Transport and Environment Committee

10.00am, Thursday, 1 February 2024

West Edinburgh Transport Improvements Programme – Outline Business Case

Executive/routine	**Executive**
Wards	**1 – Almond; 3 – Drum Brae/Gyle**

1. Recommendations

1.1 It is recommended that Committee note that:

1.1.1 West Edinburgh has been identified as a significant urban extension to the city. Various transport assessments forecast 7,800 new public transport trips on the A89/A8 corridor during the morning peak requiring approximately 55 additional buses per hour. Consequently, improved bus priority on the A8/A89 corridor is a necessity;

1.1.2 Congestion along the corridor impacts on bus operators' ability to run fast, reliable and attractive services;

1.1.3 The Edinburgh and South East Scotland City Region Deal provides £36m to support the West Edinburgh Transport Improvement Programme (WETIP) for the delivery of Bus Priority and Active Travel improvements along A8/A89 corridor between Broxburn and Maybury;

1.1.4 A HM Treasury compliant Outline Business Case for Bus Priority and Active Travel measures along the A8/A89 corridor has been concluded and confirms that the identified measures meet Transport Planning Objectives

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and align strongly with key Council policies (including City Mobility Plan, City Plan and 2030 Climate Strategy – Net Zero);

1.1.5 Public consultation and stakeholder engagement exercises have helped inform the Outline Business Case;

1.1.6 Economic appraisal has confirmed a positive overall Benefit to Cost Ratio of 1.23; and

1.1.7 The next stages in the programme include: detailed design tasks, promotion of required statutory consents, procurement exercises and the development of a Final Business Case.

Report

West Edinburgh Transport Improvements Programme – Outline Business Case

2. Executive Summary

2.1 This report updates Committee on the production of the Outline Business Case (OBC) for Bus Priority and Active Travel improvements on the A8/A89 between Broxburn and Maybury. The programme will now progress to the next stage, where key tasks include: detailed design, promotion of required statutory consents, procurement exercises and the development of a Final Business Case.

3. Background

3.1 The Scottish Government's third National Planning Framework, published in 2014, established a vision for West Edinburgh identifying it as a nationally significant location for investment. National Planning Framework 4, published in 2023, continues to recognise the opportunity of West Edinburgh as a mixed use development.

3.2 The West Edinburgh Placemaking Framework and Strategic Masterplan (WEPFSM), which sets Council guidance for allocated and proposed sites in the area, was approved at Planning Committee in December 2023. WEPFSM will come into effect once City Plan 2030 is adopted and will provide non-statutory planning guidance for the determination of planning applications in the area.

3.3 To maximise the area's growth potential, investment in a strategic package of sustainable transportation improvements is necessary. In 2010, the West Edinburgh Transport Appraisal (WETA) initially identified a series of interventions to support the implementation of the development vision.

3.4 In 2016, the WETA Refresh Study updated previous transport assessments to capture revised development proposals and increased airport related growth. The WETA Refresh Study also helped inform how potential City Region Deal funding could assist in relieving public transport constraints along the A8/A89 between Broxburn and Maybury.

3.5 The WETA Refresh Study was objective-led with the aim of encouraging a continued shift to sustainable travel. The Study identified a range of pedestrian,

cycling and public transport measures with a total cost of £108.2m (or circa £150m in today's prices).

3.6 City Plan 2030 proposes to allocate sites at West Edinburgh for some 11000 homes alongside previous committed development amounting to some 13000 homes (a quantum of development larger than a town the size of Falkirk). In addition, major growth sites have also been identified within West Lothian including those at Broxburn and Winchburgh.

3.7 The A8 also serves as the main access to the United Kingdom's fastest growing international airport and the Royal Highland Centre which is a venue for major events throughout the year. Enhancing public transport and active travel choices to these trip generators is absolutely vital to ensure growth is sustainable.

3.8 Various transport assessments forecast 7,800 new public transport trips on the A89/A8 corridor during the morning peak will require approximately 55 additional buses per hour. Consequently, improved bus priority on the A8/A89 corridor is a necessity.

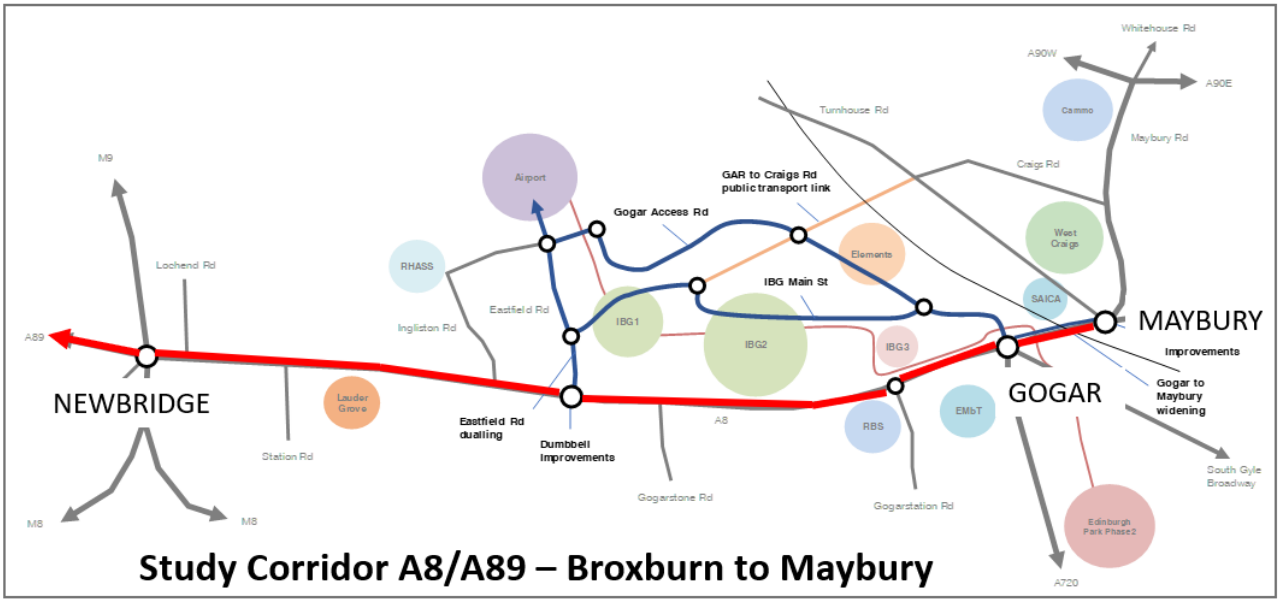

Figure 3.1 - A8, City Plan 2030 Development Sites and Airport Locations

3.9 Figure 3.1 above highlights the strategic importance of the A8 in relation to the City Plan 2030 development sites and the Airport.

3.10 Existing bus services on the A8 and A89 predominantly serve passengers travelling from West Lothian and local residents located along the corridor to Edinburgh City Centre. In addition, regular Citylink coaches operate between Glasgow and Edinburgh using the A8 corridor, with a further service to/from Stirling. The route also acts as a key link for bus passengers travelling to Edinburgh Airport from Edinburgh and other major Scottish towns and cities. The A8 is also an important corridor for Park and Ride.

3.11 Taking cognisance of the existing challenges and future opportunities along the corridor, in August 2018 the signing of the Edinburgh and South East Scotland City

Region Deal (ESESCRD) provided £36m for Bus Priority and Active Travel improvements between Broxburn and Maybury. Subsequently, the West Edinburgh Transport Improvement Programme (WETIP) was initiated by the ESESCRD with a delivery focus to support an infrastructure first approach.

3.12 The workflow diagram below (Figure 3.2) summarises the West Edinburgh project evolution and timeline.

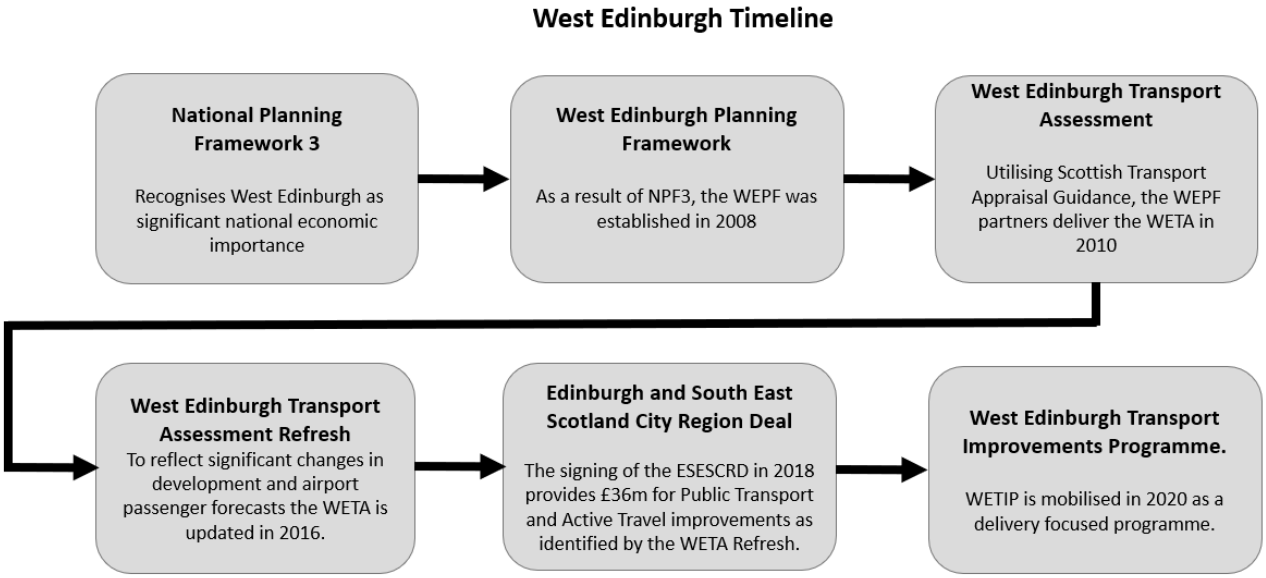

Figure 3.2 - West Edinburgh Project Timeline

3.13 WETIP is required to follow a robust business case process and adheres to the latest Scottish Transport Appraisal Guidance (STAG) and HM Treasury Green Book Guidance.

3.14 WETIP is currently in the OBC stage. The management of the OBC has been led by the Council, developed with strong regional collaboration and has utilised ESESCRD governance structures.

4. Main report

4.1 WETIP is a delivery-focused package of active travel and public transport interventions which will help to: enable early sustainable development; support a modal shift towards public and active travel; and enhance connectivity between neighbouring authorities.

4.2 The transformational interventions will provide long-term resilience in the area and are required to support the significant urban extension in the west, including the construction of the 23,480 new homes.

4.3 The WETIP OBC has been based on the components of the HM Treasury Five Case Model (Strategic, Socio-Economic, Financial, Commercial and Management Cases), and confirms a strong case for proposed public transport and active travel interventions on the A8 and A89 between Broxburn to Maybury.

4.4 The full OBC report is over 300 pages long and is available on request, however, a more accessible OBC Executive Summary is provided in Appendix 1.

Strategic Case – Identified Problems

4.5 A requirement of the OBC was to undertake an evidence-based review of the transport network within West Edinburgh to identify existing problems and opportunities along the A8/A89 corridor. Problems and opportunities were also identified through extensive engagement with local authorities, bus operators, bus user groups and community councils.

4.6 The main challenges and barriers for public transport and active travel along the corridor include:

- Very congested road network;
- Extended bus journey times;
- High levels of journey time variability (day to day);
- Increased journey time variability during planned events;
- Low public transport mode share;
- Poor public transport accessibility;
- Lack of quality active travel infrastructure provision;
- Severance; and
- Road Safety.

4.7 Bus journey time analysis has been undertaken (datasets provided by Lothian Buses). Significant journey time variability occurs daily within the corridor. For example, congestion at Newbridge during peak periods often results delays of seven to eight minutes.

4.8 The Royal Highland Centre hosts regular events including concerts and exhibitions attracting significant volumes of people (arriving and departing within short timeframes) resulting in increased congestion. This has a significant impact on regular bus users but also additional bus users travelling to the events by special bus services.

4.9 Additionally, matches and concerts at Murrayfield Stadium also have a significant impact on the corridor.

4.10 Congestion levels are such that they impact bus operators' ability to run, fast, reliable, and attractive services. Congestion also significantly increases operating costs, with additional buses required to maintain frequencies at peak periods. Evidence also suggests that bus passengers often cite service punctuality and journey time as an important factor in choosing this mode.

4.11 Generally, and as a result of congestion, bus journey times in Edinburgh have increased by nearly 20% in the last 10 years on certain corridors. Consequently, bus journey times across the WETIP corridor are not sufficiently attractive to encourage passenger growth.

4.12 There are existing gaps in active travel infrastructure provision along the corridor, and together with limited crossing opportunities on the A8 carriageway, these create severance issues.

4.13 Current bus stops on the A8 are also not aligned with direct and accessible pedestrian crossing points, which results in extended walking times between origins and destinations. Furthermore, sections of cycle infrastructure along the corridor are poor in quality which reduces the propensity to cycle.

Strategic Case - Identified Opportunities

4.14 City Plan 2030 has identified a significant urban extension to the city in West Edinburgh which will result in increased public transport and active travel demand.

4.15 Investment in significant new road infrastructure to create additional capacity and increase general traffic capacity is counter to national and local policy objectives. Therefore, the WEPFSM commits to growing West Edinburgh in a sustainable manner. Consequently, investment in bus priority and active travel to encourage a shift to more sustainable modes of travel is a core component of the sustainable approach and WETIP will play a key role by delivering:

- Public transport prioritisation;
- Quality active travel infrastructure provision;
- Enhanced transport integration;
- Mobility hubs;
- Reduced severance; and
- Embedded placemaking and urban realm.

4.16 Delivering bus priority along the WETIP corridor provides an opportunity to reduce bus journey times. For example, buses will be able to bypass congestion saving up to 10 minutes in both the morning peak inbound and evening peak outbound.

4.17 Recently examples of bus priority measures being delivered have been successful in reducing bus journey times, increasing reliability, and supporting passenger growth (in some cases passenger volumes now exceed pre-Covid baselines).

4.18 Furthermore, evidence from recent bus priority improvements on the A90 corridor between Edinburgh and Fife, has confirmed a virtuous circle of an 8% reduction in journey times and a 17% growth in passenger numbers. Bus priority has helped to reduce operating costs along this corridor and enabled the bus operator (Stagecoach) to increase the service frequency on the A90 from 12 to 15 buses per hour. WETIP proposals are expected to deliver similar successful outcomes.

4.19 Edinburgh Airport is the fastest growing airport in the United Kingdom and public transport mode share to the Airport has improved from 33.7% in 2019 to 36.5% in 2023. Approximately 15 million passengers used the Airport last year, and this is forecast to grow to 20 million per year by 2030. This growth will generate a

significant number of new public transport trips, particularly for bus as tram, which has a finite capacity and only serves Edinburgh.

4.20 WETIP provides the opportunity to enhance integration between travel modes along the A8/A89 corridor through the introduction of new bus lanes to complement existing infrastructure at Ingliston Park and Ride, and the creation of Mobility Hubs within Broxburn.

4.21 Encouraging greater use of sustainable travel modes, particularly by establishing more attractive, faster and reliable bus services as a result of bus priority, will help reduce the environmental impact of growth especially from traffic emissions.

4.22 Improvements to active travel infrastructure (including more accessible pedestrian and cycle crossing points) will help promote sustainable travel choices, significantly reduce walk times, and encourage local and longer distance cycle movements.

Strategic Case - Transport Planning Objectives

4.23 Following consideration of the range of problems and opportunities, five Transport Planning Objectives (TPOs) have been identified to inform a Detailed Appraisal (a necessary requirement of the business case process). These TPOs were developed collaboratively with partners and stakeholders (including bus operators) and are as follows:

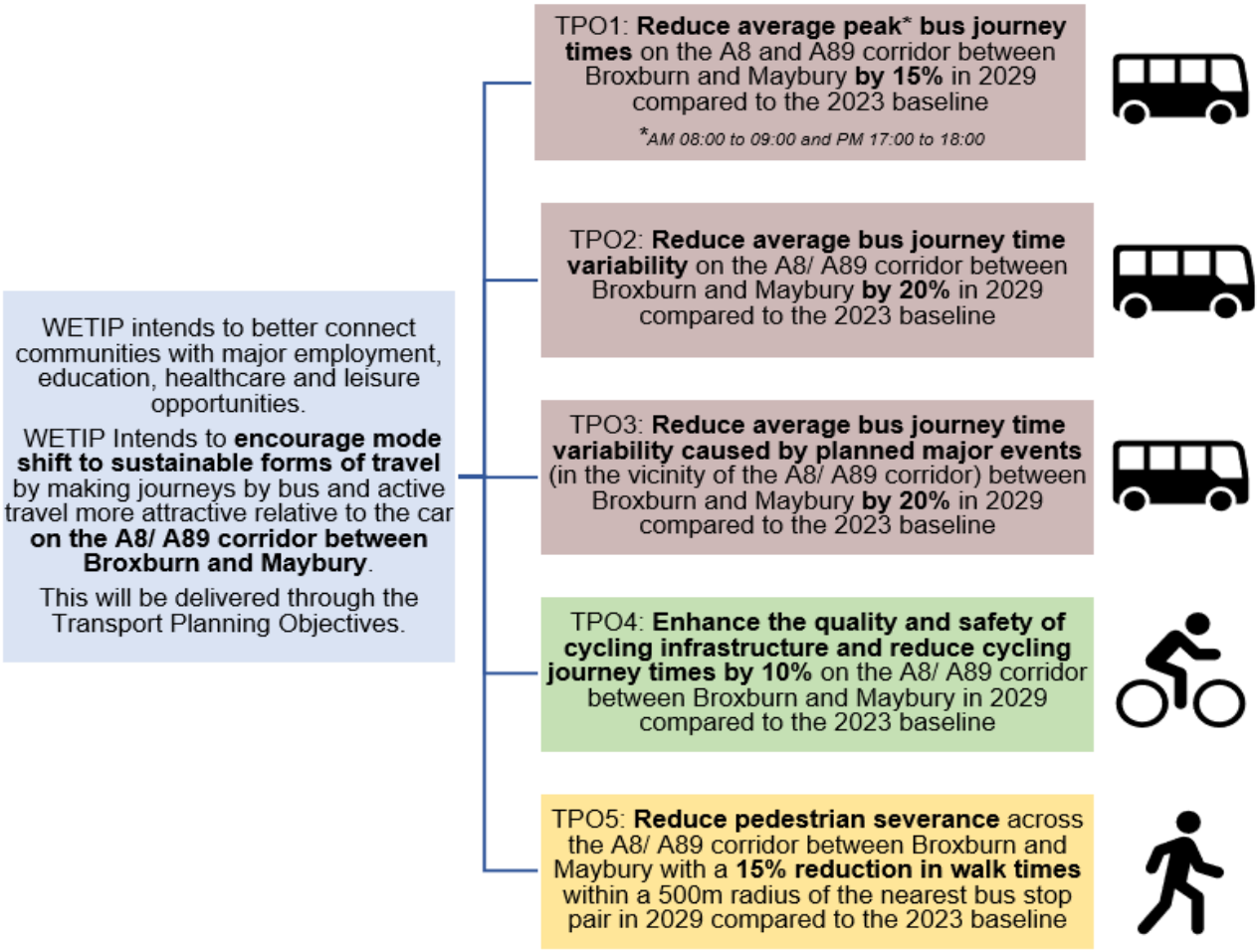

Figure 4.1 - WETIP Transport Planning Objectives

4.24 The scale and ambition of the WETIP objectives and proposals will help reduce bus journey times, improve reliability, and increase the overall attractiveness of the bus network across the A8/A89 corridor. The measures also have the potential to significantly help towards taking action against climate change and reducing the number of kilometres made by car journeys.

4.25 The four major schemes identified in WETIP have been evaluated against the TPOs using a seven-point scale set out in Scottish Transport Appraisal Guidance (STAG) criteria. Figure 4.2 below highlights that the four main schemes performed well against objectives and are considered feasible, publicly acceptable and affordable (subject to prioritisation forming a core package that can be delivered within the existing WETIP budget envelope of £36.6m).

WETIP Package	TPO1	TPO2	TPO3	TPO4	TPO5
A89 Broxburn to Newbridge	++	++	+++	+	0
A8 West: Newbridge - Eastfield Rd	++	++	++	+	+++
A8 East: Eastfield Rd - Gogar	++	++	+++	+	+++
A8 Gogar to Maybury	++	+++	+++	N/A	N/A

KEY Impact	Symbol
Major benefit	+++
Moderate benefit	++
Minor benefit	+
No benefit or impact	0
Minor cost or negative impact	x
Moderate cost or negative impact	xx
Major cost or negative impacts	xxx

Figure 4.2 - Four Main Schemes Evaluation against Transport Planning Objectives (TPOs)

WETIP Proposed Interventions

4.26 The interventions have been grouped into four main bus priority schemes and two additional schemes (Queensferry Branch Active Travel Path and Mobility Hubs within Broxburn). Each of the schemes are described below in Table 4.1:

ID	Measure Title	Description
A89 Broxburn to Newbridge		
1	A89 Broxburn to Newbridge bus lane and active travel route	Eastbound bus lane and bus priority signals and widened shared use path with two-way white line segregated cycle track. Speed limit reduced to 30mph between Newbridge and B800 Junction.
A8 West: Newbridge to Ingliston Road		
2a	A8 west of Ingliston Road to west of Station Road westbound bus lane	Westbound bus lane starting at Middle Norton Cottages to Lochend Road bus stop.
2b	Station Road Junction – improved access along Station Road	Signalised left in/ left out junction and new two stage Toucan crossing of the A8. Speed limit reduced to 30mph between Newbridge and east of Ratho Station.

2c	A8 north side pedestrian cycle route improvements between Eastfield Road and Newbridge	Widened shared use path with two-way segregated cycle track through Ratho Station section of the A8.
A8 East: Airport Junction to Gogar Roundabout		
3	A8 Airport Junction to Gogar Roundabout Bus Lane	Eastbound bus from existing airport junction off slip bus lane to Gogar Roundabout underpass. New two stage Toucan crossing of the A8 at the RBS overbridge and at Gogarstone Road.
A8 Gogar Roundabout to Maybury Junction		
4a	Gogar Roundabout to Maybury Junction additional eastbound lane	General traffic lane and section of bus lane required to improve bus journey times and reliability through Maybury Junction. This resolves a bus weaving movement issue.
4b	MOVA improvements	Gogar and Maybury Junctions to support Bus Priority proposals
Queensferry Branch Active Travel Path		
5	Other proposed cycling measures – Newbridge to Dalmeny (via Kirkliston) cycle route upgrade	Existing Bridal Path widened and surfaced.
Broxburn Mobility Hub		
6	Mobility Hubs	Broxburn Town Centre

Table 4.1 – Description of Proposed Interventions

4.27 Figures 4.2 (Active Travel) and 4.3 (Bus Priority) present the locations of the WETIP schemes.

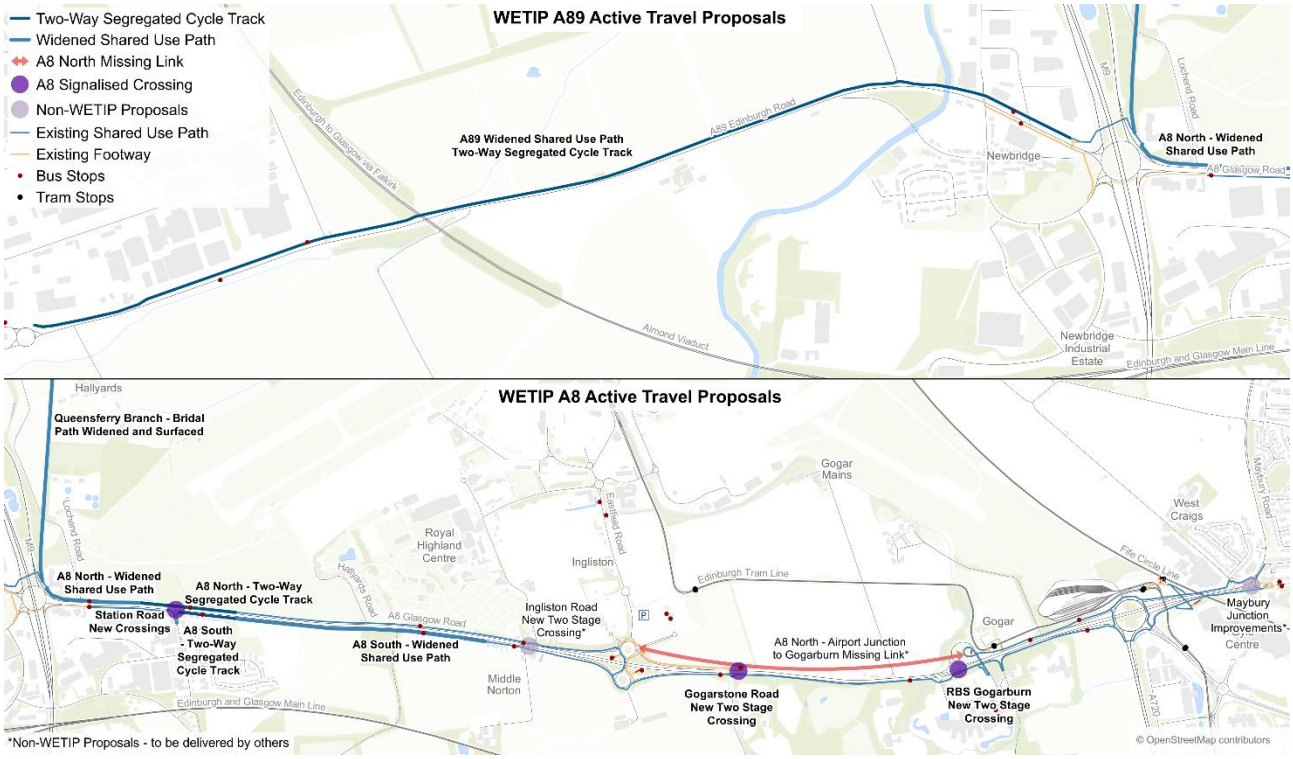

Figure 4.2 – Active Travel Proposals Locations

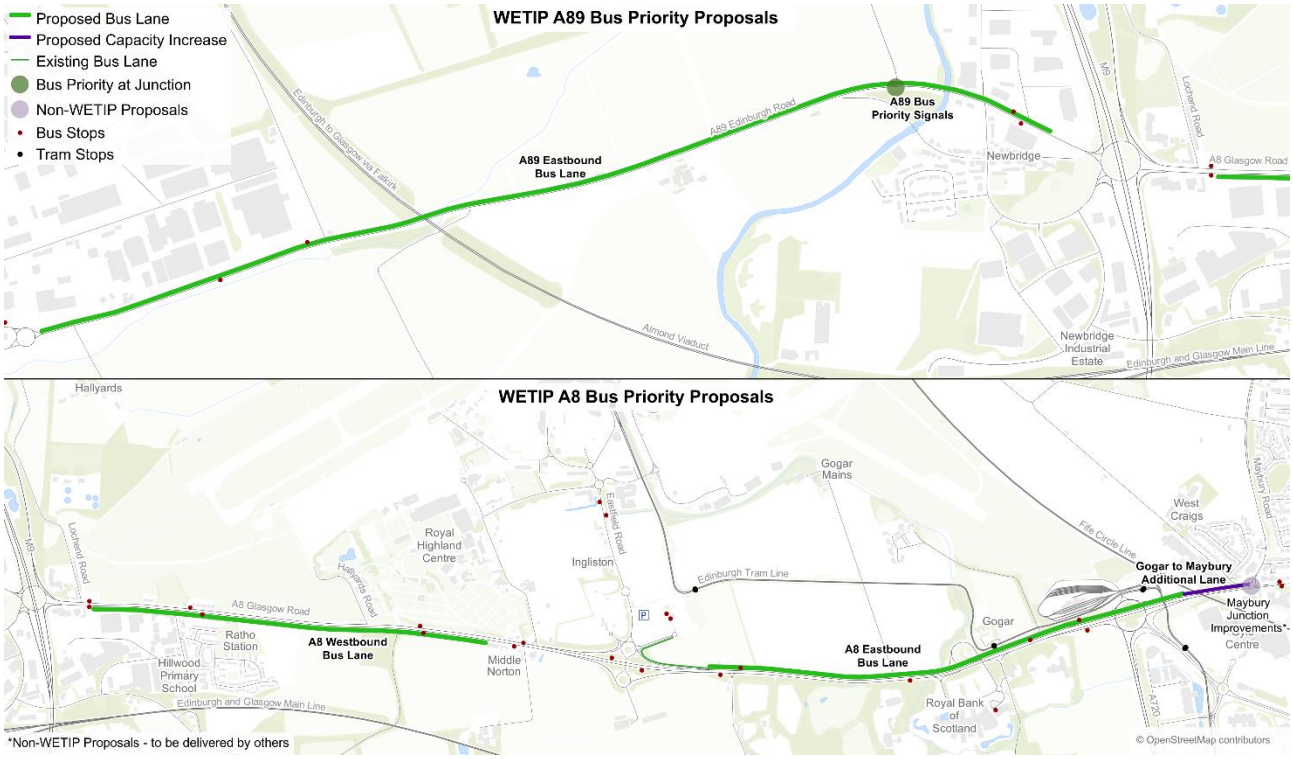

Figure 4.3 – Bus Priority Proposals Locations

Socio Economic Case

4.28 The OBC includes a detailed appraisal of the socio-economic case. The appraisal of costs and benefits contains quantitative estimates under the economy criteria of each individual schemes proposed. Against the Economy Criterion, moderate positive to major positive impact is anticipated based on bus journey time improvements and benefits to bus users while neutral to minor positive impacts are recorded against the Health, Safety and Wellbeing criterion The WETIP schemes are considered to have a positive impact against the Equality and Accessibility criterion.

4.29 The capital costs of the proposed schemes have been prepared incorporating allowances including design fees, preliminaries and contingency based on recent experience on the outturn costs of similar projects. Inflation has been accounted for and an optimism bias of 44% has also been applied to the costs.

4.30 Table 4.2 provides a summary of the monetised values for the cost benefit analysis, including benefits (PVB) and costs (PVC). As required by STAG, all Costs and Benefits have been appraised over a 60-year period and discounted to 2010 prices. The Benefit to Cost Ratio (BCR) measures how much benefit can be expected for each unit of cost (investment).

Monetised Costs and Benefits	Low Cost Scenario	Mid Cost Scenario	High Cost Scenario
A89 Broxburn to Newbridge Roundabout			
Present Value of Benefits (PVB)	£5.239m	£5.239m	£5.239m
Present Value of Costs (PVC)	£5.783m	£6.908m	£8.033m
Net Present Value (NPV)	-£0.544m	-£1.669m	-£2.794m
Benefit to Cost Ratio (BCR)	**0.91**	**0.76**	**0.65**
A8 West: Newbridge Roundabout to Eastfield Road			
Present Value of Benefits (PVB)	£6.085m	£6.085m	£6.085m
Present Value of Costs (PVC)	£3.462m	£4.879m	£6.297m
Net Present Value (NPV)	£2.623m	£1.206m	-£0.212m
Benefit to Cost Ratio (BCR)	**1.76**	**1.25**	**0.97**
A8 East: Eastfield Road to Gogar Roundabout			
Present Value of Benefits (PVB)	£9.709m	£9.709m	£9.709m
Present Value of Costs (PVC)	£4.021m	£4.822m	£5.624m
Net Present Value (NPV)	£5.688m	£4.886m	£4.085m
Benefit to Cost Ratio (BCR)	**2.41**	**2.01**	**1.73**
A8 Gogar Roundabout to Maybury Junction			
Present Value of Benefits (PVB)	£8.723m	£8.723m	£8.723m
Present Value of Costs (PVC)	£6.859m	£7.516m	£8.174m
Net Present Value (NPV)	£1.865m	£1.207m	£0.549m
Benefit to Cost Ratio (BCR)	**1.27**	**1.16**	**1.07**
All Main WETIP Schemes			
Present Value of Benefits (PVB)	£29.611m	£29.611m	£29.611m
Present Value of Costs (PVC)	£20.125m	£24.126m	£28.127m
Net Present Value (NPV)	£9.486m	£5.485m	£1.483m
Benefit to Cost Ratio (BCR)	**1.47**	**1.23**	**1.05**

Table 4.2 - Economic Appraisal Summary

4.31 Economic appraisal has estimated (based on the mid cost scenario) a positive BCR across all measures of 1.23. This BCR is based on bus journey time savings and does not reflect the benefits that will accrue in relation to increased walking, wheeling and cycling, and the environmental benefits associated with the modal shift that the interventions will help deliver.

Commercial, Financial and Management Cases

4.32 A summary of the Commercial, Financial and Management cases is provided below (with a detailed assessment provided in Appendix 1):

- Based on value for money and quality drivers, it is proposed that the main construction contract is for build services only, with the Council procuring a technical partner to complete the required design services including support during the construction phase of the programme.
- The main contract is expected to be procured via the SCAPE Civil Engineering Framework (utilising NEC4 Option A – priced contract with activity schedule).
- The estimated cost to deliver all potential measures identified at this stage in the programme is £72.3m (at 2026 prices when construction is expected to commence). A prioritisation exercise will be completed to assess which measures should be prioritised to form a core package that can be delivered within the existing WETIP budget envelope of £36.6m. This exercise will determine a programme of phased interventions developed over time with

phasing reflective of projects with the greatest immediate impact while later phases will co-inside with planned development within the WEPFSM area. In addition, the City of Edinburgh Council and West Lothian Council, as part of the statutory planning process, have already secured S75 contributions to support transport improvements in the local area and will continue to pursue additional funding through developer contributions via planned developments including delivery of the WEPFSM. Additionally grant funding bids into other funding sources to secure the additional £35.7m to deliver all potential measures (in later tranches).

- Robust ESESCRD governance arrangements, programme management processes and controls are all in place to help ensure the successful delivery of the next stages of the programme.
- The programme has identified the resources required to deliver the next stages of the programme.
- A robust schedule has been developed which is forecasting that construction will commence in summer 2026 (subject to securing the necessary statutory consents) (see table 4.2 below):

Milestone	Date
Outline Business Case Approval	March 2024
Detailed Design Complete	February 2025
Issue Tender for Main Contract	March 2025
Completion of Tender Evaluation*	October 2025
Statutory Orders Secured	October 2025* (public hearing maybe required)
Final Business Case Approval	June 2026
Construction Contract Award	June 2026
Construction Commences	July 2026
Construction Complete	July 2028

Table 4.2 - Future Programme Milestones

5. Next Steps

5.1 Noting that the OBC has identified a strong case for bus priority and active travel interventions, the OBC will be presented to the ESESCRD Joint Committee on 1 March 2024, recommending that works on the next stage of project commence at the earliest opportunity.

5.2 Prior to commencing the next stage (Detailed Design, Consents and Procurement) the outputs and recommendations of this prioritisation exercise will be reported to the Programme Board, Transport Appraisal Board, Transport and Environment Committee and Joint Committee in due course.

5.3 The delivery of a UK Treasury Green Book compliant OBC required the Council to appoint a multidisciplinary and specialist consultant. Further specialist consultancy support is similarly required to complete the next stage of the project (Detailed Design, promotion of statutory consents, Final Business Case). The intention is to

procure the required consultancy support via a mini-competition on Lot 2 of the Scotland Excel Engineering and Technical Consultancy framework.

5.4 Subject to the successful completion of 5.3, appointment of the preferred consultant and initiation of the next stage will commence. As an early deliverable, the consultant will be required to produce a Project Delivery Plan which will set out specific activities and programme in further detail.

5.5 ESESCRD and Local Authority Committees will be kept updated on project progress in due course.

6. Financial impact

6.1 The financial summary of the costs and funding for WETIP are set out in the main report section above (section 4).

7. Equality and Poverty Impact

7.1 An Equality Impact Assessment (EqIA) screening exercise has been undertaken to identify how the proposed scheme will positively and negatively impact different groups with protected characteristics**.** This exercise was informed through detailed assessment of the different types of measures proposed, how these would affect different groups and ways in which any negative impacts could be mitigated.

7.2 Equality impacts will be reviewed as the project progresses through detailed design, to ensure that measures to manage and mitigate potential impacts are embedded in emerging proposals.

8. Climate and Nature Emergency Implications

8.1 As part of the robust OBC process, individual WETIP schemes were appraised against Environment and Climate Change criteria in line with STAG.

8.2 The OBC Detailed Appraisal against Environment and Climate Change criteria has indicated a general neutral impact against the Environment and Climate Change criteria.

8.3 The construction works and associated consumption of materials are anticipated to result in a negligible impact on climate in relation to the national carbon emissions targets due to the small-scale nature of the physical works.

8.4 Once the schemes are implemented, it is anticipated that proposed interventions will result in a decrease in private car journeys which will have a beneficial impact on greenhouse gas emissions.

8.5 There are several sub environment and climate change criteria which are anticipated to result in positive impacts, such as noise and air quality.

8.6 The assessment of Biodiversity and Habitats confirmed that there are no biodiversity designations located within 2km of the package extents. Furthermore, as the proposed schemes are upgrades to the existing active road corridor or active travel route, any species present are likely to be accustomed to road noise and/or anthropogenic disturbance. Notwithstanding this, potential disturbance during construction of the interventions to species will need to be closed managed with impacts minimised.

9. Risk, policy, compliance, governance and community impact

9.1 Public Consultation and Stakeholder exercises have been delivered as part of the development of the OBC.

9.2 A Business Bulletin was provided to Committee on 16 November 2023 summarising the consultation and engagement exercises. A consultation and engagement summary report is also hosted online.

9.3 Risks have been identified through the OBC appraisal process and informed by collective knowledge and experience of Council officers and partners in delivering similar projects. The risk register is a live document and will be continuously reviewed across the breadth of programme and scheme delivery stages to ensure they are accurate and effective at all times.

9.4 The OBC has been coordinated with the Circulation Plan workstream, City Plan 2030 and WEPFSM to be fully complementary and ensure there is a clear consistency across objectives and desired outcomes at National, Regional and Local levels (for example: Infrastructure First Approach; Net Zero; and the commitment to reduce the amount of kilometres travelled by car within Edinburgh by 30% and by 20% across all of Scotland). WETIP will play a key role in contributing to CMP targets in West Edinburgh.

9.5 WETIP is required to follow a robust business case process and adheres to the latest Scottish Transport Appraisal Guidance (STAG) and HM Treasury Green Book Guidance.

9.6 The management of the OBC has been led by the Council, developed with strong regional collaboration and has utilised ESESCRD governance structures.

10. Background reading/external references

10.1 City Vision 2050 website

10.2 City of Edinburgh Council's Business Plan 2023 -2027

10.3 Scottish Government National Transport Strategy

10.4 Transport Scotland's Strategic Transport Projects Review 2 (STPR2)

10.5 Circulation Plan Consultation Update

10.6 Edinburgh Economic Strategy

10.7 Edinburgh City Plan 2030

10.8 West Edinburgh Placemaking Framework and Strategic Masterplan

10.9 City Mobility Plan

10.10 Public Transport Action Plan

10.11 2030 Climate Strategy

11. Appendices

Appendix 1: Outline Business Case – Executive Summary (the full OBC is available on request)

Jacobs

APPENDIX 1

West Edinburgh Transport Improvement Programme

Outline Business Case

Executive Summary

Edinburgh and South East Scotland City Region Deal

January 2024

West Edinburgh Transport Improvement Programme
Outline Business Case

Client name:	Edinburgh and South East Scotland City Region Deal		
Project name:	WETIP Outline Business Case		
Client reference:	CEC	**Project no:**	BESP0023
Revision no:	1	**Project manager:**	Grant Davidson
Date:	January 2024	**Prepared by:**	Iain Esslemont
Doc status:	Final	**File name:**	WETIP Outline Business Case_Executive Summary 230124.docx

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Executive Summary

1. Introduction

The West Edinburgh Transport Improvement Programme (WETIP) Outline Business Case identifies a strong case for proposed public transport and active travel interventions on the A8 and A89 between Broxburn and Maybury.

Enabling improved bus priority is one of the actions that can help encourage bus use. WETIP interventions will help enable buses bypass congestion, saving up to 10 minutes on morning peak inbound and evening peak outbound journey times. Journey time reliability will also be improved. Consequently, bus operators have the potential to benefit from both increasing passenger revenue and a relative reduction in operating costs, improving network viability in West Edinburgh.

Improving public transport and active travel infrastructure will enhance the attractiveness and efficiency of bus and walking, wheeling and cycle networks along the A8/A89, between Broxburn and Maybury, helping meet national, regional and local climate change and car kilometre reduction targets.

Based on the mid cost scenario the estimated benefit cost ratio (BCR) is 1.23. This BCR is based on bus journey time savings and does not reflect the benefits that will accrue in relation to increased walking, wheeling and cycling, and the environmental benefits associated with the modal shift that the interventions will help deliver.

Proposed interventions will support sustainable development adjacent to the WETIP corridor with in the region of 25,000 houses being built in the area as per Table 1.1 below. The City Plan 2030 transport assessment forecasted that planned development will generate an estimated 4,100 additional two-way morning peak vehicle trips and 7,800 public transport trips along the corridor following the completion of all development. This represents a 50% increase in private vehicle trips and potentially a 400% increase in public transport demand through Maybury.

Table 1.1: City Plan 2030 and West Lothian LDP– WETIP Corridor Residential Development Allocations

Site	Residential Units
Cammo Meadows (HSG 20) – under construction	656
West Craigs (HSG 19) – under construction	1,780
Lauder Grove (HSG 5) – under construction	132
International Business Gateway (IBG) 1 (Emp 6)	312
Elements Edinburgh (H61)	2,493
West Town (formerly IBG2) (H63)	7,000
Land Adjacent to Edinburgh Gateway (H62)	300
SAICA (H59)	1,097
Turnhouse Road Industrial Estate (H60)	200
Edinburgh Park Phase 2 (Del 4)	1,800
West Newbridge (HSG 4) – alternative use under consideration	500
Old Liston Road (H65)	100
East of Milburn Tower – application approved	1,320
Total City of Edinburgh Allocations	**17,690**
West Lothian LDP – Broxburn Area	2,297
West Lothian LDP – Winchburgh Area	3,493
Total City of Edinburgh and West Lothian Allocations	**23,480**

Given the positive benefit cost ratio, it is recommended that the programme proceeds to the next stage – Detailed Design, Consents and Procurement.

Proposed bus priority interventions will help address the very significant existing congestion issues on the road network which impact bus journey times and reliability. Congestion levels are such that they already impact on operators' ability to run reliable and attractive services. Delays significantly increase operating costs, with additional buses required to maintain frequencies at peak periods. There additional costs have a

direct bearing on the level of service provided across rural West Edinburgh and into West Lothian, with the communities of Ratho, Newbridge, Kirkliston and Broxburn particularly affected.

WETIP infrastructure will also support the high non-car mode shares proposed across major West Edinburgh development sites. In combination, all proposed development equates to the population of Falkirk being added to the west of the city. Summing the various available Transport Assessment assumptions results in a forecast of an addition 4,300 inbound public transport trips between 08:00 and 09:00. Edinburgh Gateway will provide capacity towards the city centre and Fife, for sites closest to the station, including West Craigs and Edinburgh Elements. Across the rest of West Edinburgh, tram can cater for a maximum of 2,000 passengers per hour[1] with bus required to accommodate the remainder. Assuming 80 passengers per bus, approximately 30 additional buses will be required, on top existing provision. Given this level of future service, improved bus priority on the WETIP corridor is a necessity.

The estimated cost to deliver all potential measures identified at this stage in the programme is £72.3m. The project team are currently assessing which of these measures should be prioritised to form a core package that can be delivered within the existing WETIP budget envelope of £36.6m. Prior to commencing of next stage activities (Detailed Design, Consents and Procurement), the outputs and recommendations of this prioritisation exercise will be reported to the Programme Board, Transport Appraisal Board, Joint Committee and relevant West Lothian and City of Edinburgh Council committees in due course.

The City of Edinburgh Council and West Lothian Council, as part of the statutory planning process, are also pursuing funding through developer contributions via planned developments in West Edinburgh. In addition, there is an opportunity to bid into other funding sources to secure the additional £35.7m to deliver all potential measures (in later tranches).

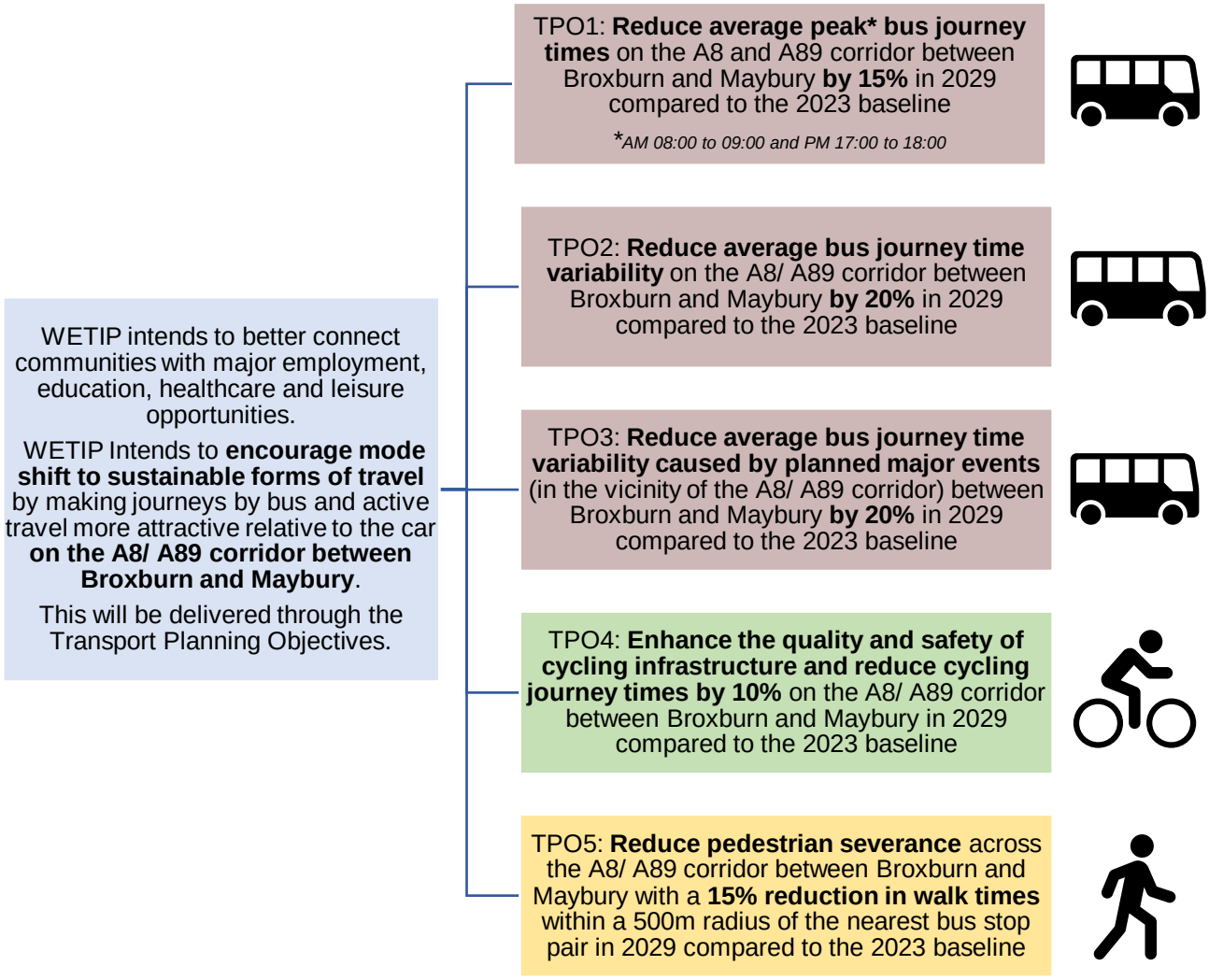
Through the Edinburgh and South East Scotland City Region Deal (ESESCRD), the Scottish Government has committed a £20m investment to support the public transport infrastructure improvements identified by the West Edinburgh Transport Appraisal (WETA Refresh 2016) along the A8 and A89 corridor from Maybury to Broxburn. In addition, the City of Edinburgh Council (CEC) has committed a further £16m to deliver active travel and public transport infrastructure improvements from Maybury to Newbridge. Contributions from developers will also be sought to mitigate the impact of development; including those contributions received through the West Edinburgh Transport Contribution Zone.

2. WETIP Planning Objectives

The WETIP transport planning objectives are detailed in Figure 2.1 below.

[1] Assuming 50% of tram capacity is available to serve West Edinburgh demand

Figure 2.1: WETIP Transport Planning Objectives



3. Public Consultation and Engagement

Key to the success of recent bus priority interventions has been strong collaborative working between the local and regional authorities, and key stakeholders including public transport operators, local community councils, landowners, active travel and bus passenger organisations.

A1 Bus Priority
New bus lanes on the A1 have improved journey times and supported the introduction of a network of new express services to and from East Lothian. The combination of improvements has resulted in passengers benefiting from significant journey time savings, while operators have seen strong passenger growth.

WETIP has continued this theme by including stakeholders from the outset, helping in the identification of problems and opportunities, and Transport Planning Objectives. A public consultation process seeking feedback on WETIP planned improvements and concept design proposals ran for an eight-week period from 13th July to 5th September 2023 and was promoted as 'Broxburn to Maybury Public Transport and Active Travel Improvements'. Engagement included: face-to-face workshops with key stakeholders and public webinars/ drop-in events. Feedback was gathered via an online survey hosted via the City of Edinburgh Council's Consultation Hub and by direct responses from key stakeholders and other interested parties.

Concept designs have been refined based on comments received and have included path widening and improved access for cycling at the Newbridge roundabout footbridge. Provision of a right turn for buses out of Station Road, onto A8 is also being investigated.

4. Five Case Model

The structure of the OBC follows the Five Case Model, as outlined in HM Treasury and Transport Scotland Guidance on the Development of Business Cases:

Strategic Case - determines whether an investment is needed, either now or in the future. It demonstrates the case for change, that there is a clear rationale for making the investment.

Socio-Economic Case - a proportionate appraisal to understand the potential costs and benefits of the programme. It includes the reporting of scheme costs, the benefit to cost ratio and socio-economic impacts.

Commercial Case - identifies the procurement and contracting strategy for the programme, and outlines the proposed approaches to incentivising Contractor performance, and to risk allocation.

Financial Case - assesses the cashflows over the life of the programme and the affordability of the programme.

Management Case - demonstrates that robust arrangements are in place for the delivery, monitoring and evaluation of the programme.

4.1 Strategic Dimension

The key problems identified within the study area are:

- Very Significant Congestion on the Road Network
- Extended Bus Journey Times
- High Levels of Journey Time Variability – Day-to-Day and During Planned Events
- Low Public Transport Mode Share
- Poor Public Transport Accessibility
- Lack of Quality Active Travel Infrastructure Provision
- Severance
- Road Safety

Congestion levels are such that it impacts on operators' ability to run reliable services. Congestion also significantly increases operating costs, with additional buses required to maintain frequencies at peak periods. These additional costs have a direct bearing on the level of service across rural West Edinburgh and into West Lothian, with the communities of Ratho, Newbridge, Kirkliston and Broxburn particularly affected.

Journey time analysis has been undertaken on datasets that have been collected and provided to Jacobs by Lothian Buses. The baseline dataset adopted covers a 9-week period in April and May of 2023 with analysis completed on weekday data only. This baseline data has been used as part of the appraisal against the Transport Planning Objectives. The AM (08:00 to 09:00) and PM (17:00 to 18:00) hourly average bus journey time has been calculated and presented in Table 4.1 for the full WETIP corridor route between Broxburn and Maybury.

Table 4.1: 2023 Average Peak Hour Baseline Bus Journey Time Data

Route	AM – 08:00 to 09:00 (mm:ss)			PM – 17:00 to 18:00 (mm:ss)		
	Timetable	Average	Average vs Timetabled	Timetable	Average	Average vs Timetabled
Broxburn to Maybury	14:26	16:39	+02:13	15:06	18:23	+03:17
Maybury to Broxburn	11:14	13:10	+01:56	14:23	16:44	+02:21

Buses are delayed with general traffic on the WETIP corridor with congestion impacting bus journey times as well as journey time variability. Analysis of the 2023 bus journey time data has also been completed to take account of the journey time of each individual bus travelling from stop to stop all along the WETIP corridor. Table 4.2 provides an indication of the number of individual bus journeys that have journey times slower than the timetabled journey time for all stop to stop movements along the WETIP corridor in both directions.

Table 4.2: Percentage of Individual Bus Journeys Slower than the Timetabled Journey Time

Route	AM – 08:00 to 09:00 (mm:ss)			PM – 17:00 to 18:00 (mm:ss)		
	Slower than timetabled	Over 30 seconds slower	Over 60 seconds slower	Slower than timetabled	Over 30 seconds slower	Over 60 seconds slower
Broxburn to Maybury Stop to Stop Bus Journeys						
Tuesday	42%	20%	12%	49%	33%	22%
Wednesday	40%	25%	20%	48%	35%	28%
Thursday	38%	19%	11%	43%	29%	19%
Maybury to Broxburn Stop to Stop Bus Journeys						
Tuesday	58%	23%	11%	42%	21%	9%
Wednesday	60%	19%	5%	44%	20%	8%
Thursday	61%	17%	10%	43%	20%	11%

The results provide an indication of journey times and variability in 2023 across each weekday with Monday and Friday generally having a lower proportion of buses delayed compared to Tuesday, Wednesday and Thursday. This journey time variability across day of the week, by peak period and by changing travel patterns creates further difficulties for bus operators and leads to uncertainty for bus users impacting on the attractiveness of public transport and suppressing mode share targets along the corridor.

Table 4.3 provides a summary of the average journey time of all buses that are delayed i.e., buses that are slower than the timetabled journey time. This is compared to the average of all bus journeys within the 2023 dataset, those that are quicker, on time and slower than the timetabled journey time. This provides an indication of the level of variability in journey times along the full WETIP corridor. Note that operator timetables seek to take account of typical delays and, as a result, may mask the potential for improvement.

Table 4.3: Average Bus Journey Time of all Delayed Services

Route	AM – 08:00 to 09:00 (mm:ss)			PM – 17:00 to 18:00 (mm:ss)		
	Average of all journeys	Average of delayed journeys	Difference	Average of all journeys	Average of delayed journeys	Difference
Broxburn to Maybury	16:39	21:37	+04:58	18:23	23:08	+04:45
Maybury to Broxburn	13:10	14:51	+01:41	16:44	21:09	+04:25

Given the existing congestion on the corridor, investment in bus priority and active travel provides significant opportunities to:

- Encourage a shift to more sustainable modes of travel, through:
- Public Transport Prioritisation
- Quality Active Travel Infrastructure Provision
- Enhance Transport Integration
- Reduce Severance
- Embed Placemaking and Urban Realm

Delivering bus priority along the WETIP corridor provides an opportunity to reduce bus journey times relative to the car. Buses will be able to bypass congestion saving up to 10 minutes on morning peak inbound and evening peak outbound services.

Car users witnessing faster and more reliable bus journeys on the network may be encouraged to switch to bus, helping stimulate passenger growth and assisting the delivery of a virtuous circle of increasing service frequencies, destinations and patronage. Additional benefits include reduced vehicle emissions with greater modal shift to public transport.

WETIP delivers additional quality active travel infrastructure that better meets Cycling by Design and local Council design standards. Proposals will support the longer-term delivery of a high-quality active travel link along the full length of the A8 from Maybury connecting the west of Edinburgh with Newbridge, Broxburn and

beyond. Additional improvements to north south connections will promote sustainable travel and enable longer distance cycle movements across the region.

Mobility Hubs within Broxburn improve stop access and interchange between bus and active travel, reducing the need to use the car for part of the journey. Facilities can include cycle storage, tools for cycle repair, lockers and pick up points, real time travel information, EV charging and safety and security measures.

Proposed Interventions

During earlier stages of the project, the Options Appraisal and Strategic Case were reported to committee, with a recommendation that the full WETIP package be taken forward for feasibility design and the development of an Outline Business Case. All measures score positively against the WETIP transport planning objectives and are considered feasible, affordable[2] and publicly acceptable.

Proposed active travel elements include the A8 Quiet Route 9 missing link section. The latter would be delivered outside the scope of WETIP either through developer contributions or through securing additional active travel funding. The Maybury junction improvement is being funded through Sections 75 agreements collected via the Maybury Barnton Transport Contribution Zone. This is required to enable public transport to better serve the West Craigs development and Turnhouse Road.

The measures outlined in Table 4.4 and shown in Figure 4.1 and Figure 4.2 form the package of WETIP measures appraised as part of this OBC.

Table 4.4: WETIP Package

ID	Measure	Notes
	A89 Broxburn to Newbridge	
1	A89 Broxburn to Newbridge bus lane and active travel route	Eastbound bus lane and bus priority signals and widened shared use path with two-way white line segregated cycle track. Speed limit reduced to 30mph between Newbridge and B800 Junction.
	A8 West: Newbridge to Ingliston Road	
2a	A8 west of Ingliston Road to west of Station Road westbound bus lane	Westbound bus lane starting at Middle Norton Cottages to Lochend Road bus stop.
2b	Station Road Junction – improved access along Station Road	Signalised left in/ left out junction and new two stage Toucan crossing of the A8. Speed limit reduced to 30mph between Newbridge and east of Ratho Station.
2c	A8 north side pedestrian cycle route improvements between Eastfield Road and Newbridge	Widened shared use path with two-way segregated cycle track through Ratho Station section of the A8.
	A8 East: Airport Junction to Gogar Roundabout	
3	A8 Airport Junction to Gogar Roundabout Bus Lane	Eastbound bus from existing airport junction off slip bus lane to Gogar Roundabout underpass. New two stage Toucan crossing of the A8 at the RBS overbridge and at Gogarstone Road.
	A8 Gogar Roundabout to Maybury Junction	
4a	Gogar Roundabout to Maybury Junction additional eastbound lane	General traffic lane required to improve bus journey times and reliability through Maybury Junction. This resolves a bus weaving movement issue.
4b	MOVA improvements	Gogar and Maybury Junctions, supporting bus priority proposals.
	Queensferry Branch Active Travel Path	
5	Other proposed cycling measures – Newbridge to Dalmeny (via Kirkliston) cycle route upgrade	Existing Bridal Path widened and surfaced.
	Broxburn Mobility Hub	
6	P&R Mobility Hubs	Broxburn Town Centre

[2] In addition to City Deal funding, the City of Edinburgh Council and West Lothian Council have already secured S75 contributions to support transport improvements in the local area and will continue to pursue additional funding through developer contributions. Bids into other funding sources will also be made to secure the additional £35.7m to deliver all proposed measures (in later stages).

Figure 4.1: WETIP Active Travel Proposals

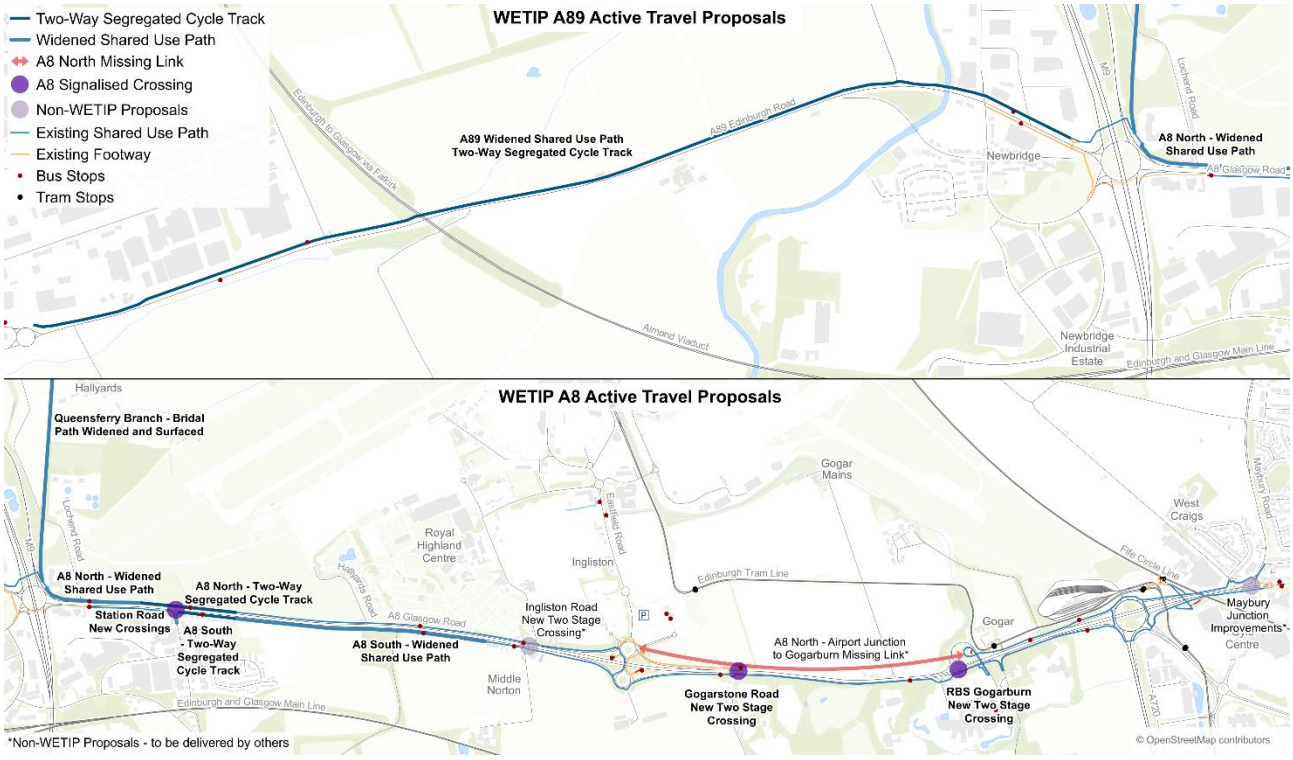
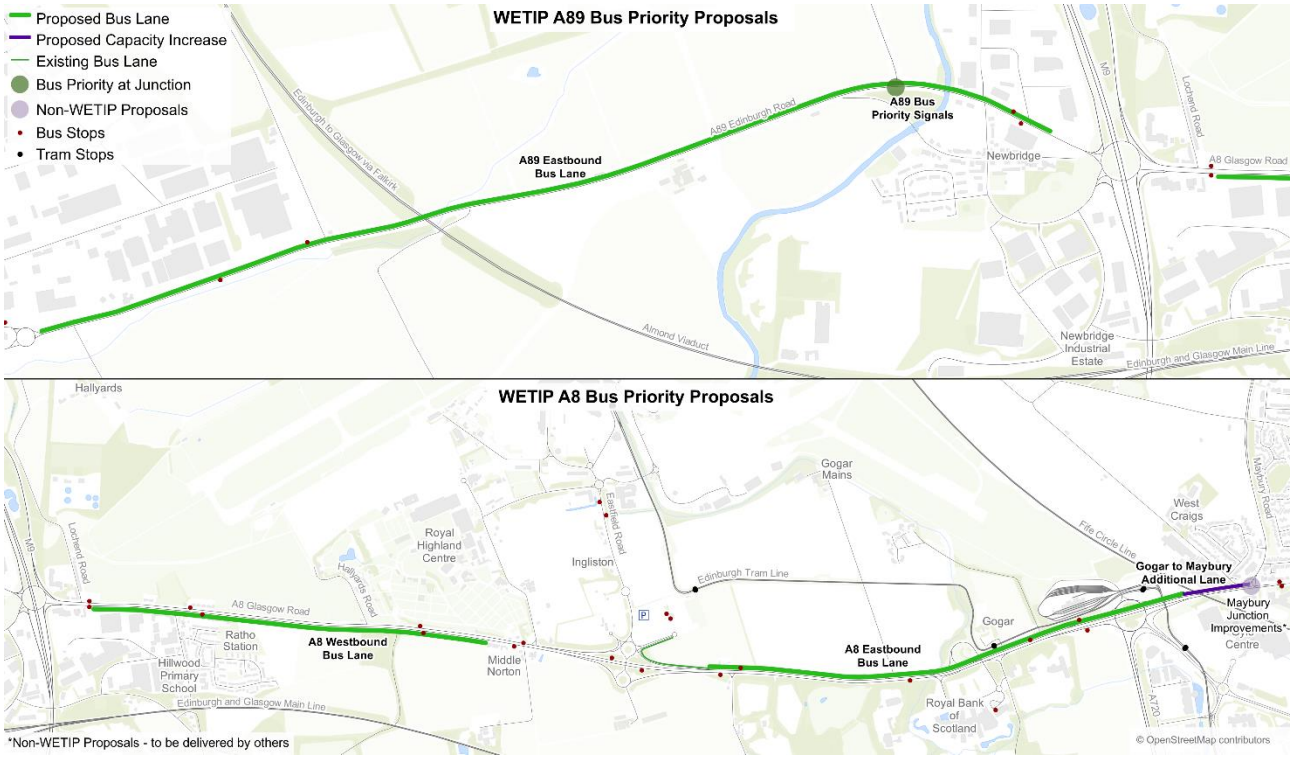


Figure 4.2: WETIP Bus Priority Proposals



4.2 Socio Economic Dimension

This socio-economic case includes a detailed appraisal of the WETIP packages to understand its potential impacts. The appraisal of costs and benefits has been undertaken following guidelines from Transport Scotland and best practice guidance outlined in Scottish Transport Appraisal Guidance (STAG), ensuring a structured methodology which is consistent with HM Treasury Green Book. The appraisal contains quantitative estimates under the economy criteria of STAG, supplemented by a qualitative assessment of impacts that have not been quantified at this stage. For each assessment criterion, impacts of the different packages will be assessed using the seven-point scale set out in STAG, augmented by two additional STPR2 scale points as shown in Table 4.5.

Table 4.5: Scale of Impacts

Impact	Symbol	Description
Major benefit	+++	These are benefits or positive impacts which, depending on the scale of benefit or severity of impact, should be a principal consideration when assessing an option.
Moderate benefit	++	The option type is anticipated to have only a moderate benefit or positive impact, and although not to be taken in isolation, these scores may be a key consideration in the overall appraisal of an option when considered alongside other factors.
Minor benefit	+	The option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting but are not likely to contribute materially to determining whether an option is taken forward.
No benefit or impact	0	The option is anticipated to have a neutral impact.
Minor cost or negative impact	x	The option is anticipated to have only a minor cost or negative impact. Minor costs or impacts are worth noting but are not likely to contribute materially to determining whether an option is funded or otherwise.
Moderate cost or negative impact	xx	The option is anticipated to have only a moderate cost or negative impact, and although not to be taken in isolation, these scores may be a key consideration in the overall appraisal of an option when considered alongside other factors.
Major cost or negative impacts	xxx	These are costs or negative impacts which, depending on the scale of cost or severity of impact, should be a principal consideration when assessing an option.
Uncertain impact	?	The option has an uncertain relationship with the objective / criteria, or the relationship is dependent on the way in which the aspect is managed. In addition, insufficient information may be available to enable an assessment to be made.
No or negligible relationship	~	There is no clear relationship between the option and the achievement of the objective / criteria, or the relationship is negligible.

The appraisal against TPOs (Figure 2.1) of each individual WETIP package has been presented within the Detailed Appraisal Report and accompanying ASTs and a high-level summary is shown below in Table 4.6. In summary, all four main schemes which include bus priority provision are anticipated to have a minor to major positive impact against TPO1, TPO2 and TPO3 relating to bus journey time improvements. In terms of TPO4 and TPO5 the impacts are mixed based on the active travel interventions proposed on each section. Packages that incorporate new toucan crossing points between the north and south sides of the A8 result in a major benefit for cycles and pedestrians.

Table 4.6: Transport Planning Objectives Appraisal Summary

WETIP Package	TPO1	TPO2	TPO3	TPO4	TPO5
A89 Broxburn to Newbridge	++	++	+++	+	0
A8 West: Newbridge - Eastfield Rd	++	++	++	+	+++
A8 East: Eastfield Rd - Gogar	++	++	+++	+	+++
A8 Gogar to Maybury	++	+++	+++	~	~
Queensferry Branch Path	~	~	~	+	~
Broxburn Mobility Hub	?	?	?	~	~

The appraisal of each individual WETIP package against the STAG Criteria has also been presented in the Detailed Appraisal Report and accompanying Appraisal Summary Tables (ASTs) with a high-level summary shown below in Table 4.7. The appraisal suggests that they are generally anticipated to have an overall neutral impact against the Environment and Climate Change criteria and a mix of neutral to minor positive impact against the Health, Safety and Wellbeing criterion. Against the Economy Criterion, moderate positive to major positive impact is anticipated based on bus journey time improvements and benefits to bus users. The WETIP schemes are considered to have a negligible to moderate positive impact against the Equality and Accessibility criterion.

Table 4.7: STAG Criteria Summary

WETIP Package	Environment	Climate Change	Health, Safety and Wellbeing	Economy	Equality and Accessibility
A89 Broxburn to Newbridge	0	0	0	++	+
A8 West: Newbridge - Eastfield Rd	0	0	+	++	++
A8 East: Eastfield Rd - Gogar	0	0	+	+++	+
A8 Gogar to Maybury	0	0	0	+++	+
Queensferry Branch Path	0	0	+	?	0
Broxburn Mobility Hub	0	0	0	?	0

Upon completion the proposed bus priority schemes would provide quicker bus journey times along the length of each proposed scheme. Values of Time (VOT) per passenger included within the TAG Databook are used to derive the monetary benefits of the bus journey time savings over the entire modelled scheme. This process has also been adopted to derive the monetary impacts on other motorised vehicle users.

The capital costs of the proposed measures have been prepared incorporating allowances including design fees, preliminaries and contingency based on recent experience of the team on the outturn costs of similar projects. Inflation is applied based on a developed spending profile while optimism bias assumption of 44% has been applied to the costs.

All Costs and Benefits are in 2010 prices discounted to 2010 for a 60-year appraisal period as per TAG guidance. Low, mid and high-cost scenarios represent the cost uncertainties associated with utilities at this stage.

Table 4.8 provides a summary of the monetised values of all elements quantified for the cost benefit analysis of the economic appraisal of public transport elements of the scheme, including benefits (PVB) and costs (PVC). The BCR measures how much benefit can be expected for each unit of cost (investment) and the Value for Money (VfM) is derived based on the BCR value.

Patronage forecasts are based on the City of Edinburgh Council's strategic transport model. Base year volumes have been validated against Lothian Buses data, future year estimates are based on values previously calculated to support City Plan 2030. Demand forecasts include a 20% increase in public transport demand from West Lothian, reflecting additional bus priority and improved service provision.

The overall BCR for all schemes is 1.23; while this is classed as Low in Value of Money terms, it is considered high for this type of large public transport intervention. By contrast, the Borders Railway, Levenmouth Rail Link and Bus Partnership Rapid Deployment Fund (BPRDF) schemes have been taken forward either with BCR values significantly below 1.0 or with no BCR calculation. Subsequent wider socio-economic benefits have justified the investment. Given the opportunity for improved connectivity, similar benefits are likely to be delivered along the A8 / A89 corridor.

BCR values for individual interventions are generally lower at the western end of the corridor and increase further east, reflecting bus patronage volumes along the route. Nevertheless, the largest journey time savings are in the vicinity of Newbridge roundabout and so provide the greatest benefit per passenger.

Table 4.8: Economic Appraisal Summary

Monetised Costs and Benefits	Low Cost Scenario	Mid Cost Scenario	High Cost Scenario
A89 Broxburn to Newbridge Roundabout			
Present Value of Benefits (PVB)	£5.239m	£5.239m	£5.239m
Present Value of Costs (PVC)	£5.783m	£6.908m	£8.033m
Net Present Value (NPV)	-£0.544m	-£1.669m	-£2.794m
Benefit to Cost Ratio (BCR)	**0.91**	**0.76**	**0.65**
Value for Money (VfM)	Poor	Poor	Poor
A8 West: Newbridge Roundabout to Eastfield Road			
Present Value of Benefits (PVB)	£6.085m	£6.085m	£6.085m
Present Value of Costs (PVC)	£3.462m	£4.879m	£6.297m
Net Present Value (NPV)	£2.623m	£1.206m	-£0.212m
Benefit to Cost Ratio (BCR)	**1.76**	**1.25**	**0.97**
Value for Money (VfM)	Medium	Low	Poor
A8 East: Eastfield Road to Gogar Roundabout			
Present Value of Benefits (PVB)	£9.709m	£9.709m	£9.709m
Present Value of Costs (PVC)	£4.021m	£4.822m	£5.624m
Net Present Value (NPV)	£5.688m	£4.886m	£4.085m
Benefit to Cost Ratio (BCR)	**2.41**	**2.01**	**1.73**
Value for Money (VfM)	High	High	Medium
A8 Gogar Roundabout to Maybury Junction			
Present Value of Benefits (PVB)	£8.723m	£8.723m	£8.723m
Present Value of Costs (PVC)	£6.859m	£7.516m	£8.174m
Net Present Value (NPV)	£1.865m	£1.207m	£0.549m
Benefit to Cost Ratio (BCR)	**1.27**	**1.16**	**1.07**
Value for Money (VfM)	Low	Low	Low
All Main WETIP Schemes			
Present Value of Benefits (PVB)	£29.611m	£29.611m	£29.611m
Present Value of Costs (PVC)	£20.125m	£24.126m	£28.127m
Net Present Value (NPV)	£9.486m	£5.485m	£1.483m
Benefit to Cost Ratio (BCR)	**1.47**	**1.23**	**1.05**
Value for Money (VfM)	Low	Low	Low

4.3 Commercial Dimension

The commercial dimension of the business case identifies the procurement and contracting strategy for the programme, and outlines the proposed approaches to incentivising Contractor performance, and to risk allocation.

Procurement Strategy

The procurement strategy considers the different contracts required to deliver the programme. Figure 4.3 details the various works involved in constructing the scope of the programme, broadly following the sequence of construction.

Figure 4.3: Procurement work breakdown

Design Responsibility

Two procurement models have been considered in developing the procurement strategy for the programme:

- Client design; and
- Design and build.

Both models were evaluated against the procurement objectives. The results of the evaluation are detailed in Table 4.9 below, using a green, amber, red colour coding system to show how well the options perform against each objective.

Table 4.9: Procurement model evaluation

Objective	Client Design	Design and Build
Cost	▪ Given limited complexity of what is being delivered Council has capability (through procurement of design consultancy support) to deliver value for money ▪ Limited design interfaces to be managed	▪ Given limited complexity on what is being delivered there is limited scope for private sector innovation to help ensure value for money
Time	▪ Council has more control over the Contractor's work sequences and traffic management ▪ Council more exposed to delay risks associated with unforeseen site conditions ▪ Council exposed to delay risks associated with design interfaces	▪ Unable to procure contract until utility investigations and required statutory orders are secured delaying commencement of design activities ▪ Provision can be made in the Contract for rigorous Council approvals and for the Contractor to work with the Council in finalising and implementing its traffic management and programme phasing proposals ▪ Contractor can respond more efficiently to delay risks associated with unforeseen site conditions, and will carry most of this risk
Quality	▪ Council has complete control over all design decisions ▪ Given limited complexity of what is being delivered Council has capability to supervise works to ensure quality	▪ Contractor is responsible for quality in accordance with the specified requirements ▪ Quality is monitored through ISO9000 and 9001 and the Council has right to intervene if the quality falls below that specified ▪ Contractor is incentivised to provide a quality product as completion of the works and final sign off by the Council will depend on it

Based on the scoring above the client design model will provide more opportunity to drive value for money and deliver the required quality. Both models perform similarly in terms of delivery timescales.

Based on the above the client design model is recommended.

To support the client design model the client will be required to procure a technical partner to complete the required design services including support during the construction phase of the programme. It is recommended that the technical partner is procured on the basis of an NEC4 PSSC contract via the most appropriate framework.

Civils Works

A Contractor will be procured to complete all required civil work (this includes the construction of the Broxburn mobility hubs).

The pros and cons of the potential procurement routes have been considered. Based on the analysis (included in Table 12.4 of the main report) it is recommended that civils work is procured via the SCAPE Civil Engineering Framework.

In addition to considering the procurement route for the main contract, contract lotting was also considered e.g., dividing the civils work into different work packages which are then procured separately.

Whilst taking a lotting approach could potentially reduce construction timescales in having more than one Contractor working on different work packages at the same time. This approach is not recommended as it's

likely to be more expensive in covering the preliminaries of multiple contractors along with the requirement for additional resource in the Council client team to manage multiple contractors.

The proposed procurement approach for enabling works and utility diversions are detailed in sections 13.5.2 and 13.5.3 respectively of the main report.

Form of Contract

The main contract will need to be entered into between the Council and the preferred bidder chosen after a competitive procurement procedure. The provisions of the main contract will need to be drafted and reviewed to ensure they reflect an appropriate risk allocation (see Table 10 below), and that the balance of risk and reward for the Contractor drives value for money and an affordable solution.

It is recommended that a standard form of contract is used. The industry standard is NEC4.

There are two NEC4 forms which are potentially suitable, depending on the risk allocation adopted:

- Option A is a lump sum priced contract with activity schedule, where the Contractor provides the works described in the contract for a sum of money. The Contractor prepares an activity schedule where each activity is priced as a lump sum that the Contractor is paid once it has completed that particular activity. The Contractor takes the assessing and pricing risk under option A, although the lump sum will be adjusted if certain compensation events occur.
- Option C is a target cost contract with activity schedule. The Contractor uses an activity schedule to tender a target price, which is the sum of the price for each activity and a fee. Payment is made on the basis of actual costs incurred, meaning that activities not initially included in the activity schedule will increase the target cost. Since the risk of savings and over-runs is shared between the parties in option C, the Contractor takes less risk than under option A.

Given the limited complexity of what is being delivered and that the activities are relatively predictable it is recommended that NEC4 Option A is taken forward for the civils work contract.

Discussions with the Councils Legal and Procurement teams and West Lothian Council (WLC) have confirmed that there is no issue in the Council procuring the main contract on behalf of WLC to cover works within West Lothian.

Risk Apportionment

A comprehensive assessment of risk has been completed following the risk management process detailed in chapter 14 of the main report. The key programme risks are detailed in Appendix A to this report.

The main areas of risk associated with the delivery of the programme are summarised in Table 4.10 along with recommendations on how each risk should be apportioned between the Council and the main contractor.

Table 4.10: Risk Apportionment

Risk	Council	Contractor	Notes
Site Access and Possession			
Site possession	✓		
Off-site access and possession rights		✓	
Exercise of third-party access rights to Site		✓	Subject to Council approval
Protester action		✓	
Road closure and traffic management approvals	✓	✓	TRO approval to be sought by Council
Site Conditions			
Condition of existing structures	✓		
Archaeology	✓		
Contaminated ground	✓		
Diversion of utilities	✓		
Necessary Consents			
Obtaining of all necessary consents	✓		
Design			
Inconsistency / ambiguity with the Design	✓		
Development of design	✓		
Construction			
Build quality		✓	
Site security		✓	
Traffic management		✓	
Exceptionally adverse weather conditions	✓		
Force majeure events	✓		
Public liaison	✓	✓	Collaborative approach preferred
Damage to existing road during works		✓	
Third party claims	✓	✓	
Testing and Commissioning			
Testing		✓	
Commissioning	✓	✓	

Conclusion

The assessment of commercial arrangements for the programme supports the following conclusions:

- It is recommended that the main contract is for build services only;
- It is recommended that the Council procure a technical partner to complete the required design services including support during the construction phase of the programme;
- It is recommended that the main contract is procured via the SCAPE Civil Engineering Framework;
- It is recommended that the NEC4 Option A – priced contract with activity schedule is used for the main contract; and
- It is recommended that risks are allocated as set out in Table 10 of the main report.

4.4 Financial Dimension

This financial dimension of the business case assesses the cashflows over the life of the programme. The programme team has worked closely with Council Finance Officers to agree the inputs and assumptions underpinning the financial analysis.

In order to assess programme cashflows, costs have been assessed in terms of:

- Financial impact of the programme to the Council; and
- Affordability to the Council in the short, medium and long term.

Income has not been considered as the programme will not generate any income for the Council or WLC.

Capital Costs

Basis of Estimate

The capital cost estimate for the programme has been built up using a range of sources.

The construction cost estimates were based on recent projects where Jacobs have supported and are in line with the Standards for Highways Manual of Contract Documents (MCHW series).

Utility rates were interpolated from the final costs on the A9 Luncarty to Pass of Birnam project.

Structural costs have been based on previous studies. Rates used on these studies are from SPONs 2016 with a cost base of Q2 2015 and have been indexed to 2023 values.

For preliminaries and Traffic Management, an additional 30% was included. This is broadly in line with other project cost estimates (ranged between 17% and 35% across differing stages).

For the purposes of financial modelling a two-year construction programme has been assumed from Summer 2026 to Summer 2028.

Programme management and consultancy support cost estimates are based on similar Council projects and are included within the cost estimate.

Further detail on the basis of the estimate is detailed in section 14.3.1 in the main report.

Optimism Bias

Optimism Bias has been applied at 44% to all capital elements of the cost. This is in line with the Economic case and applies current HM treasury guidance.

In addition to Optimism Bias, risk contingency of 10% of the total construction cost has been included. A Quantitative Cost Risk Assessment (QCRA) and Quantitative Schedule Risk Assessment (QSRA) will be completed in the next stage of the programme as the detailed design is developed, additional risks and opportunities are identified and the master schedule is developed through early contractor engagement.

Programme

The capital cost estimate is based on the current programme (as of 6th November 2023), which includes the key dates detailed in Table 4.11 below.

Table 4.11: Key Programme Milestones

Milestone	Date
Outline Business Case Approval	March 2024
Detailed Design Complete	February 2025
Issue Tender for Main Contract	March 2025
Completion of Tender Evaluation*	October 2025
Statutory Orders Secured	October 2025
Final Business Case Approval	June 2026
Construction Contract Award	June 2026
Construction Commences	July 2026
Construction Complete	July 2028

* There is currently a gap of 7 months between Completion of Tender Evaluation and Construction Contract Award which may mean prices submitted as part of the tender may not hold. The programme for the procurement will be refined in the next stage of the programme.

Inflation

Inflation (from 23/24) has been applied to all costs as per Table 4.12 below out to the assumed completion of Summer 2028.

Table 4.12: Inflation Assumptions

Item	23/24	24/25	25/26	26/27	27/28	28/29	Source
Construction Cost Inflation	2.9%	2.1%	2.1%	2.6%	3.3%	3.3%	Based on Industry forecasts
Council Staff Cost Inflation	6%	3%	2%	2%	2%	2%	Estimates provided by Council Finance Officers
Consultancy Client Support	2.5%	2.5%	2.5%	2.6%	3.3%	3.3%	Based on Scotland Excel Framework

Results

The results of the cost estimate are set out in Table 4.13 below.

Table 4.13: Programme Costs

Element	Estimated Cost (£m)
Base cost including all construction, scheme development and programme management costs	45.34
Inflation	4.85
Programme Cost (excluding optimism bias)	**50.20**
Optimism Bias at 44%	22.09
Total Programme Cost inclusive of Optimism Bias	**72.28**

Spend Profile

Table 4.14 below details the estimated spend profile for the programme. The spend profile is detailed per section which make up all potential measures identified at this stage in the programme.

Table 4.14: Spend profile by Section

Section	23/24 (£m)	24/25 (£m)	25/26 (£m)	26/27 (£m)	27/28 (£m)	28/29 (£m)	Total (£m)
Broxburn Mobility Hub	0.005	0.16	0.09	0.61	2.26	1.78	**4.92**
A89	0.02	0.55	0.30	2.04	7.56	5.97	**16.44**
Queensferry Branch	0.004	0.14	0.08	0.57	2.11	1.67	**4.57**
A8 West	0.01	0.39	0.21	1.44	5.34	4.22	**11.61**
A8 Ingliston Road to Gogarstone Road	0.005	0.18	0.10	0.63	2.32	1.84	**5.08**
Gogar to Maybury	0.02	0.54	0.30	2.00	7.41	5.84	**16.10**
A8 East	0.01	0.38	0.21	1.42	5.28	4.17	**11.47**
MOVA	0.002	0.07	0.04	0.26	0.97	0.76	**2.10**
Total	**0.07**	**2.42**	**1.33**	**8.97**	**33.25**	**26.24**	**72.28**

Affordability

The estimated cost to deliver all potential measures identified at this stage in the programme is £72.3m.

The programme has a remaining budget of £36.6m as per the breakdown in Table 4.15 below. Based on cost estimates and the existing programme budget a further £35.7m will need to be secured to deliver all potential measures identified.

It is recommended that a prioritisation exercise is completed to assess which measures should be prioritised to form a core package that can be delivered within the existing WETIP budget envelope of £36.6m.

Table 4.15: Existing Programme Budget

Item	Amount (£m)
Council funding	16.00
City Deal funding for public transport measures	20.00
Developer contributions secured to date	1.29
Programme spend to Date (as of 5th October 2023)	0.71
Existing budget (as of 5th October 2023)	**36.59**

Potential Funding Options

It is recommended that the programme pursues the following funding options detailed in Table 4.16 below to try and secure the additional funds required to deliver all potential measures identified.

Table 4.16: Potential Funding Options

Source	Description
Developer Contributions	With eleven significant planned residential developments adjacent to the A8 there is significant potential to add to the developer contributions secured to date. It is recommended that the programme team continue to work closely with Council Planning Officers and WLC to secure further developer contributions.
Active Travel Funds	There is potential to secure additional funding for the active travel elements of the programme through Sustrans Places for Everyone Fund and Transport Scotland's Active Travel Transformation Fund. It is recommended that the programme team continue to engage with Sustrans and Transport Scotland to discuss funding active travel elements of the programme.
Edinburgh and South East Scotland City Region Deal	It is recommended that the programme team investigate whether there is any potential to secure additional funding through the Regional Prosperity Framework.

This is not an exhaustive list of funding options, it is recommended these funding options detailed above are pursued as a priority.

Conclusion

The financial analysis supports the following conclusions:

- The estimated cost to deliver all potential measures identified at this stage in the programme is £72.3m;
- It is recommended that a prioritisation exercise is completed to assess which measures should be prioritised to form a core package that can be delivered within the existing WETIP budget envelope of £36.6m; and
- It is also recommended that the City of Edinburgh Council and West Lothian Council, as part of the statutory planning process, pursue additional funding through developer contributions via planned developments in West Edinburgh and through bids into other funding sources to secure the additional £35.7m required to deliver all potential measures (in later tranches).

4.5 Management Dimension

The management chapter of the business case sets out the principles for successful programme delivery, providing the framework for the activities that will be carried out in order to achieve the desired results and benefits. The key supporting document to this chapter is the Programme Management Plan (PMP).

The PMP details the overarching governance structure for delivery of the programme to satisfy the requirements of the OBC stage, outlining the guiding principles that will be followed in future stages, including the FBC and construction stages.

Master Schedule

Work Breakdown Structure

The programme consists of the following Stages detailed in Figure 4.4 below.

Figure 4.4: Programme Stages

Stage 1a of the programme was completed in April 2023 and focused on building the Strategic Case for the OBC with the following outputs completed:

- Case for Change;
- Transport Planning Objectives; and
- Options Sifting and Preliminary Appraisal.

The programme is currently focused on the delivery of Stage 1b which commenced April 2023 and is scheduled to conclude March 2024 subject to OBC approval and sign-off by Scottish Government, Edinburgh and South East Scotland City Region Deal, the Council and West Lothian Council.

Stage 2 will focus on the completion of the detailed design, securing the required statutory orders and procuring the main construction contract.

Stage 3 will focus solely on the completion of the Full Business Case (FBC) and securing the associated approvals and sign-off. Once the FBC has been signed-off and all statutory orders are in place the construction contract will be signed.

Stage 4 comprises all the activities required to construct the proposals.

The Work Breakdown Structure (WBS) for the programme is detailed in section 15.3.1 of the main report.

Key Milestones and Assumptions

The key milestones from the Master Schedule are as shown in the Table 11 above. There are other milestones in the Master Schedule which have not been included in the table below. These milestones are based on the most up-to-date information.

The timescales and dependencies shown in the Master Schedule are based on the following key assumptions:

- Scottish Government and the Edinburgh and South East Scotland City Region Deal approves the OBC by March 2024;
- Detailed Design up to RIBA stage 3 commences in January 2024 ahead of the OBC approval;
- A public hearing is required due to level of objections received on advertised orders. If it transpires that a public enquiry is not required construction could potentially commence in July 2025; and
- Major utility diversions that can be executed ahead of the main civils work can be completed under the main Contractors Traffic Management prior to main civils works.

Once the Contractor has been appointed and their detailed schedule has been agreed, these durations and logic will be further developed in the programme schedule.

The Master Schedule will be updated once a month by the Programme Team and shared with the Programme Board every six weeks.

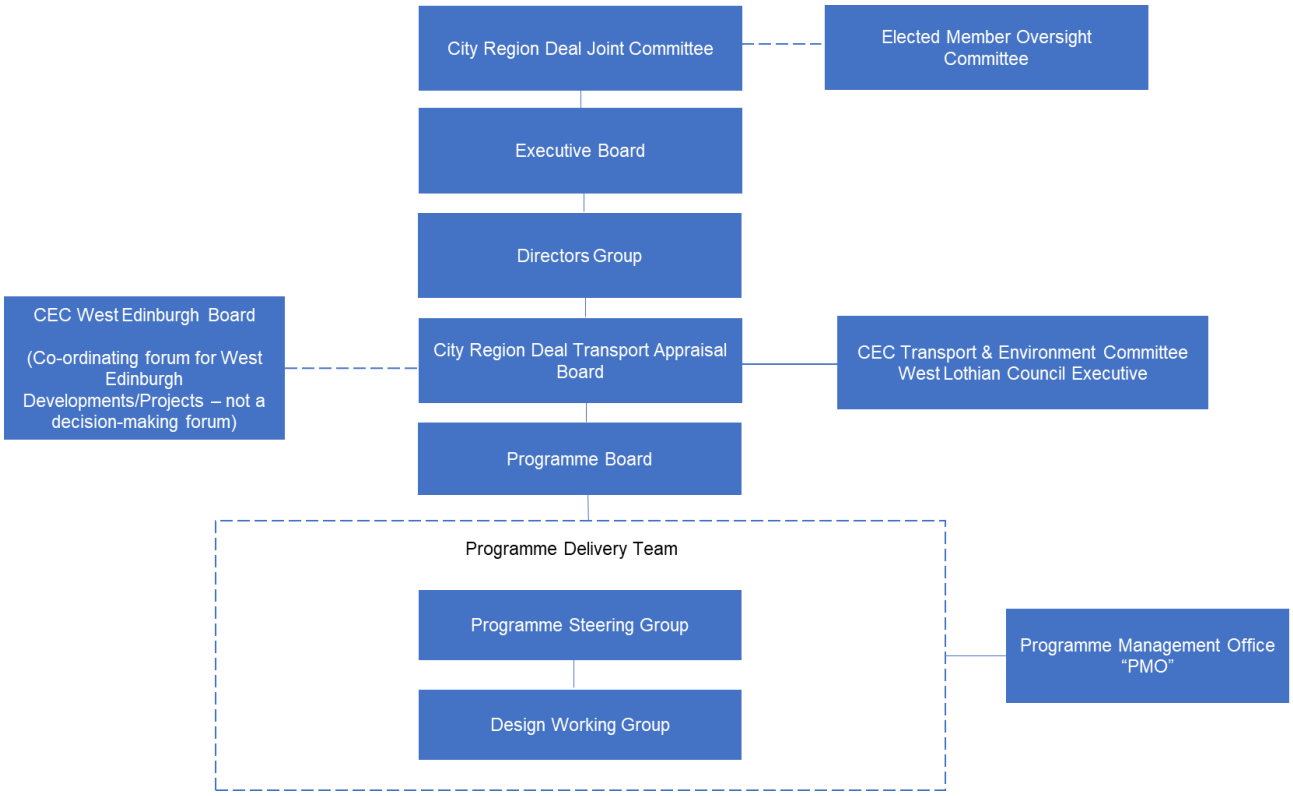
It is anticipated that a formal re-baseline of the Master Schedule will be completed once the main contract has been agreed and signed.

Programme Governance

Governance Structure

The governance structure for the programme is detailed below in Figure 4.5 below.

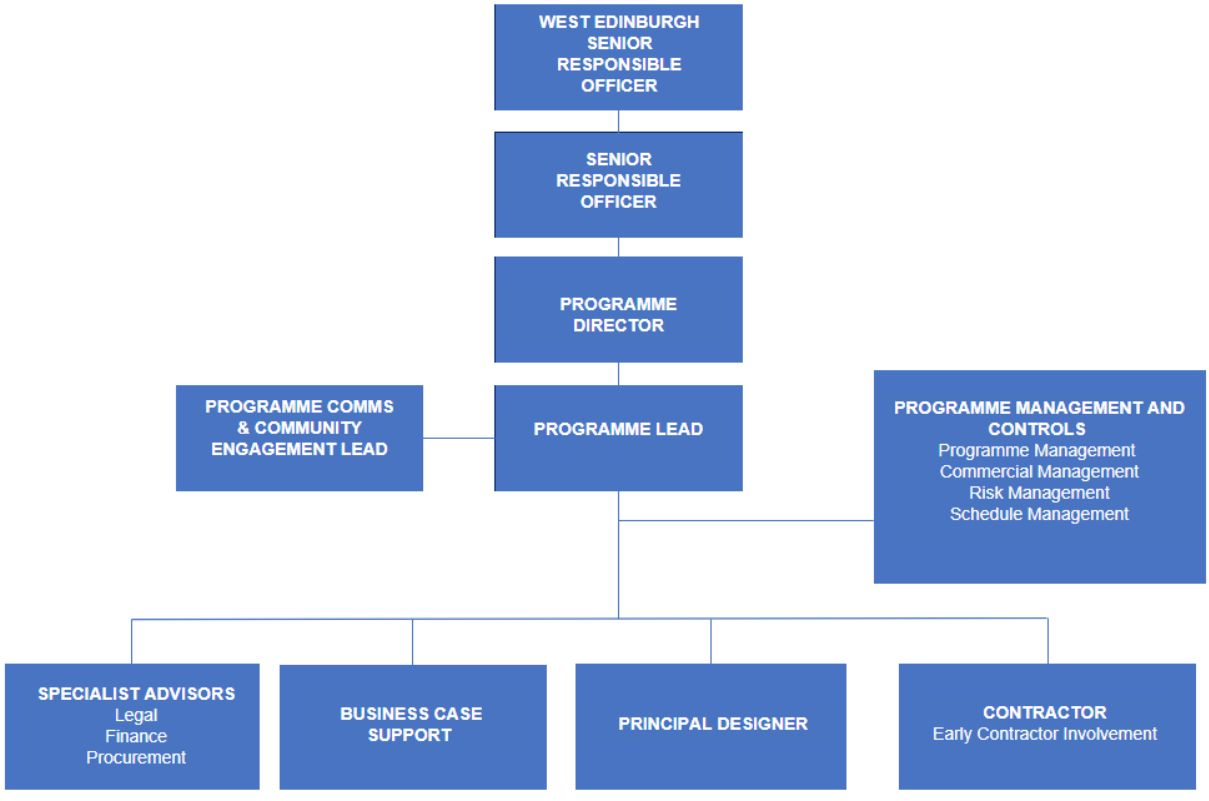
Figure 4.5: Programme Governance Structure



Programme Team

The Programme Organisational Structure is detailed in Figure 4.6 below.

Figure 4.6: Programme Organisational Structure



The organisational structure has been developed according to the functions required to progress the programme through Stage 2, 3 and 4 (as detailed in section 14.3 of the main report).

Arrangements in relation to roles & responsibilities, change & contract management, stakeholder management, risk management, benefits management and monitoring & evaluation are detailed in chapter 15 of the main report.

Conclusions

The assessment of the management arrangements for the programme supports the following conclusions.

- Robust governance arrangements, programme management processes and controls are all in place to help ensure the successful delivery of the next stages of the programme;
- The programme has identified the resources required to deliver the next stages of the programme;
- A robust schedule has been developed with a forecast that construction will commence in summer 2026;
- The programme has a robust approach to stakeholder management as detailed in the stakeholder engagement plan; and
- The programme has a robust approach to both Benefits Management and Monitoring & Evaluation.

Appendix A. Key Programme Risks

Risk No.	Risk Title	Cause	Risk	Effect / Consequence	Likelihood	Impact	Score	Mitigating Actions
1	Programme Costs	Higher than anticipated construction cost inflation (materials and labour)	Construction cost inflation (materials and labour) leads to higher costs than initially forecast to construct the proposed interventions. This could mean that certain interventions require value engineering or are reduced in scoped.	This could mean that certain interventions require value engineering or are reduced in scope	5	4	20	Costings included in the OBC will reflect latest inflation forecasts and outturn costs of similar schemes Programme has initiated discussion with Contractor on the SCAPE Framework to complete feasibility study (which includes costings) Value engineering may need to be completed Identify which packages should be prioritised and delivered utilising the existing budget Investigate options to secure additional funds e.g., developer contributions / active travel funding
2	Statutory Consents Objections	Members of the public not supporting proposed interventions	Objections could potentially be raised during the Statutory Consents process, possibly triggering the requirement to hold a public enquiry	Extended timescale to secure the necessary Statutory Consents taking up to two years, delaying the commencement of construction of some of the measures (and delaying benefits)	4	4	16	Use the stakeholder engagement and public consultation to identify any potential objections and seek to address prior to commencing any traffic orders application process Early engagement with Traffic Orders team to confirm specific traffic order requirements The Programme schedule currently assumes that it will take two years to acquire the relevant Statutory Consents with construction brought forward if there is no requirement for a public hearing
3	Network Management	Constrained road network and volume of live projects in Edinburgh	Temporary Network Management to facilitate works will be challenging and concurrent construction along the A8/A89 corridor may not be possible.	This could potentially result in an elongated construction programme, affecting the timescales and increasing costs.	4	3	12	Continue to monitor other programmes of work on the A8/A89 corridor and how they could impact WETIP Ensure early engagement with Network Management Team Ensure awareness of any planned work or events such as rail strikes Develop a robust construction phasing strategy (initially through SCAPE) which mitigates, as much as possible, temporary network management challenges
4	Utilities	Unknown utilities/services could be identified	Utilities/services need to be diverted or removed.	This would impact programme	3	4	12	Agree approach to utilities - consider when best to complete GPR and Site Investigations

Risk No.	Risk Title	Cause	Risk	Effect / Consequence	Likelihood	Impact	Score	Mitigating Actions
		during construction		timelines and costs				Compile required information to request C3 information
5	A8 missing Active Travel Link funding	The outcomes of the IBG development hearing are expected imminently, which will indicate if proposals to deliver the "A8 Northside Missing Active Travel Link" will be included via a Section S75.	That the IBG development does not get approval and does not proceed resulting in no s75 funding for the "A8 Northside Missing Active Travel Link"	Alternative funding source required - would need more time and effort resulting in potentially increased costs and timescales. May also be unable to secure alternative funding.	3	4	12	Continue to monitor developments of the IBG hearing Currently investigating active travel funding opportunities
6	Section 75 & Development Timescales	Due to commitments from local developers as part of S75 conditions not materialising and uncertain timescales for development	Unable to secure the developer contributions forecast	Unable to deliver the full programme scope	3	4	12	Continue to engage with CEC and WL planning teams on progress of planned developments Plan on basis of developer contributions secured to date
7	Active Travel Funding	Require additional funding to deliver active travel elements of the programme	Unable to secure active travel funding required	Unable to deliver certain active travel elements of the programme scope	3	4	12	Continue engagement with Sustrans and Transport Scotland on active travel funding opportunities Continue to refine active travel proposals
8	Design Process	Due to potential conflicting design objectives between both local authorities, TS and different teams within both Councils (Active Travel, Traffic Signals)	Risk that design conflicts may arise during the design process	This could impact programme timelines and costs	3	3	9	Design Working Group to be established for next stage of the programme Designs will be reviewed at Steering Group and shared with Programme Board for approval
9	Archaeology	The A89 & A8 are in effect modern day versions of a Roman Road and	There could be archaeological finds during construction	This could impact programme timelines and costs	2	4	8	Engagement with Archaeological Officer on potential impacts

Risk No.	Risk Title	Cause	Risk	Effect / Consequence	Likelihood	Impact	Score	Mitigating Actions
		run through an area of archaeological significance						
10	Winchburgh Developments	Winchburgh Developments lobbying for City Region Deal funding allocated to WETIP to be re-allocated to fund a rail station at Winchburgh	WETIP City Region Deal funding is re-allocated to fund a rail station at Winchburgh	Unable to deliver WETIP interventions	1	5	5	Meet with Winchburgh Developments to understand their concerns Raise with the programme board and City Region Deal PMO