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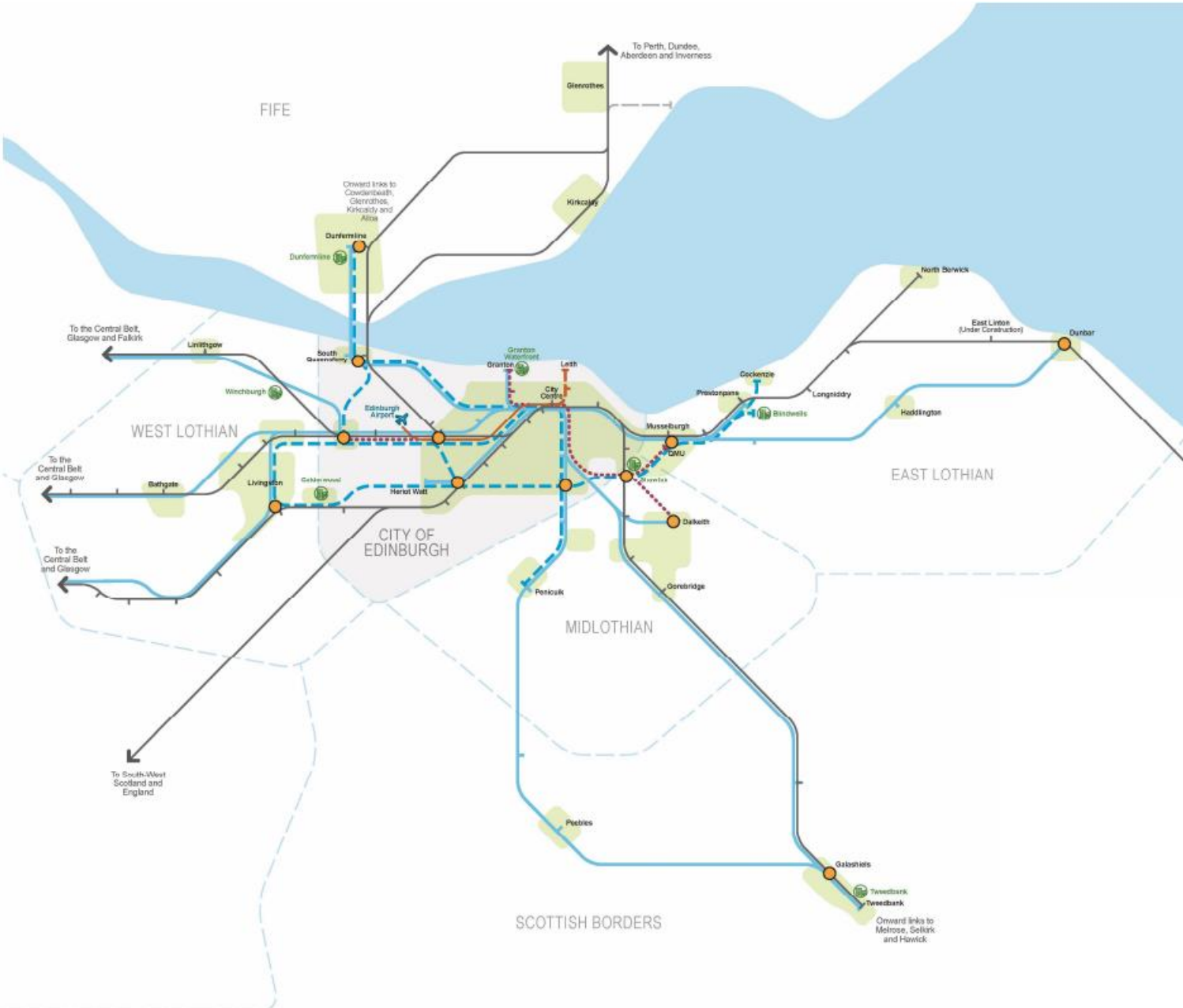
Trams to Granton, BioQuarter and Beyond

Background and Decision Context

The City of Edinburgh Council

August 2025



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Client name: The City of Edinburgh Council

Project name: Trams to Granton, BioQuarter and Beyond

Client reference: CEC **Project no:** B2340264

Date: 8 August 2025 **File name:** TGBB Background and Decision Context 080825 FINAL.docx

Document status: Final

Document History and Status

Version	Date	Description	Author	Checked	Reviewed	Approved
1	13.06.25	Draft Report	ST / GCD	LMZ	GKD	GKD
2	04.07.25	Draft Final Report	ST / LMZ	GCD	GCD	GKD
3	08.08.25	Final Report	ST / LMZ	GCD	GCD	GKD

Distribution of Copies

Version	Issue approved	Date issued	Issued to	Comments

Jacobs U.K. Limited

160 Dundee Street
Edinburgh, EH11 1DQ
United Kingdom

T +44 (0)131 659 1500
F +44 (0)131 228 6177
www.jacobs.com

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1. Introduction

1.1 Context

Edinburgh and the South East is the fastest growing region in Scotland, accounting for over two thirds of the country's population growth by 2042.

A key reason for the forecast population increase is Edinburgh's (the regional hub) successful and highly skilled jobs' market, with an internationally respected financial sector just one of the thriving industries in the city. Added to this, Edinburgh has the highest number of tourism visitors in the UK outside of London, which has resulted in the city achieving the greatest GVA per capita of any region in Scotland.

Edinburgh's success means the South East region has the potential for exponential growth. However, growth cannot happen without investment and Edinburgh falls far behind other major cities in the UK and internationally in terms of mass transit networks. For example, the Manchester Metrolink has over 100km of tram network whereas Edinburgh only has 18km.

Edinburgh does have a successful and highly regarded bus network but the industry is currently suffering from a shortage of drivers and long manufacturing times for delivery of new buses. Operators are struggling to meet existing demand let alone future development needs. Rail will also be unable to meet all future demand, with a limited number of stations within the city (only 1% of commuter trips are by rail in Edinburgh) and the commuting rail lines all operating over capacity during the peaks. Therefore, without investment in infrastructure, sustainable population and economic growth cannot be delivered in the region with the current public transport services and network.

There are pressing issues facing Edinburgh and the surrounding region now. Transport is the single biggest contributor to greenhouse gas emissions in Scotland and reliance on private vehicles must reduce. Car kilometres in the city have almost returned to pre-COVID levels (even though many people can now work from home) and are set to continue to increase as housing continues to be constructed.

Congestion levels (to worsen as housing developments build out) in the region causes significant delays to public transport services with some bus routes taking over 50 minutes to travel 5.5km – an average speed of 6kmph which is not much faster than a brisk walk. Public transport provision and integration across the region needs to be enhanced and prioritised to reduce current private vehicle kilometres and future demand.

Due to the rapidly rising cost of housing within the city, people are choosing to live farther outside the economic hub of the region. The distance of these trips are too great to be delivered through active travel improvements alone and therefore public transport has to do the heavy lifting as part of a wholistic sustainable transport solution for the region.

Edinburgh's success has also led to a clear divide between the have and the have nots. Well connected areas of the city (and areas of surrounding regions closely located to high-quality transport links) have seen a rapid rise in house prices and greater growth and prosperity. Whereas the more isolated communities tend to be lower down on the Scottish Index of Multiple Deprivation (SIMD) scale due to reduced accessibility and social inclusion, a direct result of reduced transport and mobility options available to people.

This report outlines the rationale for why an expanded tram network, as part of an integrated mass transit and transport strategy for the region, will help deliver the region's opportunities and tackle the problems. It will also outline the relevant history of studies and policy context which have recommend an integrated mass transit system for the region.

1.2 Structure of the Report

This report will outline the current and future problems and opportunities for the region, centred around detailed analysis of forecast growth and the high levels of public transport trips forecast, as well as highlighting the public transport requirements needed to address these. This analysis will also frame the transportation related environmental challenges facing the region.

A background of the previous studies that recommended mass transit as a primary intervention for addressing these regional problems and opportunities is provided, leading to a summary of how a mass transit strategy fits within the national, regional and local policy context. The strategy itself is then outlined

before specific details are provided on how it will help meet future transport needs, increase accessibility and address inequalities as well as having a positive impact on the environment, economy and tourism.

The structure of the report is as follows:

- Future Growth: Problems and Opportunities
- Establishing the Case for Mass Transit
- Developing the South East Mass Transit Network
- Summary

2. Future Growth: Problems and Opportunities

2.1 Context

The Edinburgh and South East Scotland (ESES) region plays a pivotal role in both the Scottish and UK economies. With a robust service sector, strong academic institutions, and a globally recognised financial industry, the region contributes significantly to national GDP relative to its population size. Being the capital city, Edinburgh anchors this economic engine, with the surrounding local authority areas contributing critical labour, industrial capacity, and logistical support. As the population continues to grow and economic activity intensifies, the respective local authorities recognise that strategic planning is essential to sustain momentum and ensure that the benefits of growth are broadly shared.

Table 2.1: Population / Gross Value Added

Region	Population (Mid-2023)	GVA (£ million, 2022)	GVA per Capita (£)
Glasgow City	635,130	22,000	34,646
City of Edinburgh	**523,250**	**20,000**	**38,234**
Aberdeen City & Aberdeenshire	492,070	18,000	36,565
West Central Scotland	1,526,440	45,000	29,493
East Central Scotland	1,077,010	30,000	27,861
Southern Scotland	956,130	25,000	26,155
Highlands and Islands	489,913	12,000	24,490
Eastern Scotland	937,390	28,000	29,889
Edinburgh & South East Scotland City Region	**1,398,792**	**43,000**	**30,745**
Scotland (Total)	**5,479,800**	**190,000**	**34,679**

Source: nrsscotland.gov.uk and ons.gov.uk

To sustain and enhance its economic contribution, the ESES region must continue to grow. The region's ability to attract and retain a skilled workforce is crucial for its long-term economic success, and therefore a failure to expand will constrain labour markets, limit innovation, and risk the region falling behind other UK metropolitan areas such as Greater Manchester and the West Midlands. This growth is essential not only for maintaining its current economic status but also for creating new job opportunities and accommodating an increasing population. As the population grows, so does the demand for housing, services, and infrastructure, necessitating careful planning and investment.

High-quality infrastructure is the backbone of any thriving economy. For the Edinburgh city region, investing in infrastructure is vital to support its growth ambitions. This includes transport networks, digital connectivity, healthcare facilities, and educational institutions. Efficient and reliable infrastructure not only enhances the quality of life for residents but also makes the region more attractive to businesses and investors. It is essential to ensure that infrastructure development keeps pace with the region's growth to avoid bottlenecks and inefficiencies. It is therefore vitally important that the objectives and interventions identified in the various policies and strategies outlined in subsequent sections of this report are actioned and delivered.

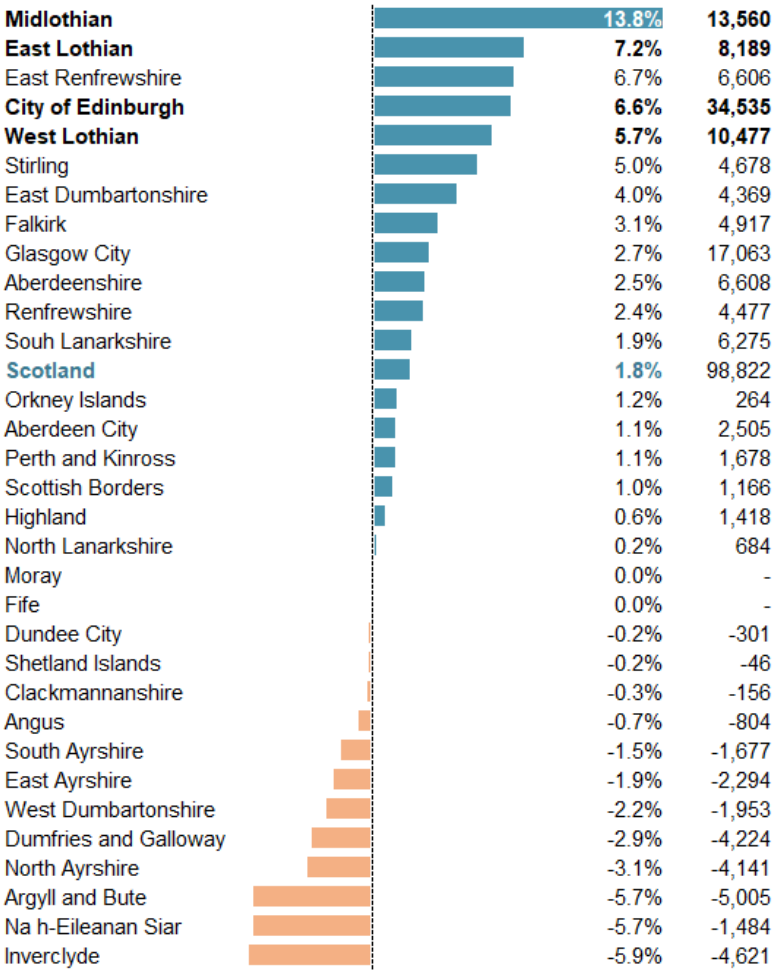
2.2 Future Growth Projections

2.2.1 Regional Growth

Population forecasts suggest a 15% increase across the region by 2042, with areas such as Midlothian and East Lothian seeing particularly rapid rises due to their development potential, and proximity to Edinburgh. Putting this into context, the additional population of approximately 215,000 across the region is almost the current population of Aberdeen (228,000).

Looking to the shorter term, as Figure 2.1 shows, the populations of the respective local authorities within the ESES region are forecast to experience the highest levels of growth across the country in the next few years. Edinburgh and the Lothians make up four of the five fastest growing regions in Scotland and account for 68% of Scotland’s total growth to 2028.

Figure 2.1: Scotland's Growth by Region 2023 to 2028

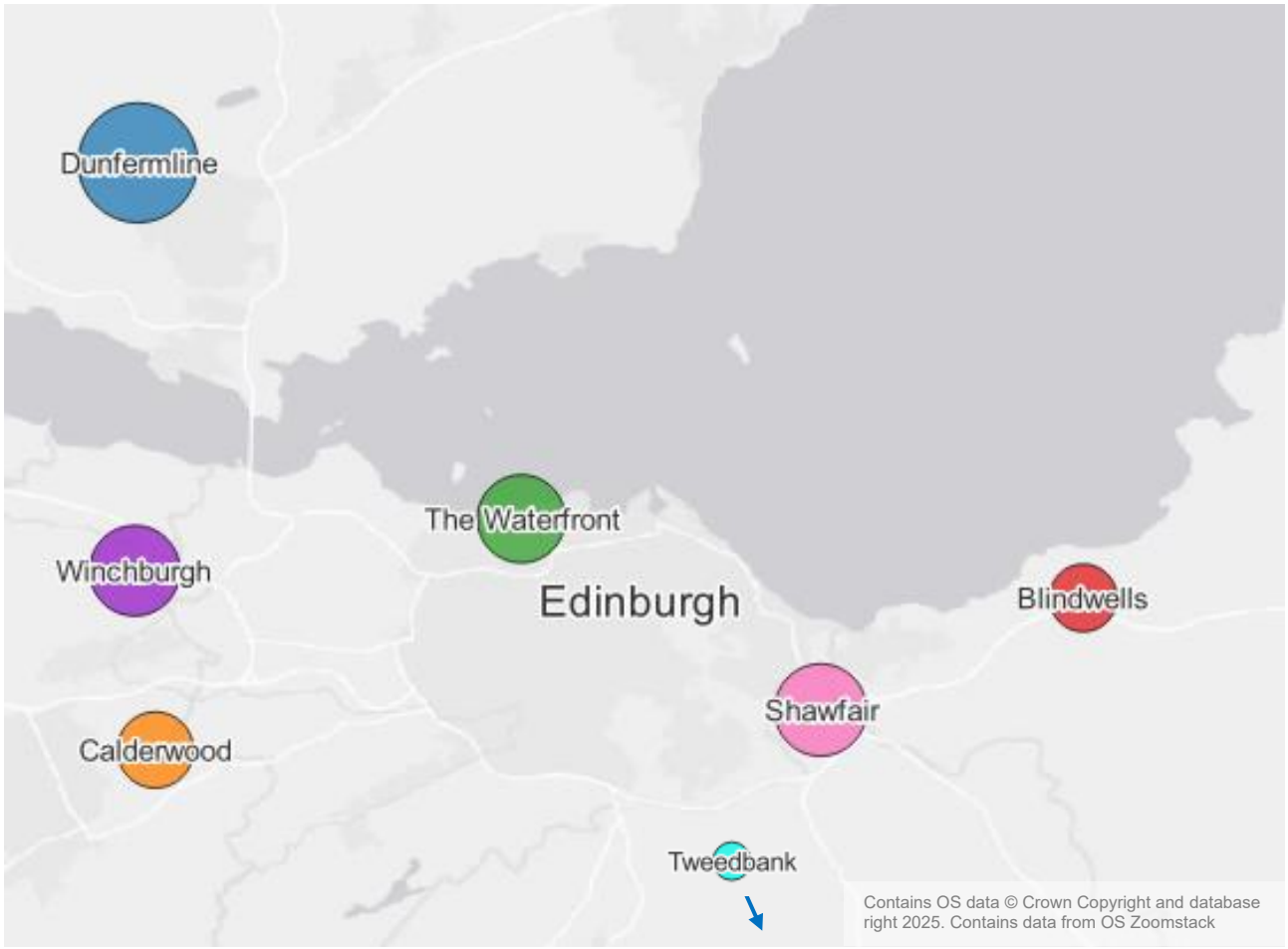


Employment is also expected to grow by 10–15% over the next 20 years, fuelled by investments in knowledge-intensive sectors and public services. These trends highlight the need for a proactive policy to ensure housing, transport, and employment opportunities grow in tandem. If managed well, this demographic and economic expansion presents a significant opportunity for the region to enhance its national and international standing.

Seven strategic sites have been identified for development to accommodate population and economic growth (Figure 2.2). The aim is to collaborate with Scottish and UK Governments to support the delivery of places where people want to live and to enable major regeneration programmes. Around 41,000 new homes will be constructed, of which around 10,000 will be affordable, to create 8,000 jobs, and to deliver wider benefits including £30bn GVA.

Areas have been selected for their strategic value – whether proximity to transport links, availability of land, or potential to support innovation clusters. These sites offer a mix of residential, commercial, and mixed-use development opportunities and have the potential to act as hubs of innovation, employment, and high-density living. They are strategically distributed to balance growth across the region while leveraging local strengths.

Figure 2.2: ESES Seven Strategic Development Sites



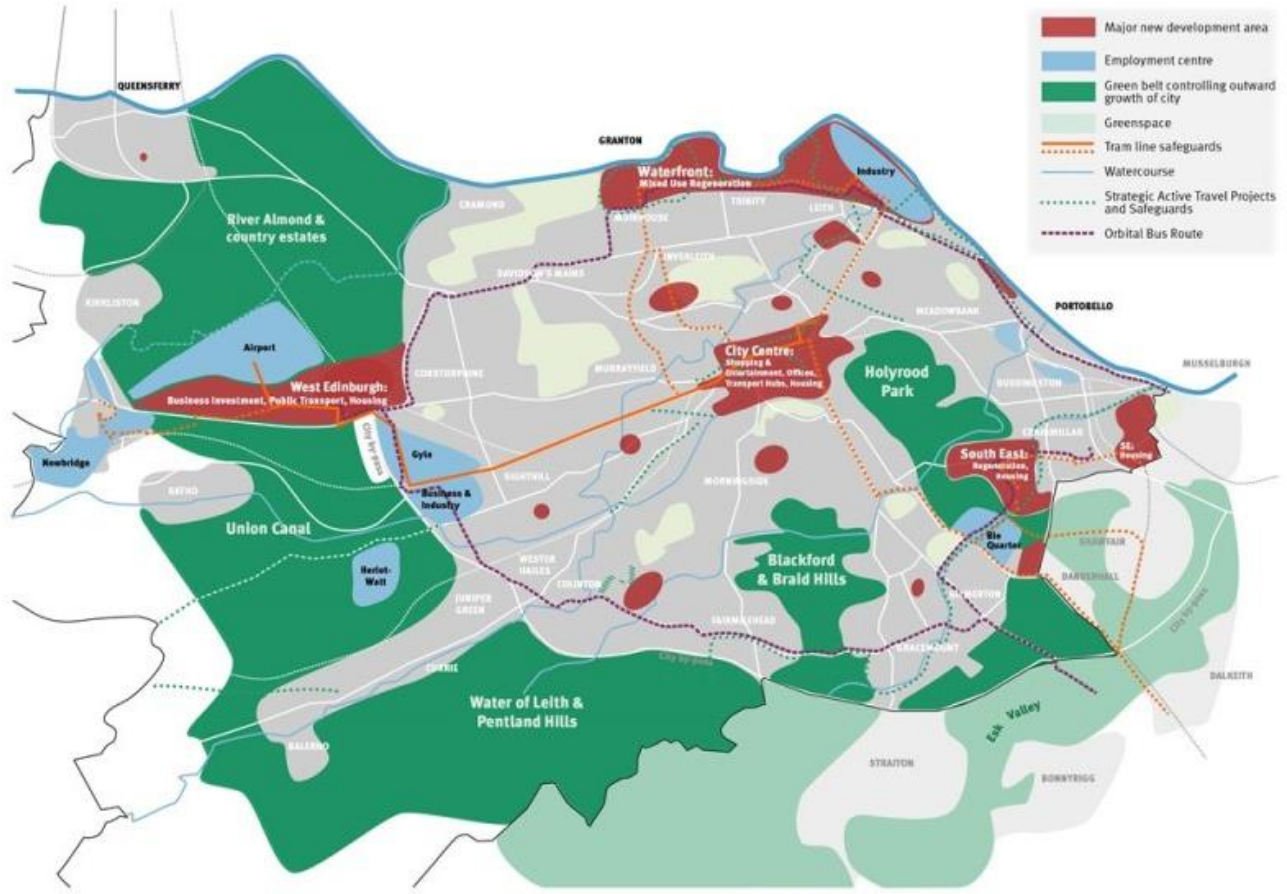
Combined, these strategic development sites are forecast to accommodate a population of 100,000 and create 8,000 jobs over the next 30 years. To provide context, the current population of Paisley is approximately 80,000.

The population forecast for ESES is almost the equivalent of adding Scotland's third largest city to the region – sustainable transport infrastructure investment needs to match the growth ambitions.

2.2.2 City Growth

Within the city, growth is generally centred around brownfield sites where high public transport provision tends to already exists, albeit further local improvements may be needed. As shown in Figure 2.3, major new development areas include: City Centre, West Edinburgh, Waterfront and the South East. Employment growth is focused around Edinburgh Park / Gyle, Leith Docks, the BioQuarter, Heriot-Watt and Newbridge. In these locations, a more significant improvement in public transport is required in order to meet mode share targets, particularly for development sites away from the city centre.

Figure 2.3: City Plan 2030 Spatial Strategy[1]



Major development sites within and surrounding Edinburgh need high-quality public transport connections in order to meet mode share and environmental targets, while also catering for housing build out at higher densities.

2.3 Future Travel Demand and Trip Distribution

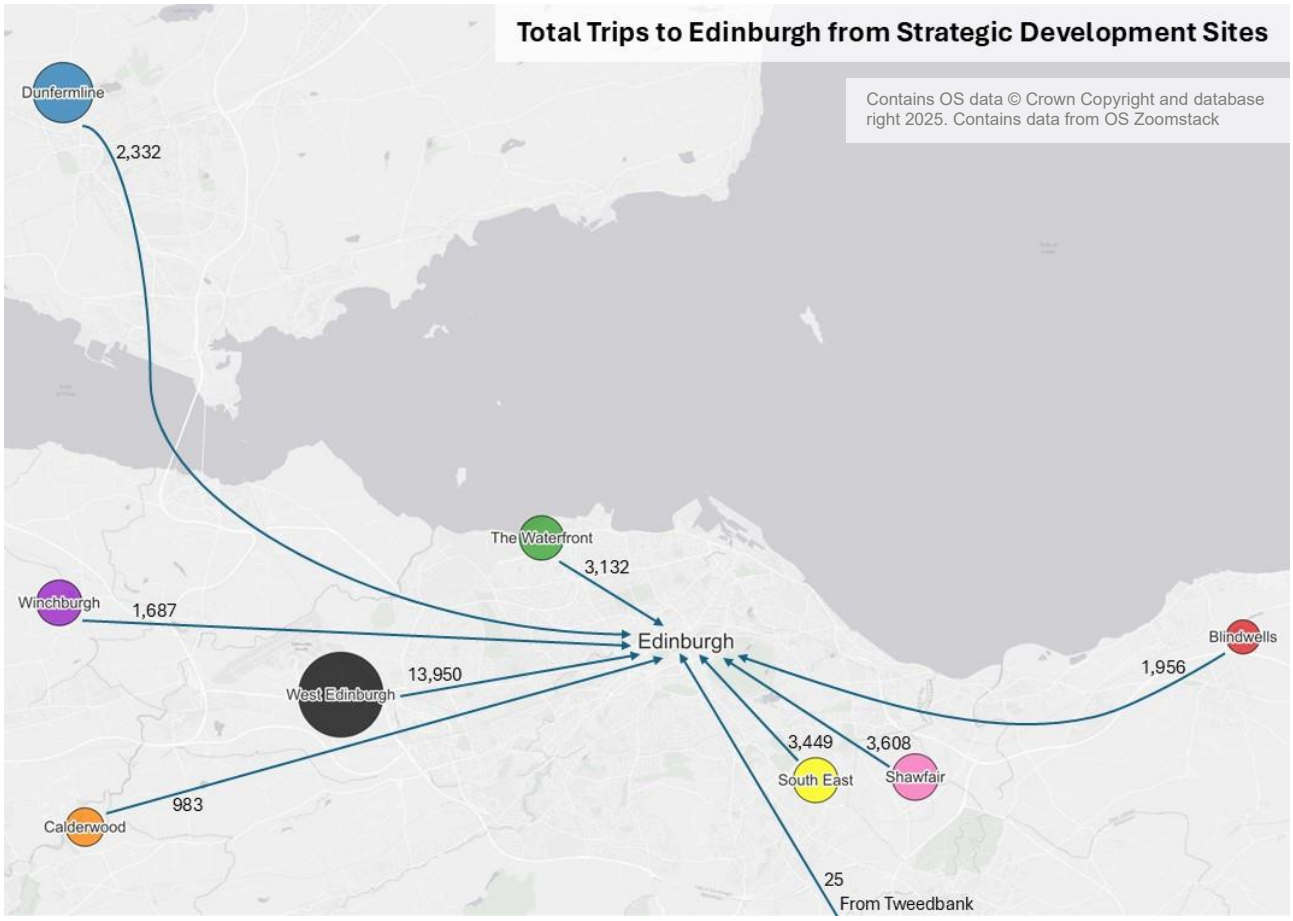
As outlined above, Edinburgh and the city region is forecast to grow significantly in the next 20 years, meaning that a high-quality public transport system is required to accommodate the additional trips that will be generated.

For each of the major development sites (seven strategic sites plus South East and West Edinburgh), future travel demand has been calculated based on available Transport Assessment information and policy objectives. A gravity model has then been developed to estimate the distribution of trips across the region.

The total number of trips from all development sites towards Edinburgh in the morning peak (07:00-09:00) is shown in Figure 2.4. These total over 30,000 across all transport modes by 2042.

[1] https://www.edinburgh.gov.uk/downloads/file/35902/city-plan-2030-written-statement

Figure 2.4: Total Morning Peak Trips to Edinburgh from Strategic Development Sites



Of the above, approximately 13,900 trips are by public transport with approximately 8,000 of these by bus. Table 2.2 summarises the number of buses required based on assumed public transport mode shares.

Table 2.2: Bus Demand from ESES Seven Strategic Sites, West Edinburgh and South East

	Demand	PT Mode Share	Total PT Trips	Bus Share Assumption	Number of Trips by Bus	Number of Buses to Edinburgh City Centre
Blindwells	1,956	45%	880	50%	440	6
Calderwood	983	20%	197	100%	197	3
Dunfermline	2,332	25%	583	50%	292	4
Granton Waterfront	3,132	50%	1566	100%	1566	21
Shawfair	3,608	20%	722	50%	361	5
Tweedbank	25	10%	2	0%	0	0
Winchburgh	1,687	20%	337	100%	337	4
West Edinburgh	17,137	50%	8569	50%	4284	57
South East	3,449	30%	1035	50%	517	7
Total	**34,309**		**13,891**		**7,994**	**107**

As show above, based on the work undertaken as part of the development sites' Transport Assessments, over 100 additional buses would be required to meet the agreed mode share targets and would be distributed as shown below in Figure 2.5. The number of buses in the table and figure relate to the major strategic sites travelling to Edinburgh only. If all development across the ESES region is included the number of buses needed would increase by around 60%.

The above analysis is for the major strategic sites only and also assumes rail and tram networks increase their capacity sufficiently to cater for the additional forecast demand. Furthermore, the calculation assumes a bus occupancy of 80 passengers, in practice maximum occupancy will be lower, requiring significantly more buses.

Figure 2.5: Number of Additional Peak Buses (07:00-09:00)

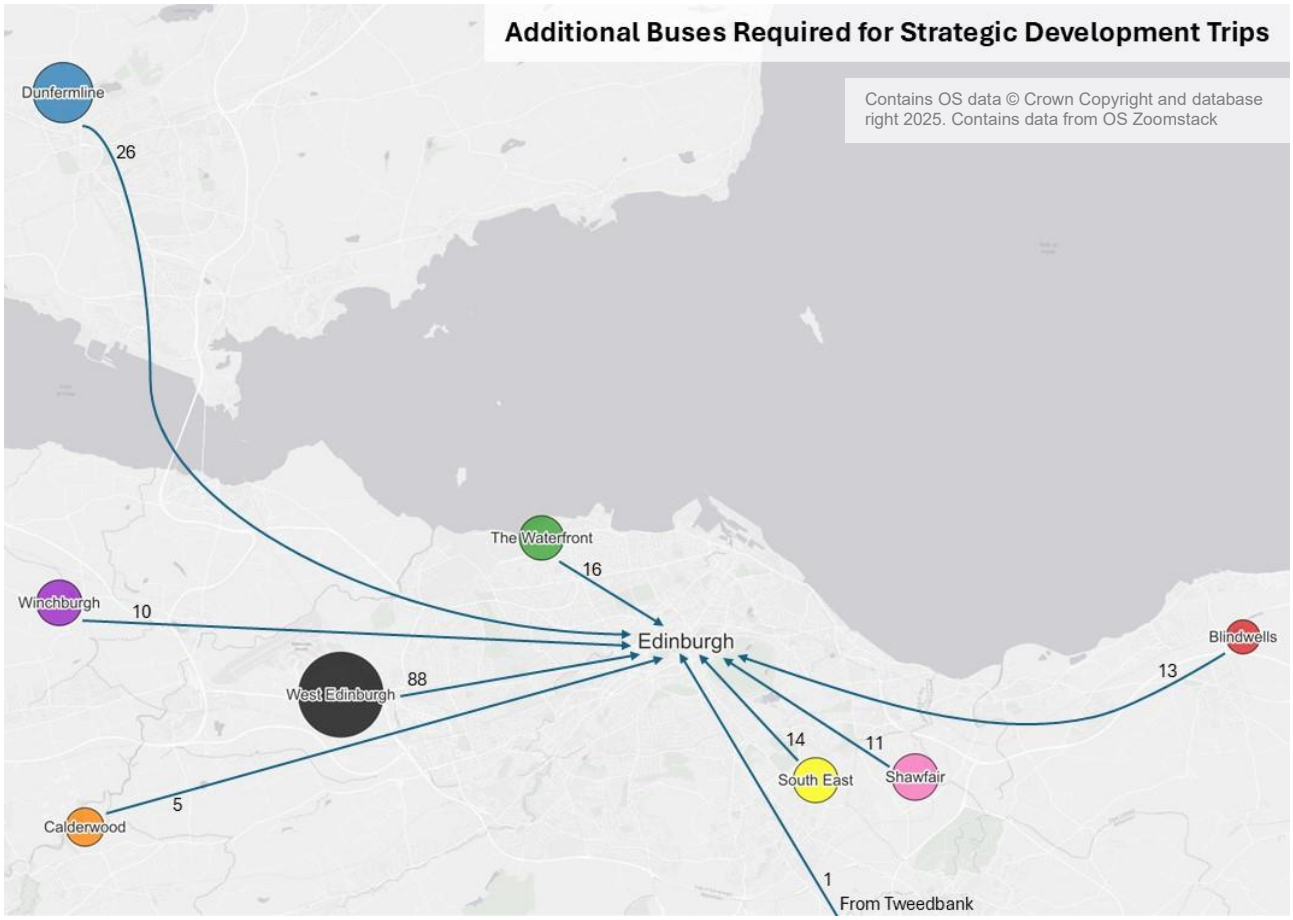


Table 2.3 outlines the number of buses needed to meet all development demand in the ESES region, based on the assumption that other elements of public transport capacity are not increased (i.e. no additional train or tram services provided).

Table 2.3: City Region Growth – Implication for Bus Provision

Element	Demand
New Homes by 2042	92,100
Occupancy based on the Edinburgh average of 2.11	194,300
Public transport share of trips (based on TA mode share assumptions)	24,600
Number of additional buses required (based on 80 passengers per bus)	308
Percentage increase from current Lothian Buses fleet (562 buses)	55%

As shown, if buses alone were to be used to accommodate the additional number of trips, it would necessitate an increase of over 300 vehicles. At a cost of £500,000 per vehicle this would require a total investment of over £150 million. Assuming annual operating costs per bus (including staff) of £250,000 results in increased operating costs of £75 million per annum.

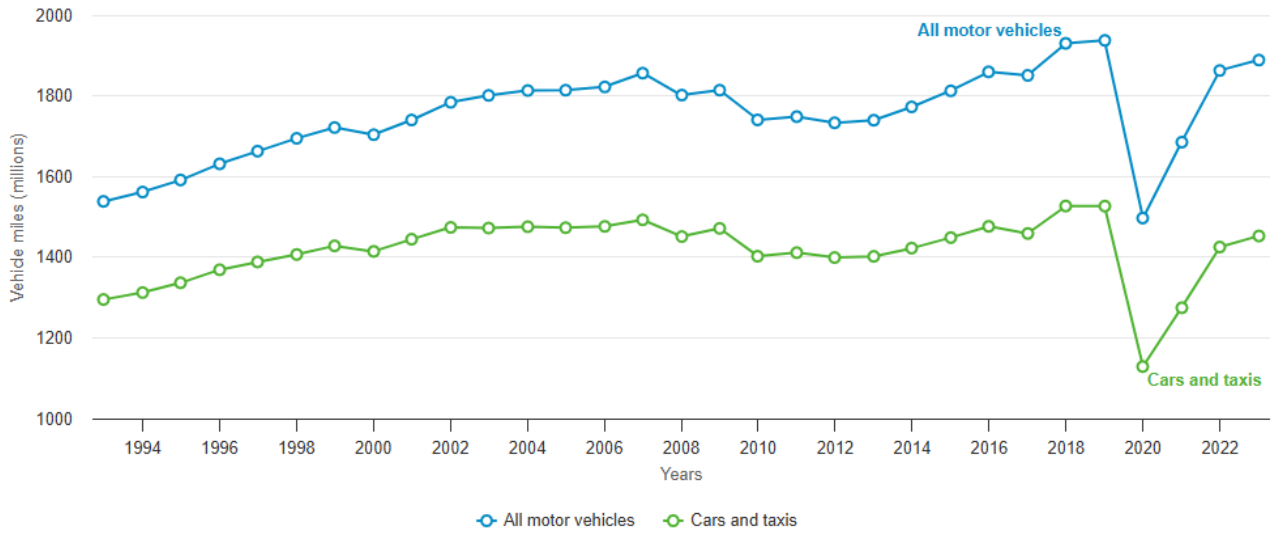
Over 34,000 trips in the peaks are anticipated from the major strategic development sites. If public transport is not delivered to match this, these people will have no option than to travel by private vehicle.

2.4 Additional 'Policy On' Impacts

The previous analysis takes no account of the City of Edinburgh Council's aim to reduce car kilometres by 30% by 2030. Even if it is accepted that the 2030 target is no longer achievable, this 30% reduction would equate to approximately 370,000 car trips per day, which is greater that the number of daily passengers that currently travel by bus in the city (approximately 300,000 per day on average).

Or to present this in another context, reducing the number of car kilometres by 30% would take private vehicle demand down below the levels experienced in 2020 during the height of the Covid-19 pandemic. Figure 2.6 shows the vehicle miles travelled in Edinburgh from 1993-2023 according to the Department for Transport. It indicates 1.89 billion vehicle miles were driven in Edinburgh in 2023, so a 30% reduction would be 1.32 billion miles annually.

Figure 2.6: Annual Vehicle Miles Travelled within Edinburgh 1993-2023



If the City of Council wanted to reduce car kilometres by 30% and cater for the additional public transport trips using bus only, the current number of buses on Edinburgh's streets would need to double. This does not include future growth forecasts.

2.5 Improving Public Transport Journey Times and Enhancing Connectivity

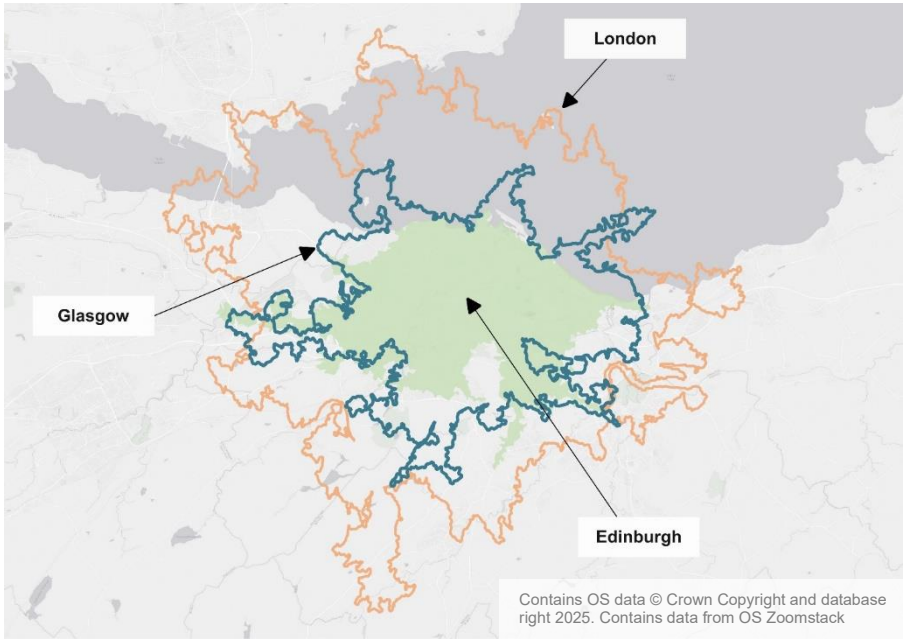
Mass transit has the potential to significantly improve journey times and connectivity. Table 2.4 and Figure 2.7 illustrate the current 45-minute journey time isochrone from Edinburgh, Glasgow and London city centres if travelling by public transport. The isochrone area for Glasgow is twice the size of Edinburgh and the isochrone size of London is 350% larger than Edinburgh, meaning residents of these cities have better access to significantly more opportunities and amenities (employment, education, heath, etc.) by public transport than Edinburgh residents.

Real-world journey times tell an even starker story. Typical weekday morning peak bus journey times from Portobello to Princes Street are approximately 50 minutes, a distance of 5.5km. In comparison, it also takes 50 minutes to travel from Stratford in east London to Heathrow, a distance of over 30km, with resulting major economic benefits.

Table 2.4: 45 Minute Isochrone Analysis

City	Isochrone Area – 45 mins (km2)	Max Travel Distance (km)
Edinburgh	104,872	17.6
Glasgow	204,480 (+95%)	40.5
London	471,927 (+350%)	25.9

Figure 2.7: 45 Minute Public Transport Isochrone Analysis



The parameters used are summarised below:

- London – includes bus, tube and DLR; maximum access distance of 1km; maximum interchange set to 3; Tuesday 08:00
- Glasgow – includes bus, rail and subway; maximum access distance of 1km; maximum interchange set to 1; Tuesday 08:00
- Edinburgh – includes bus and tram; maximum access distance of 1km; maximum interchange set to 1; Tuesday 08:00

Investment in mass transit provides an opportunity to provide a step-change in the city and region's economic competitiveness.

2.6 Summary

In summary, the Edinburgh city region is a key economic driver within Scotland and the UK. Its growth is essential for creating jobs, attracting investment, and enhancing the quality of life for residents. However, this growth must be carefully managed to ensure that infrastructure, services, and economic opportunity scale with demand. Therefore, high-quality infrastructure, including mass transit systems, is crucial for accommodating this growth and ensuring sustainable development. The region's strategic sites and interconnected growth with other towns and cities in Scotland further highlight its importance. By investing in infrastructure and planning for future growth, the ESES region can continue to thrive and contribute to national prosperity.

It is equally important to recognise that while trams have a significant role to play, they are not a one-size-fits-all solution. Trams should be utilised in the densest areas to maximise their value, while buses, including Bus Rapid Transit (BRT), can play an equally important role in serving other areas effectively.

3. Establishing the Case for Mass Transit

3.1 Introduction

The transport, planning and economic strategies of Edinburgh and the surrounding regions have developed over recent years, to recognise the need and opportunities for growth. Having a cohesive, sustainable, and inclusive mobility network is a core requirement for delivering strategic growth. This section of the report provides a historic summary of the different local and regional transport studies that have supported the need for the extension of the tram and the development of a regional mass transit network. These studies are:

- Edinburgh Strategic Sustainable Transport Study (ESSTS) Phase 1 (2019) and Phase 2 (2021),
- National Transport Strategy 2 (2020),
- National Planning Framework 4 (NPF4) (2020),
- Edinburgh City Mobility Plan (2021) and Update (2024),
- Strategic Transport Projects Review 2 (STPR2) (2022),
- SEStran Regional Transport Strategy (2023) and,
- City Mobility Plan Implementation Plan (2024).

The timeline of the seven studies and tram related outcomes are shown in Figure 3.1 below, with more detail on specific study objectives and key conclusions summarised in the following sub-sections.

Figure 3.1: Mass Transit Development Timeline

2019	2020	2020	2021	2022	2022	2023	2024
Edinburgh Strategic Sustainable Transport Study Phase 1	**National Transport Strategy 2**	**National Planning Framework 4**	**Edinburgh City Mobility Plan**	**Edinburgh Strategic Sustainable Transport Study Phase 2**	**Strategic Transport Projects Review 2**	**SEStran Regional Transport Strategy**	**Edinburgh City Mobility Plan Update and Implementation Plan**
Assessed high-capacity transit corridors, supported further tram extensions	Encouraged sustainable transport and public transport options	Supported delivery of mass transit systems for Edinburgh	Framed the tram network as central to a net-zero vision, committed to further extensions	Updated prior assessment, reinforced need for tram extension to Granton and BioQuarter	National review, supported tram and mass transit enhancements	Backed expansion of tram network and sustainable travel initiatives	Updated prior assessment and established timelines for delivery

3.2 Edinburgh Strategic Sustainable Transport Study (ESSTS) Phase 1 and Phase 2

Objectives:

Phase 1 (2019) and Phase 2 (2021) of ESSTS were commissioned to assess strategic public transport corridors in and around Edinburgh. ESSTS Phase 1 had a remit to examine strategic transport corridors within, and potentially beyond, Edinburgh to assess whether, and how, the development of transit-led solutions could deliver against stated transport objectives and support wider policy outcomes. Phase 2 of the study considered two strategic route options in greater detail with a focus on identifying key constraints and barriers to delivery, and options to mitigate these. A review of major structures and known utilities along each corridor was also undertaken.

Outcomes:

The ESSTS documents established a long-list and short-list of potential high-capacity transit corridors and assessed the viability of different modes. Crucially, the studies recognised the success of the original Edinburgh Trams route (York Place to the Airport) and supported further tram extensions as a core strategy

for sustainable transport. The Phase 2 report reinforced the need for extension of the tram network to support the future growth of the city, principally by improving mass transit provision between the city centre and Granton, in the north, and the BioQuarter and beyond in the South East. It also highlighted the potential benefits in improving connections to the west of the city beyond the airport.

The Edinburgh Strategic Sustainable Transport Studies laid the analytical groundwork for subsequent plans, confirming that tram expansion offered both environmental and economic benefits.

3.3 National Transport Strategy 2 (NTS2)

Objectives:

National Transport Strategy 2 (NTS2) was published in February 2020 and provides the national transport policy framework, setting out a clear vision of a sustainable, inclusive, safe and accessible transport system which helps deliver a healthier, fairer and more prosperous Scotland for communities, businesses and visitors. It sets out key priorities and outcomes to support that vision:

- Reduces inequalities
- Takes climate action
- Helps deliver inclusive economic growth
- Improves our health and wellbeing

Outcomes:

NTS2 sets out the Sustainable Travel Hierarchy that promotes walking, wheeling, cycling, public transport and shared transport options in preference to single occupancy private car use for the movement of people. It also outlines the Sustainable Investment Hierarchy to inform future investment decisions and ensure transport options that focus on reducing inequalities and the need to travel sustainably are prioritised.

The priorities and outcomes outlined in the NTS2 are very heavily geared towards the need to enhance sustainable forms of transport, and to encourage greater use of public transport options. All of this is positive in the context of improving mass transit provision in the Edinburgh and South East region.

3.4 National Planning Framework 4 (NPF4)

Objectives:

NPF4 is the national spatial strategy for Scotland. It sets out spatial principles, regional priorities, national developments and national planning policy. The strategy will support the delivery of sustainable places, liveable places and productive places.

Outcomes:

Every decision on future development must contribute to making Scotland a more sustainable place. NPF4 will encourage low and zero carbon design and energy efficiency, with development that is accessible by sustainable travel. Six national developments support the delivery of sustainable places, including urban mass rapid transit networks, helping reduce transport related emissions and supporting accessibility for all.

NPF4 supports the delivery of mass rapid transit systems for Edinburgh, through plans to extend the tram network, and for Glasgow (including the Clyde Metro) and wider multi-modal connectivity. Doing so provides an opportunity to substantially reduce levels of car-based commuting, congestion and emissions from transport at scale.

3.5 Strategic Transport Projects Review 2 (STPR2)

Objectives:

Led by Transport Scotland, STPR2 assessed the national infrastructure needs across the country, within the overall framework of the National Transport Strategy (NTS2), ensuring alignment with other national plans such as the Climate Change Plan and the fourth National Planning Framework (NPF4).

Outcomes:

STPR2 identified 45 strategic transport recommendations for the next 20 years, recognising the diverse needs of the population. Of particular relevance, it:

- Identified the development of an “Edinburgh and South East Scotland mass transit network” as a key recommendation (12).
- Explicitly supported tram and BRT options, including connections to the BioQuarter and other strategic development zones.
- Highlighted Edinburgh as a key region for investment in low-carbon, high-capacity transport systems.

The second Strategic Transport projects Review recognised the need and opportunities for expanding the mass transit in the Edinburgh and South East Region, including the extension of the tram network. This endorsement gave political and financial impetus to the tram extension proposals, aligning them with wider Scottish Government priorities.

3.6 SEStran Regional Transport Strategy (RTS)

Objectives:

The Regional Transport Strategy (RTS) set out with the vision to create a transport system that is accessible, affordable, and environmentally sustainable. The strategy recognised the importance of providing high quality transport connections to facilitate growth across the region, particular in the context of the seven strategic development sites.

Outcomes:

The RTS sets a direction of travel and a policy environment in which individual projects should be progressed. In doing so it identified two main themes as part of the spatial strategy:

- Theme 1 - Reducing car km and car mode share which has been the focus of the above sections, and
- Theme 2 - Better connecting communities affected by deprivation to a wider range of opportunities.

The RTS, outlined a comprehensive vision for sustainable, inclusive, and integrated transport across Edinburgh and its surrounding areas. This strategy is particularly pertinent in the context of proposed expansions to Edinburgh's tram network, as it recognises the important role it places in enhancing regional connections.

3.7 Edinburgh City Mobility Plan and Update

Objectives:

Replacing the earlier Local Transport Strategy, the City Mobility Plan (CMP) was a transformational 10-year vision aimed at rethinking the city's approach to transport. Key objectives are:

- People - To improve health, wellbeing, equality and inclusion
- Movement - To support inclusive and sustainable economic growth and respond to climate change: and
- Place - To protect and enhance our environment

Outcomes:

The City Mobility Plan's aim for 2030 is a city transformed. The vision is that the mass transit network, including tram, will have been extended to connect the Waterfront in the north to the Edinburgh Royal Infirmary in the south and beyond. The city region's seven Park & Ride facilities will be upgraded to support fast and frequent public transport along strategic bus lanes and mass rapid transit routes travel from these interchanges into the city. Additional regional interchanges will be developed to support a wider regional strategy. This will give people travelling to the city a better choice to leave their cars at multi-modal journey hubs and travel around the city on a fast, efficient public transport network.

The City Mobility Plan has framed the extension of the tram network in the broader context of integrated planning, combining transport, housing, and land use policies.

3.8 City Mobility Implementation Plan

Objectives:

The City Mobility Implementation Plan detailed the specific measures the City of Edinburgh Council would take to improve services in Edinburgh to 2030 and beyond. Its goals included:

- Enhancing reliability and coverage of public transport.
- Integrating ticketing and information systems.
- Supporting long-term tram development and prioritisation.

Outcomes:

The plan identified six transport focused themes in which to frame the individual actions. These included the need to "Deliver a reliable and efficient network to support growth", and "Enhancing regional connectivity". The extension of the tram network would play a major part in delivering against both of these. The plan outlined the commitment to work with partners to complete the feasibility and business cases for tram extensions to Granton and the South East by the mid-2020s. In doing so it recognised the need to protect potential corridors for future tram and BRT development. It also provided clearer timelines and interim targets for progressing tram-related projects, showing a maturing shift from vision to implementation.

The City Mobility Implemenrtation Plan re-affirmed the commitment from The City of Edinburgh Council to prioritise the completion of the Business Case for the extension of the tram network within the city and providing regional connections to East Lothian and Midlothian.

3.9 Strategic Policy Context

A summary of the strategic policy context is given in Technical Note 4, The Strategic Rationale for Tram to Granton, BioQuarter and Beyond.

3.10 Summary

Taken together, these seven documents reveal a consistent and escalating commitment to the tram system as a vital element of Edinburgh's sustainable transport future. The vision laid out in the ESSTS was reinforced and expanded by subsequent plans, with the tram not only seen as a transport solution but also as a catalyst for economic development, land regeneration, and decarbonisation. The opening of the Newhaven extension in 2023 marks a key milestone, and further expansions — particularly to Granton and the BioQuarter — now benefit from strategic, technical, and political alignment. With continued investment and stakeholder coordination, Edinburgh's tram network is set to play an increasingly central role in shaping a greener, more accessible city.

4. Developing the South East Scotland Mass Transit Network

4.1 The Role of Mass Transit

One of the central pillars of the region's infrastructure strategy is the ESES mass transit system, as recommended in the STPR2. A mass transit system for the region would provide more public transport options for cross-boundary travel, reducing the need to make unnecessary changes between services, leading to lower journey times. This would improve region-wide connectivity and encourage a switch from car to public transport and other more sustainable travel options. The system would include cross-boundary routes along key corridors within and around Edinburgh, as the main population and economic area of the region. The primary purpose would be to facilitate end-to-end sustainable transport journeys. The introduction of new regional interchanges would also form part of the mass transit system.

The system would focus on key corridors of demand as well as where congestion impacts on bus services and where public transport is more limited, including targeting more disadvantaged areas where there is greater dependence on public transport. This would increase travel choices to access employment, education, healthcare and other services and help to address inequalities. Improved public transport would also reduce the need to travel unsustainably and contribute to targets for lower emissions and the reduction in car vehicle-kilometres travelled, as well as placemaking.

Trams are a key element of Edinburgh's current and future transport strategy. The recent extension to Newhaven has demonstrated the mode's capacity as a catalyst for regeneration and increased public transport uptake. In the context of the ESES mass transit system, trams will continue to serve dense urban areas and development zones. Trams can also play a vital role in accommodating city trips within the wider city region. By creating high-quality transport interchanges with the heavy rail network, at Waverley, Haymarket, and potentially Shawfair / Newcraighall / Musselburgh, they support enhanced regional connectivity. They will offer a reliable and efficient mode of transport for short to medium-distance journeys, reducing the reliance on private vehicles and contributing to a more sustainable urban environment. The expansion of the tram network is therefore essential for meeting the growing demand for public transportation and supporting the region's economic and population growth.

An extended tram network is also not in competition with bus services but complements them. The bus industry is currently suffering from a shortage of drivers and long manufacturing times for delivery of new buses, with operators struggling to meet existing demand let alone future development needs. Any corridors served by tram would not require as many buses, enabling them to be redeployed elsewhere on the network.

Figure 4.1 below shows the extent of the existing and proposed extension of the tram network.

Figure 4.2 illustrates how Edinburgh's extended tram network forms part of an integrated mass transit system including rail and BRT, with transport hubs on all major corridors into the city in prime locations such as Ferry Toll, Newbridge, Gowkley Moss, Shawfair and Queen Margaret University.

Figure 4.3 shows how a combination of tram, BRT and orbital bus can help encourage the delivery of major development sites across East Lothian, Midlothian and Edinburgh.

Figure 4.1: Edinburgh's Future Tram Network

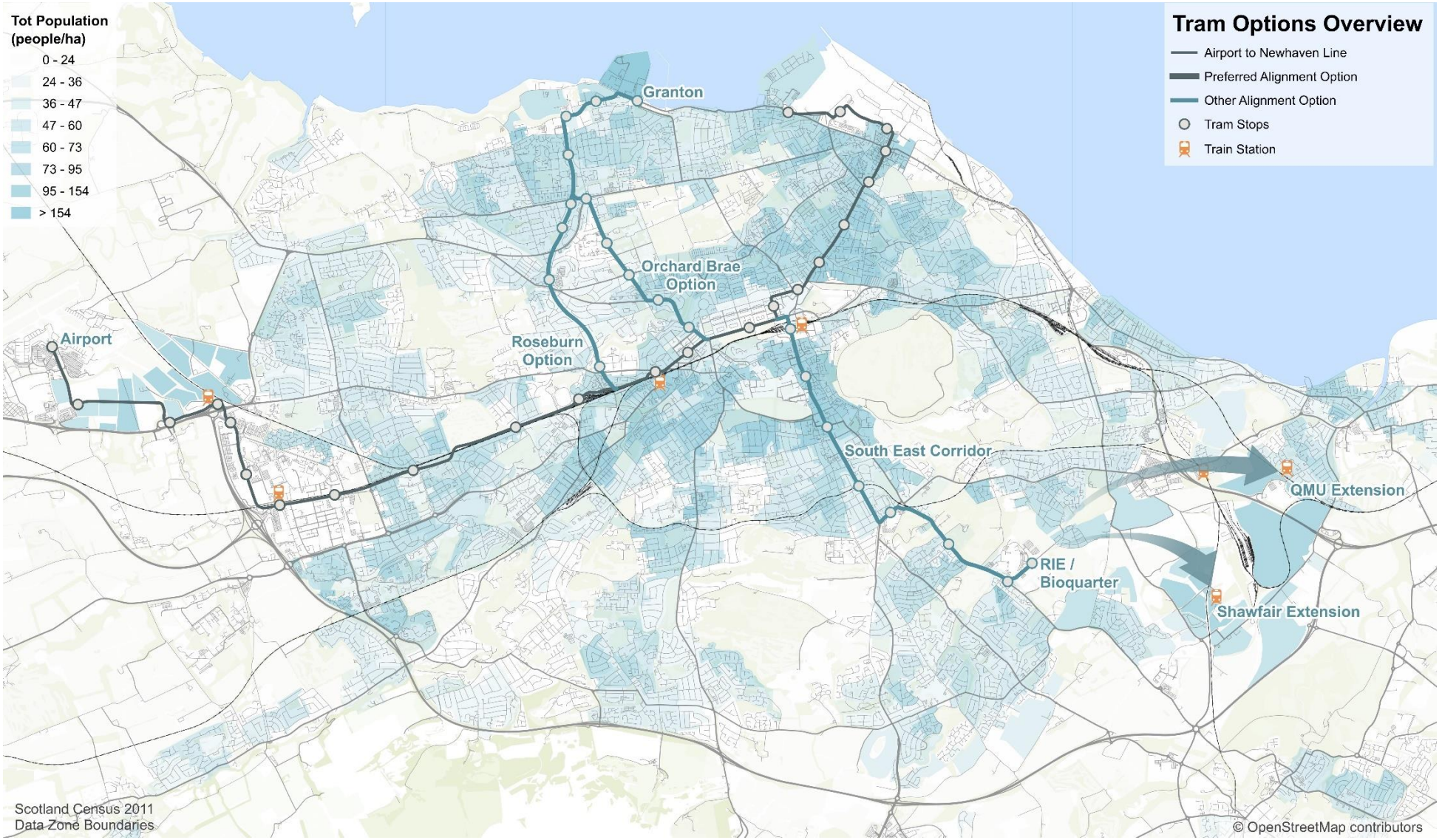


Figure 4.2: Potential Edinburgh and South East Scotland Mass Transit Network

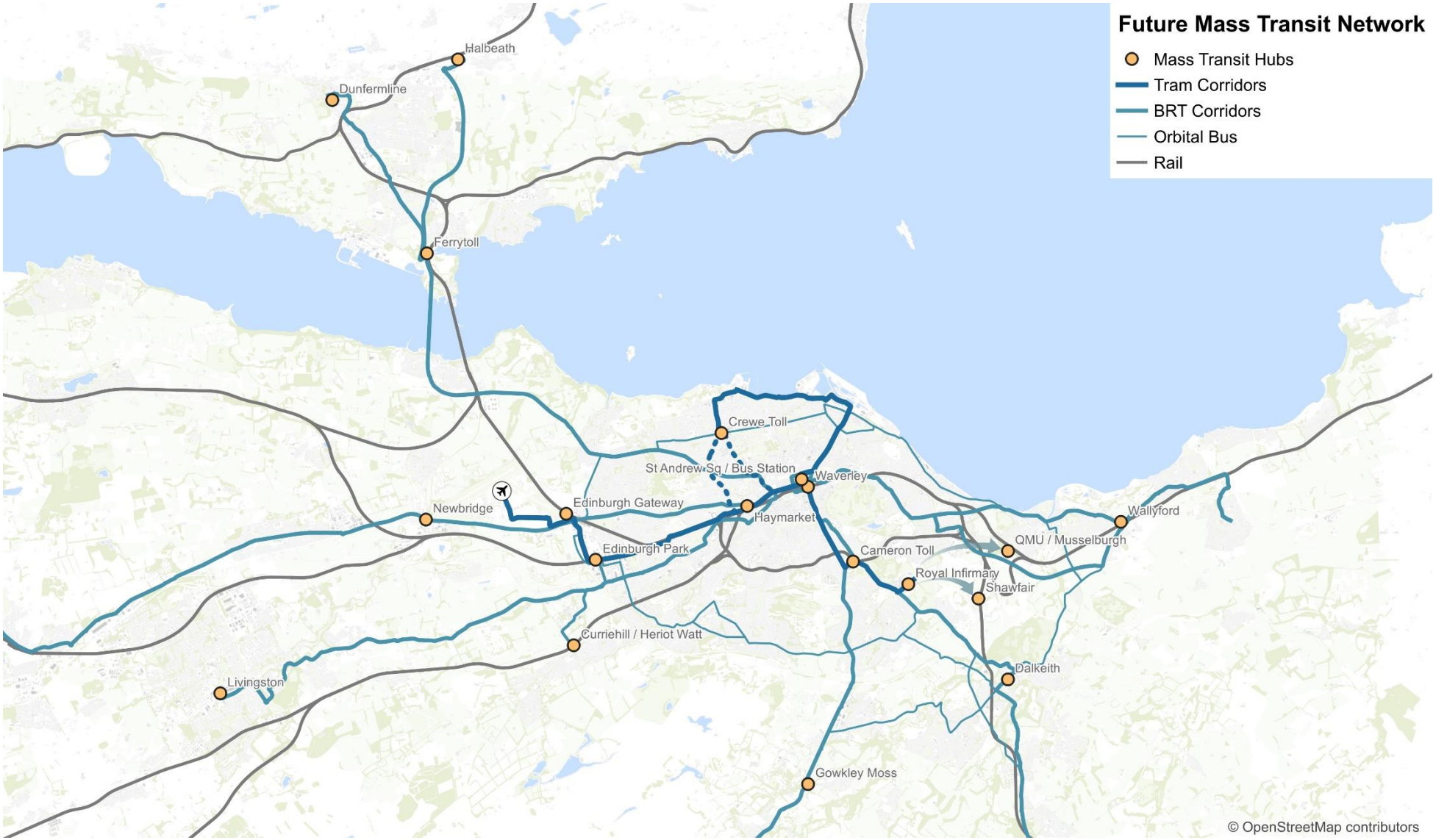
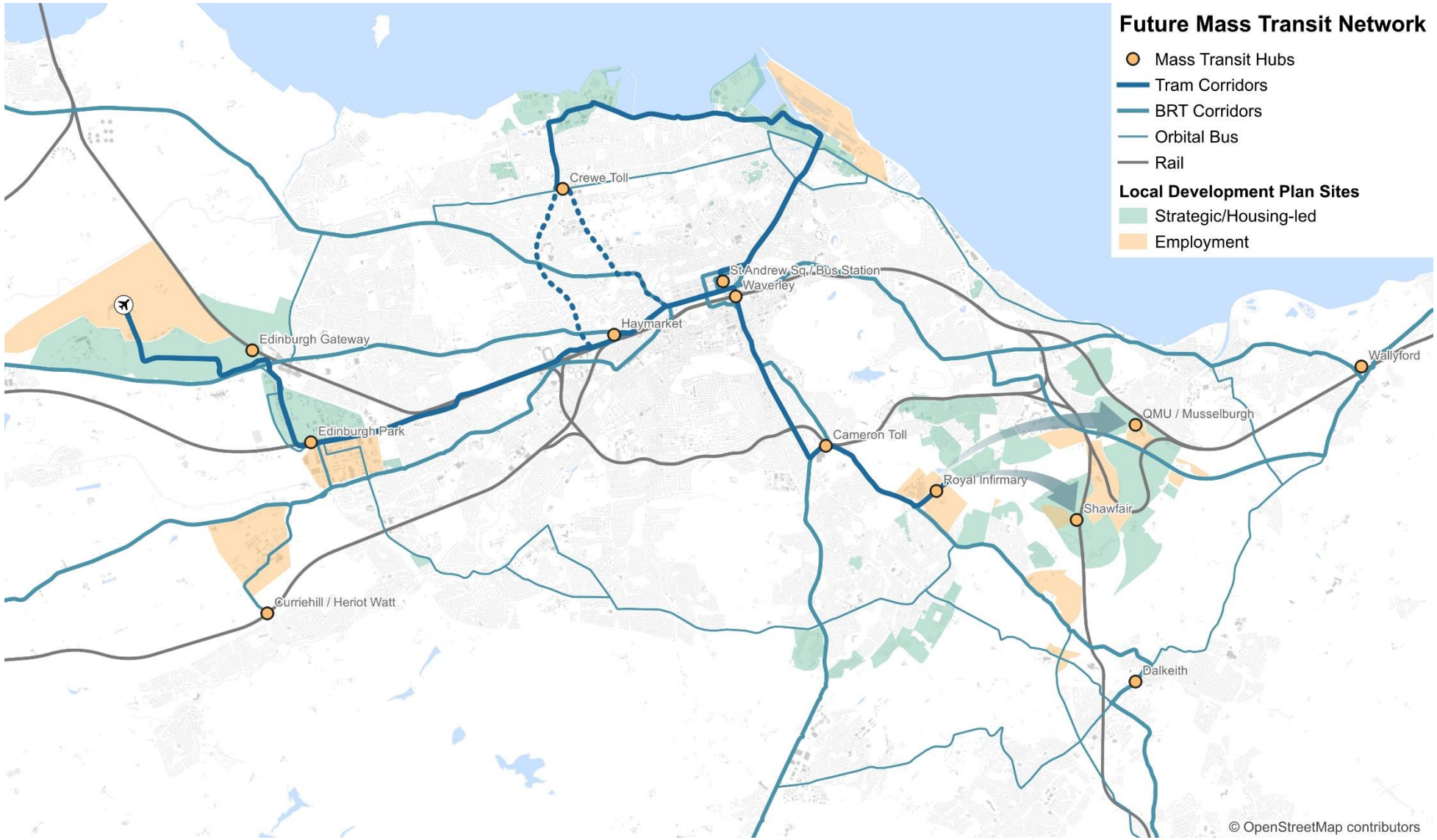


Figure 4.3: Potential South East Scotland Mass Transit Network Connecting Major Future Development Sites



4.2 Delivering Components of the Mass Transit System

As outlined above, one of the most significant recommendations from the STPR2 was to develop and enhance the cross-boundary public transport system for the ESES region, potentially comprising tram and bus-based transit modes including BRT and bus priority measures. Whilst the expansion of the existing tram network is a key component of this recommendation, it is essential to recognise that the ultimate success of the wider network will rely on the introduction of various other interventions.

Significant progress has been made against many of the interventions since the publication of the STPR2 Final Report in December 2022, as outlined in Table 4.1 below.

Table 4.1: Developing the South East Scotland Mass Transit Network

Interventions	Comment	Current Status / Progress
Bus Priority Rapid Deployment Fund	Post Covid bus priority improvements	Completed 2023
Trams to Newhaven	Opened June 2023	Timetable and service frequency improvements being explored
Levenmouth Rail Link	Opened June 2024	May 2025 timetable improvement
Bus Network Enhancements	Refinement of Lothian City, Lothian Country and East Coast services to provide limited stop faster 'outer' services	Improvements have delivered Significant passenger increases across regional services. Service 43 patronage has grown by 70% since 2017
	Electrification of Lothian Buses fleet	Approximately 50 of 98 vehicle order delivered
	Stagecoach frequency and service improve from and to Fife	Ongoing
	Borders Buses improvements from the Scottish Borders and East Lothian	Ongoing
Enhanced Bus Infrastructure	New RTPI system, improved bus stops and information, new Barnton Queue Relocation system	Ongoing
	7/7/7 bus lanes	Ongoing
West Edinburgh Transport Improvement Programme	OBC complete, detailed design ongoing	Ongoing
Haymarket – Dalmeny Electrification	First stage of Fife Electrification	Ongoing
Regional Hubs and Interchanges	Park & Ride / Choose between all modes, radial and orbital movements	Ongoing

Multiple public transport priority projects have been, or are in the process of being, delivered in the ESES region, with many considered 'quick wins' or able to be rolled out in stages over time. However, the significant time and cost involved in expanding the tram network means there is a need to progress tram proposals now so there are limited gaps in the future mass transit network resulting in an unoptimised system or delays to the strategic development sites.

4.3 Mass Transit: Addressing ESES Regions' Problems and Opportunities

In Section 2 of the report, several problems and opportunities for the ESES region were identified. In broad terms these were:

- Population and economic growth
- Environmental concerns and the reliance on private vehicles
- Reducing inequalities and improving social inclusion

4.3.1 Growth

A key concern for the ESES region is the scale of housing growth and the additional trips this will generate. For example, previous analysis in the report highlighted a minimum of 107 buses would be required to cater for the travel demand associated with the major strategic sites alone. As a result, the heavy rail network

needs to be capable of providing a high-quality public transport option for those sites farther from Edinburgh city centre.

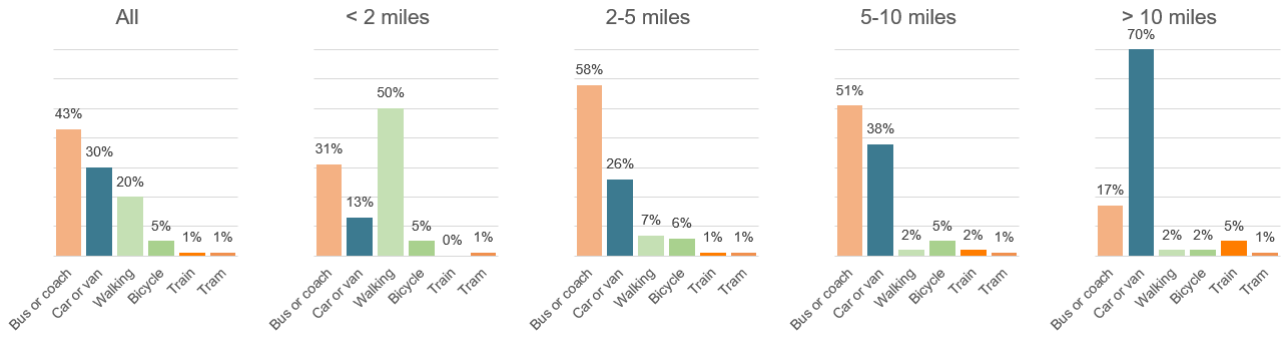
Looking at the situation within and close to the city boundary, the tram will continue to play a critical role in catering for public transport demand. With the passenger capacity more than three times that of a double decker bus (approx. 250 vs 80) and due to the extensive levels of on-street priority given to them, it allows the trams to be able to operate at higher frequencies, increasing capacity further. In particular, the proposed tram extensions to the north and south east would directly serve the Granton Waterfront and South East development sites, with Shawfair being a realistic opportunity also. Analysis indicated these three sites require 33 additional buses in total. Tram has the capacity to replace the need for these buses, allowing the fleet to be redeployed elsewhere on the network, saving time and cost associated with manufacturing new vehicles.

4.3.2 Reducing the Reliance on Private Vehicles

A citywide travel survey was undertaken in 2019 (pre completion of Trams to Newhaven) gathering information on people's travel choices to work and education. Figure 4.4 separates transport mode based on distance travelled with key statistics from this summarised below.

- Approximately 43% of all travel to work / education journeys across the city are by bus or coach.
- For journeys less than 2 miles 50% of trips are on foot but walking only accounts for 7% of the total for distances of 2-5 miles, and less as distance increases.
- Bus journeys account for 31% of trips less than 2 miles, 58% of trips between 2 and 5 miles and 51% of trips between 5 and 10 miles. For longer distances, car dominates with a 70% mode share.

Figure 4.4: Mode Share by Distance (travel to work/education)



The mass transit network proposals for the ESES region have been designed to specifically address the high car modes shares for longer distance trips through faster journey times, improved reliability and better opportunities for interchange at transport hubs. Analysis of the survey demonstrates there is a willingness to use public transport (as noted by bus having the highest mode share at distances to 2-5 miles) but bus becomes less attractive at greater distances due to less competitive journey times compared to private vehicle. High-quality mass transit can reduce, or potentially eliminate, the gap between travel time by car and public transport to encourage uptake.

The transport hubs alongside additional parking restraints across Edinburgh (including extended Controlled Parking Zone areas and parking levies) could help reduce the level of in-commuting by private vehicle to Edinburgh, further encouraging mode shift to sustainable modes and reduced carbon emissions.

Mass transit also provides a new mode choice for those who may have a negative perception of travelling on a standard bus service. And for this reason, uptake in mass transit is anticipated to be particularly high in the regions that do not have an existing heavy rail network, i.e. within Edinburgh and interchange from Midlothian and the Scottish Borders.

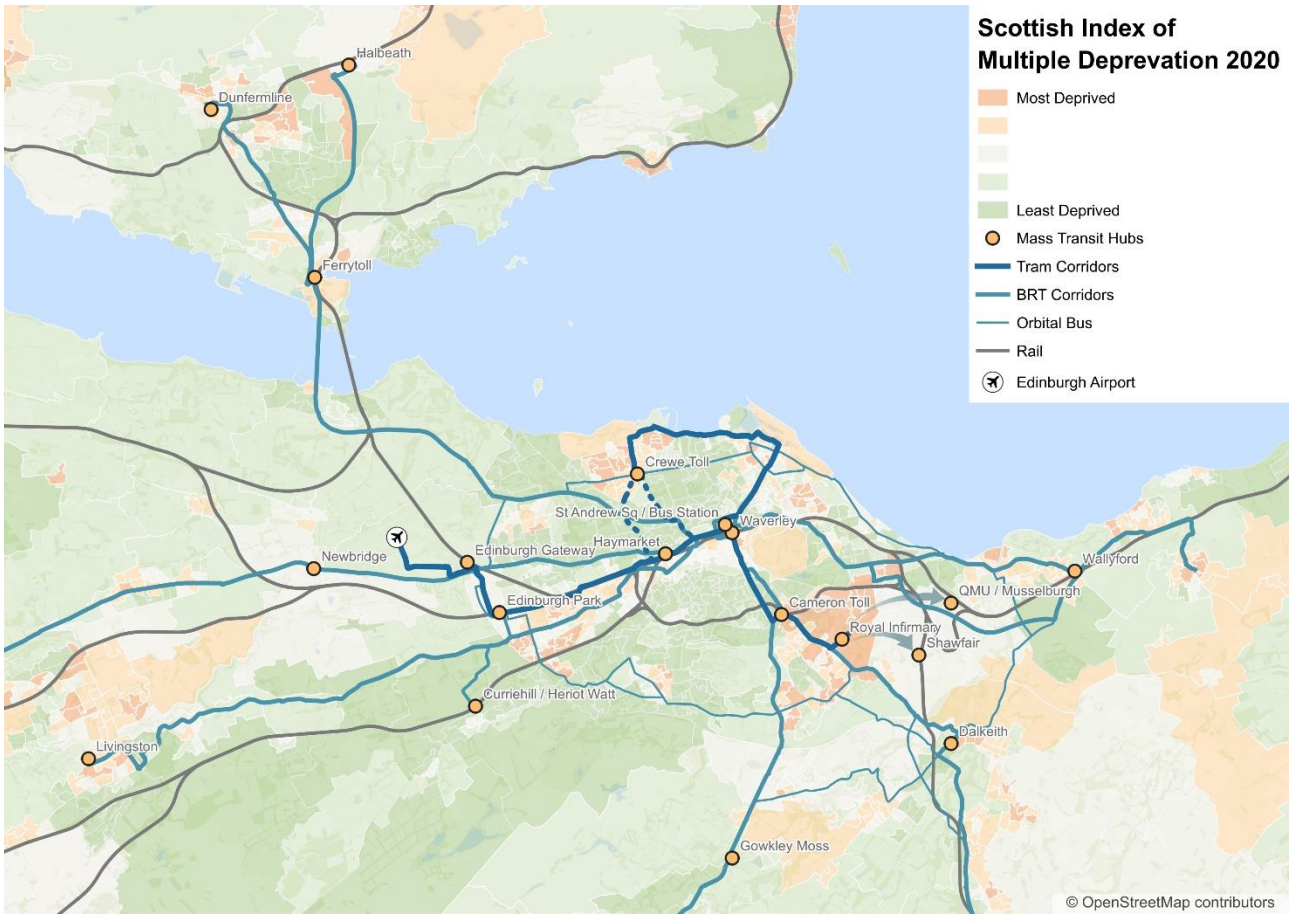
4.3.3 Access and Services for All

The mass transit network proposals link into the major strategic development sites and other large population densities throughout the ESES region to maximise the public transport potential, and are further

strengthened by greater connectivity at transport hubs. In addition to these linkages, the mass transit network aims to enhance people's lives by making it easier, quicker and more affordable to access employment, education, key amenities and recreational activities. Public transport is most effective at achieving this when serving the most deprived areas of our communities.

Figure 4.5 below shows the proposed ESES mass transit network overlaid on top of the Scottish Index of Multiple Deprivation (SIMD) with the lowest 20 percentile (most deprived) highlighted in red.

Figure 4.5: SIMD / ESES Mass Transit Network

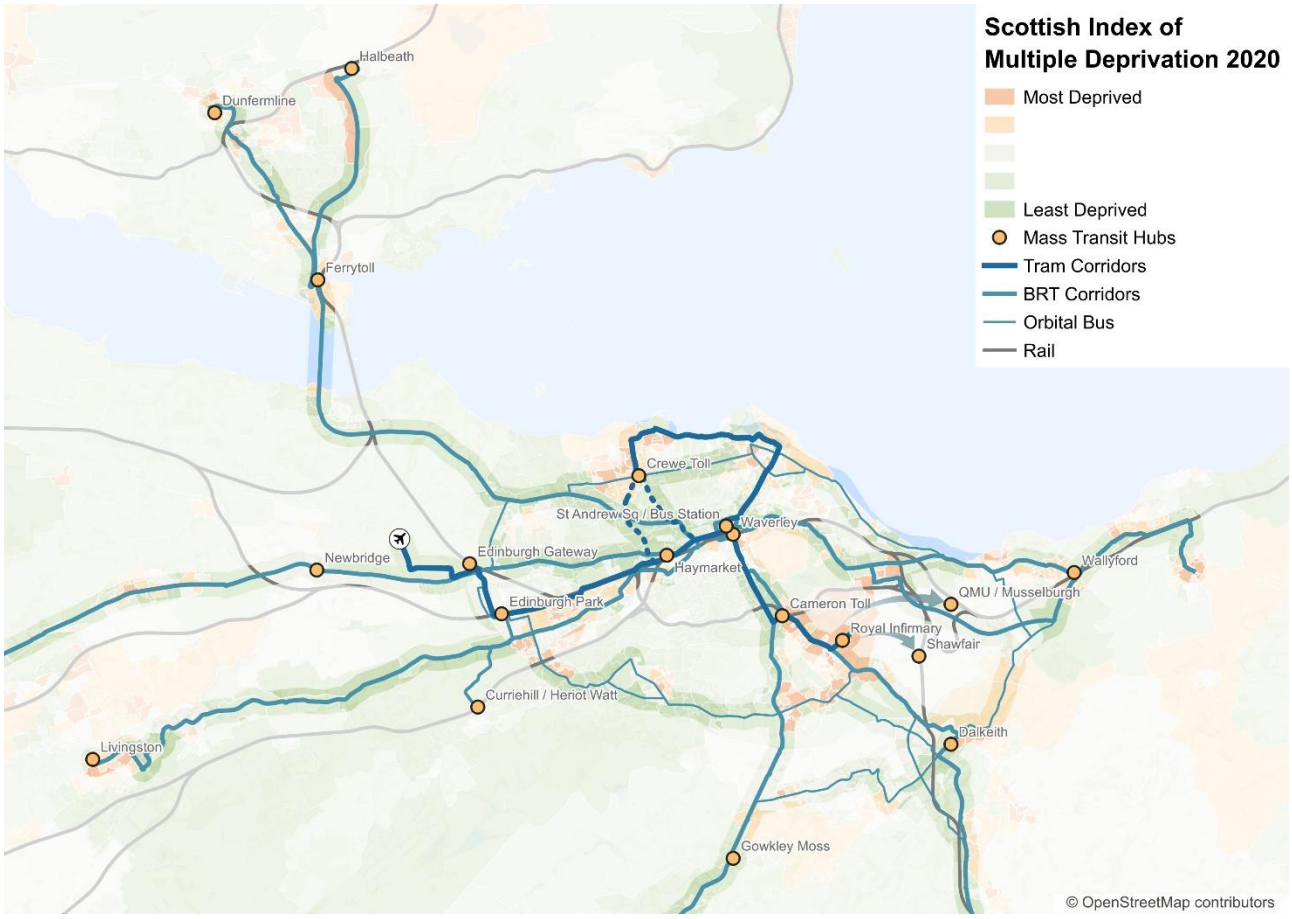


The same image with a 400m buffer around the mass transit network, to indicate a comfortable walking distance to the services, is shown overleaf in Figure 4.6 and demonstrates how the proposed network links into several of the more deprived areas in Fife, West Lothian, East Lothian and within Edinburgh.

The introduction of new mass transit links in the regions surrounding Edinburgh would improve access to employment, education, health, and leisure facilities from deprived communities and disadvantaged households, resulting in enhanced social mobility.

Previous analysis has highlighted the ESES region's reliance on travel by private vehicle for longer distance trips, with a key reason for this due to a lack of travel choices and uncompetitive journeys times. The Park & Rode sites and multi-modal hubs will make it easier to interchange and, alongside the improved public transport provision, will reduce the need to commute by private vehicle to Edinburgh. The mode shift to public transport will result in fewer vehicle kilometres travelled, improved air quality and positive health impacts.

Figure 4.6: SIMD / ESES Mass Transit Network (400m buffer)



The proposed tram extensions directly serve two of the largest SIMD most deprived areas in Edinburgh (Granton and Craigmillar), as shown below in Figure 4.7 with a highlighted 400m buffer around the tram route to indicate a comfortable walking distance to the service.

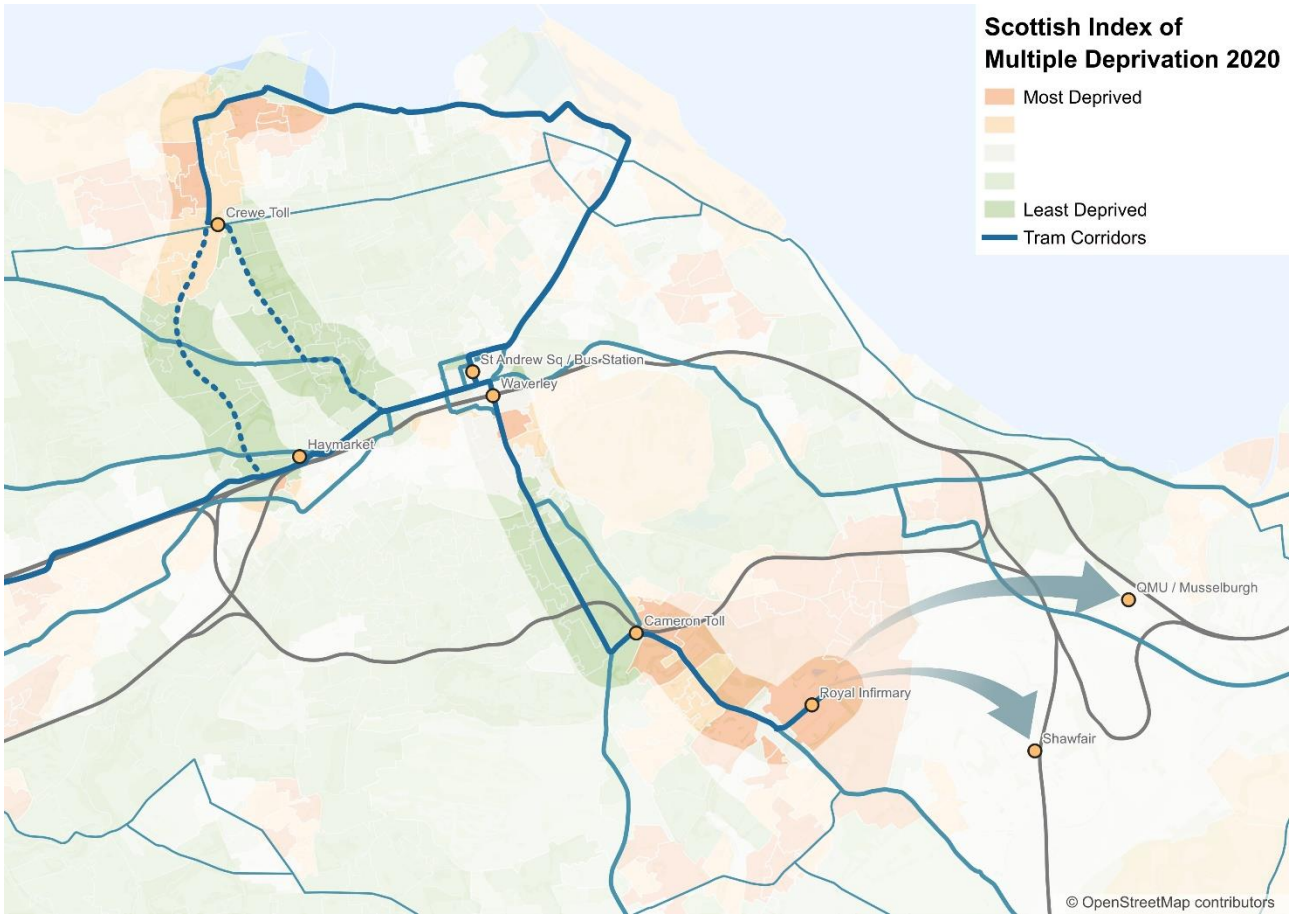
These locations suffer from relatively poor public transport accessibility, with a reliance on bus. Tram fares would be the same as for bus and so affordable, particularly for longer distance/cross-city movements which are charged at a flat fare. Tram would be fully integrated with ticketing and travel card products, helping deliver greater social mobility.

The tram will help address the inequalities in the highlighted areas with the people living within the direct catchment of the tram corridor gaining increased travel choices to access employment, education, healthcare and other services. The improved public transport provision would also contribute to targets for lower emissions by reducing the need to travel unsustainably and being less reliant on private vehicles.

The major investment in tram will also allow the planned development build out to be delivered at higher densities. While greenspaces will be enhanced along the corridor to encourage walking/wheeling, cycling and recreational activities, all contributing to improving people's health and wellbeing.

Young people could gain significant benefits from improved open spaces and more affordable access to leisure facilities. While tram being electric/battery powered will reduce tailpipe emissions, improve air quality and reduce greenhouse gas emissions, a specific benefit for children as they are more vulnerable to the adverse health effects of traffic pollution.

Figure 4.7: SIMD / Edinburgh's Future Tram Network (400m buffer)



5. Summary

5.1 Summary

The Edinburgh and the South East Scotland region is about to embark a period of rapid growth. The level of growth forecast will allow the region to continue to deliver its significant economic contribution to Scotland's GDP and ability to attract investment in its jobs market and international tourism in the long-term.

However, this growth cannot be delivered with the current level of transport infrastructure, particularly when set within the context highlighted in this report:

- Edinburgh, West, Mid and East Lothian are four of Scotland's top five fastest growing regions.
- By 2042 the population growth estimate for the ESES region is almost the equivalent of Aberdeen.
- Over 100 new buses, at an estimated cost of £50,000,000, would be needed to meet the demand for the major strategic development sites.
- If all developments are considered, and there is no investment in public transport (e.g. no rail or tram capacity expansion) then over 300 new buses would be needed – a 55% increase on Lothian Buses' existing fleet.
- Edinburgh is facing a climate emergency with vehicles the number one contributor of greenhouse gas emissions. To meet a target of 30% reduction in vehicle kilometres, the number of trips displaced from private vehicle to bus would require the number of buses on Edinburgh's streets to double.
- Edinburgh falls below other major UK and international cities in terms of mass transit provision, meaning people take longer to travel shorter distances and have reduced access to employment, education, healthcare and other amenities.

The ESES region therefore needs a step change in public transport provision and an integrated network that will help deliver the forecast growth opportunity and address the issues identified. A mass transit solution has been recommended as part of multiple studies at a national, regional and local level. A key reason for this recommendation is that an integrated mass transit network would meet crucial policy objectives to reduce emissions, prioritise sustainable transport modes, improve health & wellbeing and reduce inequalities. Importantly, it would also act as a catalyst for economic development, land regeneration and decarbonisation.

The proposed mass transit network would include tram and BRT on cross-boundary routes along key corridors within and around Edinburgh to facilitate end-to-end sustainable transport journeys. New regional transport hubs would be constructed to encourage interchange and promote public transport as the dominate mode in the region.

The mass transit network also focuses on areas of current and future high demand as well as where public transport is more limited, including targeting more disadvantaged areas where there is greater dependence on public transport. This increases travel choices for people to access employment, education, healthcare and other services and help to address inequalities. Improved public transport would also reduce the need to travel unsustainably and contribute to targets for lower emissions and the reduction in car vehicle-kilometres travelled.

Business and housing developments served by mass transit could be built out at higher densities and along the corridors served by tram, enhanced placemaking in the form of parks, greenspaces and footways would be implemented to promote walking/wheeling, cycling and other recreational activities. All contributing to improving people's health and wellbeing.

Extension of the tram network is only one element of the ESES mass transit system, with several interventions being delivered now, including: Bus Partnership Fund; Levenmouth Rail Link; West Edinburgh Transport Improvement Programme and development of regional transport hubs and interchanges. Due to the long lead in times for tram it is important that tram proposals are progressed in order to maximise the potential of the mass transit network and realise the associated benefits identified.