are outlined in Table 6.

**Table 6: Successful schemes delivered by BCC.**

Schemes	Summary
Bristol Bridge	BCC was responsible for the delivery of the Bristol Bridge project, which delivered a two-way segregated cycleway, improved pedestrian crossings and a camera enforced bus gate on a key strategic route in Bristol’s City Centre. £1.4 million was allocated to deliver the scheme which better connects the city centre to Temple Meads station and the employment opportunities of the area, giving priority to those using sustainable and active modes of transport.
Old Market Gap	BCC delivered a key missing cycling link in the city network at a cost of £1.2 million, funded by the Department for Transport’s Active Travel Fund. Consisting of segregated cycling tracks connecting to Tower Hill, Old Market Roundabout, and Castle Park, as well as dedicated cycle signals and wider and safe crossings, the recently completed scheme will aid in connections to the strategic routes such as the Bristol-Bath Bike Path, Concorde Way, and routes into the city centre.
MetroBus	Bristol City Council was a co-contributor to the MetroBus project, consisting of four rapid bus routes – the M1 through M4. As part of the South Bristol Link portion of the scheme, 4.5km of new road and cycleway, as well as a 0.5km bus link to Long Ashton Park and ride, were successfully delivered.
Ashton Vale to Temple Meads (AVTM) MetroBus	BCC played a major role in the delivery of the metrobus project, which delivered three rapid bus transit routes in the West of England region. £250 million was allocated to the region’s authorities, including BCC, SGC and North Somerset Council to deliver the scheme. AVTM is the route of the m2, connecting people in the southwest of the city, and North Somerset with employment centres and transport interchanges in the city centre. AVTM is unique in comparison to the other metrobus routes (m1 and m3), as the route required the installation of bus only roads and bus guideways (under the Transport and Works Act 1992).
North Fringe to Hengrove Park (NFHP) MetroBus	NFHP is also part of the metrobus project, the route of the m1 runs from Cribbs Causeway in South Gloucestershire to Hengrove Park in Bristol, via the City Centre. BCC helped to deliver the project including the installation of metrobus standard stops, bus only roads, and bus



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lanes. NFHP has been successful in connecting people in residential areas such as Hengrove with employment centres to the North of the city.

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## 5.4 WECA Grant

The West of England Combined Authority will provide the funding for the next stage of the scheme subject to a decision in its CEO meeting. In advance of this, the OBC will be reviewed and commented on by the WECA Grant Assurance team led by the Head of Grant Management & Assurance, Pete Davis. BCC will then receive a Grant Funding Allocation notice.

## 5.5 Programme Plan

A programme has been drafted using Microsoft Project. Over 180 tasks have been identified, their duration, and logic (e.g. predecessors, successors and lag times) have been coded into Microsoft Project. Microsoft Project then calculates the start and end dates of each activity and highlights the critical path.

The programme has been put together by the project manager in conjunction with team members. For example, team members will provide realistic durations and help compile the logic and sequencing of tasks.

The percentage complete of each task is also tracked in Microsoft Project. Microsoft Project can calculate the float in the programme, and time risk allowances are also applied to some tasks.

This programme is reviewed at least once a month with the percentage complete being updated, and duration and logic updated where new information has come to light. This is done by the project manager in conjunction with the project team. This programme is provided to WECA as part of the reporting monthly.

Within the programme the baseline, and key milestones can also be seen.

A pdf of the programme is provided in Appendix H8. Table 7 below is a table summarising the key milestones.

Table 18 : Programme plan summary.

<b>Milestones</b>	<b>Timeline</b>
OBC approved at WECA CEOs	Mar-25
FBC approved at WECA CEOs	Sept-25
Construction Start	Sept-25

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## 5.6 Risks, Constraints and Dependencies

### 5.6.1 Risks

A risk register is provided in Appendix H9a, this was initially compiled by the BCC project manager in conjunction with key members of the project team such as the principal designer. It is now reviewed and updated regularly, furthermore the project manager adds/edits risks as and when they come to light and outside of the formal period review sessions. The register consists of risks to delivery sorted by category and given owners. Mitigations are also given for each risk. These risks are given an initial rating based on probability and impact to give a risk rating, and subsequently a residual rating following any mitigation.

This Risk Register was used as the basis of the QRA. A time or impact cost was allocated to each risk, along with a probability. A QRA workshop was hosted by a risk specialist from an external consultant; this was attended by the project manager, the project sponsor, and the principal designer (project engineer).

The project's risk management strategy will enforce a systematic approach to responding to the various risks during the project lifecycle and will continuously look to avoid, mitigate, transfer, or accept risks. In many cases, additional technical work or surveys, or early discussions with partners, will reduce or mitigate risks.

Risk control measures, such as preventive, corrective, directive or detective measures will be in place to treat risks. Delivery and contractor teams will be responsible for managing their risks and reporting any newly identified risks to the Project Manager.

### 5.6.2 Constraints and Dependencies

There are process based constraints and dependencies the project must be delivered within:

- BCC committee will need to approve the OBC (and later the FBC) before it can be submitted to WECA's CEOs.
- The completion of the Scheme by March 2027 (CRSTS funding deadline)
- Framework end dates as discussed in section 2.1.1 [Project Development](#)

The project has many physical and operational interfaces with other projects and organisation which if left unmanaged could harm delivery. The project team have identified all these and then identified which need to be actively managed based on the risk posed to the project. An overview of the types of interfaces is below:

- Numerous developments within the geographic vicinity of the scheme. These are set out in section 1.5 Interdependencies of the strategic dimension.

- A requirement for the uninterrupted and continuous running of bus services during construction.
- The need to provide replacement facilities (e.g. blue badge parking) before current facilities are closed.
- Highway / structural maintenance works to bridges.
- Utility diversions and upgrades required by other projects.
- Projects not in the immediate vicinity of the scheme, but whose construction impacts could negatively clash with this scheme's construction impacts for example diversion routes from both projects contradicting and leading to congestion.

Of the interfaces listed some projects are managed by BCC, and some by our partners and some by separate organisations.

### **5.6.3 Construct Impacts**

The CRSTS programme team are aware of the challenge of delivering this project alongside many other capital works on the highway, without causing significant disruption to the city and its residents. In recognition of this, various measures have been / will be put in place namely:

- An impact study has been commissioned by an external consultant. This study will identify the flash points which need particular attention. It will identify a strategy of how to Keep Bristol Open for Business. The recommendations from this report will be used to apply for additional funding where required, and plan mitigation works.
- An internal working group and work package lead has been set up to produce a phasing plan. This will consider all schemes no matter the promoter and map them both physically and in time sequence to understand the multiple scenarios of which roads are closed / affected. The work will then include a temporary bus rerouting strategy for each scenario.
- At least one, potentially two, construction manager roles will be created and recruited to. Funding for this role has been secured, and the council are currently defining the job description.

## **5.7 Land Acquisition, Planning and Other Consents**

All the work within this project is Permitted Development on adopted highway and therefore has no dependencies relating to land acquisition or planning. Traffic Regulation Orders will be required as is standard legal practice for changes to the highway.

### **5.7.1 Traffic Regulation Orders (TRO)**

This scheme will require many TROs to be altered and potentially new ones to be created. Work has already begun to identify what is required by BCC officers. The following type of TROs are required:

- Speed limit orders.
- Movement order
- Bus lane order
- Waiting restrictions

### **5.7.2 Tree Felling**

During the delivery of this project, BCC will voluntarily follow the Tree Replacement Standard. Following engagement that occurred with the BCC tree officers from the project, various locations in the project area are being considered for tree replacement. If tree removal is part of the project we will consult with the public. On 23 November 2023 s.115 Environment Act 2021 implemented a statutory duty on local authorities to consult with residents on the felling of trees where no exemption applies.

## **5.8 Utility / Service Diversions**

The C2 to C4 process forms part of the design delivery of new or diversionary utility works on the public highway operating under the legal framework of the New Roads and Street Works Act 1991 (NRSWA). The process entails the following stages:

C2 – Scheme identification (Preliminary Inquiry). The Project Sponsor or in this case Overseeing Organisation (OO) (being a highway authority) seek from the Undertakers (utilities company), details of their apparatus within the specific section of the highway which is being considered for improvement without making any commitment to the scheme.

C3 – Budget Estimate. The OO submit a preliminary design to the Undertakers. The Undertakers should respond with preliminary details of the effects on their apparatus and provide budget estimates for the necessary works and an indication of any special requirements involved.

C4 – Detailed Budget Estimate. The OO submits a final detailed design with working drawings and an outline programme. The Undertakers should come back within 25 days with (a) their detailed design of their works (b) a detailed specification of the works required; (c) a detailed estimate with itemised costs; (d) provisional programmes and timescale for works; and (e) all necessary information for the civil engineering work required if the Undertaker's works are to be undertaken by the OO's contractor.

The project is currently at the C3 stage.

## **5.9 Data Collection**

Understanding how Bristol City Centre is used today is paramount to designing how it will be used in the future. To assist with the project team's understanding, and in turn project development various data collection techniques have been undertaken.

### **5.9.1 Traffic counts**

In June 2024, this project collected data on Bedminster bridge to calculate how many cars, pedestrians, cyclists and scooters are crossing the bridge weekly both North and Southbound. This research was carried out to as part of the process to assess the emerging design.

From this study it was found that the number of people using active transport modes outnumbered the number of passenger vehicles in the weekday PM peak hour (southbound direction). Specifically pedestrian, cyclist and scooter movements exceeded car use by just over 15%. Furthermore, during the AM peak, the North and Southbound movement of active transport users was a total of 45.8% of all transport modes in the weekly average. Overall, this bridge regularly sees a highly significantly level of active transit use from pedestrians, cyclists and scooters, of which should be reflected within the final

transport model for the design proposal.

## **5.10 Stakeholder Engagement**

The project has and will continue to undertake extensive stakeholder engagement. This is described in this section. Some engagement with stakeholders overlaps with design development and/or project assurance. As such engagement with WECIL, ATE and WECA's internal teams is described in section 5.11 Project Assurance and Optioneering.

### **5.10.1 Bus Operators**

The changes as part of this project are intended to benefit buses by improving reliability through the junction. Most bus routes are unaffected except one service, which is the 24 operated by First group. The 24 can use the general traffic lanes rather than the bus only section to keep operating largely on the same route, unless the bus company choose to re-route it onto Bedminster Parade to make use of the bus priority facilities. There are several adjustments to southbound bus stops on Redcliffe Hill to expand the provision and accord with the new layout.

### **5.10.2 First Group**

This scheme is part of wider City Centre programme which includes significant bus re-routing in the city. All infrastructure changes and bus re-routing plans have been extensively discussed with the major stakeholder of First bus group to ensure full support and understanding. The close management started with the first meeting that set out the objectives of the project, and over time the content of the meetings have become more detailed.

For example, at a meeting with First group in November 2023, impacts were discussed upon the number 24 bus service that were summarised. The feedback given was around the ability of being able to make the Southbound right turn from Redcliffe Hill to Coronation Road. To limit conflict, many variations of the manoeuvre and what possible re-routing options there was for the service were considered. The scheme is highly supported by First group and engagement will continue regarding the route of the 24. Overall, First believes that this project looks positive and will be transformational once completed.

As part of the public consultation in summer 2024 First group issued a letter of support<sup>15</sup> for the scheme

### **5.10.3 Other operators**

The Project Sponsor also met with key stakeholder Stagecoach ahead on consultation upon the re-routing of buses in the scheme area. Verbal support has been offered in response to the plans back to the project sponsor. Despite no formal response, there are regular meetings meaning Stagecoach could raise any queries on not only this project but various other ongoing schemes, this provides much opportunity to engage with BCC plans.

### **5.10.4 Businesses and the General Public**

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<sup>15</sup> <https://news-wew.firstbus.co.uk/news/our-response-to-ddp>

This project undertook formal public consultation in summer 2024.

The main way to feedback on the project was through an online survey hosted from 12 August 2024 until 30 September 2024 and was accessed from a shortened AskBristol link:

[www.bristol.gov.uk/bcctc](http://www.bristol.gov.uk/bcctc). This was promoted and publicised through materials including, postcards, lamppost wrap around banners, adverts at bus stops as well as advert on the information screen on the services that run through the Broadmead area. Our communication team also ran local adverts on next door, Facebook and X getting more than 10,000 link clicks and reach of over 47,000. From this we had 2,120 people respond to the survey. We commissioned support from West of England Centre for Inclusive Living (WECIL) to send the survey out to wider disability network this allowed us to have representative sample of responding to the survey with 16% response rate.

We held 9 drop-in events at 5 different locations around the city centre on weekdays and weekends and at a range of times to make the events as practical as possible. All events were wheelchair accessible. Across the 9 sessions, we spoke to 141 people with the aim of giving information about the project, answering questions and encouraging people to complete the survey in their own time.

To ensure that those businesses most impacted by the proposed changes had a chance to get involved, the team attempted to drop into all businesses in Broadmead and the Galleries in August and September. In total, 205 businesses were successfully reached and were left information on the scheme.

We have also received responses and conducted in person presentations to the below stakeholders:

- Broadmead Baptist church
- Bristol cycle campaign
- Bristol Civic Society
- Bristol walking alliance
- Business West and Chamber of Commerce
- Churches Conservation Trust
- Disability Equalities Forum (plus email from Alun)
- First Bus
- Green Party Response
- Guide Dog Charity
- Labour Group Response
- University Hospital Bristol and North Bristol NHS Trust
- Redcliff Church
- Residence
- TAXI Forum
- University of West of England
- WECIL
- SWX music venue

Response areas related to survey:

- New rapid transit route: We had 2039 respondents of those **56.2% of respondents agree** with the proposal while 31% disagreed.

- 1,000 individuals responded to the section about Bedminster Bridges. Of those 54% agreed while 39.7% disagreed.
- The proposal in this section of least support was changing of pay and display parking to residents' parking which had 41.1% agreement and 35.5% disagreement.
- The proposal in the area that had the most support was to improve lighting and landscaping, which had 66% agreement while 16.9% disagreed.
- All the pedestrian and cycle stated improvements had more than 60% approval.

Following the consultation held between August and Sept 2024 the team have been reworking designs to take account of the feedback to ensure we take on board stakeholder concerns and the comments from the public. As part of the preliminary design process leading to the final designs that will be assessed as part of the council's Quality Assurance stage 4 process (see section [5.11.1 BCC QA Process](#)) the team will continue with stakeholder engagement. The type of external stakeholders that will continue to be informally engaged with are bus operators, Taxi forum, accessibility groups, ward members, MCA, Broadmead BID, key businesses and landowners in the area, utility companies and developers. These discussions will help shape the final design before the work commences on detailed design.

The next consultation step will be working with the Traffic Regulation Orders team to begin work on all the orders that will be required to enact the delivery of the project. This will include statutory consultation which will be held during 2025 to ensure project delivery can commence on schedule.

## **5.11 Project Assurance and optioneering**

To achieve the project's goals of enhancing bus journey times, creating safer and more comfortable cycling routes, and improving speed and comfort for pedestrians, the existing roundabout is planned for removal. In its place, a traffic signal system will be implemented, directing general traffic over one bridge while dedicating a separate bridge exclusively for buses to enhance efficiency and reliability. Most of the pedestrian traffic will also be served by the bus only bridge, and cycles will be able to use segregated cycle routes on both bridges. Stakeholder feedback on the initial options led to a further option which was developed and assessed. This is presented in the Options Assessment Report, Appendix H2 to the Strategic Case.

Design solutions had requirements that needed to fit within significant physical constraints e.g. highway widths, bridge strengths and desire to not lose any trees.

Design work was originally undertaken by BCC's Strategic Partner Arcadis, this project team strived to follow all highway design guidance (Manual for Streets, LTN 1/20, LTN 1/24) to the letter and could not design a solution to the requirements set out in the Basis of Design Document which fit within the physical constraints. This work concluded with a set of designs which the BCC Client team did not feel met the requirements, and a design report setting out how standards constrained the design. Design was then brought in house to be completed by BCC's Engineering Design team. This team are empowered to work creatively within the guidance and had the added advantage of being Bristol based and familiar with the schemes.

It is not proportionate to fully describe all design development and all minor optioneering that has been conducted. In addition to this, a significant number of design alterations were/ are being made in response to BCC internal and external project assurance processes. These processes are described in this section and where suitable the outputs can be provided. There is also some design rationale given in the strategic case and the presentation of the scope.

### **5.11.1 BCC QA Process**

The Quality Assurance (QA) process at BCC is required upon the design and implementation of any city council capital works affecting the public realm to recognise the constraints, opportunities, and issues. The process is a form of project lifecycle, with several stage gates a project must progress through before it can move to the next project / design stage. To pass through these stages, the design is reviewed by the QA board (or a representative of the board for smaller projects). The QA board members are made up of senior managers from City Transport, City Design, Highways and Traffic, Passenger Transport, Major Projects, and Parks Horticulture Tree Management.

The QA Board guides the project manager to decide the scope, impact/scale, programming, and staffing. It also ensures the design process is followed appropriately to design standards, guidance, and toolkits. QA also mediates any conflict of policy or design that the PM cannot address while providing approval for various project stages.

There are five QA stages, projects can only be progressed to the next stage once the previous stage has been received by the QA co-ordinator and approved.

- The first of the five stages will allow a PM to have overall approval to proceed with the design, it will also allocate them a QA representative. Here the stages of QA that are required for the project will be decided as the scope of the project is assessed.
- The second stage will ask for approval from the board to ensure the draft preliminary design or concept is feasible prior to undertaking public consultation.
- The third QA stage seeks approval of the final preliminary design, which has been revised following the public consultation and further consultation with all other stakeholders. Once this is approved, the TRO process can commence, as the horizontal design is agreed.
- The fourth stage provides evidence that all elements of the final detailed design have been completed and agreed and are ready to be developed into construction documentation. Once this stage is completed, a construction tender can commence.
- In the fifth, and final, stage approval is sought for project completion and handover. The scheme should be acceptable to the Business As Usual Teams and handed over, as necessary.

The stages are summarised in 2.



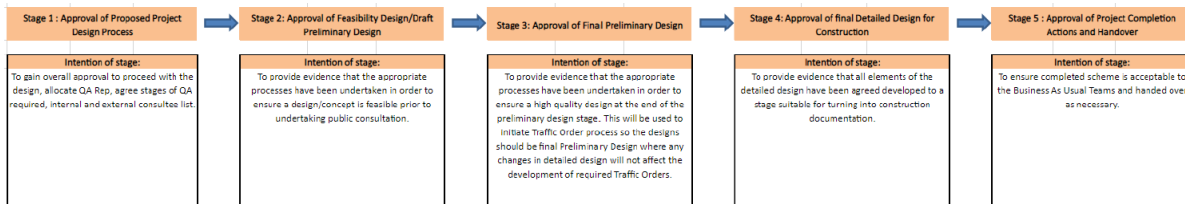


Figure 4: The BCC QA process stages.

The project has secured QA3 (Approval of final preliminary Design), and as part of this process comments were collected from QA board members and internal stakeholders. Approximately 150 comments were received which were addressed and discussed in further detail to close out any concerns from QA consultees. These comments and how they have been / are being actioned are tracked via comments tracker - this can be provided as an appendix to the business case if requested.

### 5.11.2 WECIL Access Audit

West of England Centre for Inclusive Living (WECIL) were commissioned to complete an Access Audit to appraise proposed plans and designs and propose the extent of works required to improve the proposed designs in accordance with the definitions of the Equalities Act 2010. The audit considers the needs of people with mobility impairments (including wheelchair users) and sensory impairments. The audit identifies physical barriers to access. This audit should be treated as the starting point of an ongoing access plan, which should be regularly reviewed by the organisation.

WECIL are a Disabled Peoples User Led Organisation that has several members with a variety of impairments that can relate to the access issues Disabled people face daily. All WECIL's access audit specifications come from the official HM Government Approved Document on Access to Buildings and Use, using M1/M2 specifications.

This access report explored the concerns and feedback of Disabled people who live, work and visit Bristol. The aim of this report was to provide detailed feedback on the design elements of the project as per the resources given by Bristol City Council. In addition, the team visited the route as it is currently to explore and address access barriers along the route, whilst also exploring potential accessibility issues caused by the infrastructural changes. This is with the overall aim of addressing such issues before they arise to support Bristol City Council in achieving the goal of creating truly inclusive spaces throughout the City Centre.

Several points to be considered when reviewing the scheme were highlighted as part of the audit. The high-level points are summarised below.

#### Residents

- Potential for drivers to take longer to travel to nearby locations due to being diverted.
- Benefits of cutting time off bus users commute, may encourage people to use the transport due to quicker journey times.
- Cyclists are likely to still turn left from York Road to Coronation Road using the pavement.
- Tactile paving potentially not deep enough on the bus only crossing. L shaped tactile paving preferred.

- Parking access to the library for blue badge holders?

### **Workers and Visitors**

- Roots of the trees are beginning to disrupt the pavement along the riverside path.
- People are likely to use the green area on the South of the roundabout to cut across the junction and then cross the bus gate rather than walk up the other crossings.
- Visitors are at a disadvantage when it comes to traversal as they may not be familiar with the route.
- Incorporate rest areas along the route where the pavement had space.
- How is the access to the hotel for taxis and drivers going to be maintained?
- Incorporate pedestrian signage on the crossings.
- Potential conflict with the cycle lane on the Redcliffe Road heading down. Pedestrians would need to cross the cycle lane to cross over the water. Could this be modified so that the cycle lane remains roadside so that the pavement to the crossing is continuous.

### **Path of Travel**

- Quite over complicated for drivers.
- Cars may end up across the crossing where the second set of traffic lights on the junction has turned red.
- Wider crossings incorporating bike lanes, concerns over the size of the crossing and the lack of pedestrian island.
- Where are the E-scooter parking spots and how will they be managed?
- Clarify what style of delineation kerb used throughout?
- Incorporate look left and look right signage on the ground where there are multiple crossings.
- Pedestrian crossing point being added alongside the cycle crossing point on Guinea Street.
- There are no crossing points across the cycle way at any point, how would pedestrians access the buildings.
- Removing the railings at the Redcliffe crossings will result in people running across the road.
- Ensure that pavement on East St works around the new bus stops and the crossing is improved as it is currently very poor.

### **Travelling to and from the Area**

- Concerns over the limitation on these routes directed traffic back out onto main roads. This could be very confusing which could be hazardous.
- Use the same blue colour for the cycle lanes and incorporate this into the cycle area at the head of crossings.
- Ensure tree position is considered.

The project team are in the process of reviewing, understanding and actioning the comments raised by the WECIL access audit, and will be tracking actions taken via a comment tracker. This comment tracker can be provided as an appendix to this business case if required.

### **5.11.3 WECA's BOP**

WECA have recently implemented an assurance process called the Benefits and Outcomes Panel (BOP). The purpose of the Benefits and Outcomes Panel (BOP) is to support the development and delivery of high-quality schemes through review of project outputs against investment objectives, project requirements, and national and local guidance. This will provide better value for money and improved benefits/outcomes for residents, businesses and visitors to the region.

Designs are reviewed prior to attending the BOP, with the Unitary Authority responsible for undertaking the Active Travel England's Route Check to audit the scheme. This is then sent to WECA along with a completed proforma for circulation and at this point Active Travel England provide their comments. Following this a meeting is held where the panel will either endorse, endorse with conditions, or not endorse the scheme.

In addition to the BOP process described above, the project sought guidance from ATE (Active Travel England) before the BOP process had been implemented. Active Travel England have reviewed the designs of this scheme in the past, and BCC has amended the designs accordingly. The scheme went to WECA's design surgery in December 2024 for scheme appraisal with Active Travel England. This scheme was endorsed by the BOP subject to conditions. These conditions being small design conditions regarding the sustainability of materials and hybrid loading facilities; these conditions are not fundamental components of the scheme. The project manager has responded to the conditions, and we are awaiting a response from the BOP Chair.

### **5.11.4 Grant Assurance**

In line with DfT and WECA Grant Management guidance, this Outline Business Case will be reviewed by WECA's Grant Assurance team before approval for funding of the next project stage is given at WECA committee. Prior to the OBC being submitted to the WECA Committee it will be / has been approved by BCC's Transport and Connectivity Committee.

## **5.12 Carbon Management**

The project team and BCC have an aspiration to minimise the emission of greenhouse gasses (shorthand carbon) to tackle the climate emergency and meet BCC's targets of Net Zero by 2030. It was recognised in 2023 that out of the UK's total emissions, transport is the largest sector emitting 29.1% of all carbon. Contributing to these emissions is domestic travel; the need for people to travel to and from their homes to work/ leisure etc. Furthermore, the housing crisis resolution of building homes is another great emitter of carbon, especially when the new homes also require new infrastructure such as roads, utilities and services.

This project is helping to enable new homes for 5500 residents at the Whitehouse Street regeneration area close to the city centre. As following the Social Value Policy BCC is committed to providing and aiding sustainability in the city. The central locations of these homes to be developed in the vicinity of

the Bedminster Bridges work require no large new roads, structures, or service connections to be developed, which would have increased carbon emissions.

Secondly it is recognised that the largest area in which carbon emissions can be produced are in the operational stage of a project life cycle; especially for a transport and highway-based scheme. As a result, this project proves itself to be greatly positive regarding carbon as it significantly enhances walking and cycling, and sustainable modes (bus and rapid transit) to discourage people from using a car.

That said it is still important that the project works to minimise its emissions in the construction phase. BCC is committed to keeping this in mind when making design decisions. Moreover, the project seeks to avoid creating civil engineering works where appropriate, for example existing kerb lines are used and utility diversions avoided where possible. As the project is now moving phases, the next stage includes reducing carbon through the materials that are selected in the scheme. To ensure this is completed with professional expertise, the project is commissioning a consultant to quantify the baseline carbon emissions from construction. This will then be used further as a baseline to reduce the carbon from construction as the design progresses.

### **5.13 Benefits Realisation**

To ensure that project benefits are successfully realised, several systems are in place. These systems are largely not project-specific, as the Council has several different projects focusing on improvements to sustainable travel provision. For instance, through the Engagement team, officers are employed to engage with businesses, communities, and schools to communicate improvements to sustainable travel infrastructure, as well as encouraging its use. These officers provide on-site roadshows, door knocking of associated businesses, and printed materials to raise awareness of completed schemes. This will help to raise awareness of the new walking and cycling infrastructure post-construction.

Beyond these well-tested methods, continuous improvement is also underway to ensure we realise the benefits of each of our schemes. Going forward, the Council has formalised a new engagement approach that increases the importance of both early engagement and benefits realisation, two key areas that result in higher resident satisfaction, greater likelihood of project success, and can always be improved.

This new approach will be applied to the improvements going forward, meaning a benefits realisation plan will be drawn up by the Engagement Manager and included in the FBC.

Further benefits can be self-realised in evaluation. This will be seen as buses will use the new infrastructure of the bus lane and cyclists will use the segregated cycleways. On evaluation, these uses of the project will be successfully realised when in use as the Council continue to promote active travels.

### **5.14 Monitoring & Evaluation**

A Monitoring & Evaluation Plan will be produced for this project building on the traffic data and engagement surveys already undertaken for project development which will be used as a baseline for the post opening evaluation. The plan will be designed to ensure that the project remains on track to meet its objectives and maintains effective communication with stakeholders. The information

gathered will be qualitative and quantitative to inform decision making and future improvements. The post evaluation periods will take place post construction, 1 year after completion and 3 years after completion as in line with the guidance produced by the MCA. This information will be added to other project data that can help evaluate the whole CRSTS programme and its success after full completion.

## **5.15 Contingency Plans**

The chosen contractor will be subjected to a competitive tender process whereby their application to complete the works would have been assessed by BCC. As part of the assessment the contractor's capacity to complete the works will be examined, including resources, supplies and materials.

If for any reason the contractor chosen to complete the work through the tender period process is no longer able to fulfil the requirements of the contract within the 90-day period where quotes from the other tender applicants are still valid, the second placed tender applicant will be offered the works. If the tender winner is unable to fulfil the requirements of the contract outside of the period where other tender applications are valid, then the works may be subject to re-tendering.

As an NEC4 contract, the Bristol Highways Asset Management and Associated Works Framework 2021-2025 (HAAWF) allows BCC to ask contractors to include a performance bond within the tender submissions. A performance bond is a way of ensuring a contractor's performance and the guarantor would take on the responsibility of payment to the client (BCC) should the contractor breach the contract. Typically, would cost the project between 1-3% of the construction value.

## **5.16 Project Closure**

As part of the project closure, the project will progress through Quality Assurance Stage 5. The intention of the Quality Assurance Stage 5 is to ensure that the completed scheme is acceptable to the Business As Usual teams and handed over, as necessary. Tasks that must be completed as part of project closure include:

- Completion of as-built drawings
- Safety audit undertaken.
- Consolidation of finances
- Project closure report produced.

# Appendices

Appendix H8 - Programme Plan

Appendix H9a - Risk Register

Appendix H9b – QRA Report

Appendix E1 - Cost Estimate REDACTED