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# East Lothian Access Study STAG Appraisal

## Case for Change Report



On behalf of **East Lothian Council**



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## Contents

<b>Executive Summary .....</b>	<b>1</b>
<b>1 Introduction .....</b>	<b>5</b>
1.1 Scope of Study .....	5
1.2 Study Context .....	6
1.3 Socio-Economic Landscape .....	7
1.4 Summary .....	11
<b>2 Current Transport Network .....</b>	<b>12</b>
2.1 Strategic Transport Links .....	12
2.2 Road Network & Current Issues .....	13
2.3 Rail Network & Current Issues .....	14
2.4 Bus Network & Current Issues .....	24
2.5 Journey Time Comparisons .....	28
2.6 Active Travel .....	29
2.7 Summary .....	31
<b>3 Current Transport Demand and Travel Patterns .....</b>	<b>33</b>
3.1 Travel To Work Summary .....	33
3.2 Travel To Edinburgh .....	36
3.3 Public Consultation Findings .....	39
3.4 Summary .....	40
<b>4 Planned Land-use Development .....</b>	<b>42</b>
4.1 Introduction .....	42
4.2 Overview of Development Related Transport Issues .....	43
4.3 Dunbar .....	56
4.4 North Berwick .....	57
4.5 Haddington .....	57
4.6 Blindwells .....	60
4.7 Longniddry, Cockenzie & Prestonpans .....	69
4.8 Tranent .....	73
4.9 Musselburgh & Wallyford .....	74
4.10 Edinburgh & The West .....	76
4.11 Summary .....	77
<b>5 Problems, Issues, Constraints &amp; Opportunities .....</b>	<b>79</b>
5.1 Introduction .....	79
5.2 Public Transport .....	79
5.3 Road .....	80
5.4 Land-use Developments .....	81
5.5 Socio-Economic .....	81
5.6 Active Travel .....	82

5.7	Environment .....	82
5.8	Summary .....	82
<b>6</b>	<b>Transport Planning Objectives .....</b>	<b>84</b>
6.1	Defining Transport Planning Objectives .....	84
6.2	Consistency With Problems, Issues, Constraints and Opportunities .....	84
6.3	Summary .....	86
<b>7</b>	<b>Option Generation, Sifting &amp; Development .....</b>	<b>87</b>
7.1	Introduction .....	87
7.2	Public Transport Options .....	87
7.3	Active Travel Options .....	94
7.4	Road Options .....	94
7.5	Summary .....	95
<b>8</b>	<b>Next Steps .....</b>	<b>96</b>
8.1	The Case for Change .....	96
8.2	Initial Appraisal .....	98

## Figures

Figure 1.1	Extent of Study Area .....	5
Figure 1.2	Current and Projected Population in East Lothian 2016 - 2041 .....	7
Figure 1.3	Local Authorities with Largest Projected Population Change (Percentage) 2016 - 2041 .....	8
Figure 1.4	Local Authorities with Largest Projected Population Change 2016 - 2041 .....	8
Figure 1.5	Projected Population Change in East Lothian by Age Group (Percentage) 2016 – 2041 .....	8
Figure 1.6	Employment by Industry Sector (% of total) 2017 .....	9
Figure 1.7	Highest Qualification Achieved (% of Population Aged 16 or over) 2011 .....	10
Figure 1.8	Jobs Density by Local Authority 2017 (Ratio of Total Jobs to Working Age Population) ....	10
Figure 1.9	Residents of East Lothian Working Outside of the Local Authority Area (%) .....	11
Figure 2.1	East Lothian Strategic Transport Network .....	12
Figure 2.2	Main Problems With Transport Serving East Lothian (% of Total Respondents) .....	13
Figure 2.3	2012 'Base Case' Network Performance – AM Peak Hour .....	13
Figure 2.4	2012 'Base Case' Network Performance – PM Peak Hour .....	14
Figure 2.5	Main Problems Faced On The Road Network (% of Total Respondents) .....	14
Figure 2.6	Stations with Park and Ride Capacity and Maximum Train Length .....	15
Figure 2.7	Passengers at East Lothian Stations (2013/14 to 2017/18) .....	17
Figure 2.8	% Occupancy At Park And Ride Car Parks By Time Period (0600 – 2000) .....	21
Figure 2.9	Main Problems Faced When Travelling By Rail (% of Total Respondents) .....	24
Figure 2.10	Rail Improvements Which Would Offer Greatest Impact (% of Total Respondents) .....	24
Figure 2.11	Current Bus Routes in East Lothian .....	25
Figure 2.12	Total Buses Per Hour – AM Peak Period (0700 – 1000) .....	26
Figure 2.13	Combined Hourly Bus Service Frequency At Stops – AM Peak Period (0700 – 1000) .....	27
Figure 2.14	Main Reasons For Not Travelling By Bus (% of Total Respondents) .....	27
Figure 2.15	Bus Improvements Which Would Offer Greatest Impact (% of Total Respondents) .....	27
Figure 2.16	Journey Time To Edinburgh City Centre in AM Peak & Off Peak – Car vs Bus vs Train ..	28
Figure 2.17	Existing Core Path Network and Proposed Active Travel Corridor .....	30
Figure 2.18	Existing National Cycle Network and Proposed Active Travel Corridor .....	30
Figure 2.19	Main Reasons For Not Travelling By Walking And Cycling (% of Total Respondents) .....	31
Figure 3.1	Census Travel To Work Total Flows .....	33
Figure 3.2	Census Travel To Work Origins and Destinations .....	34
Figure 3.3	Distance Travelled To Work .....	34

Figure 3.4 Travel To Work Mode Share By East Lothian Sector – All Destinations (%) .....	35
Figure 3.5 Car Ownership By East Lothian Sector .....	35
Figure 3.6 Musselburgh & Wallyford Travel To Edinburgh .....	36
Figure 3.7 Tranent Travel To Edinburgh .....	37
Figure 3.8 Prestonpans & Port Seton Travel To Edinburgh .....	37
Figure 3.9 Haddington Travel To Edinburgh .....	38
Figure 3.10 North Berwick Travel To Edinburgh .....	38
Figure 3.11 Dunbar Travel To Edinburgh .....	39
Figure 3.12 Public Transport Mode Share For Travel To Edinburgh City Centre (%) .....	39
Figure 4.1 Local Development Plan Spatial Strategy .....	42
Figure 4.2 RFC at A1 QMU / Old Craighall – LDP Without Mitigation (AM Peak Hour) .....	44
Figure 4.3 RFC at A1 QMU / Old Craighall – LDP Without Mitigation (PM Peak Hour) .....	45
Figure 4.4 RFC at A1 Salters Road Interchange – LDP Without Mitigation (AM Peak Hour) .....	46
Figure 4.5 RFC at A1 Salters Road Interchange – LDP Without Mitigation (PM Peak Hour) .....	46
Figure 4.6 RFC at A1 Dolphingstone Interchange – LDP Without Mitigation (AM Peak Hour) .....	47
Figure 4.7 RFC at A1 Dolphingstone Interchange – LDP Without Mitigation (PM Peak Hour) .....	48
Figure 4.8 RFC at A1 Bankton Junction - LDP Without Mitigation (AM Peak Hour) .....	49
Figure 4.9 RFC at A1 Bankton Junction - LDP Without Mitigation (PM Peak Hour) .....	49
Figure 4.10 RFC in Musselburgh Town Centre – LDP Without Mitigation (AM Peak Hour) .....	50
Figure 4.11 RFC in Musselburgh Town Centre – LDP Without Mitigation (PM Peak Hour) .....	50
Figure 4.12 RFC in Tranent Town Centre – LDP Without Mitigation (AM Peak Hour) .....	51
Figure 4.13 RFC in Tranent Town Centre – LDP Without Mitigation (PM Peak Hour) .....	52
Figure 4.14 Westbound Rail Loadings – LDP Without Mitigation (AM Peak Hour) .....	53
Figure 4.15 Eastbound Rail Loadings – LDP Without Mitigation (PM Peak Hour) .....	53
Figure 4.16 East Lothian Local Development Plan Transport Proposals .....	54
Figure 4.17 Spatial Strategy for the Dunbar Cluster .....	56
Figure 4.18 Spatial Strategy for the North Berwick Cluster .....	57
Figure 4.19 Spatial Strategy for the Haddington Cluster .....	58
Figure 4.20 Impacts Of Reinstating Railway Link & Station At Haddington (% of Total Respondents) .....	59
Figure 4.21 Likelihood Of Using A New Station At Haddington (% of Total Respondents) .....	59
Figure 4.22 Spatial Strategy for the Blindwells Cluster .....	60
Figure 4.23 2037 Greater Blindwells 'Reference Case' Network Performance – AM Peak Hour .....	62
Figure 4.24 2037 Greater Blindwells 'Reference Case' Network Performance – PM Peak Hour .....	63
Figure 4.25 2037 Greater Blindwells 'Reference Case' Westbound Rail Loadings – AM Peak Hour ..	64
Figure 4.26 2037 Greater Blindwells 'Reference Case' Eastbound Rail Loadings – PM Peak Hour ...	64
Figure 4.27 2037 Greater Blindwells 'Reference Case' Eastbound Rail Loadings – AM Peak Hour ...	65
Figure 4.28 2037 Greater Blindwells 'Reference Case' Westbound Rail Loadings – PM Peak Hour ..	65
Figure 4.29 2037 Greater Blindwells 'Reference Case' Eastbound Available Capacity – AM Peak ...	66
Figure 4.30 2037 Greater Blindwells 'Reference Case' Westbound Available Capacity – PM Peak ...	66
Figure 4.31 Likelihood Of Using A New Station At Blindwells (% of Total Respondents) .....	67
Figure 4.32 Blindwells Potential Infrastructure Requirements .....	68
Figure 4.33 Spatial Strategy for the Longniddry, Cockenzie and Prestonpans Cluster .....	70
Figure 4.34 Cockenzie Power Station Masterplan Zones .....	71
Figure 4.35 Spatial Strategy for the Tranent Cluster .....	73
Figure 4.36 Spatial Strategy for the Musselburgh Cluster .....	75
Figure 4.37 Sheriffhall Roundabout Grade Separation Preferred Option .....	76

## Tables

Table 1.1 Assessed Housing Requirement by Plan Period .....	6
Table 2.1 Platform Lengths at East Lothian Stations .....	15
Table 2.2 Combined Local and Long-Distance Rail Service Frequencies – Westbound & Eastbound	16
Table 2.3 Westbound Rail Service Frequencies – Local and Long-Distance Services .....	16
Table 3.1 Locations People Travel To On A Regular Basis By Purpose (% of Total Respondents) ....	40
Table 3.2 Locations People Would Travel To But Can't Due To Transport (% of Total Respondents)	40

Table 4.1 East Lothian LDP Transport Interventions .....	54
Table 6.1 Relationship Between TPOs And Identified Problems, Issues, Constraints & Opportunities	84
Table 7.1 Rail Option Development And Assessment With And Without Capacity Upgrades .....	90

## Appendices

Appendix A: Public Survey	
Appendix B: MOIRA Origin – Destination Maps	
Appendix C: Station Site Surveys	
Appendix D: Rail Timetable Analysis	
Appendix E: Park and Ride Survey	
Appendix F: Bus Services Baseline	
Appendix G: Bus Frequencies	
Appendix H: Bus Stop Frequencies	
Appendix I: Journey Time Comparisons	
Appendix J: Haddington Branch Line Survey	
Appendix K: Greater Blindwells Modelling	

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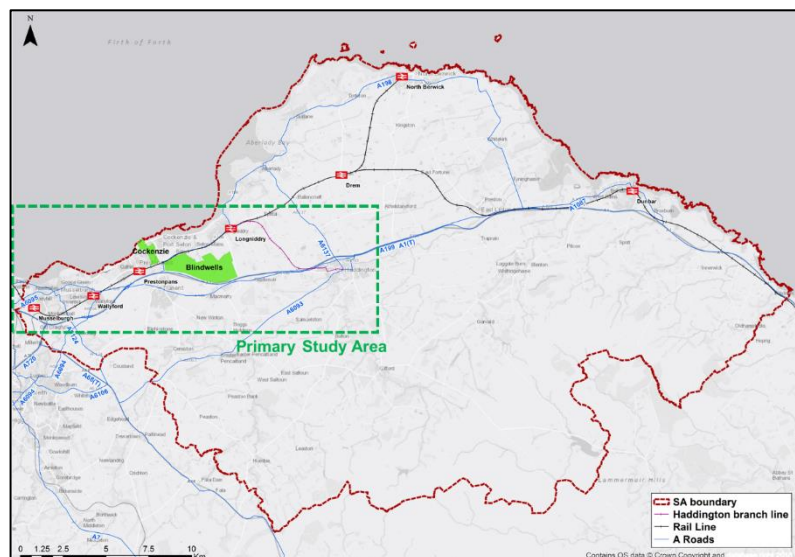
## Executive Summary

### Scope of the Study

Peter Brett Associates (PBA) were appointed by East Lothian Council to develop a Case for Change in line with the Scottish Transport Appraisal Guidance (STAG) in January 2019. The key issue driving the need for the study is the **ongoing economic growth across the Edinburgh city region** creating significant housing and employment land demands. These are being accommodated in East Lothian through the land-use proposals coming forward from the East Lothian Local Development Plan (ELLDP) and its emerging second iteration as well as the Edinburgh and South East Scotland City Regional Deal. These are expected to have impacts upon **transport demand, travel patterns** and the **transport infrastructure** both within East Lothian and neighbouring areas.

Alongside this there has been a longstanding aspiration to **provide Haddington with more direct connectivity to the rail network**. Funding was consequently awarded from the Scottish Government's Local Rail Development Fund to examine this further and this study incorporates the findings from this work.

The scope of the study is predominantly looking at the corridor through the west of East Lothian broadly following the A1 and East Coast Main Line as shown adjacent. It is here where **most journeys converge on the transport network**. The corridor incorporates the main settlements of Haddington, Tranent, Prestonpans and Musselburgh as well as the smaller settlements in the area. However, consideration has also been given to the wider East Lothian transport network and travel demands taking into account the major settlements at North Berwick and Dunbar.



### The Opportunity for East Lothian

East Lothian is faced with a **massive opportunity** to support the nationally and regionally important growth of the Edinburgh city region, reinvigorate its own local economy and to deliver a step change in transport connectivity and accessibility to enable sustainable inclusive growth.

The growth of East Lothian is being driven by significant land-use development and regeneration proposals articulated through the Local Development Plan. This includes the creation of a **new town at Blindwells**, the **redevelopment of the former Cockenzie Power Station** site and creation of the **Edinburgh Innovation Park** adjacent to Queen Margaret University. The Innovation Park and new settlement at Blindwells are City Deal projects whilst





Blindwells Artists Impression (Hargreaves)

Cockenzie is designated as a National Development site within the National Planning Framework 4. This highlights their importance at both the **regional** and **national** scale. The Council is seeking to **significantly increase job density** and housing delivery to create **new destinations, attractors** and **national, regional and local economic drivers** that facilitate regeneration and environmental improvement.

However, changes of this scale also present challenges with implications for the **transport network, infrastructure** and **services**. Given the close linkages between East Lothian and the Edinburgh labour market it will also impact upon **where** people want to travel to and **how** they get there. These changes will only be enabled by first class connectivity which presents the opportunity to **deliver transformational change** in both the public transport and active travel links serving East Lothian. Provision of more local employment opportunities will also **reduce the need to travel**.

It is clear then that for these sites to play a role in the future economic success of Scotland there is a need to make provision for the **delivery of the nationally, regionally and locally significant interventions** within their planning and design.

## Current Transport Problems

The analysis has identified that the transport network and services serving East Lothian are **already under pressure** even before consideration is given to the impacts that the proposed land-use developments will have.

On the road network there are **high traffic flows in Tranent and Musselburgh town centres** which cause poor air quality, delays, severance and undermine the attractiveness of the town centres as places to visit, work and spend leisure time. Indeed, a traffic related **Air Quality Management Area** has been in place in Musselburgh since 2013. Alongside this, key junctions on the **A1 at Old Craighall and Bankton Interchange** are also suffering from congestion and delays at peak periods.

However, the most acute problems are faced on the rail network with **peak hour trains operating at or over capacity** and **limited train paths on the East Coast Main Line** that would enable extra services to operate. This is impacted upon by the conflicts occurring between fast, limited stop long-distance services and slower, frequently stopping local services.

It is evident that limited capacity on train services and at Park and Ride sites is **suppressing demand for rail travel**. The problems are most acute in the western part of East Lothian, particularly **Musselburgh** and **Wallyford**, located nearest to Edinburgh.

The provision of longer trains is constrained by existing platform lengths, particularly at Edinburgh Waverley, with **8, or possibly 9, coach trains being the likely maximum** that can be operated. In addition, it could be challenging to **increase service frequencies from hourly to half hourly** given existing capacity constraints on the East Coast Main Line and at Edinburgh Waverley.

### SHORT TERM RAIL MITIGATION MEASURES

It is recommended that the detailed appraisal of short-term options to increase rail service capacity is taken forward **as a priority** at the **earliest possible opportunity** with a view towards establishing the case for and implementing 8 car services and / or a half hourly frequency as early as the December 2020 timetable change. Close liaison with the rail industry will be a fundamental requirement of this process.

The previously identified solution to the East Coast Main Line capacity constraints was the provision of **four tracking between Prestonpans and Drem**. However, Transport Scotland is currently exploring the feasibility of **High Speed Rail** links between the east of Scotland and north east England. It is highly unlikely that both solutions would be implemented suggesting there will be **no decision on additional capacity for East Lothian until Q1 2020** at the earliest when Transport Scotland's HSR feasibility work is due to report. This has significant implications for resolving the rail problems facing East Lothian.

### LONG TERM RAIL INFRASTRUCTURE BARRIERS

The vast majority of rail options that could address the identified current and future needs of East Lothian are **completely dependent** upon decisions regarding the provision of **additional rail network capacity** and whether this takes the form of **East Coast Main Line four tracking** or a **High Speed Rail line**. The resolution of capacity constraints at **Edinburgh Waverley** station is also likely to be fundamental to delivering a step change in public transport connectivity in East Lothian.

Buses currently experience delays most frequently in Musselburgh town centre, Tranent town centre and Wallyford but **most delays to East Lothian services are experienced within the City of Edinburgh** boundaries suggesting close partnership working with City of Edinburgh Council as well as other key stakeholders is necessary to resolve these problems.

Haddington has excellent bus links but no direct rail connection. There is a high degree of car dependency in the area which can be attributed to its **limited public transport links**. There is strong public support for improved public transport provision in Haddington with the **reintroduction of the former Haddington branch line** put forward as a potential solution.

### Transport Infrastructure Required to Deliver Growth Opportunities

The analysis has identified that, in the future, both the A1 Trunk Road and rail network are likely to experience capacity and performance impacts related to demand generated by the introduction of LDP developments. Mitigation measures were identified during the development of the LDP but these will only be sufficient to return the network to acceptable functionality. They **would not deliver a step change in public transport connectivity and accessibility** or realise the nationally significant economic benefits that these developments offer.

The creation of a new town at Blindwells will, inevitably, have **significant impacts for the transport network** with modelling suggesting that junctions on key access roads, including the

A1 and A198, are predicted to exceed capacity, particularly in the AM peak hour. It is also anticipated that capacity would be exceeded on westbound train services in the AM and eastbound train services in the PM, reflecting anticipated commuting patterns. To date the redevelopment of the former Cockenzie Power Station has not been modelled as the proposals are at a much earlier stage than those for Blindwells. There are close linkages between the two sites and there is a need to consider the cumulative impacts of the developments. On this basis there is a need to consider the **optimum package of transport interventions** required to support the Blindwells and Cockenzie developments with sustainable transport options and mitigate impacts on the road network.

Delivery of sustainable transport links to Blindwells and Cockenzie also needs considered alongside the need to improve public transport links to Haddington as the two locations are closely related. This requires appraisal of potential options that could **link Blindwells, Cockenzie and / or Haddington to the rail network**, creation of **enhanced Park and Ride** provision as well as the viability of introducing a '**new mode**' which could take the form of a Light Rapid Transit, Tram, Tram-Train or Bus Rapid Transit based solution. This offers the opportunity to create a **multi-modal regional transport hub** to serve East Lothian and beyond.

Furthermore, **resolution of access constraints** is necessary to help facilitate development of Edinburgh Innovation Park adjacent to Queen Margaret University which is in the vicinity of the capacity constrained A1 / A720 Old Craighall Junction.

The reinvigoration of the economy of East Lothian also presents opportunities to **encourage greater self-containment** in the area as well as **more in commuting** from across the Edinburgh city region. This strategy seeks to **maximise use of the available network capacity** by encouraging travel in the opposite direction to the tidal commuting flow at peak periods.

## DELIVERING TRANSFORMATIONAL SUSTAINABLE GROWTH

Overall, it can therefore be seen that there is a strong Case for Change to **address the transport issues East Lothian is currently facing** and to develop a comprehensive transport strategy that will **deliver the opportunities in East Lothian** in a sustainable manner by:

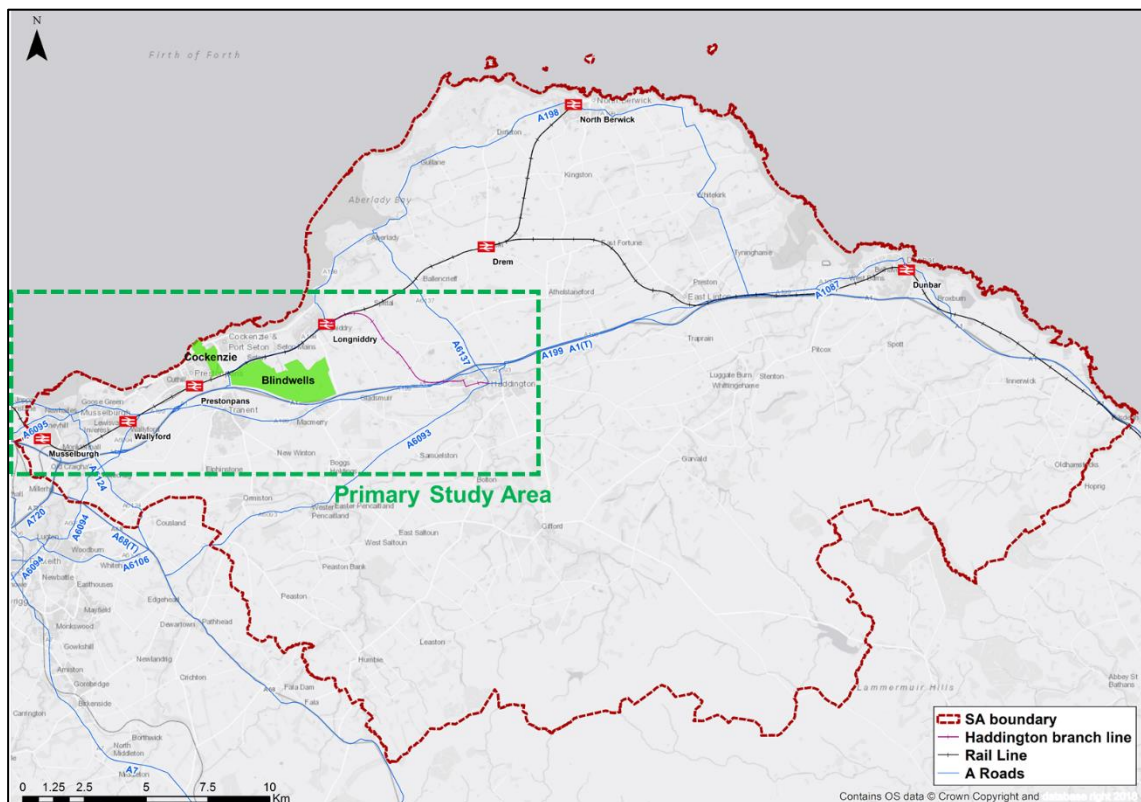
1. Providing a **step change in public transport** connectivity and accessibility that will enable creation of a **multi-modal regional transport hub**;
2. Considering the transport impacts of the proposals to make East Lothian a **more attractive place to invest, work, spend leisure time and access services** thereby making it an **attractor of journeys** and **encouraging self-containment**; and
3. Exploring the impact of flexible and agile working to **reduce demands placed upon transport networks and services** at peak periods.

# 1 Introduction

## 1.1 Scope of Study

- 1.1.1 Peter Brett Associates (PBA) were appointed by East Lothian Council to develop a Case for Change in line with the Scottish Transport Appraisal Guidance (STAG) in January 2019. The key issue driving the need for the study is the ongoing economic growth across the Edinburgh city region creating significant housing and employment land demands. These are being accommodated in East Lothian through the land-use proposals coming forward from the East Lothian Local Development Plan (LDP) and its emerging second iteration as well as the Edinburgh and South East Scotland City Regional Deal. These are expected to have impacts upon transport demand, travel patterns and the transport infrastructure both within East Lothian and neighbouring areas.
- 1.1.2 Alongside this there has been a longstanding aspiration to provide Haddington with more direct connectivity to the rail network. Funding was consequently awarded from the Scottish Government's Local Rail Development Fund to examine this further and this study incorporates the findings from this work.
- 1.1.3 The scope of the study is predominantly looking at the corridor through the west of East Lothian broadly following the A1 and East Coast Main Line (ECML) as shown in Figure 1.1. It is here where most journeys converge on the transport network. The corridor incorporates the main settlements of Haddington, Tranent, Prestonpans and Musselburgh as well as the smaller settlements in the area. However, consideration has also been given to the wider East Lothian transport network and travel demands taking into account the major settlements at North Berwick and Dunbar.

Figure 1.1 Extent of Study Area





## 1.2 Study Context

- 1.2.1 The SESplan Strategic Development Plan (SDP) was approved by Scottish Ministers in June 2013. It sets out an ambitious vision for the Edinburgh city region which recognises that the area is the key driver in the Scottish economy with Edinburgh, a leading European city and Scotland's Capital, at its heart.
- 1.2.2 The plan recognises that delivery of the development within the area requires growth generated by the city to be distributed to locations around it where there are also opportunities for sustainable inclusive growth and regeneration. It seeks to enable growth in the city region economy by developing key economic sectors, acting as the national hub for development and supporting local and rural development. To achieve this it set out a strategy to enable delivery of new housing required to support growth and meet identified housing needs in the most sustainable locations.
- 1.2.3 The SDP identified a requirement for ~156,000 new houses between 2009 and 2032 broken down as shown in Table 1.1.

**Table 1.1 Assessed Housing Requirement by Plan Period**

2009 – 2019	2019 – 2024	2024 - 2032
74,835	32,710	47,999

- 1.2.4 For East Lothian the SDP and its Supplementary Guidance on Housing Land requires that sufficient housing land is available that is capable of delivering 6,250 homes in the period 2009 to 2019 and a further 3,800 homes in the period 2019 to 2024. In total, sufficient housing land is needed so 10,050 homes can be developed in the period 2009 - 2024. It also signposts that there may be a need for a further 3,820 dwellings in East Lothian for the period 2024 – 2032. The implication of planning for this unprecedented level of housing delivery is that substantially more effective housing land has been allocated in line with Scottish Planning Policy 2014.
- 1.2.5 The second SESplan SDP was submitted to the Scottish Government for examination on Monday 26 June 2017. It identified the need for over 70,000 new homes in the city region between 2018 and 2030 of which 6,851 were allocated in East Lothian. This was a reduction from the unprecedented levels of housing delivery being planned for in the original SDP.
- 1.2.6 However, the Scottish Government recently rejected the proposed SDP 2 on the grounds that it was not adequately informed by a Transport Appraisal and that the linkages between land-use and transport had not been sufficiently considered. It is currently uncertain as to how these issues will be resolved and this needs to be kept under review as the STAG process progresses.



Between 2014/15 and 2024 an additional **10,000 houses** will be constructed in East Lothian – the equivalent of constructing a new town.

- 1.2.7 East Lothian's approach to delivering the SDP 1 aspirations is set out in the LDP. It outlines a compact spatial strategy which focuses on the most accessible western part of East Lothian focussed upon creating a corridor of growth aligned with the A1 / ECML. However, these developments will have a significant impact upon the transport network and services linking

East Lothian internally and to the wider Edinburgh city region. These pressures will grow increasingly acute as you move further west in the study area where population density is greatest and routes to Edinburgh converge. This STAG study consequently considers both current and potential future transport problems, issues, constraints and opportunities within the study area taking into account the significant land-use development proposals in the area.

- 1.2.8 A key component of delivering the SDP aspirations in East Lothian is the proposed development of a new town at Blindwells as shown in Figure 1.1. This is situated adjacent to the former power station site at Cockenzie which offers potential for significant economic growth opportunities reflected by its safeguarding in the National Planning Framework (NPF) as a site of national significance. In addition, the Council is currently engaging with the Scottish Government to explore opportunities for potential designation of a new National Development area within NPF4 to cover Cockenzie, Blindwells, the land and infrastructure between these sites as well as regeneration of surrounding communities.
- 1.2.9 These sizeable developments offer a significant opportunity to deliver a step change in transport provision and to provide them with attractive sustainable transport solutions from the outset. East Lothian Council is keen to ensure that they are not allowed to develop in a piecemeal fashion that would potentially not achieve these aspirations. The objective is to deliver closely integrated land use and transport infrastructure that aligns with newly emerging nationally significant development areas and that delivers sustainable and inclusive growth in the long term national, regional and local interest.
- 1.2.10 As such, this work has been undertaken to inform the creation of a strategic transport plan that will allow these land-use developments to take place in a coordinated manner including integration with locally, regionally and nationally significant transport provision. Furthermore, the Edinburgh City Region Deal will provide £1.3bn of investment in infrastructure and economic growth over the next 15 years which makes it the ideal time for East Lothian to develop a comprehensive transport strategy to facilitate its growth and deliver economic growth in the area.
- 1.2.11 The findings in this report reflect the outcomes of extensive public and stakeholder consultation as well as detailed analysis of relevant data and evidence. In some instances, this draws upon previously undertaken work linked to the development of East Lothian's Local Transport Strategy (LTS), the ELLDP along with other more specific studies.
- 1.2.12 There were 1,601 total responses to the public consultation survey and a full summary of the findings are set out in Appendix A.

## 1.3 Socio-Economic Landscape

### Growing Population

- 1.3.1 East Lothian had an estimated population of 104,090 people in 2016 which accounted for 1.9% of the total Scottish population. The area is expected to undergo significant population growth between 2016 and 2041 with an increase of over 19,000 people as shown in Figure 1.2.

**Figure 1.2 Current and Projected Population in East Lothian 2016 - 2041**



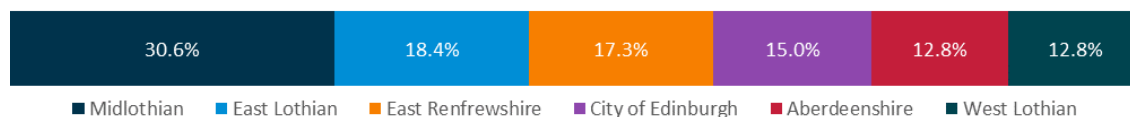
Source: NRS Population Projections, 2016

- 1.3.2 This equates to 18.4% growth which, as shown in Figure 1.3, is the second largest increase in percentage terms expected in any local authority area. Only Midlothian is expected to have a



larger percentage increase at 30.6% whilst Edinburgh and West Lothian are also amongst the six local authorities expected to experience the highest percentage growth.

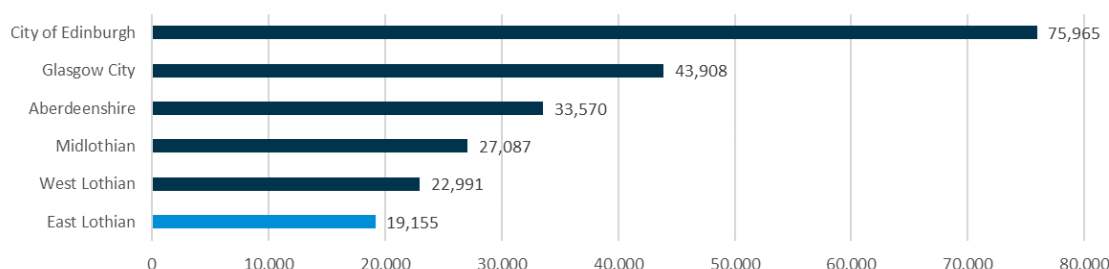
**Figure 1.3 Local Authorities with Largest Projected Population Change (Percentage) 2016 - 2041**



Source: NRS Population Projections, 2016

- 1.3.3 In absolute terms the population of Edinburgh is expected to experience greatest growth at almost 76,000 by 2041. It is anticipated that East Lothian's population growth will be the sixth largest as shown in Figure 1.4. This also shows large absolute increases in West Lothian and Midlothian as well.
- 1.3.4 These forecasts highlight the extensive growth anticipated around the Edinburgh labour market area which will have significant implications for housing provision, the location and range of employment opportunities as well as travel across the Edinburgh city region.

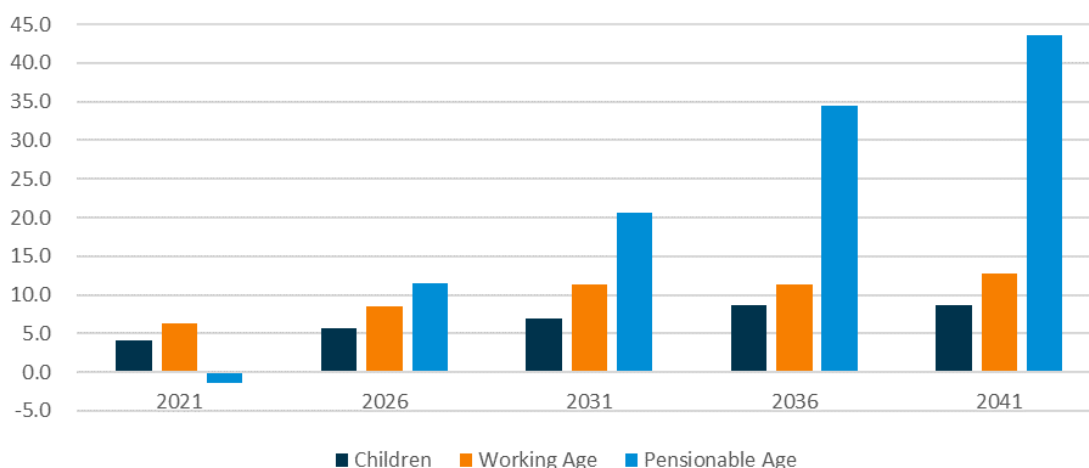
**Figure 1.4 Local Authorities with Largest Projected Population Change 2016 - 2041**



Source: NRS Population Projections, 2016

- 1.3.5 The change in the composition of the population in East Lothian is shown in Figure 1.5. This highlights that all segments of the population are expected to grow but that, in the long-term, there is expected to be an extremely large increase (43.6%) in the retired population. This will have implications for healthcare provision and other local services including concessionary travel. Alongside this, children and working age population will also increase which will impact on education services and growing demand for travel to work.

**Figure 1.5 Projected Population Change in East Lothian by Age Group (Percentage) 2016 - 2041**

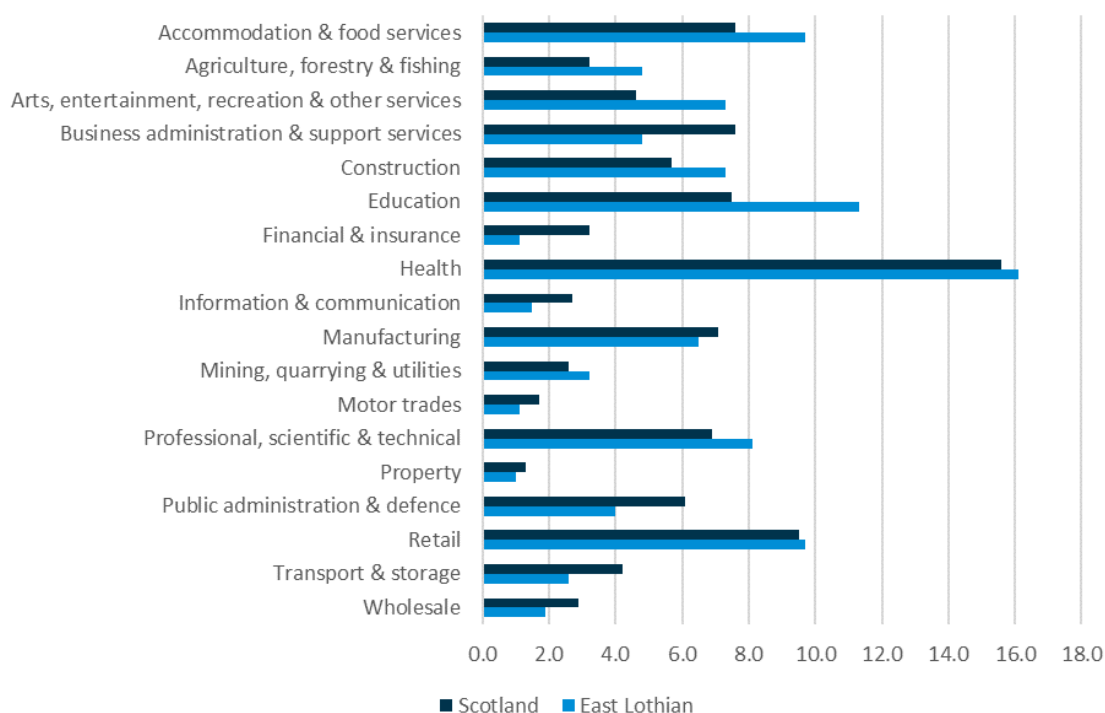


Source: NRS Population Projections, 2016

## Current Economic Climate

- 1.3.6 East Lothian's economic position is closely aligned with the Scottish average. The unemployment claimant count for East Lothian was 2.8% of the population aged 16 to 64 years old in January 2019. This is the same as Scotland as a whole but does hide some variations across the local authority area.<sup>1</sup> Similarly the mean gross weekly household income in East Lothian was £529.90 in 2018 which closely equates to the Scottish average of £529.40.<sup>2</sup>
- 1.3.7 Based on the 2016 Scottish Index of Multiple Deprivation (SIMD) data, there are some small pockets of deprivation in parts of Tranent, Prestonpans, Musselburgh, Wallyford and Elphinstone. These were amongst the 25% most deprived in Scotland due to income, employment, education, health, housing or crime. These are within the former coalfield with ongoing regeneration efforts in these areas. However, the evidence suggests deprivation is generally not a significant problem within East Lothian.
- 1.3.8 Employment in East Lothian also aligns closely with the national average in a number of sectors as shown in Figure 1.6. The greatest positive variation can be seen in Education, Arts & Entertainment and Accommodation & Food where East Lothian exceeds the national average. The latter likely reflects East Lothian's tourism industry whilst education employment is most likely driven by Queen Margaret University. Conversely, East Lothian is behind the national average for employment in Public Administration, Financial & Insurance and Business Administration & Support.

**Figure 1.6 Employment by Industry Sector (% of total) 2017**



Source: NOMIS, 2017

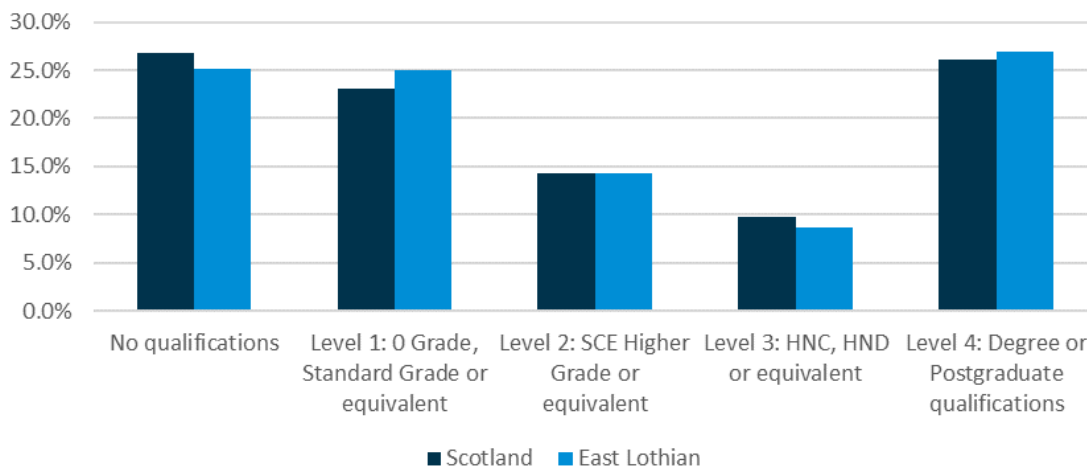
- 1.3.9 The trend is continued in education where the qualifications obtained by East Lothian residents closely reflect that of Scotland as shown in Figure 1.7. The slight variation that does exist suggests that the population of East Lothian is slightly better educated than the national average

<sup>1</sup> Claimant Count, NOMIS, January 2019

<sup>2</sup> Annual Survey of Hours and Earnings, NOMIS, 2018

as there are fewer people with no qualifications and more with degree or postgraduate qualifications.

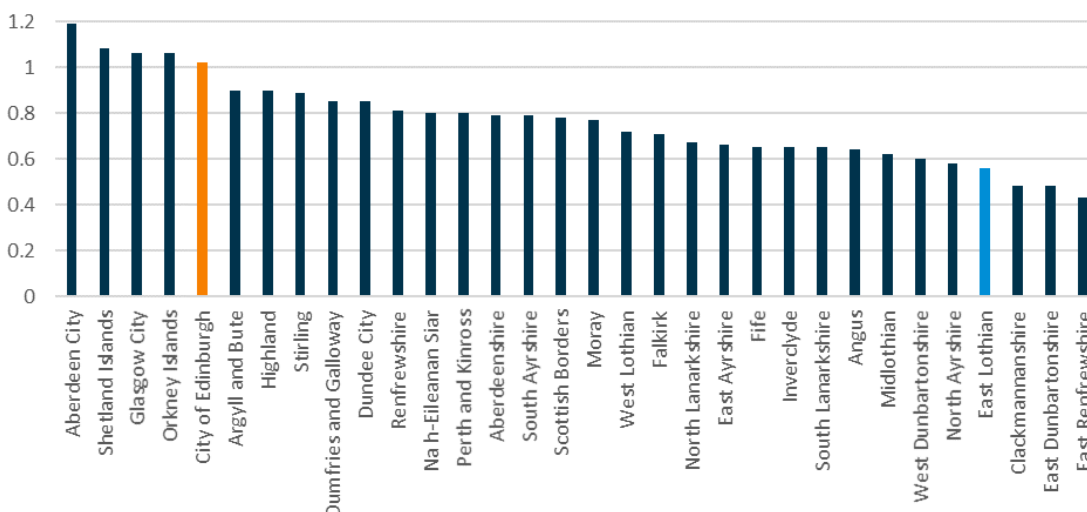
Figure 1.7 Highest Qualification Achieved (% of Population Aged 16 or over) 2011



Source: Census, 2011

- 1.3.10 On this basis it can be seen that the overall economic performance of East Lothian broadly aligns with Scotland. However, there are variations within East Lothian predominantly linked to its close ties with the wider labour market. Figure 1.8 shows that East Lothian has the fourth lowest jobs density of all local authorities in Scotland whereas Edinburgh has the fifth highest jobs density making it an attractive destination for residents of East Lothian.

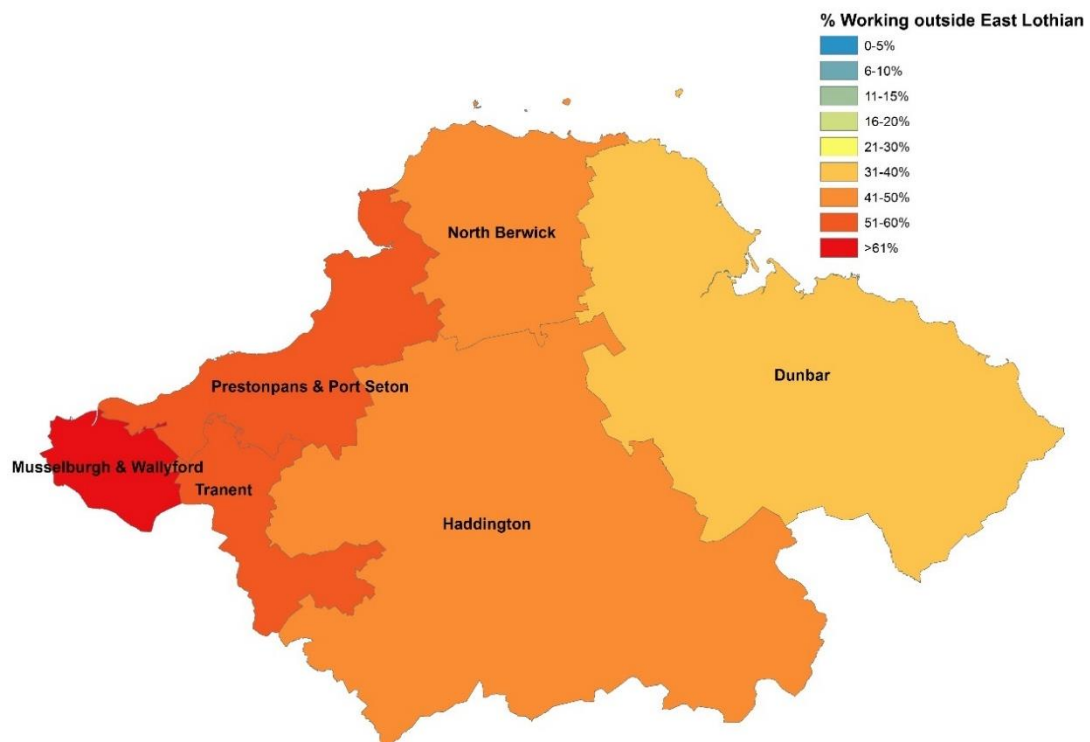
Figure 1.8 Jobs Density by Local Authority 2017 (Ratio of Total Jobs to Working Age Population)



Source: ONS Jobs Density, 2017

- 1.3.11 The analysis set out in Figure 1.9 shows that a large proportion of residents from across East Lothian travel out with it for employment. This is most pronounced in the western part of East Lothian, closest to Edinburgh, where over 60% of residents travel out of the area for employment. Further east there is evidence of more containment although around a third of residents in the Dunbar area still travelled out of East Lothian for employment.

Figure 1.9 Residents of East Lothian Working Outside of the Local Authority Area (%)



Source: Census, 2011

- 1.3.12 So it is clear that East Lothian has close ties to the Edinburgh labour market with 36% of East Lothian residents working in Edinburgh at the time of the Census in 2011. This is explored in more detail in Chapter 3 which examines transport demand and travel patterns.

## 1.4 Summary

- 1.4.1 East Lothian is forecast to undergo significant population growth over the short to medium-term which will have implications for housing provision, the location and range of employment opportunities as well as travel across the Edinburgh city region.
- 1.4.2 The economy of East Lothian closely mirrors the Scottish average and the residents of East Lothian are closely integrated with the Edinburgh labour market. This is most pronounced in the western part of the local authority area.

## 2 Current Transport Network

### 2.1 Strategic Transport Links

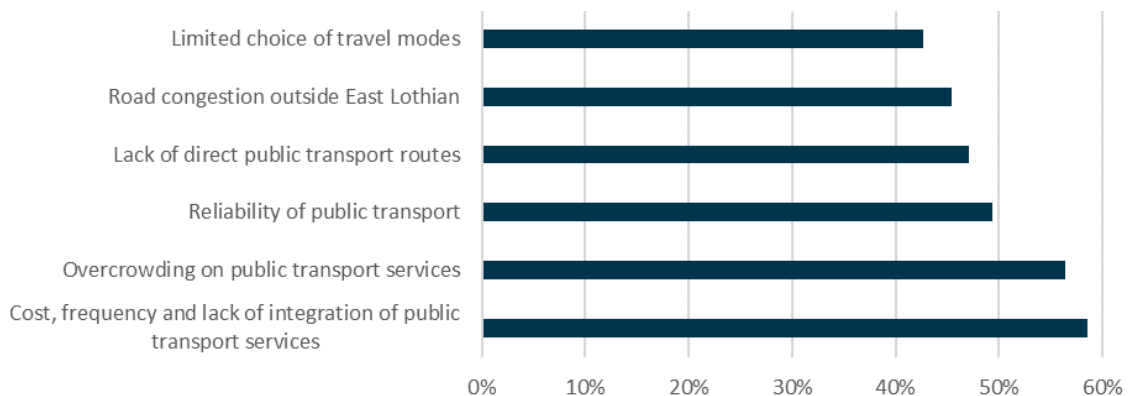
- 2.1.1 The strategic transport network in East Lothian is illustrated in Figure 2.1. The A1, the East Coast Main Line (ECML) and the North Berwick Branch Line are East Lothian's main transport corridors. The A1 has a junction with the A720 Edinburgh City Bypass at Old Craighall and a number of interchanges along its length that provide access to other settlements and routes.

Figure 2.1 East Lothian Strategic Transport Network



- 2.1.2 While East Lothian is relatively well served by the strategic transport network, particularly in a west / east direction, there is a perception of an underlying problem of limited capacity in transport infrastructure and services. This is regarded as particularly relevant because travel demand is expected to increase in the coming years as the population of East Lothian grows and these issues exist even without factoring the impacts of planned growth.
- 2.1.3 The public consultation survey explored what people felt are the key problems associated with travel in the area. Figure 2.2 shows that the top four problems were all related to public transport suggesting this is an area which could be improved.

Figure 2.2 Main Problems With Transport Serving East Lothian (% of Total Respondents)



Source: Public Consultation Survey, 2019

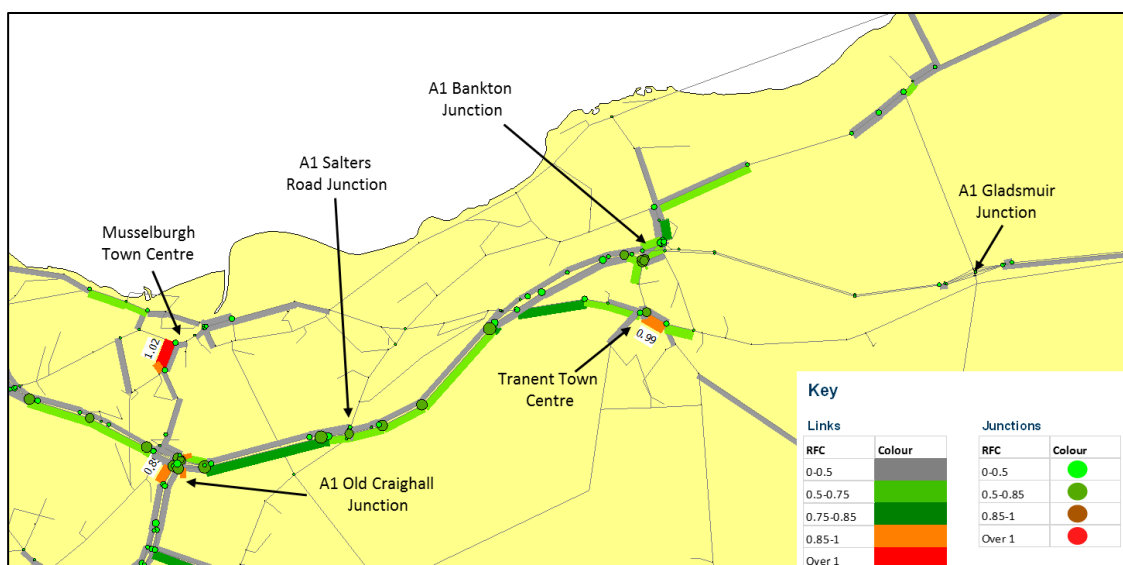
## 2.2 Road Network & Current Issues

2.2.1 Trunk road and local road network capacity is already an issue, particularly in the western part of East Lothian. Traffic modelling undertaken to support the creation of the Development Planning and Management Transport Appraisal Guidance (DPMTAG) report for the ELLDP identified several locations that were already experiencing a lack of capacity in the 2012 “Base Year” scenario as shown in Figure 2.3 and Figure 2.4. These include:

- **A1 Old Craighall Junction:** AM peak hour / PM peak hour;
- **A1 Bankton Interchange and A198 Junction:** PM peak hour;
- **Musselburgh Town Centre:** AM peak hour / PM peak hour; and
- **Tranent Town Centre:** AM peak hour.

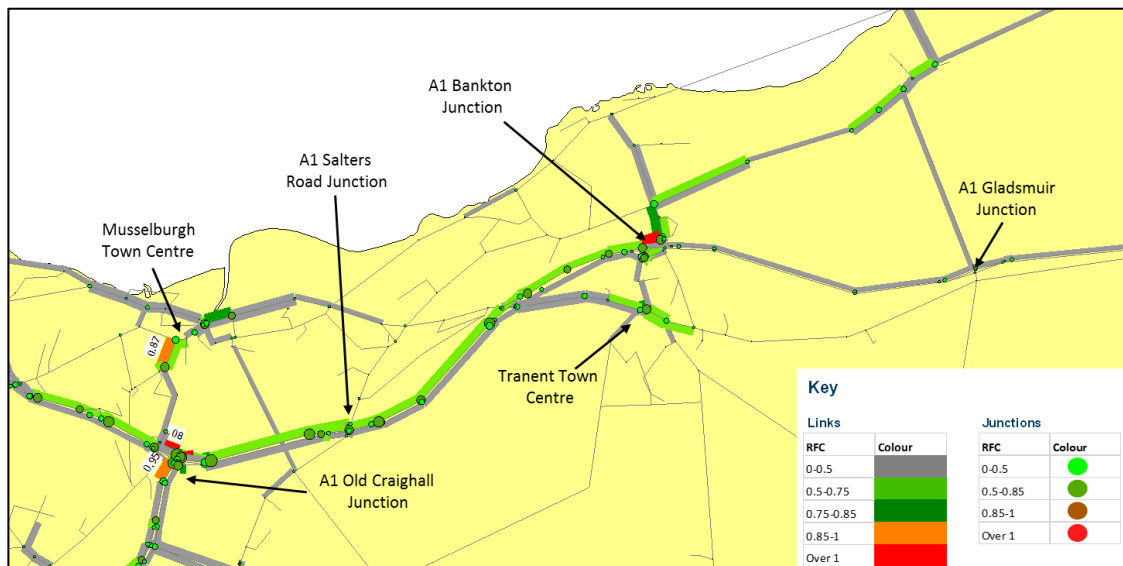
2.2.2 The high traffic volumes in Musselburgh and Tranent are creating particular problems with regards to air quality. An Air Quality Management Area (AQMA) has already been declared in Musselburgh which is largely attributable to the impact of traffic.

Figure 2.3 2012 ‘Base Case’ Network Performance – AM Peak Hour





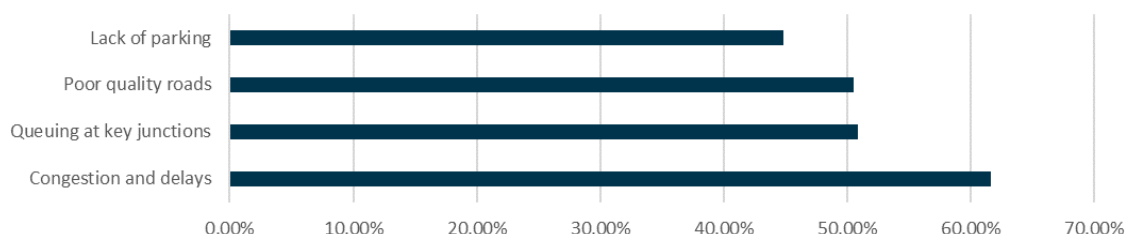
**Figure 2.4 2012 'Base Case' Network Performance – PM Peak Hour**



2.2.3 No modelling has been undertaken of current network performance but, given the identified issues in 2012 and that the network has not altered significantly since then, it is highly likely that conditions are at least similar and quite possibly worse.

2.2.4 Furthermore, findings from the public survey shown in Figure 2.5 suggest congestion and delays are the biggest problem on the road network. Most of respondents (70%) stated that the impact of these problems is the need for an early or late start to their journey to avoid delay.

**Figure 2.5 Main Problems Faced On The Road Network (% of Total Respondents)**



Source: Public Consultation Survey, 2019

## 2.3 Rail Network & Current Issues

2.3.1 East Lothian has seven stations located at Musselburgh, Wallyford, Prestonpans, Longniddry, Drem, North Berwick and Dunbar. In addition, there is a commitment to construct a new station at East Linton as early as possible in Network Rail's Control Period 6 (2019 to 2024). The existing stations along with their Park and Ride capacity and maximum train length are shown in Figure 2.6. The maximum train lengths are based upon the current platform lengths which are shown in Table 2.1.

Figure 2.6 Stations with Park and Ride Capacity and Maximum Train Length

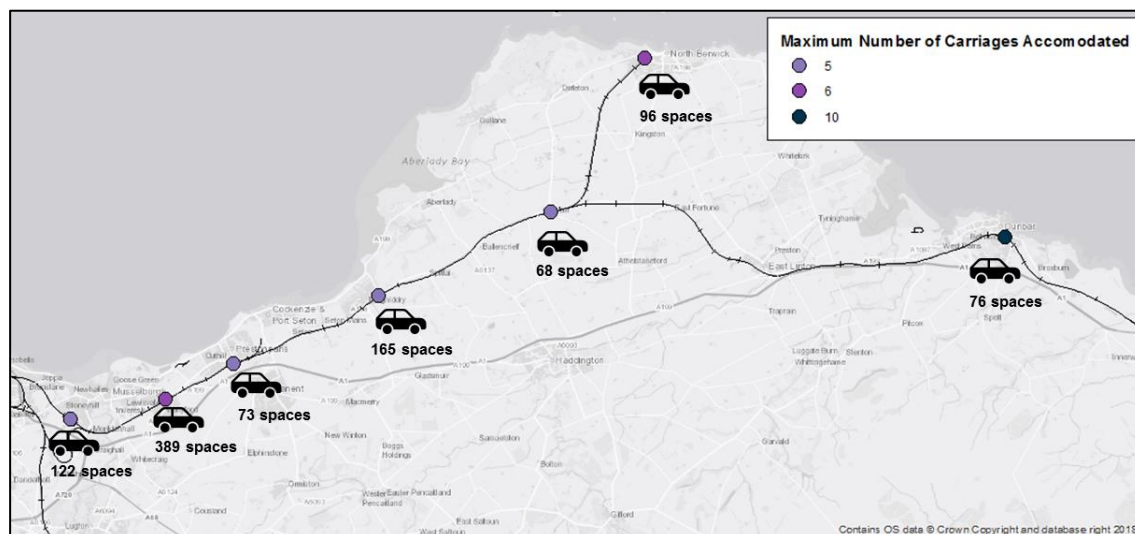


Table 2.1 Platform Lengths at East Lothian Stations

Station	Platform Length (m)	
	Up	Down
Dunbar	256*	271**
North Berwick	148	Single
Drem	123	135
Longniddry	131	131
Prestonpans	134	185
Wallyford	150	150

Source: Network Rail

\* Bi-directional

\*\* Under construction

## Service Frequencies

- 2.3.2 Currently no stations in East Lothian have a service frequency greater than half hourly at peak times and hourly at off peak times. The service frequencies are shown in Table 2.2 and can be seen to cater for commuter flows between East Lothian and the Edinburgh city region with more frequent westbound services in the AM peak period and eastbound services in the PM peak period. Only North Berwick and Musselburgh have an eastbound service frequency less than an hour in the AM peak period.
- 2.3.3 The first and last service times can also be seen to reflect movements between East Lothian and Edinburgh with all westbound services starting at 7AM or earlier and all final eastbound services between 11PM and midnight. These are designed to accommodate people commuting to work in Edinburgh in the morning and returning home from late night leisure activities in Edinburgh in the evening.
- 2.3.4 People travelling in the opposite direction to the peak period tidal movements are less well accommodated with first eastbound services all being after 7AM except at Dunbar whilst all last westbound services between 10PM and 11PM except Dunbar where the last service is at 9.50PM.

**Table 2.2 Combined Local and Long-Distance Rail Service Frequencies – Westbound and Eastbound**

Station	All Services					All Services				
	Westbound					Eastbound				
	First	Last	AM Peak Headway (6-10am)	Off Peak Headway	PM Peak Headway (5-8pm)	First	Last	AM Peak Headway (6-10am)	Off Peak Headway	PM Peak Headway (5-8pm)
Dunbar	07:00	21:50	59	58	50	06:09	22:31	100	64	28
North Berwick	06:07	22:27	40	60	30	07:47	23:54	50	60	38
Drem	06:14	22:34	40	60	40	07:39	23:35	74	60	38
Longniddry	06:20	22:40	40	60	40	07:32	23:29	74	60	38
Prestonpans	06:25	22:45	33	60	40	07:27	23:24	74	60	38
Wallyford	06:28	22:48	33	60	40	07:24	23:21	74	60	38
Musselburgh	06:32	22:52	33	41	30	07:20	23:17	50	45	38

- 2.3.5 All stations in East Lothian are served by ScotRail whilst Dunbar is also served by long-distance LNER services between Edinburgh and London as well as Cross Country services between Edinburgh and Plymouth, Leeds and Birmingham. These account for the variations in service frequencies, first and last trains observed above. The split in service frequencies between local and long-distance services is shown in Table 2.3. This shows that a combination of local and long-distance services are used to provide Dunbar with a regular service.

**Table 2.3 Westbound Rail Service Frequencies – Local and Long-Distance Services**

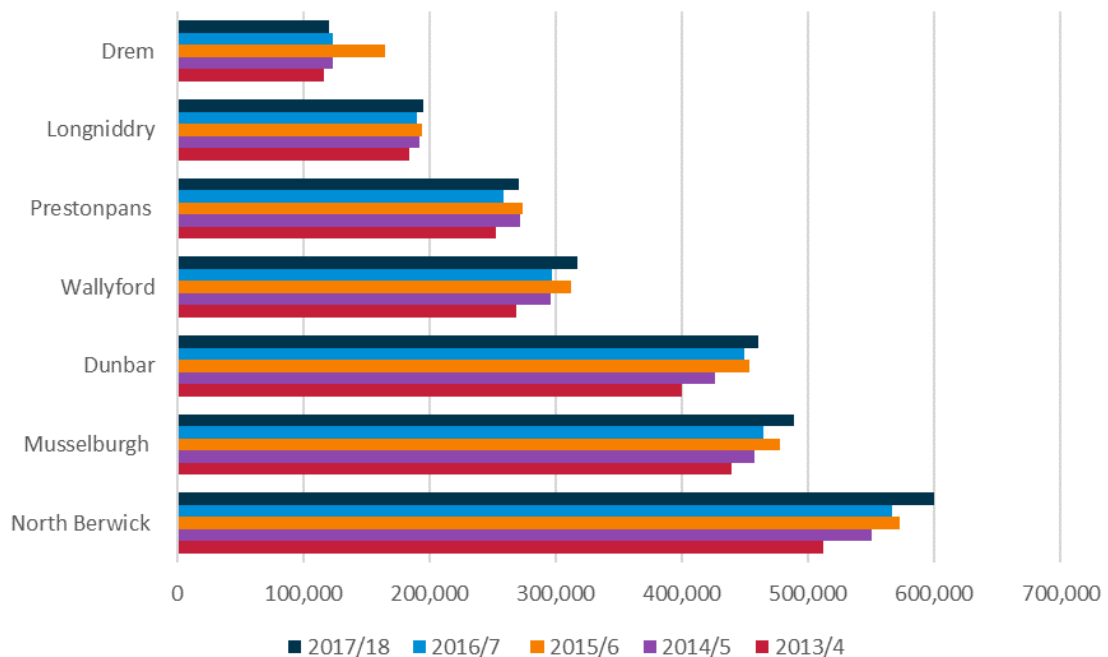
Direction	Local Services					Long Distance Services				
	First	Last	AM Peak Headway (6-10am)	Off Peak Headway	PM Peak Headway (5-8pm)	First	Last	AM Peak Headway (6-10am)	Off Peak Headway	PM Peak Headway (5-8pm)
	First	Last	AM Peak Headway (6-10am)	Off Peak Headway	PM Peak Headway (5-8pm)	First	Last	AM Peak Headway (6-10am)	Off Peak Headway	PM Peak Headway (5-8pm)
Westbound	11:02	17:03	None	126	1 Service	07:00	21:50	59	120	120
Eastbound	07:31	22:07	None	127	None	06:09	21:00	100	120	28

- 2.3.6 TransPennine Express also plan to introduce two new services which will travel through East Lothian. The first will introduce direct services between Edinburgh Waverley and Liverpool at the December 2019 timetable change. This will extend the current Liverpool Lime Street to Newcastle Central service on to Edinburgh, with a call at Morpeth. It will be operated with one train per hour and it was noted that Transport Scotland have aspirations for calls at the new stations at Reston and / or East Linton. The second is an Open Access service which will operate between Edinburgh and London calling at Morpeth, Newcastle and Stevenage.

## Demand

- 2.3.7 Total passenger numbers at stations in East Lothian have grown by 280,000 (13%) from 2,171,000 in 2013 to 2,451,000 in 2018. The greatest demand is at North Berwick as shown in Figure 2.7. It has also experienced the greatest absolute growth over the period increasing by 88,000 passengers. Wallyford has experienced the highest percentage growth being up 18% which could be attributed to the extension of the Park and Ride.
- 2.3.8 However, it can be seen that demand has plateaued at most stations over recent years despite ongoing population growth. This suggests that demand may be constrained by capacity which is explored further in the next section.

Figure 2.7 Passengers at East Lothian Stations (2013/14 to 2017/18)



Source: Office of Rail and Road Station Estimates, 2019

- 2.3.9 The distribution of demand originating from each station in East Lothian has been assessed using data from MOIRA v2.2. The maps attached in Appendix B show that Edinburgh Waverley is the main destination for passengers originating at East Lothian stations followed by Edinburgh Haymarket.
- 2.3.10 Edinburgh Park is also a popular destination whilst the highest demand for travel out with the Edinburgh city region is typically for journeys to Glasgow. Demand to travel to Fife and West Lothian typically increases the further west the station is located with Musselburgh showing the highest number of journeys destined for these areas.
- 2.3.11 Dunbar exhibits much higher demand for travel south to England than other stations reflecting the fact that it is regularly served by long-distance services.

## Capacity Constraints

- 2.3.12 The analysis and stakeholder engagement have identified that the current rail network serving East Lothian is suffering from a shortage of capacity, both on trains themselves and for the train paths that would allow extra services on the ECML. The latter is predominantly related to conflicts between fast, limited stop long-distance services and slower, frequently stopping local services. This problem has been exacerbated by the additional long-distance services discussed previously. These include the committed extension of the existing hourly TransPennine Express Liverpool – Newcastle service to Edinburgh leading to four long-distance passenger trains an hour through East Lothian as well as a new Open Access service between Edinburgh and London. These will use additional paths which could inhibit the ability to increase local service frequencies.
- 2.3.13 The stakeholder consultation identified that there is a perception the rail network serving East Lothian is operating at capacity at peak times. This is manifested through demand on services themselves and at the Park and Ride car parks. It was highlighted that passengers trying to use AM peak services at the stations further west like Musselburgh and Wallyford are sometimes unable to board trains as they are already full by the time they reach them. Some people in

these areas consequently choose to use Newcraighall instead as it has a more regular service (half hourly as opposed to hourly) and a large Park and Ride (560 spaces) car park.

- 2.3.14 Transport Scotland published a report entitled “ScotRail’s Top Ten Busiest Trains” in May 2018 which identified the 0755 North Berwick – Haymarket service as the third busiest in Scotland. This train is comprised of four carriages and runs with a planned loading of 434 passengers which combines both seated and standing capacity. The maximum reported peak loading is 518 passengers (119% of planned loading).
- 2.3.15 The busiest part of the route is between Musselburgh and Edinburgh, although this is for less than ten minutes. The previous train at 0717 has a reported peak loading of 461 passengers, and is a six-carriage train, whilst the following train at 0845 has a reported peak loading of 188 passengers.



**0755 North Berwick – Haymarket service was the third busiest ScotRail service in May 2018 with a capacity of 434 passengers and peak loading of 518 passengers (119% of capacity).**

- 2.3.16 ScotRail’s solution to this problem is to introduce new 6 car Class 385 trains on the route which will provide additional peak capacity. These came into service in May 2019 and are expected to alleviate the current problem.
- 2.3.17 The extent to which trains can be further extended to cope with increasing demand is constrained by the existing rail infrastructure, primarily platform lengths, currently serving East Lothian. To understand this further visual surveys were undertaken with the findings set out in detail in Appendix C. These suggest that the east end of Edinburgh Waverley station is the major constraining factor on the possible extension of train lengths on the North Berwick services. The cramped space between the ends of the platforms and the Calton Tunnels, coupled with the listed station building at the buffer ends of the platforms restricts the maximum train length to 8, or possibly 9, 23m coaches. Longer trains would require major infrastructure works at Waverley.
- 2.3.18 The stations within East Lothian appear to have space for platform extensions to cater for 8 or 9 car trains. The LDP safeguarded land for platform lengthening at Musselburgh, Prestonpans, Longniddry, Drem and Dunbar. Developer contributions are currently being collected to fund these interventions.
- 2.3.19 In addition, it should be noted that terminal stations need to be able to accommodate the longest trains meaning North Berwick would require platform extension for any service longer than 6 x 23m cars. The use of Selected Door Operation (SDO) could enable trains that are longer than the platform to call at intermediate stations which could reduce the need for platform lengthening but this is a less than optimal solution. However, any new stations serving East Lothian would also need to be constructed taking into consideration the potential requirements for trains that are 8 or 9 cars long.
- 2.3.20 This is an initial observation of the possible options for lengthening platforms. In all cases the overhead line equipment will need to be modified, with the generally single-track cantilevers

requiring replacement with a single twin track cantilever to remove live equipment from above the new platform.

2.3.21 Network Rail identified in their Scotland Route Study that forecast passenger demand in 2023/24 indicates that ScotRail services will exceed 100% of seating capacity (assumed to be six carriage trains) in the AM peak hour by the time they reach Edinburgh Waverley. Although this does not exceed the current ScotRail franchise commitment of passengers standing for more than 10 minutes.

2.3.22 This is broadly consistent with the findings of previous analysis which examined the potential transport impacts of the proposed land-use developments in the East Lothian Local Development Plan. The detailed findings are set out in Chapter 4, but they broadly highlighted the following capacity problems:

- **AM Peak Hour Westbound:** Seating capacity exceeded from Wallyford to Edinburgh; and
- **PM Peak Hour Eastbound:** Seating capacity exceeded from Edinburgh to Musselburgh.

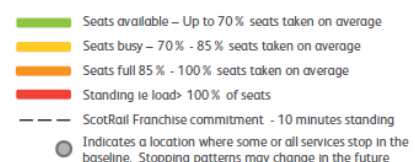
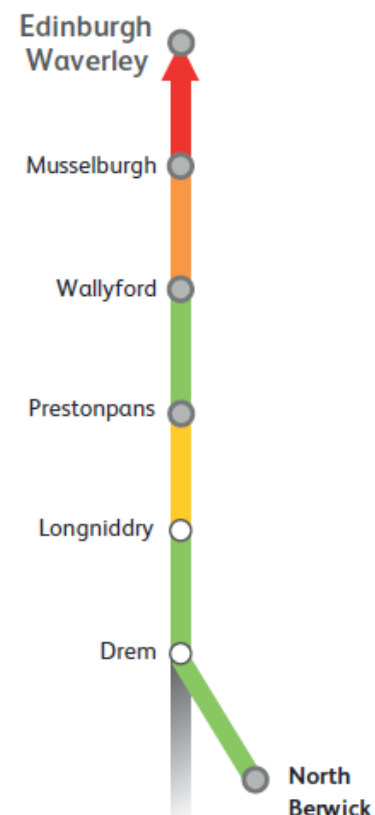
2.3.23 One of the difficulties faced by East Lothian is the difference in average speeds between fast long-distance passenger trains, with few or no stops, and local passenger services that stop frequently. These speed differentials are some of the most critical factors in timetabling congested routes which currently affects the line between Edinburgh Waverley and Drem.

2.3.24 To address this problem East Lothian Council put forward a proposal in 2016 in response to Network Rail's Scotland Route Study Consultation to raise the concept of four tracking the ECML from Prestonpans to Drem (rather than between Wallyford and Prestonpans as originally proposed). The responses to the Route Study and the subsequent rail industry publications have supported that four-tracking option although there is currently no commitment to implementing it.

2.3.25 Consultation has identified that Transport Scotland is currently exploring the potential for High Speed Rail (HSR) links between north east England and the east of Scotland. This is considering the feasibility of new track infrastructure and it is understood that this could either be proximate to the existing ECML or non-proximate following an alternative alignment. In addition, it is understood that creation of a parkway station in East Lothian has also been considered.

2.3.26 It is highly unlikely that both the ECML four tracking and HSR would be constructed as this would likely lead to an overprovision of infrastructure. It is therefore anticipated that no work to deliver ECML four tracking will be undertaken prior to a decision being taken on the feasibility of HSR which isn't expected until Q1 2020.

2.3.27 Although more detailed analysis is required the initial assessment suggests that increasing service frequencies to stations within East Lothian will be challenging within the constraints of the existing infrastructure. Early assessment suggests that there may be potential paths



Source: Network Rail Scotland Route Study



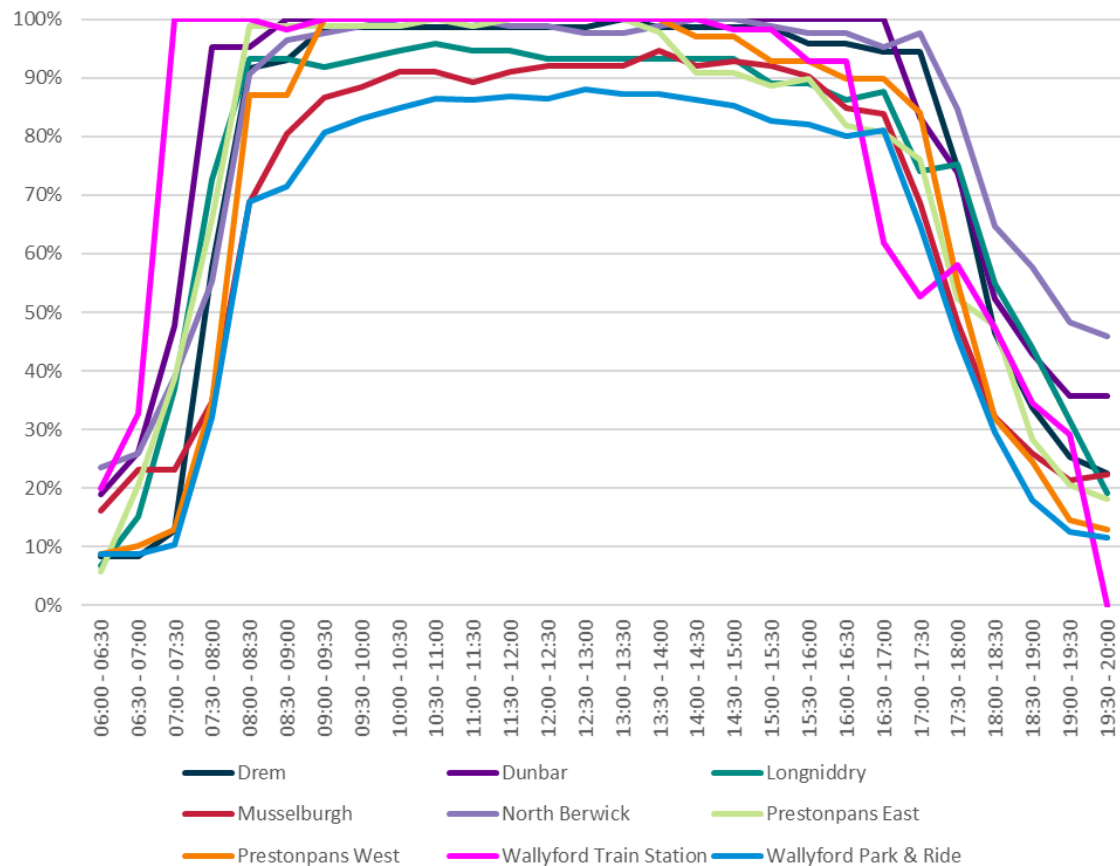
although the operation of the two hourly ScotRail Dunbar services does appear to impact on the potential paths. This is discussed further in the timetable analysis attached as Appendix D.

- 2.3.28 As such, the decisions on future capacity hinging around HSR are of critical importance as delivery of this capacity would substantially increase timetable flexibility in East Lothian although capacity constraints on the east approaches to and platforms at Edinburgh Waverley would also need to be resolved.

### Park and Ride

- 2.3.29 To develop a comprehensive understanding of demand for Park and Ride in East Lothian occupancy, turnover and duration of stay surveys were undertaken at each station including Drem, Dunbar, Longniddry, Musselburgh, North Berwick, Prestonpans and Wallyford. In addition, on-street parking surveys were undertaken at the same time to assess the extent to which overflow parking was occurring.
- 2.3.30 The surveys were undertaken using 30-minute parking beats on neutral weekdays from 6AM to 8PM. They were carried out on the 23<sup>rd</sup> April 2019 (Longniddry & Wallyford), 24<sup>th</sup> April 2019 (Drem & Musselburgh), 25<sup>th</sup> April 2019 (North Berwick & Prestonpans) and the 1<sup>st</sup> May 2019 (Dunbar). The full analysis is set out in Appendix E and summarised here.
- 2.3.31 The occupancy at each of the Park and Ride car parks is summarised in Figure 2.8. It should be noted that this does not include disabled bays, electric vehicle charging bays and other similar designations which are typically not used to the same extent that unrestricted bays are. However, it is understood that electric vehicle charging bays have not been operational for over a year suggesting these spaces are being used by general traffic.
- 2.3.32 The survey highlighted that Drem, Dunbar, North Berwick, Longniddry and Prestonpans are operating at maximum capacity and most are fully occupied by the end of the AM peak period. The only stations that did not reach full capacity were Musselburgh (94.6% / 6 unoccupied spaces) and Wallyford (88.1% / 37 spaces unoccupied). All car parks have low turnover due to vehicles parked for long periods of time.
- 2.3.33 The peak arrival time is 7:30AM in Drem, Dunbar and Longniddry and 8AM elsewhere. This is intuitive as the stations located further east arrive earlier than those which are closer to the main commuter destination of Edinburgh. For stations with a 7:30AM peak the majority are parked for 10.5 hours or longer whilst those with an 8AM peak the majority are parked for 9.5 - 10 hours.
- 2.3.34 Overflow parking is likely occurring in all the areas where full capacity is reached, but it is only occurring in potentially high volumes in Dunbar (Station Road - 26 cars, Countess Road - 50 cars) and North Berwick (Station Court - 24 cars). It is unlikely that this is entirely attributable to the stations, but some follows a commuter pattern which would suggest it is.
- 2.3.35 Dunbar and Longniddry are the only sites to experience illegal parking that could be directly or indirectly attributed to the rail station. They are also the stations that reach full capacity first (8AM and 8:30AM respectively) highlighting their high demand.

Figure 2.8 % Occupancy At Park And Ride Car Parks By Time Period (0600 – 2000)



- 2.3.36 The situation for each individual station is discussed in more detail below along with the observations from site visits and findings from consultation. This includes an initial visual assessment of the potential to provide extended Park and Ride facilities at each station. It should be noted that the LDP has safeguarded land at Musselburgh, Longniddry and Drem for extension of Park and Ride car parks.

#### Dunbar

Dunbar's unrestricted parking is being used to full capacity, with only disabled and motorcycle bays not being fully utilised. The survey identified that electric charging bays were also being fully occupied by vehicles for between 11 and 14 hours but as they are not operational it is likely they are being used for general parking. Car park capacity was reached by 8:30AM and remained fully occupied for 8.5 hours until 5PM.

There is evidence of long-stay parking linked to the station on Station Road, Countess Road, East Links Road and the road from the A1087 bounding the churchyard. Illegal parking was observed on Countess Road and Station Road.

The Council previously provided additional car parks at Abbeylands and Countess Road but both filled immediately when opened. There is limited scope to provide additional parking with the only option appearing to be in the old goods yard.

#### North Berwick

North Berwick's unrestricted parking was being used to full capacity when surveyed with only the disabled and electric charging bays not fully utilised although the latter is not operational.

Full capacity was reached by 10AM and it remained almost fully occupied for 7 hours until 5PM.

Overflow parking that was likely linked to the station was observed on Ware Road, Station Road and Station Court which is likely impacting upon the residents in these areas.

Given the central location of the station there is no realistic scope to increase Park and Ride provision suggesting these problems will continue.

### **Drem**

Drem's unrestricted parking reached full capacity at 1PM and stayed fully occupied for 0.5 hours. However, it reached 98.6% occupancy at 9AM (1 space unoccupied) showing that most demand is in the AM peak period. Neither the electric charging bay nor the disabled bays were fully occupied at any point in the day.

On street parking was evident on B1377 with the time of occupancy suggesting these were commuters.

Land has been safeguarded in the LDP to extend Park and Ride provision by ~12 spaces.

### **Longniddry**

Longniddry's unrestricted parking was being used to full capacity when surveyed with only disabled and electric charging bays not being fully utilised. Full capacity was reached by 8AM and it remained fully occupied for 7 hours until 3PM. Long-stay on street parking was prevalent on the A918 Lyars Road, Park View and Wemyss Terrace.

However, an extension to the car park at Longniddry was opened in May 2019 shortly after the surveys were undertaken. It has space for 58 vehicles and 10 bikes, adding to the previous 73 vehicle capacity at the station. The Council expected it to be fully occupied upon opening.

The LDP includes a safeguard for expansion of up to 80 spaces which incorporates the recent extension. There is consequently land remaining for an extension of ~20 spaces.

### **Prestonpans**

Prestonpans station has two car parks which both reached full capacity for their unrestricted parking when surveyed. The overall capacity of both sites was reached by 10:30AM and they remained fully occupied for 3 hours until 1:30PM. This included the electric vehicle charging bays, where users spent 5 to 11.5 hours, and the disabled bays in the eastern car park. The disabled bays in the western car park did not reach capacity.

The on-street surveys highlighted long-stay parking in all roads surveyed, particularly Gardiner Terrace, Polwarth Terrace and Station Road. However, the pattern of arrivals and departures suggested that only Gardiner Terrace was being used by commuters. The Council advised that on street parking is generally well policed in this area through a combination of TROs and enforcement.

If additional Park and Ride capacity were to be provided it is possible that it could be accommodated on the land to the south of the station adjacent to the existing car park. There is no space to the north of the station.

### **Wallyford**

Wallyford has two adjacent car parks including one at the station and the other slightly further east which also serves bus-based Park and Ride. When surveyed the station car park reached

full capacity by 7AM but the Park and Ride site never reached capacity although demand started to rise after the station car park was filled. The station car park remained fully occupied for 7.5 hours until 2:30PM. There was no evidence of on street parking problems which is consistent with the fact that the Park and Ride site did not reach capacity.

Consultation suggests that, at times, Wallyford can reach capacity and that the station car park can suffer from indiscriminate parking on the turning head and at the junction.

The only spaces available to expand car parking at Wallyford are on either side of the station where, to the south, there are playing fields and public open space and, to the north, there are agricultural fields which are part of the Green Belt. The site to the north is adjacent to the existing Park and Ride site, so better located to link with the bus services that call here.

### **Musselburgh**

Musselburgh car park did not reach capacity when it was surveyed with occupancy of marked bays peaking at 94.6%. The electric charging bays were fully occupied by vehicles for 7 to 11 hours. Disabled bays were not fully occupied. The on-street parking suggested that overflow parking was not occurring which is consistent with the fact that the Park and Ride car park did not reach capacity.

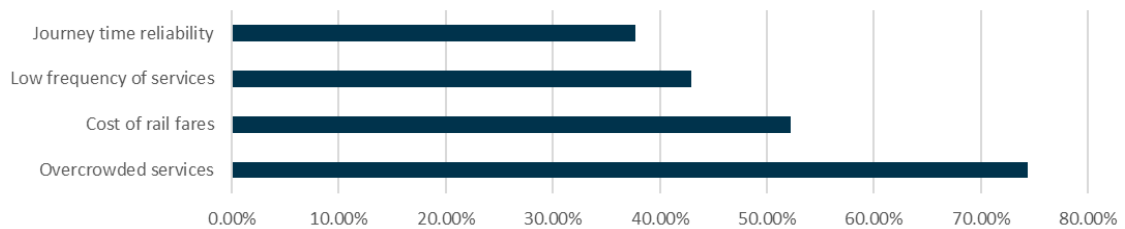
However, the consultation and previous site visits suggest that Musselburgh car park does reach capacity at times and that overflow parking takes place on the access road as illustrated below. It is likely that this is partially driven by demand at Queen Margaret University (QMU) with the campus being located adjacent to the station.



Approximately 1.5 ha of land is safeguarded adjacent to Musselburgh station in the LDP to create a transport hub with car parking, bus and active travel access. However, with QMU being located nearby there may need to be a parking management solution to ensure the capacity is used as intended.

- 2.3.37 Based on the utilisation observed it is possible that the existing Park and Ride capacity is constraining rail demand in Drem, Dunbar, North Berwick, Longniddry and Prestonpans. Furthermore, lower occupancy at Musselburgh and Wallyford stations can potentially be attributed to overcrowding on services which is most prevalent in the western part of East Lothian as discussed earlier in this section. This was confirmed through the public consultation with Figure 2.9 showing overcrowding as the largest problem faced by the 54% of respondents that travel by rail frequently. This could also be causing passengers to travel east to stations further up the line to avoid the risk of not being able to board at Musselburgh or Wallyford.

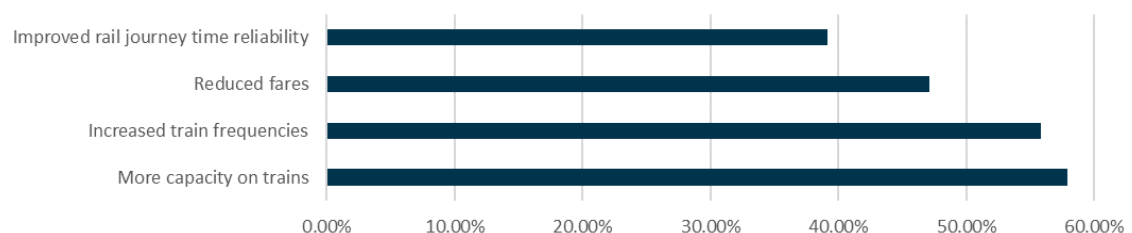
**Figure 2.9 Main Problems Faced When Travelling By Rail (% of Total Respondents)**



Source: Public Consultation Survey, 2019

2.3.38 The public consultation suggested that improvements that would offer the greatest positive impact to residents are more capacity on trains followed closely by increased train frequencies as shown in Figure 2.10.

**Figure 2.10 Rail Improvements Which Would Offer Greatest Positive Impact (% of Total Respondents)**



Source: Public Consultation Survey, 2019

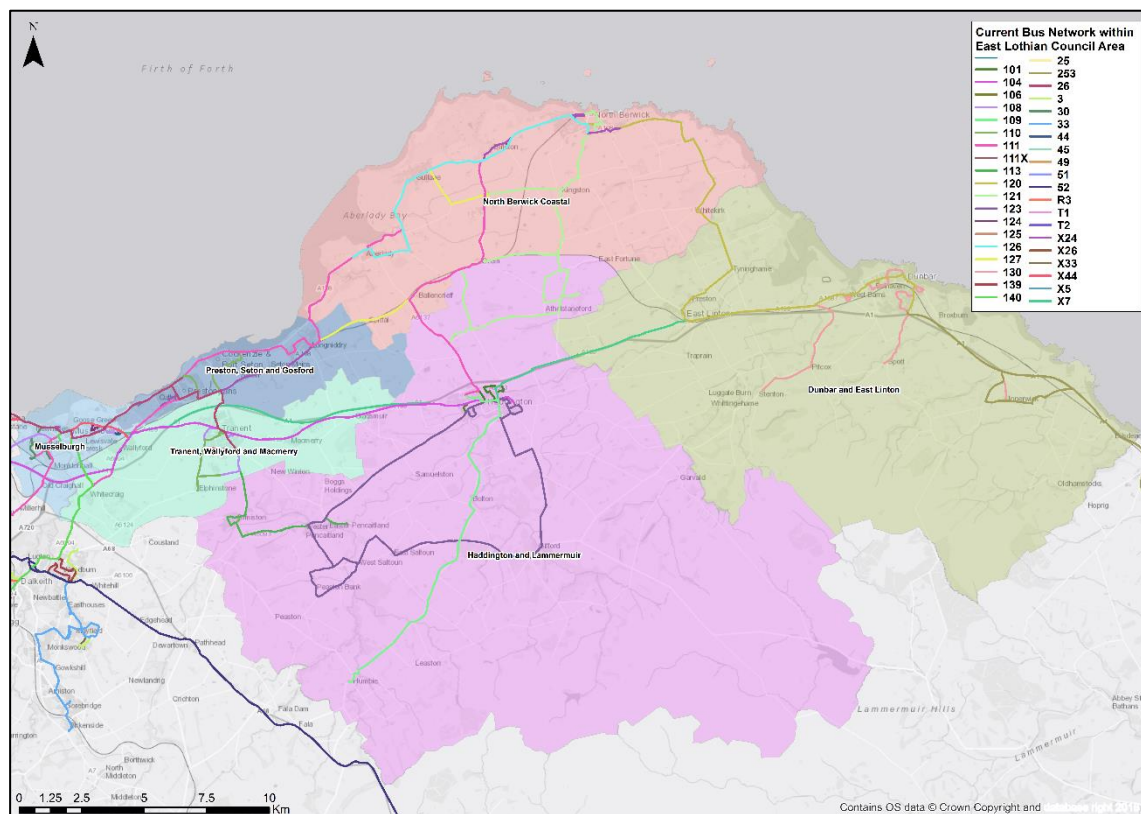
## 2.4 Bus Network & Current Issues

2.4.1 The main bus services linking East Lothian to Edinburgh are provided by Lothian Buses and their subsidiary company East Coast Buses. The latter also provide local services along with other local operators including Prentice Coaches, Eve Coaches, E&M Horsburgh and Lothian Community Transport.

2.4.2 An overview of current bus services, their frequency as well as the times of the first and last buses is provided in Appendix F. Their routes are illustrated in Figure 2.11.



Figure 2.11 Current Bus Routes in East Lothian

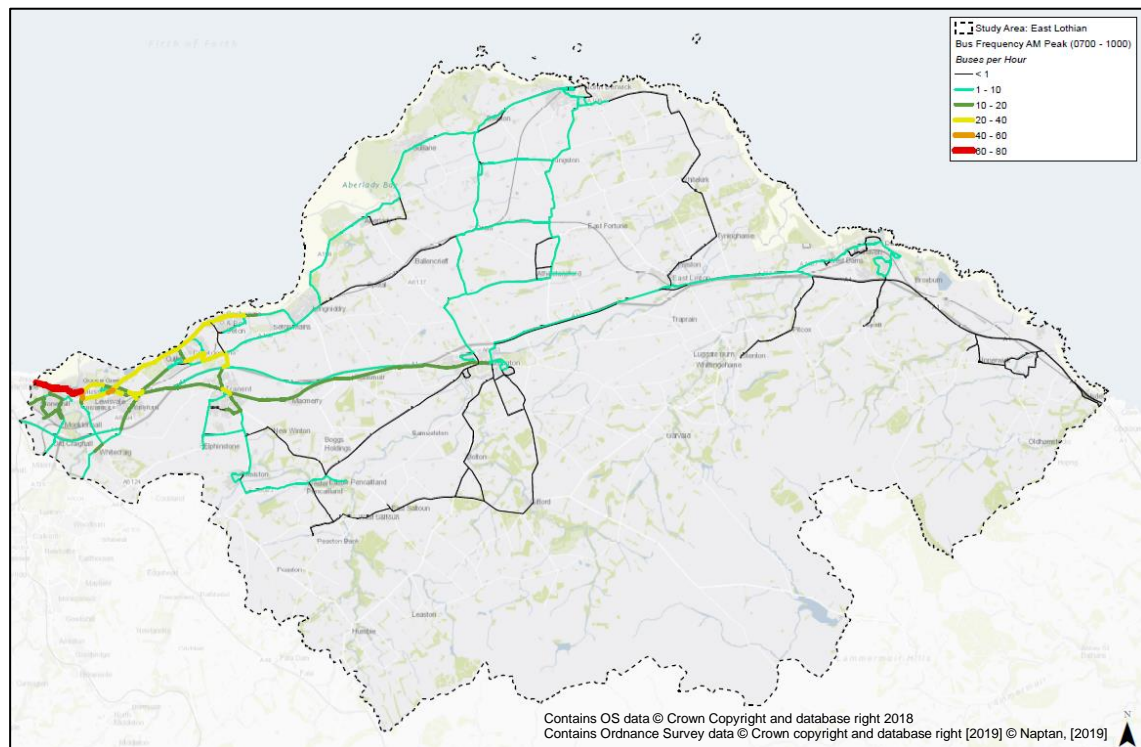


Source: Bus Operators Routes and Timetables

- 2.4.3 The total buses per hour (e.g. all buses travelling along that section of the road network) in the AM peak period (0700 – 1000) are shown Figure 2.12 with similar mapping for the inter peak (1000 – 1600) and PM peak (1600 – 1900) provided in Appendix G.
- 2.4.4 This shows that there is comprehensive bus network coverage linking the main towns and settlements across East Lothian with the most frequent services operating in the west of the county at frequencies of half hourly or less. These are predominantly the services provided by Lothian Buses and East Coast Buses that link East Lothian to Edinburgh and beyond.
- 2.4.5 In addition, East Coast Buses have plans to increase service frequencies on core routes such as the X5 express between Edinburgh and North Berwick and X7 express between Edinburgh and Dunbar via Haddington.
- 2.4.6 Local services operate at lower service frequencies typically being no more regular than hourly.

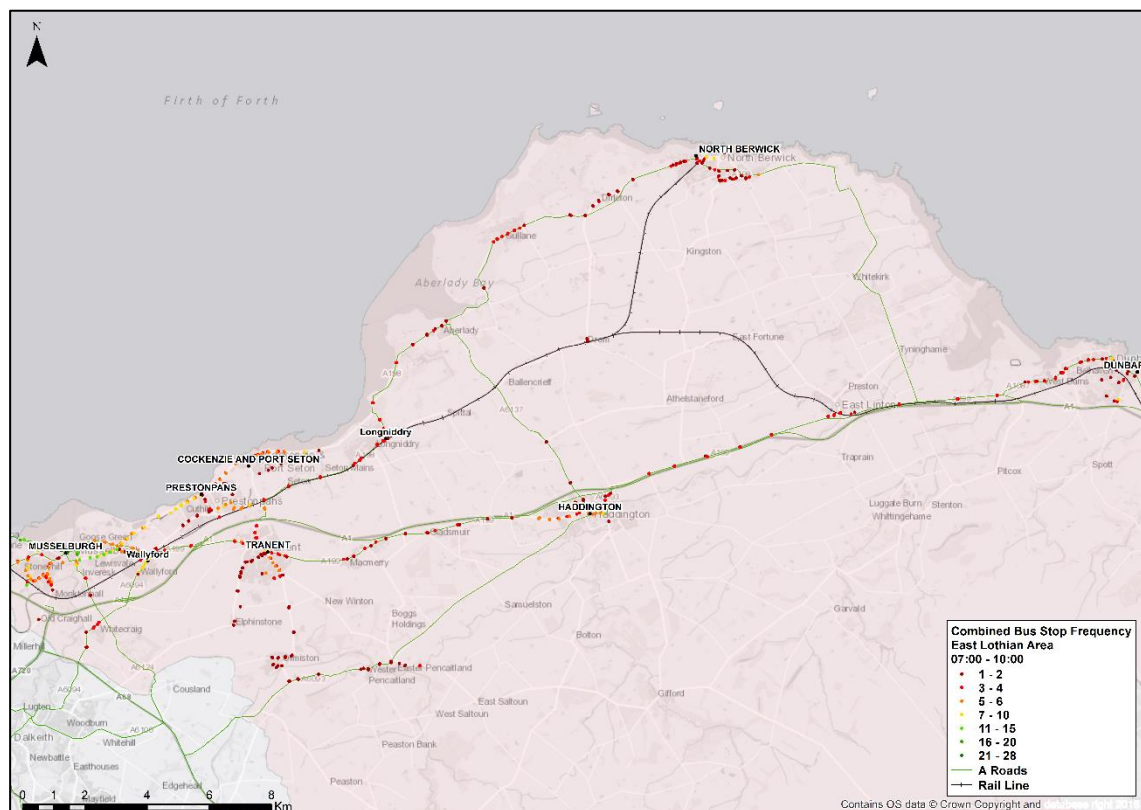


**Figure 2.12 Total Buses Per Hour – AM Peak Period (0700 – 1000)**



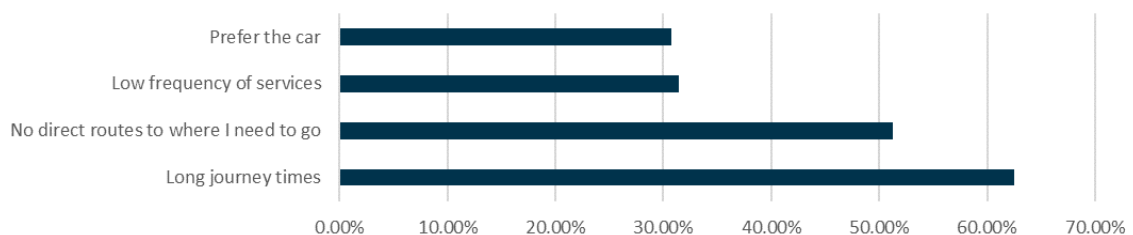
- 2.4.7 The combined hourly service frequencies at bus stops across East Lothian in the AM peak period (0700 - 1000) are shown in Figure 2.13. Similar data for the inter peak (1000 – 1600) and PM peak (1600 – 1900) is provided in Appendix H. This shows that most stops have a combined frequency of 6 services per hour or less during this time period with smaller settlements like Pencaitland and Ormiston having no more than 2 services per hour.
- 2.4.8 However, frequencies at stops in Prestonpans, Wallyford and, particularly, Musselburgh are much higher. These are sufficient to provide a ‘turn up and go’ level of service. This can be attributed to the closer proximity to Edinburgh and the high number of Lothian Buses and East Coast Buses services that serve these areas. Buses are also ‘funnelled’ through Musselburgh as the only alternative route into Edinburgh is via A1.
- 2.4.9 Consultation with East Coast Buses revealed that services currently experience peak period delays most frequently in Musselburgh town centre, Tranent town centre and Wallyford. This closely aligns with where the highest frequency services are operating. However, most delays to East Lothian services are experienced within the City of Edinburgh boundaries despite the provision of some bus lanes on these corridors.
- 2.4.10 Overall, East Lothian benefits from good quality, regular bus links to Edinburgh which are most concentrated in the western part of Council area. These also provide some local linkages as well but predominantly this function is left to local services. However, there are fewer dedicated local services meaning internal bus links are more limited and, particularly, between the smaller settlements and larger local centres.

Figure 2.13 Combined Hourly Bus Service Frequency At Stops – AM Peak Period (0700 – 1000)



2.4.11 The public consultation found that 42% of respondents regularly travel by bus. Figure 2.14 shows that the main reasons for not travelling by bus are long journey times and a lack of direct routes.

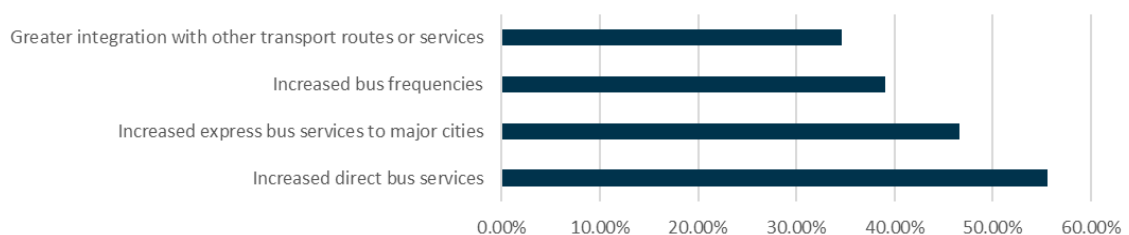
Figure 2.14 Main Reasons For Not Travelling By Bus (% of Total Respondents)



Source: Public Consultation Survey, 2019

2.4.12 The bus improvements that would offer the greatest positive impact are increased direct bus services and express services as shown in Figure 2.15.

Figure 2.15 Bus Improvements Which Would Offer Greatest Positive Impact (% of Total Respondents)

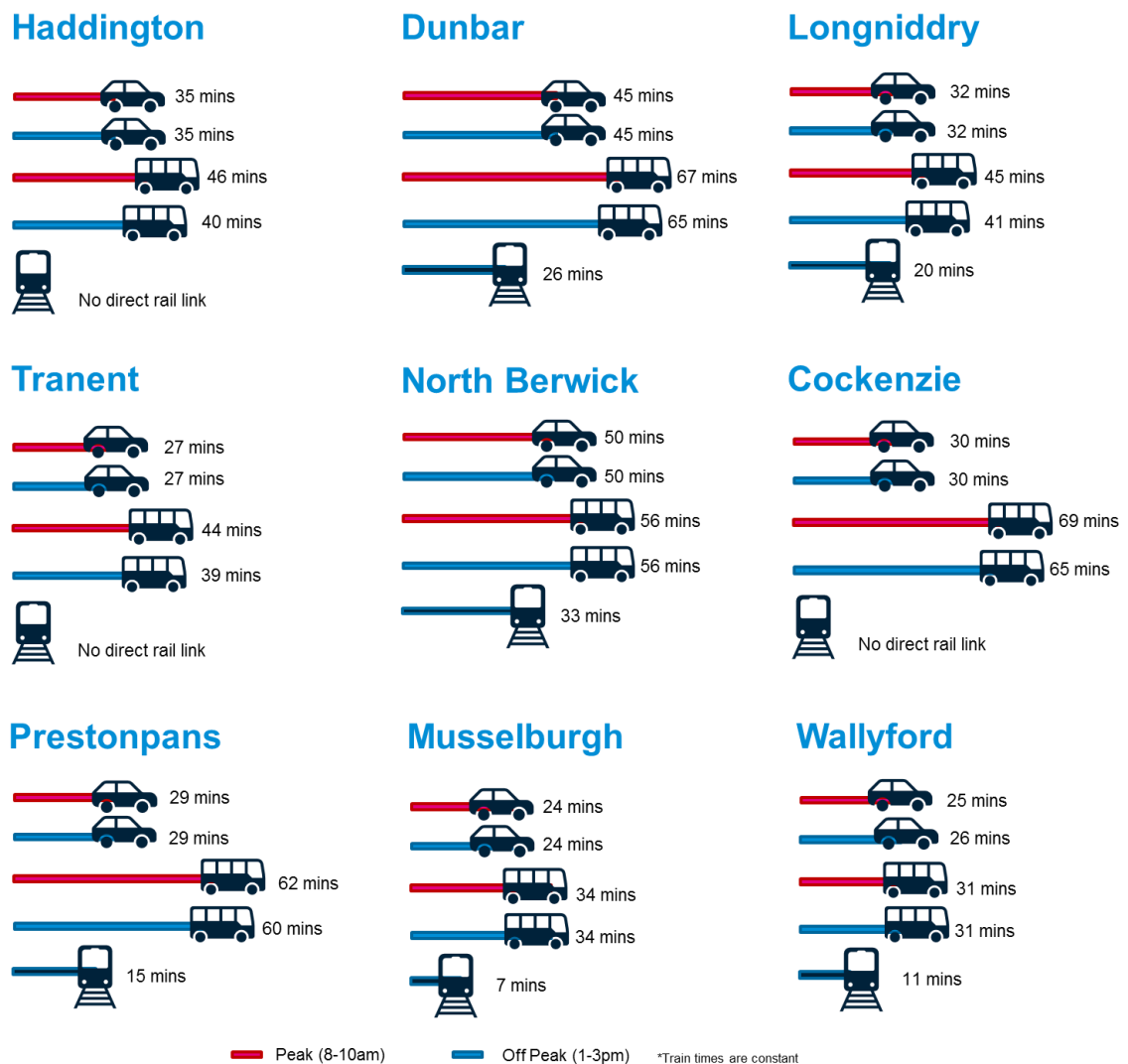


Source: Public Consultation Survey, 2019

## 2.5 Journey Time Comparisons

- 2.5.1 As the public transport network is focussed upon links into Edinburgh a comparison of journey times to Edinburgh city centre by car, bus and train is shown in Figure 2.16. This draws upon road journey times from SEStran Regional Model (SRM) as well as timetabled bus and rail journey times.

Figure 2.16 Journey Time To Edinburgh City Centre in AM Peak and Off Peak – Car vs Bus vs Train



Source: SRM road journey times, bus timetables, train timetables

- 2.5.2 In all instances cars are faster than buses but where direct train services are available these are always faster than the car. This doesn't take into consideration the time required to get to the station but does show how competitive the train is for journeys into the city centre.
- 2.5.3 The analysis suggests that, for cars and buses, there is no sizeable difference in journey times between peak and off-peak periods, but this does not reflect the variability in journey times that can occur at peak periods. So, whilst the typical journey time may only be slightly longer than in the off-peak it is likely to be more unreliable. Commuters may consequently experience occasions when the journey time is significantly longer as a result.
- 2.5.4 Alongside journey times to Edinburgh city centre analysis was undertaken to compare journey times to Edinburgh Park, Ocean Terminal and the Fort Kinnaird Retail Park. These were chosen

as proxies for key employment destinations in west, north and south Edinburgh respectively. The findings are presented in Appendix I.

2.5.5 This shows that rail is competitive with car for journeys to Edinburgh Park. This reflects the presence of a station in the area and its location relative to East Lothian which makes car journey times longer. Rail is largely uncompetitive for travel to Ocean Terminal as there are no direct rail links or station in the area. Whilst Newcraighall Station is located adjacent to Fort Kinnaird Retail Park a journey by rail from East Lothian would require a trip into Edinburgh and back out to Newcraighall making the journey time unattractive compared to car.

2.5.6 Bus journeys are frequently much longer than car making them an unattractive option for residents of East Lothian. In some instances bus journey times are double the car journey time and occasionally even longer. This can be attributed to the fact that buses are often subject to the same delays as cars along with the additional time required for stops. Bus is most competitive with car between:

- North Berwick and the city centre;
- North Berwick and Ocean Terminal;
- Haddington and the city centre; and
- Wallyford and the city centre.

2.5.7 For locations in the west of East Lothian like Musselburgh and Wallyford the bus journey time to the Fort Kinnaird Retail Park are reasonably short being less than 20 minutes. However, these are still at least double the car journey time.

2.5.8 This analysis highlights that, where direct rail links are available, they can provide a very attractive alternative to the car. Fixed public transport links like these are most effective serving locations where there is high demand to travel between them creating a critical mass that is sufficient to sustain a service. The next chapter explores the existing demand and travel patterns in more detail.

## 2.6 Active Travel

2.6.1 East Lothian Council is currently taking forward the development of an active travel corridor which includes segregated walk and cycle routes extending from Musselburgh to Dunbar via Haddington. This will link to the existing Core Paths Network as shown in Figure 2.17 and the National Cycle Network as shown in Figure 2.18.



Figure 2.17 Existing Core Path Network and Proposed Active Travel Corridor

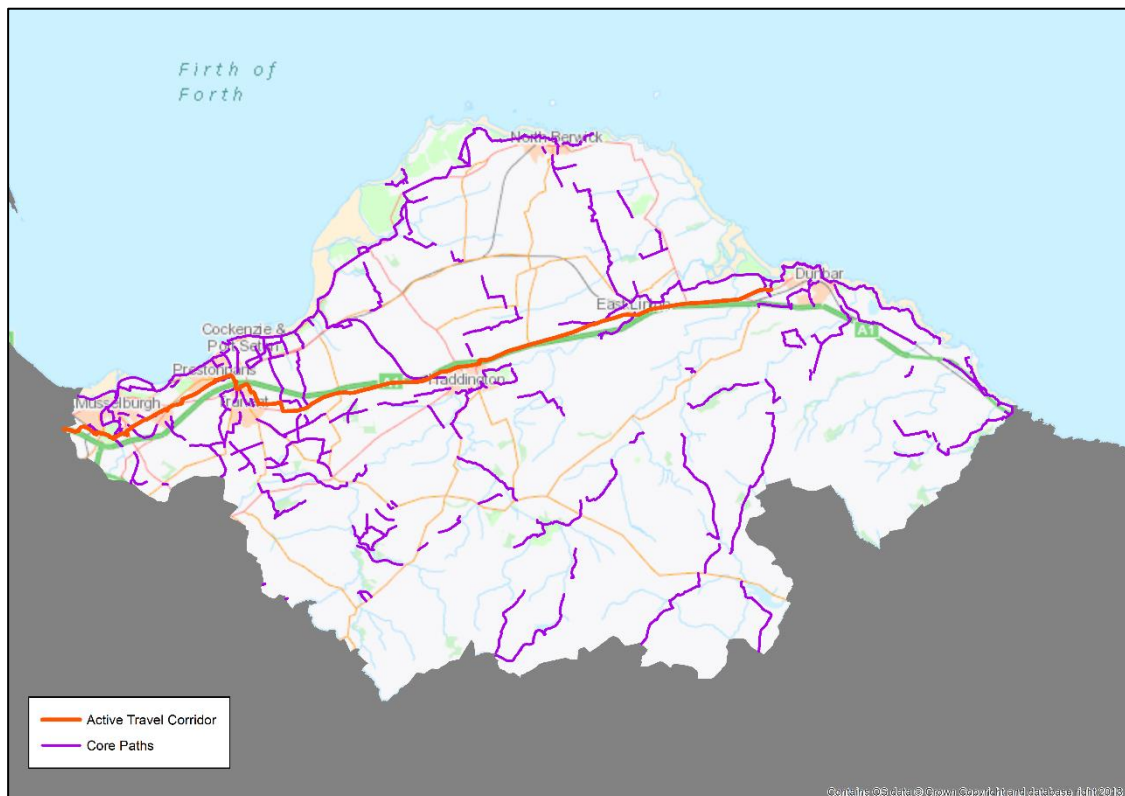
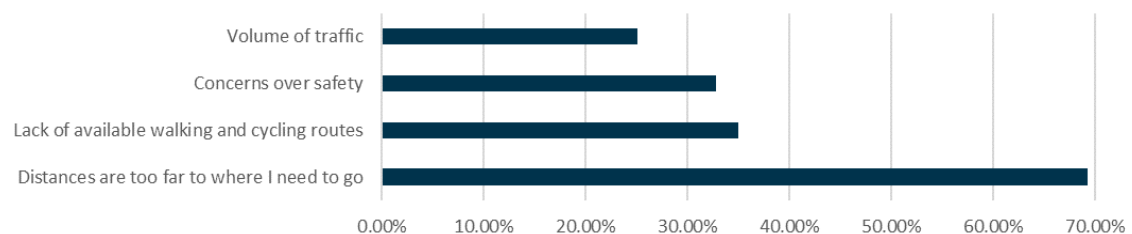


Figure 2.18 Existing National Cycle Network and Proposed Active Travel Corridor



- 2.6.2 The active travel corridor will improve the direct linkages between settlements within East Lothian by walking and cycling as the current networks often do not provide direct connectivity or are not attractive to users. This is particularly the case the further east in the county you travel where settlements are more dispersed.
- 2.6.3 The Council has also prepared a Sustainable Travel Masterplan for Musselburgh which proposes a safe and accessible network of key routes for people walking and cycling into and through Musselburgh. The aim is to create high quality routes separate from busy traffic and provide people with a practical choice for walking and cycling for everyday journeys with less reliance on the private car. Work is also being progressed to improve accessibility around Haddington, Tranent and North Berwick.
- 2.6.4 The public consultation found that 46% of respondents currently make every day journeys by walking and cycling. By far the biggest reason for not using active travel is the distances between the origins and destinations as shown in Figure 2.19.

**Figure 2.19 Main Reasons For Not Travelling By Walking And Cycling (% of Total Respondents)**



Source: Public Consultation Survey, 2019

## 2.7 Summary

- 2.7.1 The analysis has identified that the transport network and services serving East Lothian are already under pressure even before consideration is given to the impacts that the proposed land-use developments will have and their associated mitigation measures.
- 2.7.2 On the road network there are high traffic flows in Tranent and Musselburgh town centres which cause poor air quality, delays, severance and undermine the attractiveness of the town centres as places to visit, work and spend leisure time. The key junctions on the strategic road network that are suffering from congestion and delays at peak periods are:
- **A1 Old Craighall Junction:** AM peak hour / PM peak hour; and
  - **A1 Bankton Interchange and A198 Junction:** PM peak hour.
- 2.7.3 Problems are also being experienced on the rail network with peak trains operating at or over capacity and limited train paths on the ECML that would enable extra services to operate. This is impacted upon by the conflicts occurring between fast, limited stop long-distance services and slower, frequently stopping local services.
- 2.7.4 It is evident that the existing Park and Ride capacity is constraining rail demand in Drem, Dunbar, North Berwick, Longniddry and Prestonpans. Furthermore, lower occupancy at Musselburgh and Wallyford stations can potentially be attributed to overcrowding on services discouraging use and suppressing demand.
- 2.7.5 Platform lengths at stations in East Lothian and at Edinburgh Waverley constrain the maximum train length to 8, or possibly 9, 23m coaches. In addition, this would require platform lengthening at North Berwick as a minimum. Land has been safeguarded for platform lengthening at Musselburgh, Prestonpans, Longniddry, Drem and Dunbar. There is also a safeguard for car park extensions at Musselburgh, Longniddry, Drem.



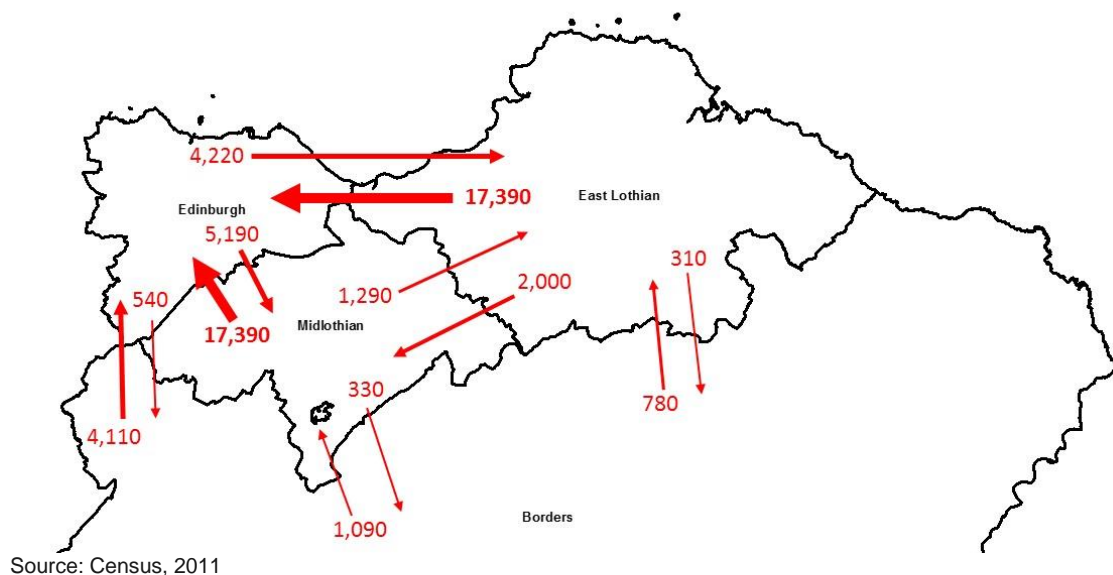
- 2.7.6 The provision of increased capacity on the rail network in East Lothian is closely linked to decisions regarding High Speed Rail which aren't expected until Q1 2020 at the earliest.
- 2.7.7 Buses currently experience delays most frequently in Musselburgh town centre, Tranent town centre and Wallyford which closely aligns with where the highest frequency services are operating. However, most delays to East Lothian services are experienced within the City of Edinburgh boundaries.
- 2.7.8 Where direct rail links are available journey times can be very attractive compared to the car whereas buses are usually not able to offer comparable journey times. Rail is most competitive for journeys to Edinburgh city centre and Edinburgh Park.
- 2.7.9 Walking and cycling routes are limited meaning it is difficult to use active travel between settlements in East Lothian. This problem is experienced across East Lothian but becomes more acute the further east you travel in the county.

## 3 Current Transport Demand and Travel Patterns

### 3.1 Travel To Work Summary

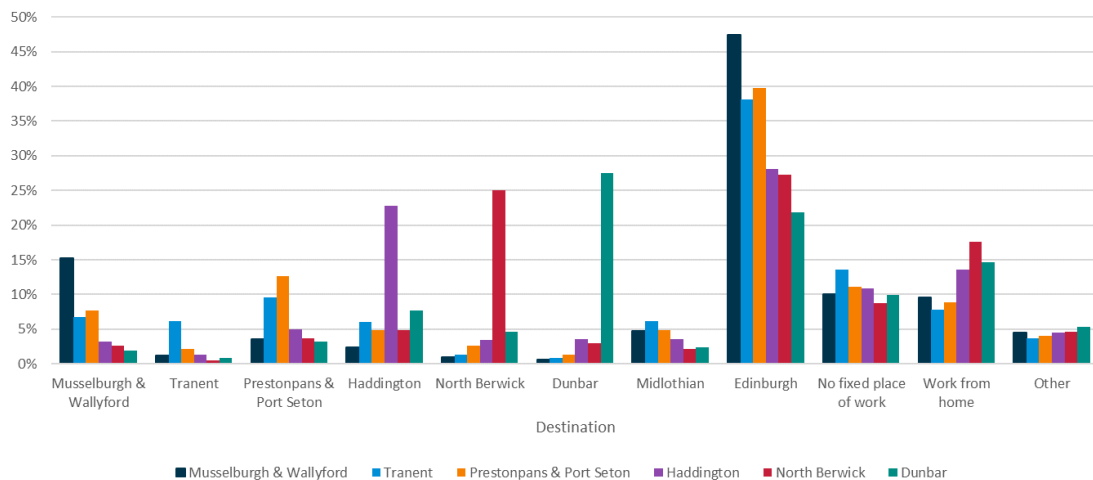
- 3.1.1 As set out in Chapter 1 there are close ties between East Lothian and the Edinburgh labour market. Figure 3.1 shows the main travel to work flows to and from East Lothian. This highlights Edinburgh as the main destination and shows East Lothian as a net exporter of labour.

Figure 3.1 Census Travel To Work Total Flows



- 3.1.2 Figure 3.2 breaks down these flows by sector and shows that Edinburgh is the largest travel to work destination for all sectors within East Lothian with the exception of Dunbar. It is noticeable that the proportion of people working in Edinburgh is higher for the western parts of East Lothian with Musselburgh & Wallyford having almost half of their residents (47%) travelling to Edinburgh for work.
- 3.1.3 Alongside this there is also a degree of containment within all sectors. This is most apparent in Haddington, North Berwick and Dunbar with the proportion living and working in the same sector steadily increasing the further east you travel away from the Edinburgh labour market. Containment is lowest in the west where the development proposals are focussed highlighting the importance of providing more local employment opportunities in this area.

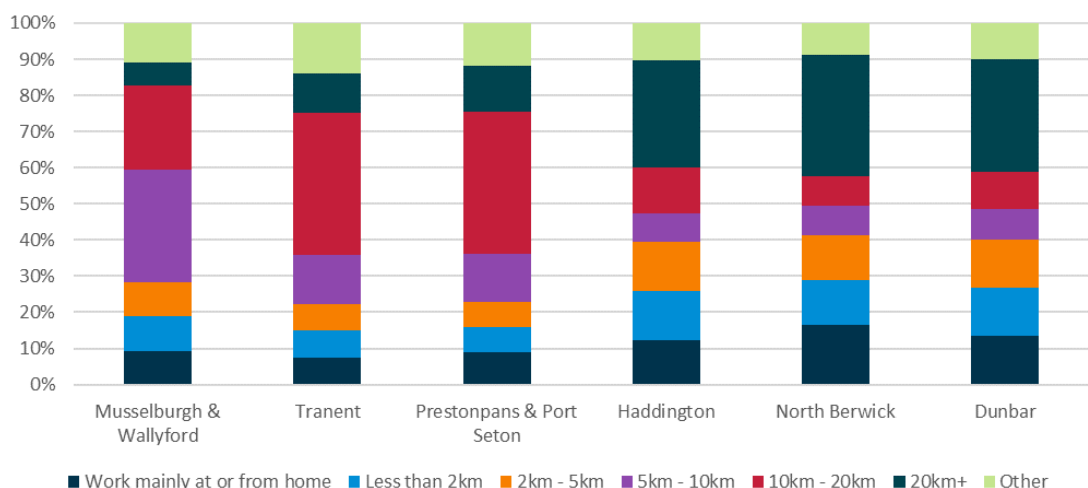
Figure 3.2 Census Travel To Work Origins and Destinations



Source: Census, 2011

- 3.1.4 These trends are reflected in the distance travelled to work data shown in Figure 3.3 with more people travelling longer distances as you move further east through East Lothian.

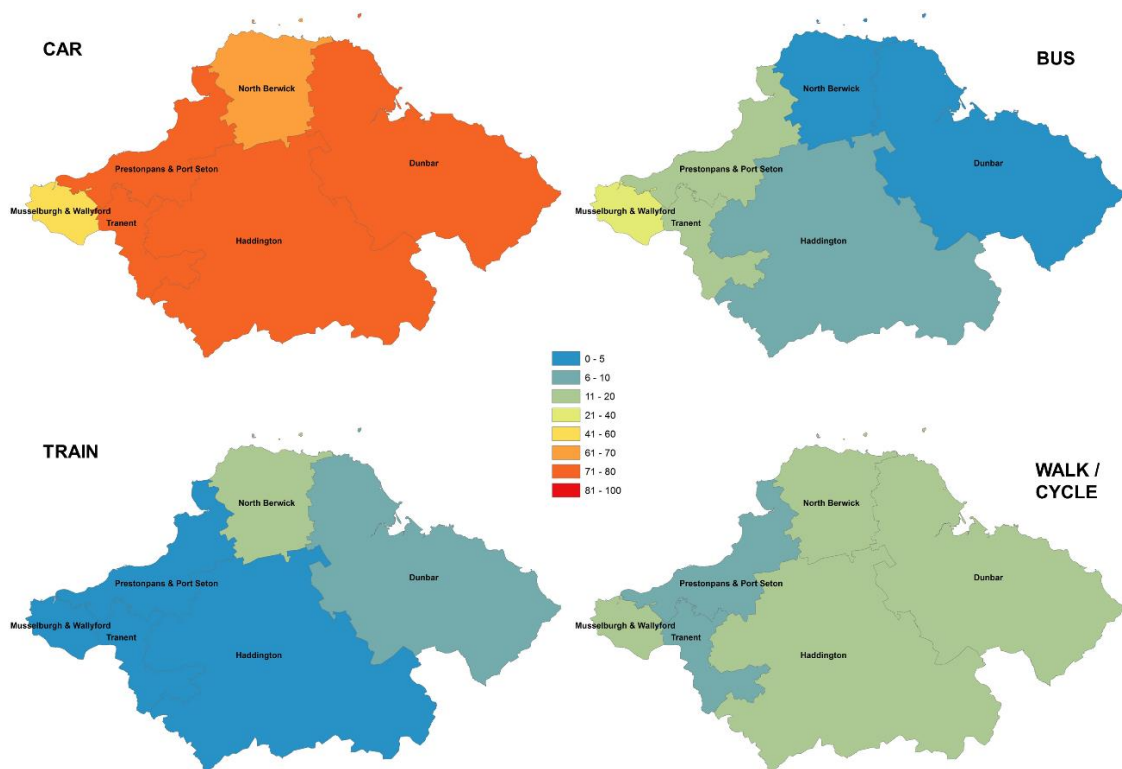
Figure 3.3 Distance Travelled To Work



Source: Census, 2011

- 3.1.5 The modal splits for travel to work from East Lothian sectors are illustrated in Figure 3.4. Car is the dominant mode in all sectors although Musselburgh & Wallyford and North Berwick are less dependent on cars than the rest of East Lothian. Bus use is greatest in the western part of East Lothian with the highest usage in Musselburgh & Wallyford. The converse is true for train with the greatest usage being in the eastern part of East Lothian. This highlights the importance of rail links for longer distance journeys and how they can be more attractive than the car under these circumstances. Walking and cycling use is highest in the sectors with the most containment suggesting people are using these modes for short, local journeys to work.

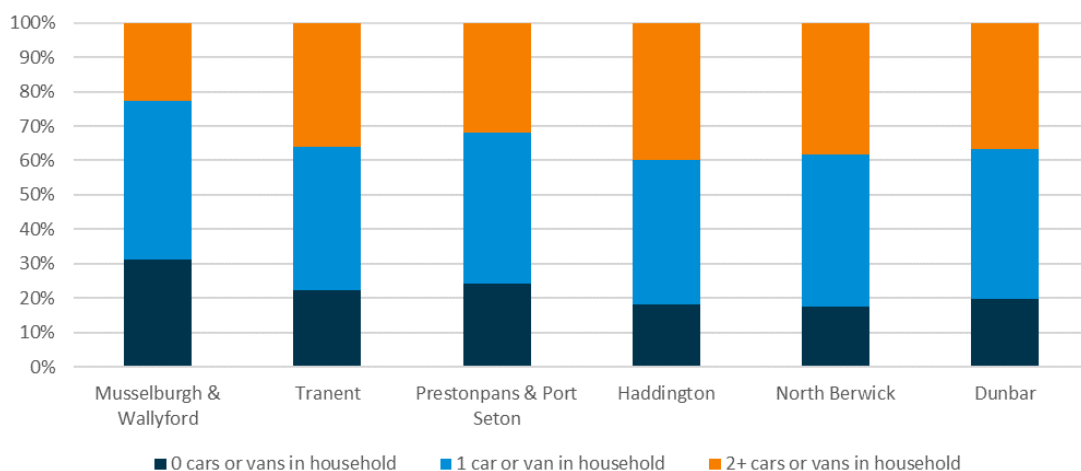
Figure 3.4 Travel To Work Mode Share By East Lothian Sector – All Destinations (%)



Source: Census, 2011

- 3.1.6 Car availability across East Lothian shown in Figure 3.5 reflects the travel to work trends with lowest levels of car ownership in Musselburgh & Wallyford where public transport usage is higher. Haddington has a lower proportion of households without a car (18%) than all other sectors except North Berwick which also has a similar level of no car ownership. For Haddington this supports the high level of car usage observed but North Berwick has the highest proportion of people using train of all East Lothian sectors. This suggests that whilst a high proportion of households may have access to a car they choose to travel by train instead. On this basis it can be seen that if an attractive public transport service can be provided car usage can be reduced even in locations with high car availability.

Figure 3.5 Car Ownership By East Lothian Sector

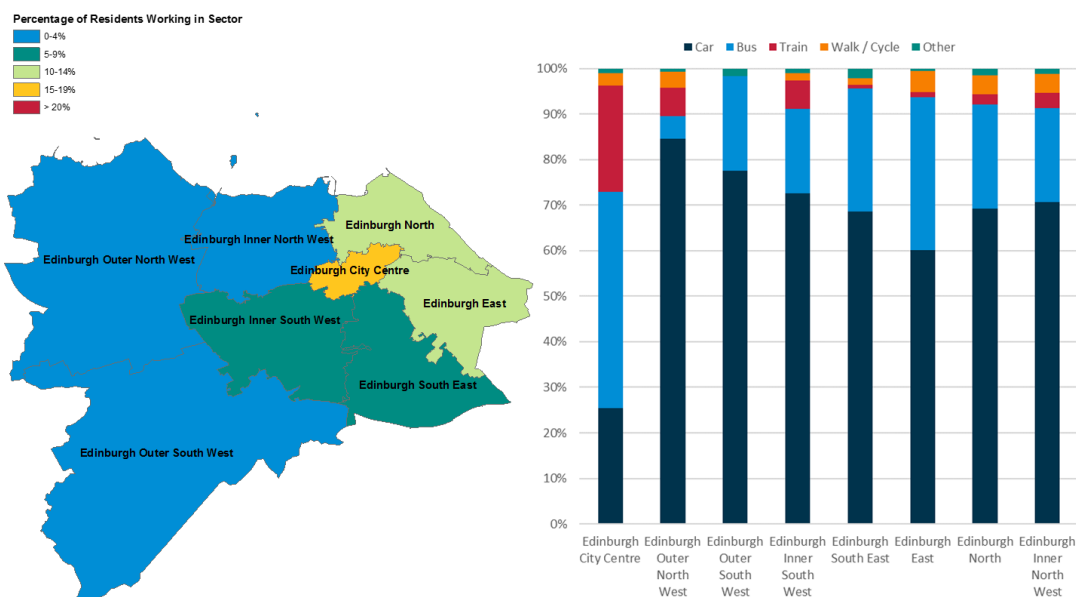


Source: Census, 2011

## 3.2 Travel To Edinburgh

- 3.2.1 To understand the travel to Edinburgh demand identified in Section 3.1 in more detail further analysis was undertaken to split Edinburgh into sectors. The travel patterns between each East Lothian and Edinburgh sector were then examined.
- 3.2.2 Figure 3.6 shows that Edinburgh city centre is the main destination of journeys from Musselburgh & Wallyford. The majority of these journeys are made by bus (47%) whilst car and train account for around a quarter each. Outside the city centre the greatest demand is for travel to the sectors which are closest to Musselburgh & Wallyford in the south and east of Edinburgh. There is lower demand for travel to destinations further west reflecting the greater distance from Musselburgh & Wallyford. Car is the dominant mode for travel to all sectors outside the city centre whilst bus is the main mode of public transport.

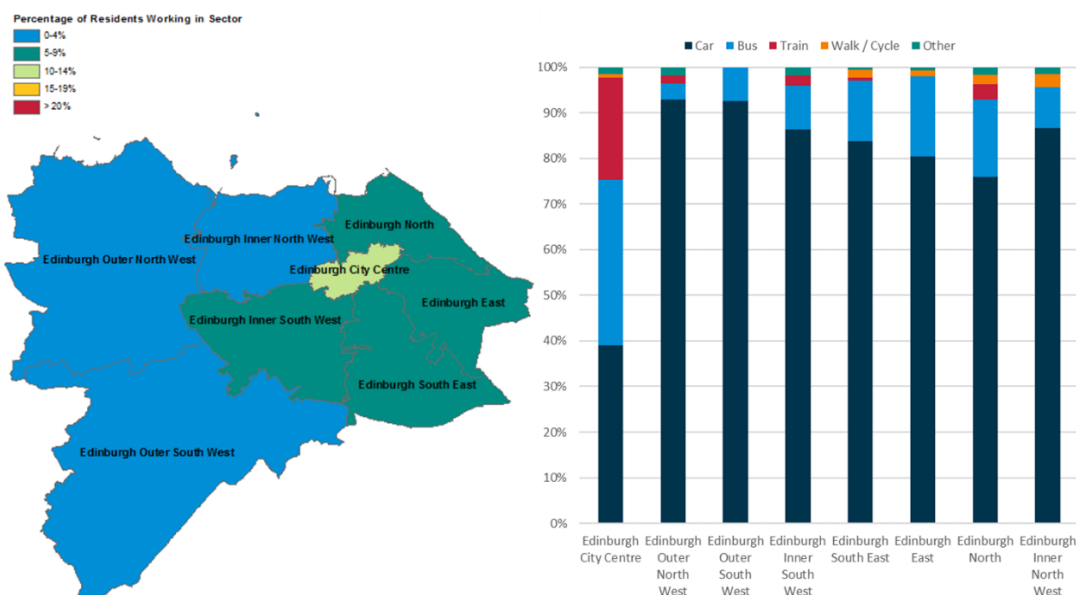
Figure 3.6 Musselburgh & Wallyford Travel To Edinburgh



Source: Census, 2011

- 3.2.3 In Tranent the patterns are similar to Musselburgh & Wallyford as shown in Figure 3.7. However, the total number of residents working across Edinburgh sectors is lower. Edinburgh city centre has the highest demand and public transport is used for 59% of journeys to it. Car use heavily dominates travel to all other sectors outside of the city centre.

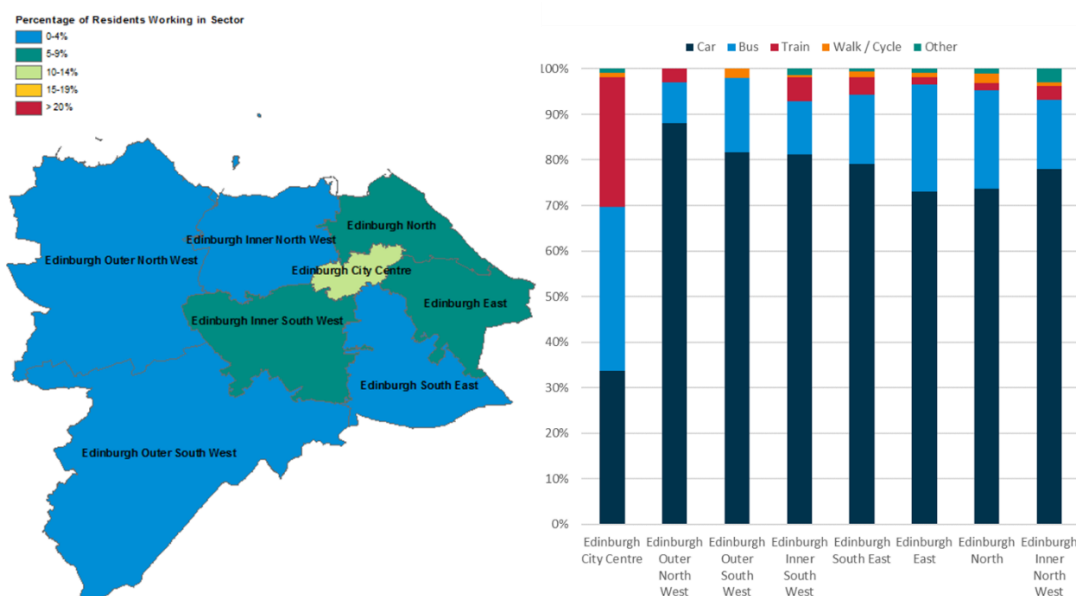
Figure 3.7 Tranent Travel To Edinburgh



Source: Census, 2011

- 3.2.4 Moving further east to Prestonpans & Port Seton demand is again focussed upon Edinburgh city centre as shown in Figure 3.8. Public transport is used for almost a third of journeys with 36% using bus and 28% train to travel to the city centre. Car is the dominant mode for journeys to other sectors and buses are the main mode of public transport.

Figure 3.8 Prestonpans & Port Seton Travel To Edinburgh

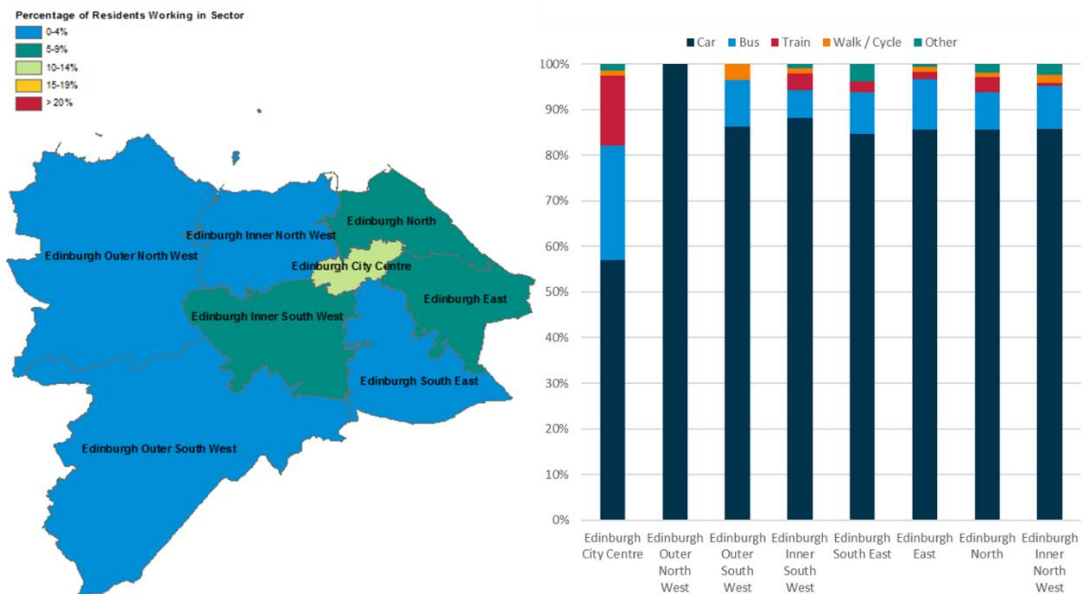


Source: Census, 2011

- 3.2.5 The split of demand across Edinburgh sectors is similar for residents of Haddington as illustrated in Figure 3.9. However, there is greater car dependency for travel to all the Edinburgh sectors. Around 57% drive to Edinburgh city centre which is the highest proportion of all East Lothian sectors. This along with the low public transport use for journeys to the other Edinburgh sectors suggests that public transport is unattractive for residents of Haddington.



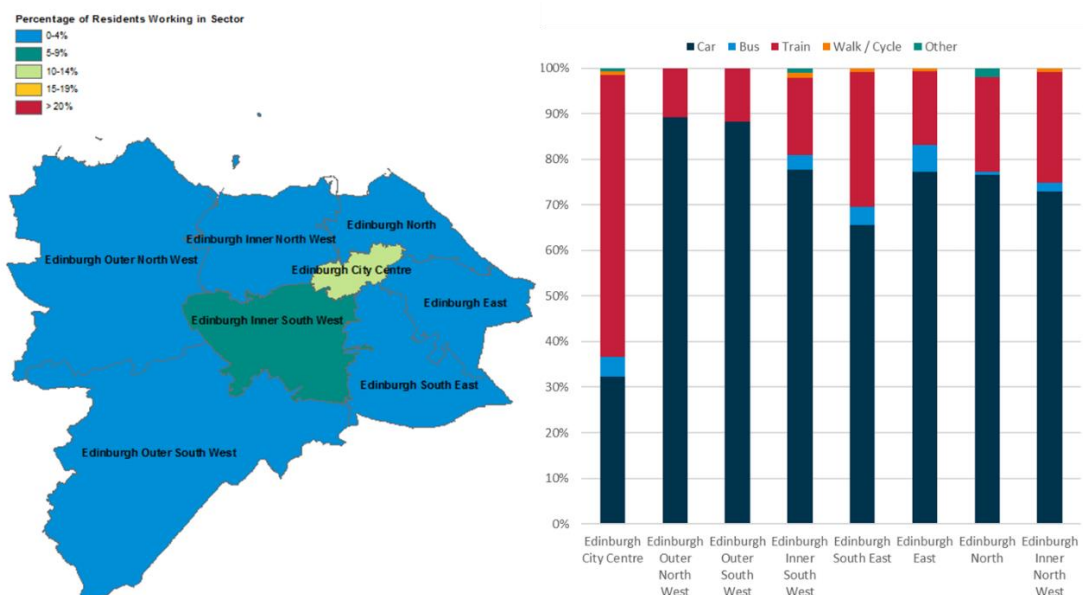
Figure 3.9 Haddington Travel To Edinburgh



Source: Census, 2011

- 3.2.6 In North Berwick most demand is for travel to Edinburgh city centre with 62% of people travelling by train. Car use is dominant for travel to the other sectors but train is the most used public transport mode for all of them highlighting the importance of the North Berwick branch line to residents in this area. This is reflected in very low bus usage as well.

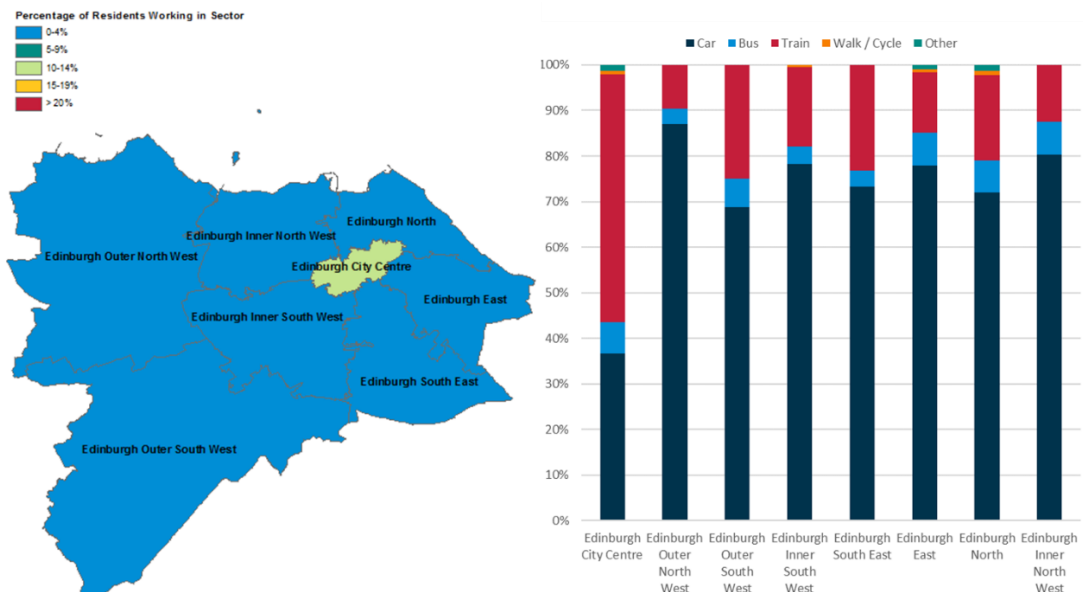
Figure 3.10 North Berwick Travel To Edinburgh



Source: Census, 2011

- 3.2.7 Dunbar is the furthest away sector from Edinburgh and those that are travelling there for work are focussed in the city centre. Like North Berwick train mode share is high as illustrated in Figure 3.11. Over half of the journeys made to Edinburgh city centre are by train and it is the main public transport mode for travel to all Edinburgh sectors.

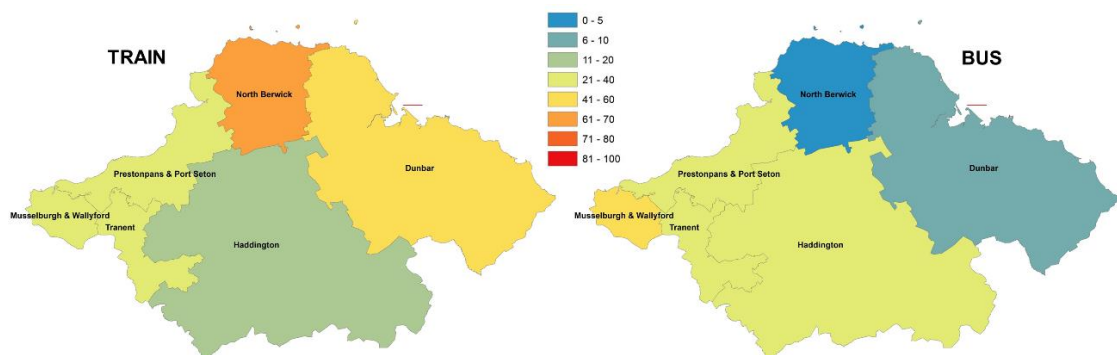
Figure 3.11 Dunbar Travel To Edinburgh



Source: Census, 2011

- 3.2.8 The evidence shows that public transport is an attractive option for residents of East Lothian for journeys to Edinburgh city centre as summarised in Figure 3.12. Trains are heavily used by residents of North Berwick and Dunbar whilst bus use is lower in these areas. The western parts of East Lothian closer to Edinburgh have higher bus use along with a similar level of train usage. The exception is Haddington where its lack of a direct rail connection creates a lower mode share.

Figure 3.12 Public Transport Mode Share For Travel To Edinburgh City Centre (%)



Source: Census, 2011

### 3.3 Public Consultation Findings

- 3.3.1 The public consultation explored respondents existing travel habits including locations that they currently travel to regularly and the purpose of the journey. The findings are outlined in Table 3.1 and show that Edinburgh city centre is the most popular destination, particularly for retail, leisure, employment and social trips. East Edinburgh has the highest purpose specific share with 68% of respondents travelling to it for retail.
- 3.3.2 Haddington is the most popular destination in East Lothian and is a clear focal point for health related journeys. However, it is notable that Haddington is an attractor for a wide range of purposes highlighting its importance as the county town.

**Table 3.1 Locations People Travel To On A Regular Basis By Trip Purpose (% of Total Respondents)**

Location	Employment	Retail	Leisure	Education	Visiting Friends and Family	Health Appointments	Personal	Total
Edinburgh City Centre	45%	54%	52%	8%	33%	17%	22%	83%
East Edinburgh (e.g. Fort Retail Park)	5%	68%	39%	0%	7%	2%	7%	72%
Haddington	18%	40%	35%	8%	19%	27%	19%	63%
North Berwick	8%	23%	42%	3%	13%	4%	10%	55%
North Edinburgh (e.g. Ocean Terminal)	7%	36%	30%	1%	10%	2%	4%	51%
Musselburgh	10%	25%	20%	4%	13%	11%	9%	46%
Dunbar	7%	18%	31%	3%	12%	3%	7%	45%
West Edinburgh (e.g. Edinburgh Park)	13%	12%	20%	1%	11%	2%	7%	41%
Glasgow	9%	17%	20%	2%	16%	1%	5%	38%
Scottish Borders	4%	5%	25%	1%	15%	1%	4%	37%
Midlothian	8%	12%	15%	1%	15%	1%	4%	34%
Tranent	7%	14%	11%	3%	12%	6%	6%	32%
Prestonpans	5%	6%	11%	2%	11%	4%	5%	29%
North East England (e.g. Newcastle)	3%	9%	18%	1%	11%	0%	3%	28%
South Edinburgh	5%	10%	12%	1%	12%	4%	4%	28%
Fife	3%	3%	12%	1%	13%	0%	2%	25%
Longniddry	4%	2%	11%	1%	7%	1%	4%	22%
Cockenzie / Port Seton	4%	4%	7%	1%	7%	5%	3%	22%
Wallyford	4%	1%	2%	1%	4%	0%	3%	12%

Source: Public Consultation Survey, 2019

3.3.3 The survey also explored the locations that people would like to travel to more often but cannot due to the transport links available. This was broken down by mode as set out in Table 3.2. Edinburgh city centre is the most popular destination overall with bus and, in particular, train being the main modes presenting barriers. Access to East Edinburgh and Haddington is also constrained with the latter showing the highest proportion of people facing barriers to cycling.

3.3.4 Overall, the responses suggest that train and bus are the main modes of transport that face barriers and are inhibiting people's ability to travel to their destinations.

**Table 3.2 Locations People Would Travel To More Often But Can't Due To Transport (% of Total Respondents)**

Location	Mode						Total
	Car	Bus	Train	Walking	Cycling	Other	
Edinburgh City Centre	13%	21%	46%	1%	7%	0%	58%
East Edinburgh (e.g. Fort Retail Park)	11%	23%	25%	1%	5%	0%	43%
Haddington	8%	20%	20%	3%	10%	1%	42%
West Edinburgh (e.g. Edinburgh Park)	9%	16%	26%	0%	3%	1%	38%
North Berwick	8%	19%	16%	1%	8%	0%	36%
North Edinburgh (e.g. Ocean Terminal)	9%	20%	19%	0%	3%	0%	36%
Dunbar	7%	13%	16%	1%	4%	0%	29%
Musselburgh	8%	12%	9%	2%	6%	1%	28%
Scottish Borders	7%	10%	19%	0%	2%	0%	27%
Glasgow	6%	7%	21%	0%	1%	0%	26%
Midlothian	7%	12%	11%	0%	3%	0%	23%
North East England (e.g. Newcastle)	6%	5%	16%	0%	1%	1%	22%
South Edinburgh	7%	10%	12%	1%	3%	0%	21%
Fife	6%	6%	14%	0%	1%	0%	19%
Longniddry	5%	9%	5%	1%	5%	0%	19%
Tranent	5%	9%	4%	2%	4%	0%	18%
Prestonpans	5%	7%	6%	1%	4%	0%	17%
Cockenzie / Port Seton	4%	7%	4%	1%	3%	0%	15%
Wallyford	4%	5%	4%	1%	4%	0%	13%

Source: Public Consultation Survey, 2019

## 3.4 Summary

3.4.1 The travel to work and public consultation analysis shows a high demand for travel to Edinburgh from East Lothian, particularly the city centre. Public transport is an attractive option for these

journeys with train services being well used wherever they are available. This is likely attributable to the quick journey times compared to the car as well as factors like the difficulty and cost of parking in the city centre. North Berwick stands out as an example here where, despite high levels of car ownership consistent with those seen in heavily car dependent Haddington, it exhibits the highest rail mode share of all East Lothian sectors.

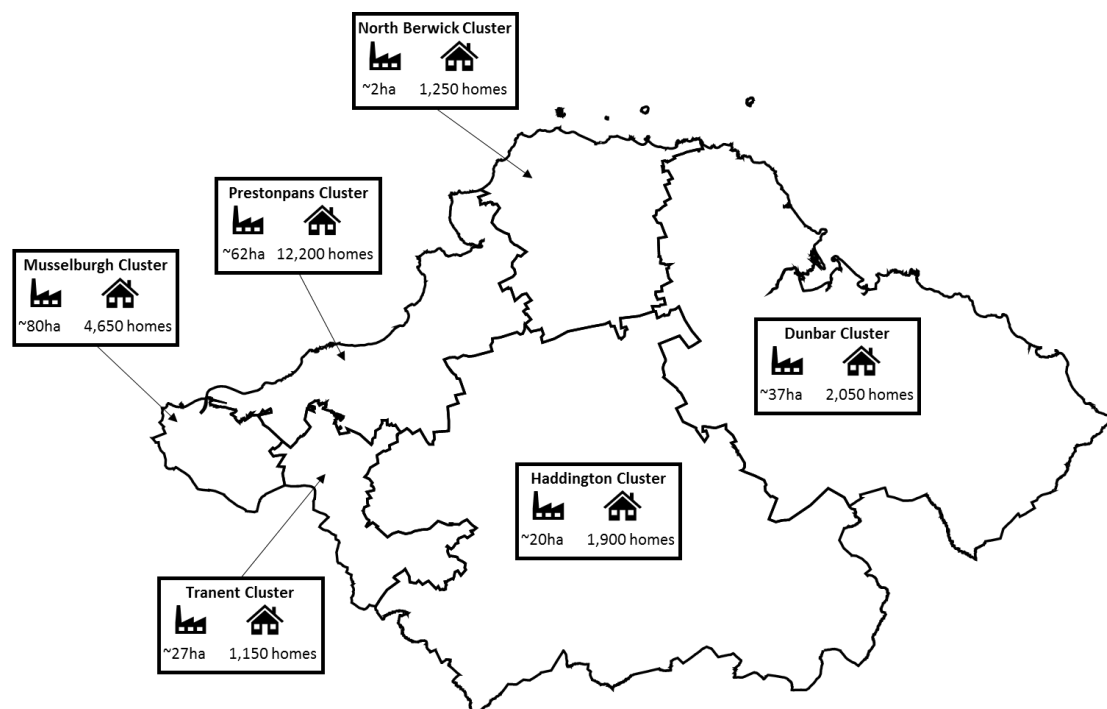
- 3.4.2 However, it is notable that respondents to the public consultation cited trains and buses as the modes of transport which they experience the greatest barriers with. This suggests that public transport mode share could be increased further if existing constraints are resolved. In particular, Chapter 2 highlighted the existing capacity constraints on the rail network which are currently suppressing demand for train travel. It is anticipated that further modal shift to rail could be achieved if capacity is increased on the existing network.
- 3.4.3 This is contributing to a high degree of car dependency in East Lothian particularly in Haddington. It is much more car dependent than the rest of East Lothian which reflects the more limited public transport services it has access to. As the county town and administrative centre for East Lothian it is a popular destination making it vitally important that it is accessible by a variety of transport modes.
- 3.4.4 In addition, whilst these issues are currently being experienced, it doesn't take into account the impact of the extensive land-use development proposals in East Lothian. These will create additional travel demand, change the locations where people want to travel to and from and place further pressure on the existing network and services. The proposed developments are concentrated mainly in the western part of East Lothian which has the closest ties to the Edinburgh labour market. To accommodate this growth there will be a need to:
- Provide attractive public transport links for those travelling to Edinburgh city centre and the wider Edinburgh labour market; and
  - Build on the existing self-containment that is evident within parts of the labour market within East Lothian to reduce the need to travel.
- 3.4.5 The proposed developments and their anticipated transport impacts are explored further in Chapter 4.

## 4 Planned Land-use Development

### 4.1 Introduction

- 4.1.1 East Lothian is currently developing detailed proposals for the implementation of major new land-use developments in accordance with the overarching vision defined by SESPlan's SDP 1 which has been further articulated through the East Lothian LDP. The SDP has set out an ambitious growth plan for the Edinburgh city region which includes an allocation to increase households in East Lothian by 20% by 2024. The spatial strategy set out in the LDP has sought to distribute this across the area as shown in Figure 4.1. This includes 410 ha of land for the enlarged Blindwells and 90 ha for redevelopment of the former Cockenzie power station site.

Figure 4.1 Local Development Plan Spatial Strategy



- 4.1.2 However, it is important to note that the Scottish Government recently rejected the proposed SDP 2 citing a lack of consideration of the transport implications of the plan. This creates some uncertainty with regards to future land-use development proposals for the region but in the short to medium term the plan set out through the original SDP and LDP provides the framework for development. It will nonetheless be crucial to keep this under review as the STAG process progresses.
- 4.1.3 The current spatial strategy for East Lothian is a compact one, as it focuses the majority of new development in the west of the county. This is where the best opportunities are to locate new housing and economic development in the most accessible part of the area. The sites selected also provide opportunities to further the regeneration of communities in East Lothian's former western coal field and include the creation of a new settlement at Blindwells and redevelopment of the former Cockenzie power station site.
- 4.1.4 In order to facilitate delivery, the spatial strategy requires suitable infrastructure improvements both to enable the developments and to mitigate their impact upon existing capacity. This has implications for transport, education and community facilities, water and drainage, energy and digital connectivity.

## Changing Travel Patterns and Delivering Growth

- 4.1.5 East Lothian's spatial strategy has been designed to allow it to grow economic and employment opportunities alongside the housing growth set out. Through the coordinated development of complementary land-uses the Council seeks to reduce the need to travel out with East Lothian for employment, shopping and leisure opportunities. The objective is to facilitate greater containment and reduce the leakage of expenditure from East Lothian residents.
- 4.1.6 However, the close ties to the Edinburgh city region, its labour market and leisure facilities will nonetheless remain and there will continue to be significant demand for travel to this area from East Lothian settlements. There will consequently continue to be pressure on the transport network in the area which increases along with demand as you move from the east to west of East Lothian then onwards to Edinburgh and beyond.
- 4.1.7 The transport network has therefore been identified as an area where interventions will be required to support the spatial strategy. As such, East Lothian Council and its partners have identified a requirement to develop a comprehensive transport strategy which ensures the needs of East Lothian as a whole and of the individual development sites are addressed coherently.
- 4.1.8 The proposed developments along with their potential transport impacts are at varying stages of development and this is explored further in the rest of this chapter.

## 4.2 Overview of Development Related Transport Issues

- 4.2.1 East Lothian Council has previously assessed the potential impact of the proposed developments set out in the LDP through the application of Transport Scotland's Development Planning and Management Transport Appraisal Guidance (DPMTAG) methodology, which is consistent with the principles of STAG. To undertake the DPMTAG appraisal the SEStran Regional Model 2012 (SRM12), Musselburgh and Tranent Traffic Model (MTTM) and local junction models were used to inform the identification of transport network implications arising from housing and economic land allocations set out in the LDP.
- 4.2.2 The modelling highlighted that the following network locations may have capacity and performance impacts related to demand generated by the introduction of LDP development:

### Road Network

- A1 Queen Margaret University Junction & A1 Old Craighall Junction;
- A1 Salters Road Junction;
- A1 Dolphingstone Junction;
- A1 Bankton Junction & A198 Meadowmill Junction;
- Musselburgh Town Centre; and
- Tranent Town Centre.

### Rail Network

- Crowding on North Berwick Line service at Musselburgh and Wallyford.

- 4.2.3 A summary of the problems at each location as identified by the modelling is set out in the following sections. These are drawn from SRM modelling tests which included all proposed LDP developments for a forecast year of 2024.



- 4.2.4 For the road network the Ratios of Flow to Capacity (RFCs) from SRM are presented. However, it should be noted that the modelled RFCs provide an average, which would be expected to vary depending on the profile of traffic demand. Therefore, the strategic model outputs should be used as an indicator of network 'hotspots' rather than absolute predictions of worst-case conditions.
- 4.2.5 In addition, the forecast rail passenger demand from SRM and equivalent train capacities are set out to highlight possible crowding issues.

## A1 QMU Interchange & Old Craighall Interchange

<b>Relevant Development</b>	<p>Employment associated with the Craighall development northwest of QMU.</p> <p>In addition, the strategically important location of Old Craighall junction, forming the interchange between the A1 and A720, is likely to experience traffic from the majority of LDP developments across East Lothian.</p>
<b>Network Impacts</b>	<p>Employment at QMU attracts new trips during the AM peak hour and generates additional trips in the PM peak hour. Furthermore, the additional LDP trips are expected to add pressure to the key Old Craighall interchange, which is already congested.</p> <p>The existing QMU junction is predicted to accommodate LDP traffic in all modelled time periods, however, there is heavy congestion on A1 Old Craighall junction, as shown in Figure 4.2 and Figure 4.3. This is due to the considerable volume of LDP traffic where westbound trips exiting from QMU currently need to travel via Old Craighall.</p>

Figure 4.2 RFC at A1 QMU / Old Craighall – LDP Without Mitigation (AM Peak Hour)

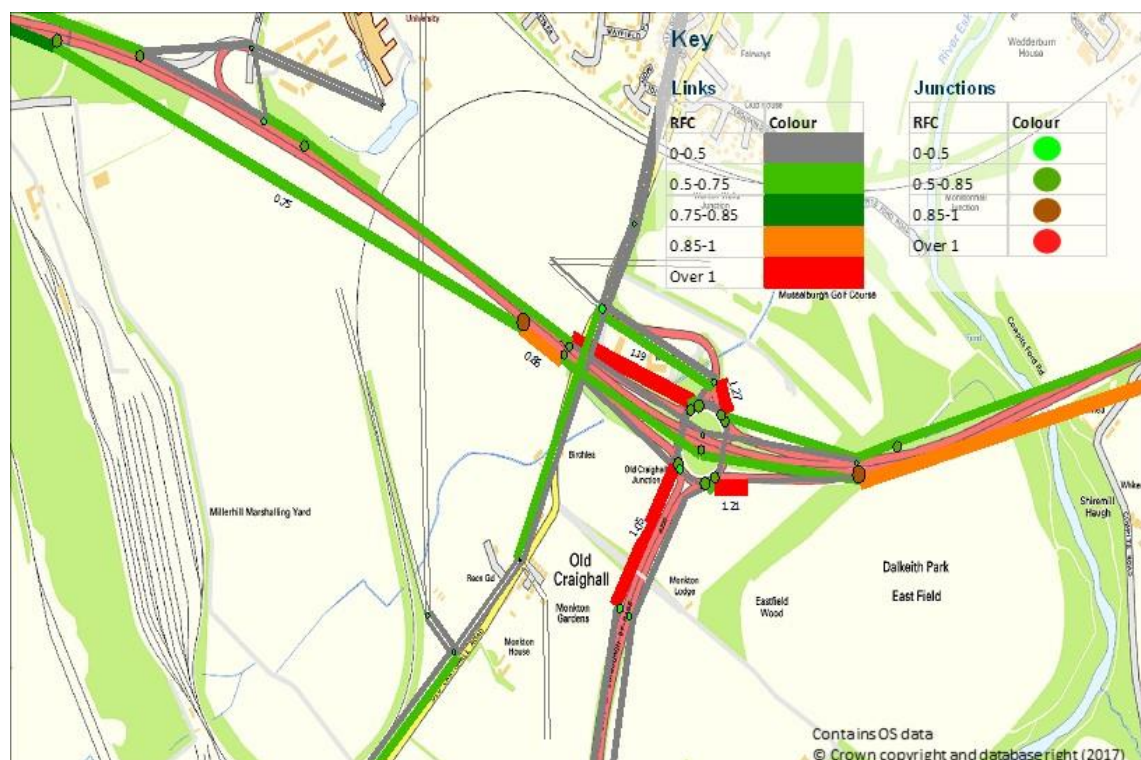
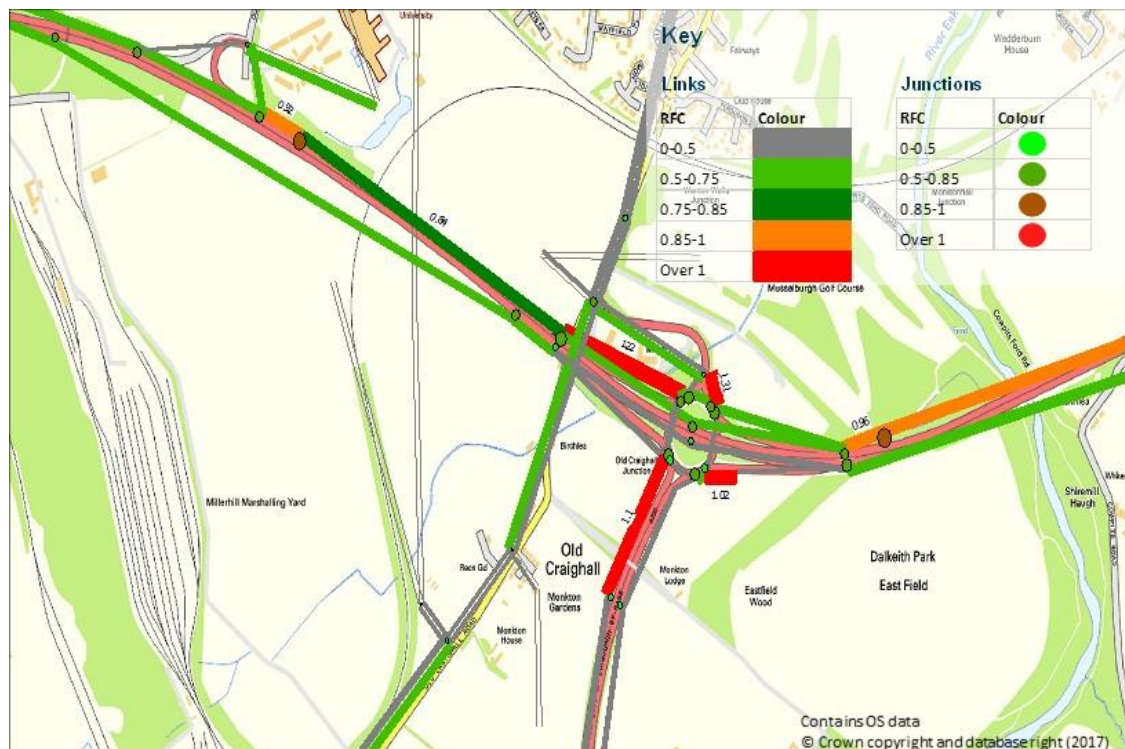


Figure 4.3 RFC at A1 QMU / Old Craighall – LDP Without Mitigation (PM Peak Hour)



## A1 Salters Road Interchange

<b>Relevant Development</b>	Wallyford and Barbachlaw sites are directly adjacent to the junction.
<b>Network Impacts</b>	The addition of traffic to / from the new developments has the effect of increasing RFCs on the Salters Road arms of the junction leading to heavy congestion in the AM peak as shown in Figure 4.4 below.

**Key**

RFC	Colour
0-0.5	Grey
0.5-0.75	Light Green
0.75-0.85	Dark Green
0.85-1	Orange
Over 1	Red

**Junctions**

RFC	Colour
0-0.5	Light Green
0.5-0.85	Dark Green
0.85-1	Brown
Over 1	Red

The map displays the A67 road corridor with various links and junctions color-coded according to the RFC values. Key locations labeled include Howe Mire, Rosehill Cottage, Eskfield Cottages, Crookston, Sweethope North, and Sweethope South. Specific RFC values are noted along the route, such as 0.74, 1.02, 0.71, 0.92, 0.97, and 0.97.

Contains OS data  
© Crown copyright and database right (2017)

**Key**

**Links**

RFC	Colour
0-0.5	Grey
0.5-0.75	Light Green
0.75-0.85	Dark Green
0.85-1	Orange
Over 1	Red

**Junctions**

RFC	Colour
0-0.5	Green
0.5-0.85	Dark Green
0.85-1	Brown
Over 1	Red

Howe Mire

Joseph Cottages

Rose Vill

Eskfield Cottages

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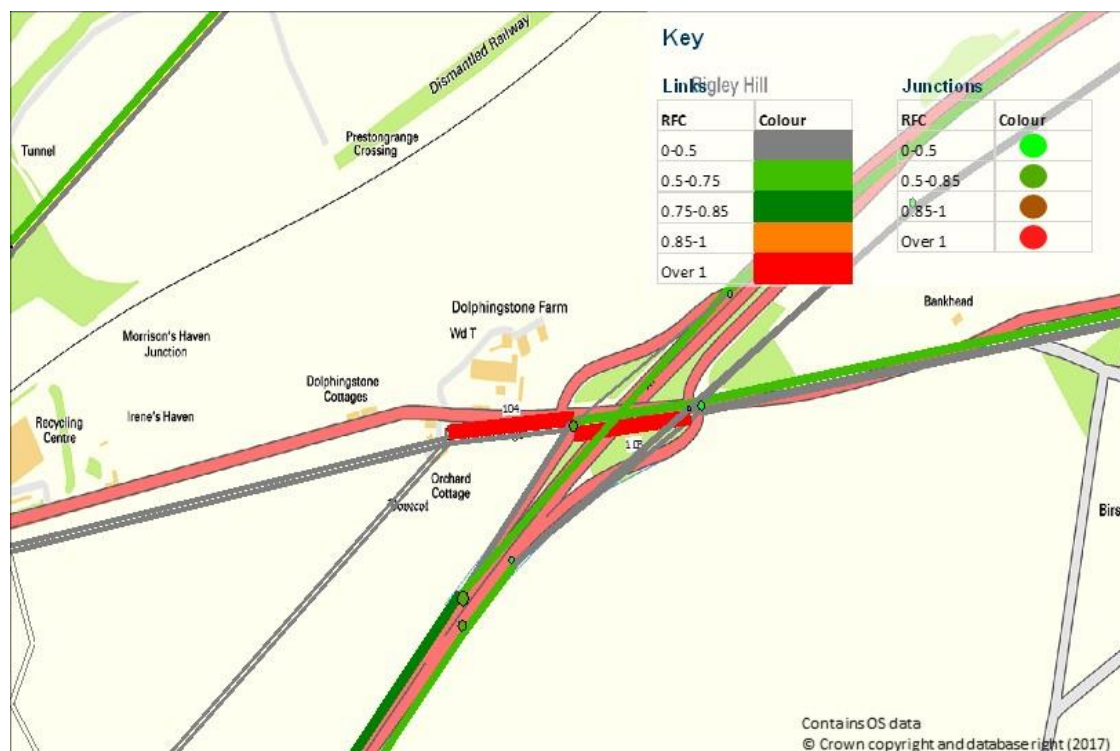
## A1 Dolphingstone Interchange

<b>Relevant Development</b>	Dolphingstone site directly adjacent and the majority of Wallyford and Tranent sites will generate traffic that goes through this junction.
<b>Network Impacts</b>	Additional traffic generated by these developments is expected to add to congestion on A199 arm of the junction as shown in Figure 4.7.

Figure 4.6 RFC at A1 Dolphingstone Interchange – LDP Without Mitigation (AM Peak Hour)



Figure 4.7 RFC at A1 Dolphinstone Interchange – LDP Without Mitigation (PM Peak Hour)



## A1 Bankton Interchange & A198 Meadowmill Junction

<b>Relevant Development</b>	Residential and employment at Blindwells and developments around Tranent.
<b>Network Impacts</b>	<p>The Blindwells development will generate additional trips, which will access the road network on the A198 and at Bankton northern roundabout. Developments around Tranent also result in extra traffic.</p> <p>The addition of LDP traffic, including Blindwells, has the effect of significantly increasing RFCs at Bankton Interchange as shown in Figure 4.8 and Figure 4.9, with particular issues in the AM peak where several links are predicted to be over capacity suggesting significant delays.</p>

Figure 4.8 RFC at A1 Bankton Junction - LDP Without Mitigation (AM Peak Hour)

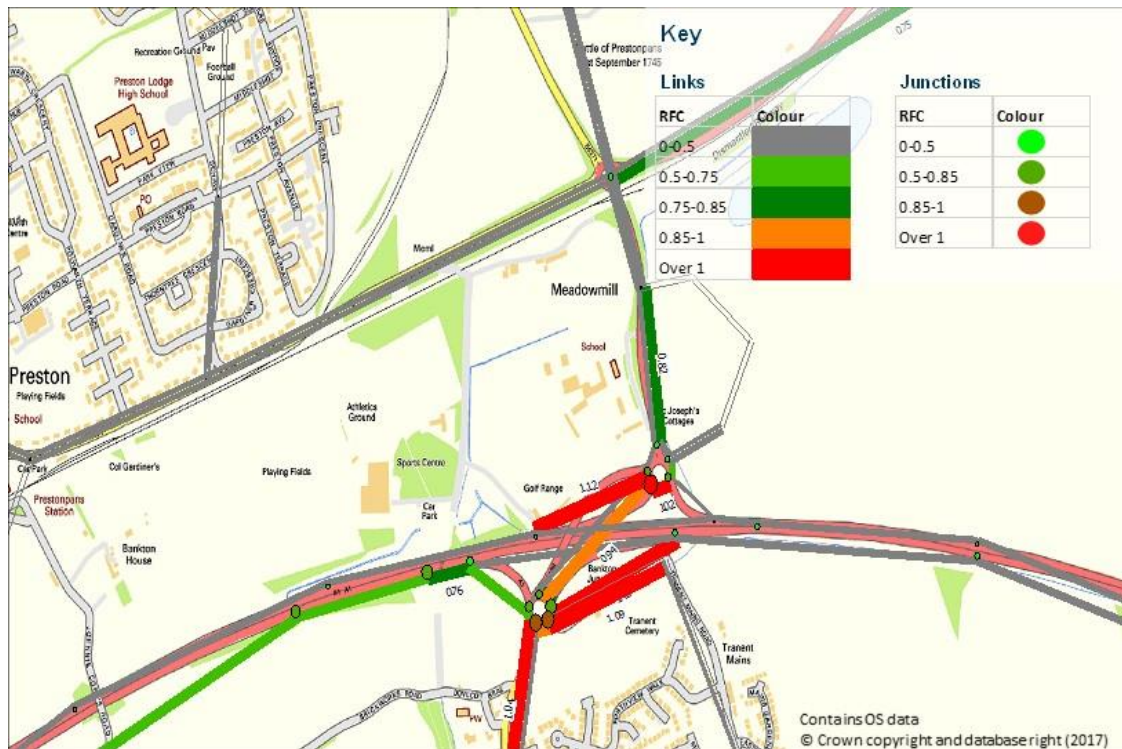
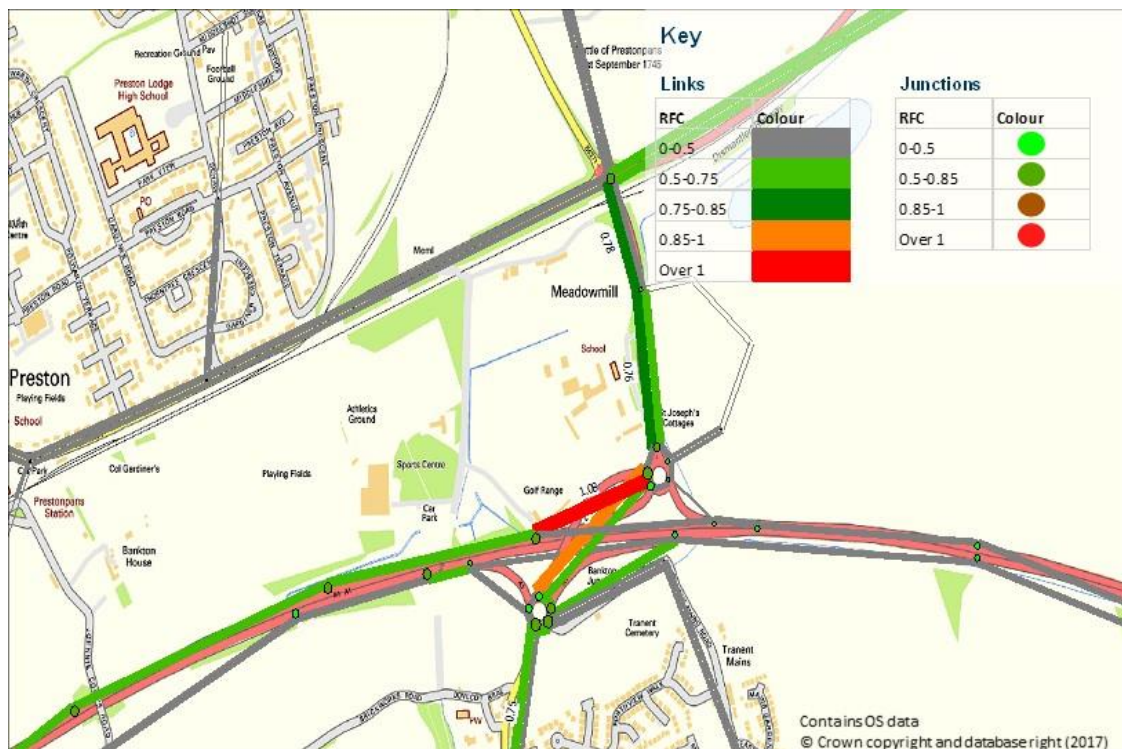


Figure 4.9 RFC at A1 Bankton Junction - LDP Without Mitigation (PM Peak Hour)



## Musselburgh Town Centre

<b>Relevant Development</b>	Residential and employment developments in and around Musselburgh and Wallyford.
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<b>Network Impacts</b>	Additional traffic generated by these developments is expected add to congestion in Musselburgh town centre. High level analysis suggests that there could be some congestion issues in both the AM and PM on Eskview Terrace, Clayknowes Road and at the High Street / Bridge Street junction as shown in Figure 4.10 and Figure 4.11.
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Figure 4.10 RFC in Musselburgh Town Centre – LDP Without Mitigation (AM Peak Hour)

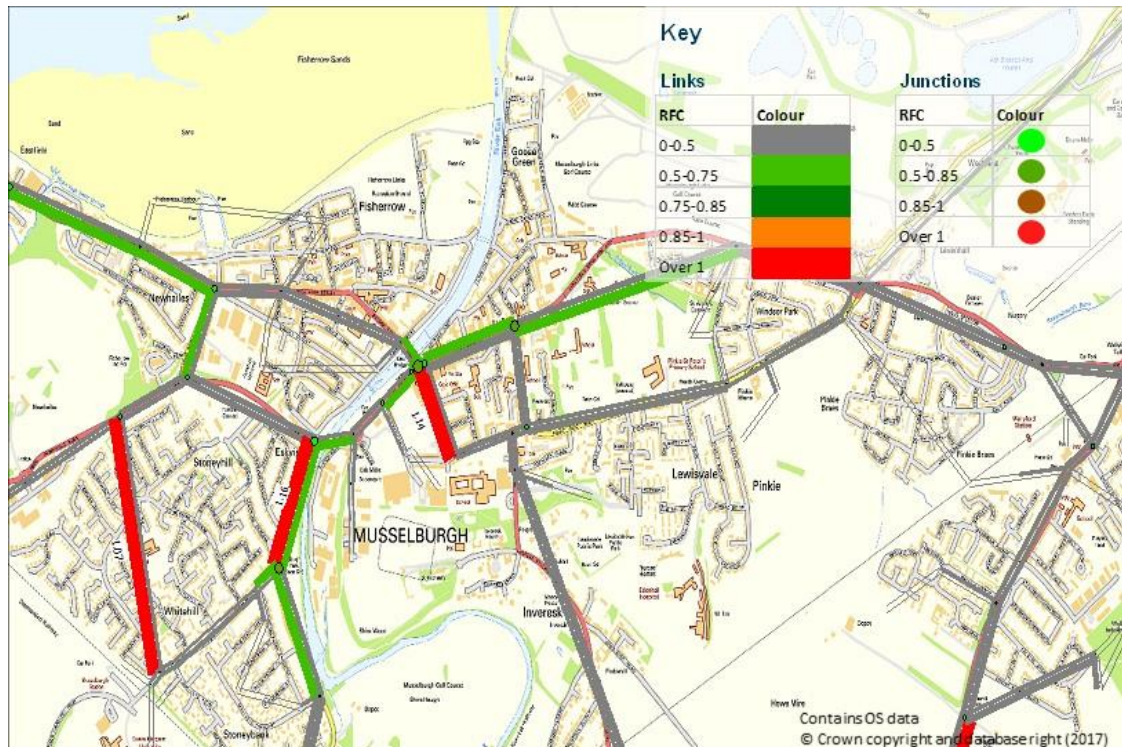
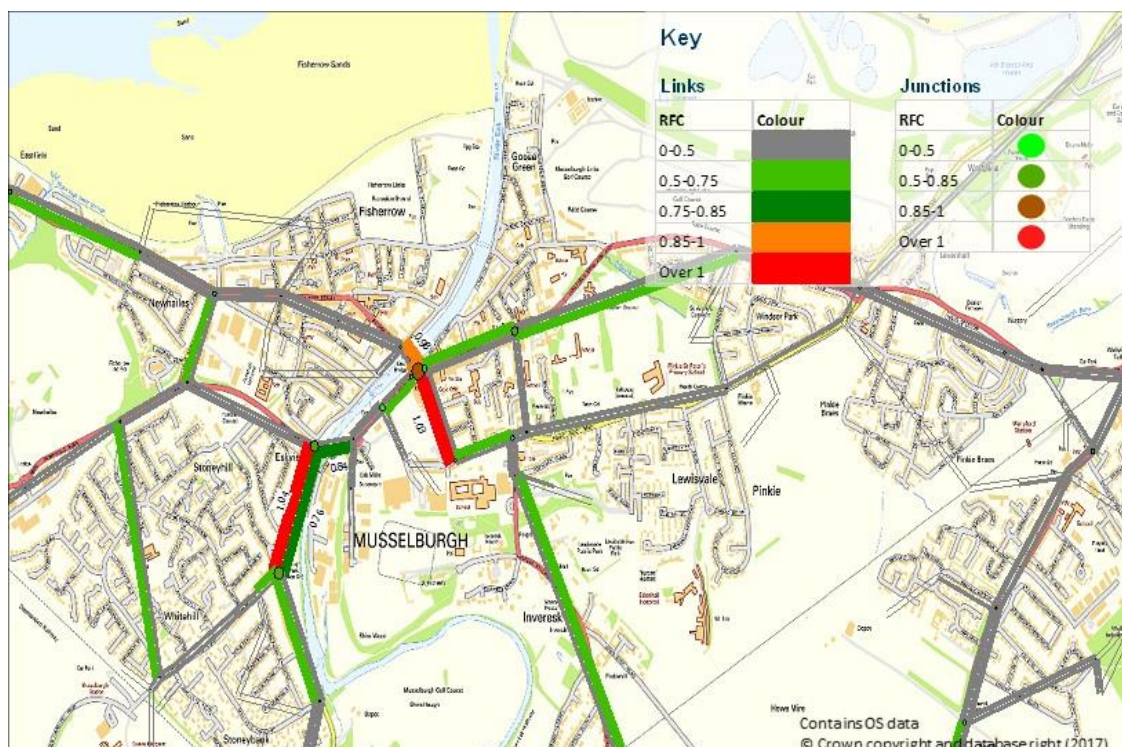


Figure 4.11 RFC in Musselburgh Town Centre – LDP Without Mitigation (PM Peak Hour)



## Tranent Town Centre

<b>Relevant Development</b>	Residential and employment developments in and around Tranent, with the Blindwells development nearby.
<b>Network Impacts</b>	Additional traffic generated by these developments is expected to add to congestion in Tranent town centre. High level analysis suggests congestion at the Bridge Street / Church Street roundabout in the AM and PM as shown in Figure 4.12 and Figure 4.13.

Figure 4.12 RFC in Tranent Town Centre – LDP Without Mitigation (AM Peak Hour)

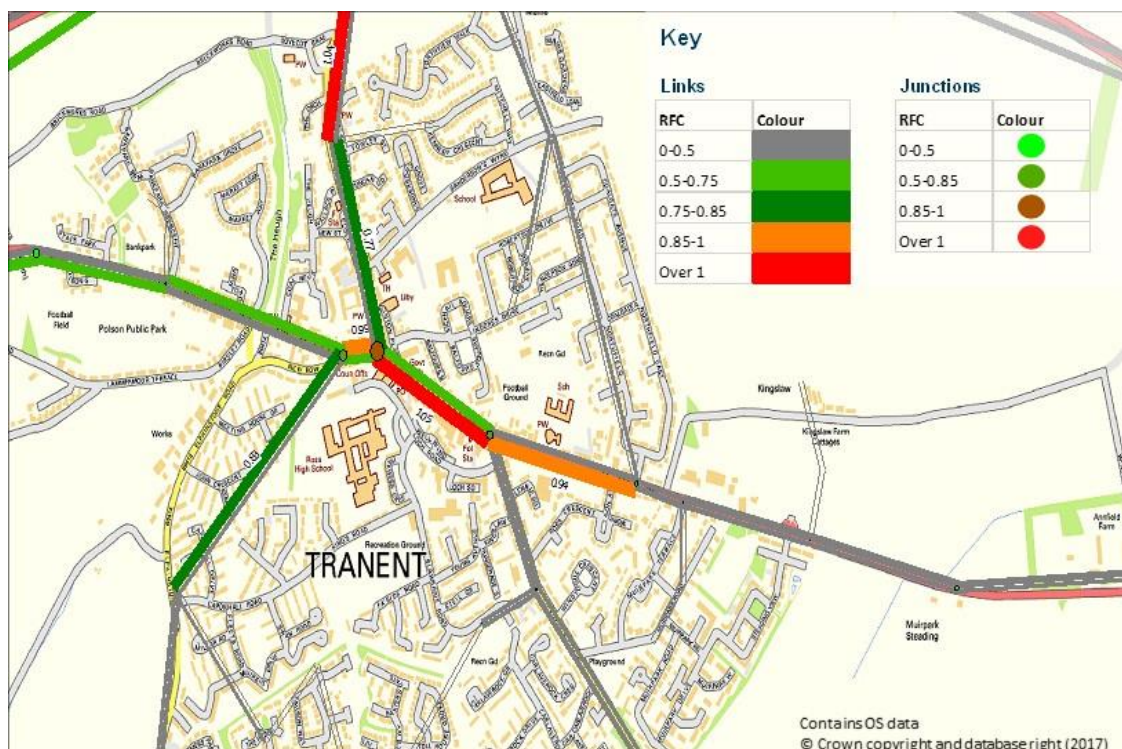
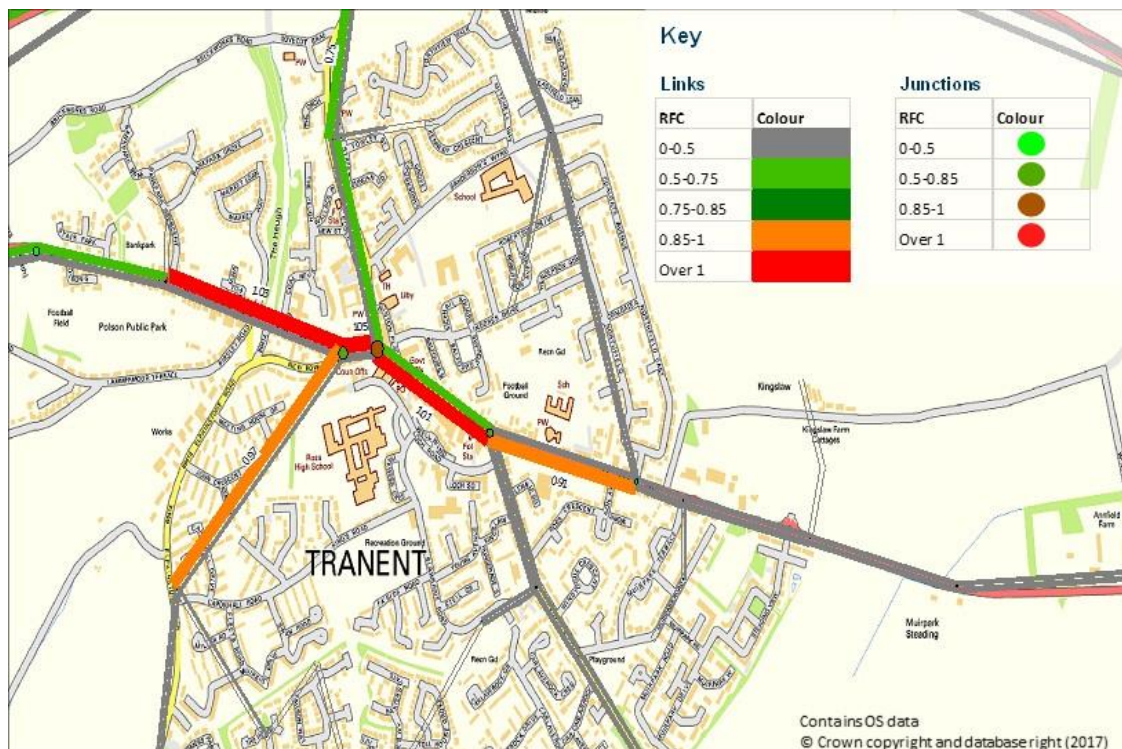




Figure 4.13 RFC in Tranent Town Centre – LDP Without Mitigation (PM Peak Hour)



- 4.2.6 In addition, analysis of the impacts on the rail network were undertaken focussing on the local rail services between Edinburgh and North Berwick. It should be noted that services are assumed to be operated by 6-car trains in line with the recently implemented upgrades.

### East Lothian Stations

<b>Relevant Development</b>	<p>A number of sites are within driving distance of the stations, which have substantial P&amp;R facilities. The largest sites within walking distance of a station are:</p> <ul style="list-style-type: none"> <li>■ Employment associated with Craighall development northwest of QMU</li> <li>■ Residential at Old Craighall</li> <li>■ Residential at Dolphingstone</li> <li>■ Residential at Wallyford</li> </ul>
<b>Network Impacts</b>	<p>The 6-car services are shown to have very high load factors between Wallyford, Musselburgh and Edinburgh focused on westbound services in the AM and eastbound services in the PM, reflecting commuting patterns. Rail crowding is considerably less east of Wallyford. However, some additional demand is likely being suppressed due to lack of capacity at the western end of the route. Figure 4.14 and Figure 4.15 show loadings in the 'Without LDP' and 'With LDP' scenarios.</p>

- 4.2.7 Figure 4.14 and Figure 4.15 show train boardings and alightings at each of the stations along the North Berwick line as follows:

- Without LDP boardings (orange bar) and alightings (red bar)

- With LDP boardings (light blue bar) and alightings (dark blue bar)
- Without LDP loading on departure (red line with triangle markers)
- With LDP loading on departure (blue line with triangle markers)
- Seated capacities and crush capacities – square and circle marker series respectively

4.2.8 The graphs show the seating capacity line being exceeded between Wallyford, Musselburgh and Edinburgh. There is also evidence that lack of capacity on the rail network is constraining growth of public transport. This is most apparent at Musselburgh and Wallyford suggesting that despite the additional capacity provided by 6-car trains, it is not sufficient to meet future demand on the network during peak times.

Figure 4.14 Westbound Rail Loadings – LDP Without Mitigation (AM Peak Hour)

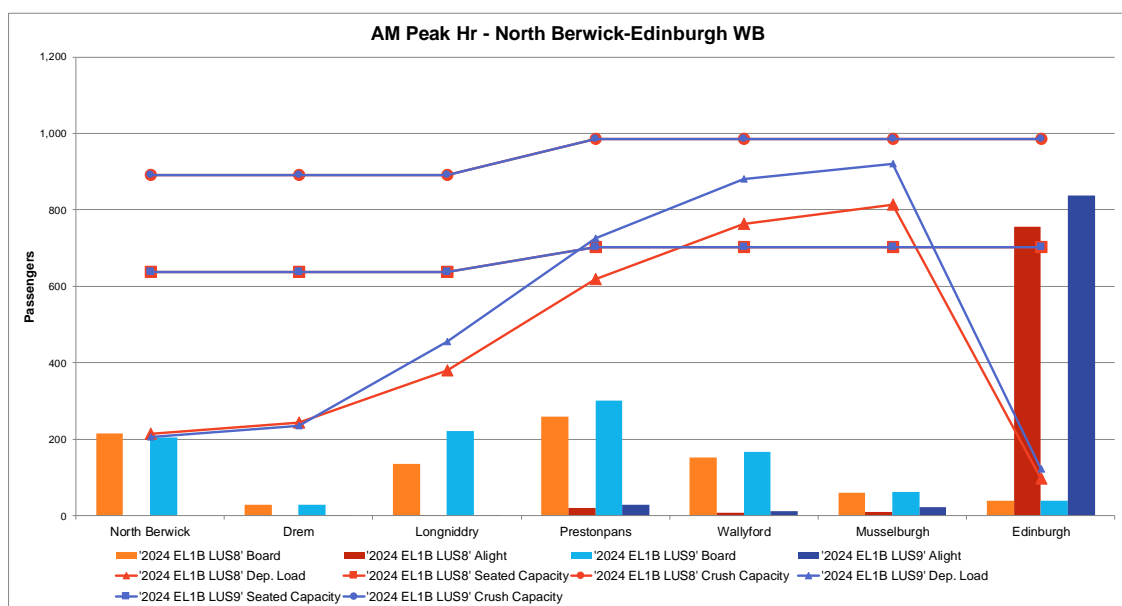
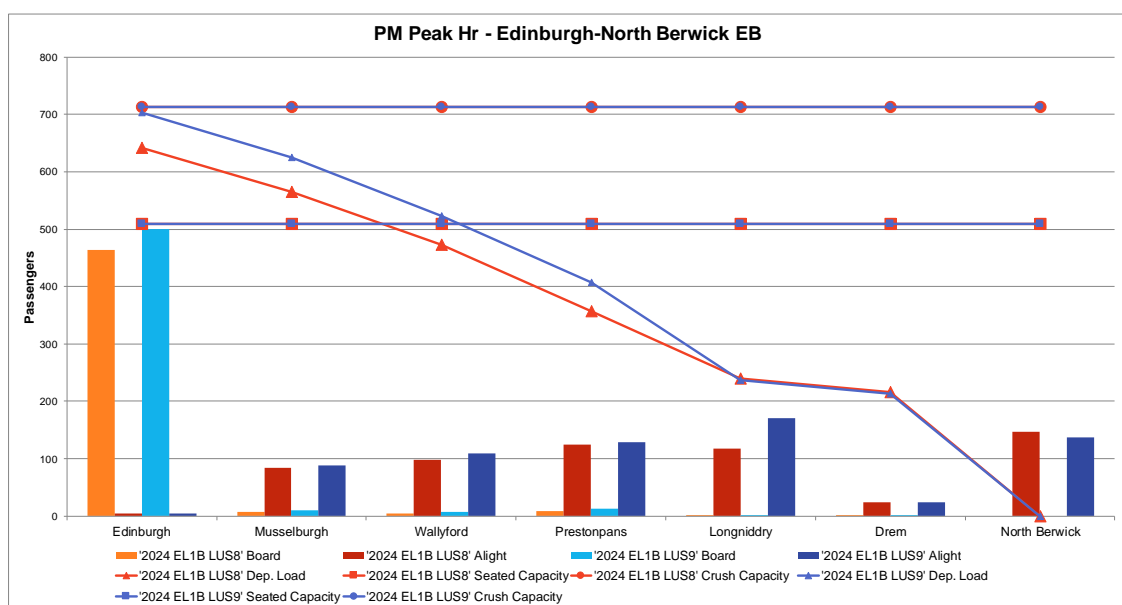


Figure 4.15 Eastbound Rail Loadings – LDP Without Mitigation (PM Peak Hour)



## Mitigation Measures

- 4.2.9 A number of potential mitigation measures were assessed using the transport models to identify a set of interventions that would address the identified issues. These were subsequently included in the LDP as part of the transport proposals summarised in Figure 4.16 and described in more detail in Table 4.1.

Figure 4.16 East Lothian Local Development Plan Transport Proposals

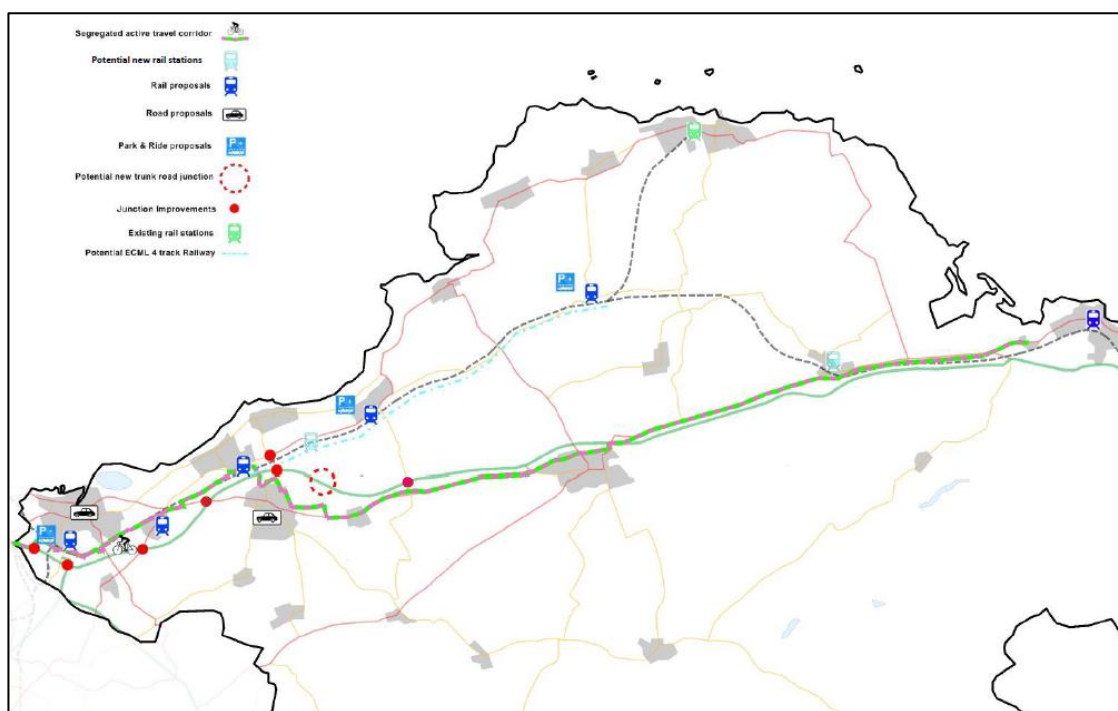


Table 4.1 East Lothian LDP Transport Interventions

Intervention	Description
PROP T15: A1 Old Craighall Junction Improvements	Signal control of A1 off-slip and A720 approaches with local widening.
PROP T17: A1 Dolphingstone Interchange Improvements	Local widening and optimisation of signal control staging, phasing and timings.
PROP T17: A1 Salters Road Interchange Improvements	Local widening on Salters Road and optimisation of signal control staging, phasing and timings.
PROP T17: A1 Bankton Interchange and A198 Junction Improvements	Signal control of northern roundabout with local widening. Redesign of southern roundabout with local widening.
PROP T17: Meadowmill Roundabout Junction Improvements	Redesign of roundabout and local widening.
PROP T9 + PROP T10: Rail Station Package	Station platform lengthening at Musselburgh, Wallyford, Prestonpans, Longniddry and Drem rail stations. This would accommodate longer (8-car) trains. Car park extensions at Longniddry and Drem Stations.

Intervention	Description
PROP T21: Musselburgh Town Centre Improvements	Local junction improvements at various locations including introduction of signal control.
PROP T27 & T28: Tranent Town Centre Improvements	One-way system in town centre.
PROP T3: Active Travel Corridor	Segregated walk and cycle route extending from Musselburgh to Dunbar via Blindwells and Haddington.
A1 QMU All-Ways Interchange	Addition of westbound on and off slips.
Ashgrove Underpass, Dunbar	New walk and cycle link under railway line linking community facilities & developments.

4.2.10 However, it should be noted that these mitigation measures were determined as the minimum level of intervention required to accommodate the forecast growth from the LDP proposals. They are not intended to deliver a step change in transport provision or to facilitate a sizeable modal shift from car to public transport. Indeed, they would only be sufficient to return the operation of the network to acceptable levels.

4.2.11 East Lothian Council seeks to develop an integrated package of measures that will deliver large scale modal shift to public transport, address identified bottlenecks and facilitate the nationally significant economic growth opportunities. The intention is to deliver strategic aspirations of national, regional and local significance including:

- improving national accessibility on the ECML as well as access through and connectivity within south east Scotland;
- stimulating inclusive growth and regeneration within the former East Lothian coal field;
- providing sustainable access to a new settlement at Blindwells and creating a regional transport hub at the centre of East Lothian;
- helping redevelop / regenerate the former Cockenzie Power Station site; and
- relieving traffic congestion in Tranent town centre to help alleviate air quality concerns and to unlock it as a potential future growth area within the wider Edinburgh housing and labour market areas.

4.2.12 The application of STAG is intended to identify the most appropriate means to achieve these aspirations and to inform an initial developer contributions framework to mitigate the strategic, cumulative and cross boundary impact of committed development strategies.

4.2.13 The rest of this chapter consequently explores in detail the transport and development problems and issues that need to be addressed across East Lothian to achieve these wider aspirations. This is broken down by area including:

- Dunbar;
- North Berwick;
- Haddington;
- Blindwells;



- Longniddry, Cockenzie & Prestonpans;
- Tranent; and
- Musselburgh & Wallyford.

4.2.14 In addition, a brief overview of the transport problems and issues out with East Lothian in Edinburgh and the west is also provided.

## 4.3 Dunbar

### Development Proposals

4.3.1 The spatial strategy for the Dunbar cluster is illustrated in Figure 4.17. The Hallhill South West site (DR1) will be the focus for strategic housing development. Dunbar town centre will continue to be the focus for active land uses in the cluster, such as retail, commercial and business uses.

Figure 4.17 Spatial Strategy for the Dunbar Cluster



### Transport Impacts

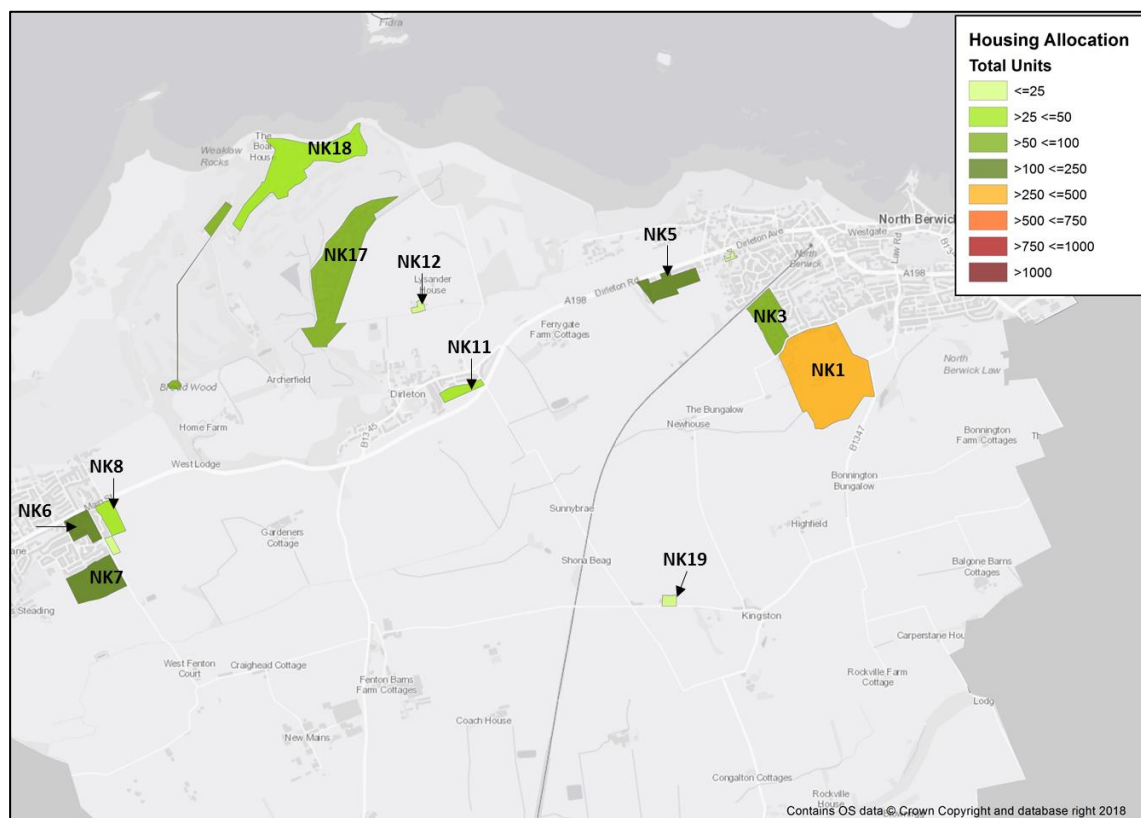
4.3.2 The Hallhill South West site will provide a northern extension of Brodie Road to link to Spott Road and the A1. This is to ensure traffic does not route through the town. This road will connect to the Hallhill North housing site, which can be developed when the new link road is complete. The re-opening of an existing underpass will be required to the west of the town in association with development at Hallhill North. In addition, the provision of additional pedestrian and cycle access between the northern and southern parts of the town separated by the rail line is also required.

## 4.4 North Berwick

### Development Proposals

- 4.4.1 The spatial strategy for the North Berwick cluster is shown in Figure 4.18. The mixed-use site at Mains Farm (NK1) will be the focus for strategic scale development in the town, including the introduction of a new local centre. Land to the east of this site is safeguarded for an expansion of North Berwick High School. A housing site at Ferrygate Farm is allocated and a mixed-use employment and housing site is allocated at Tantallon Road.

Figure 4.18 Spatial Strategy for the North Berwick Cluster



### Transport Impacts

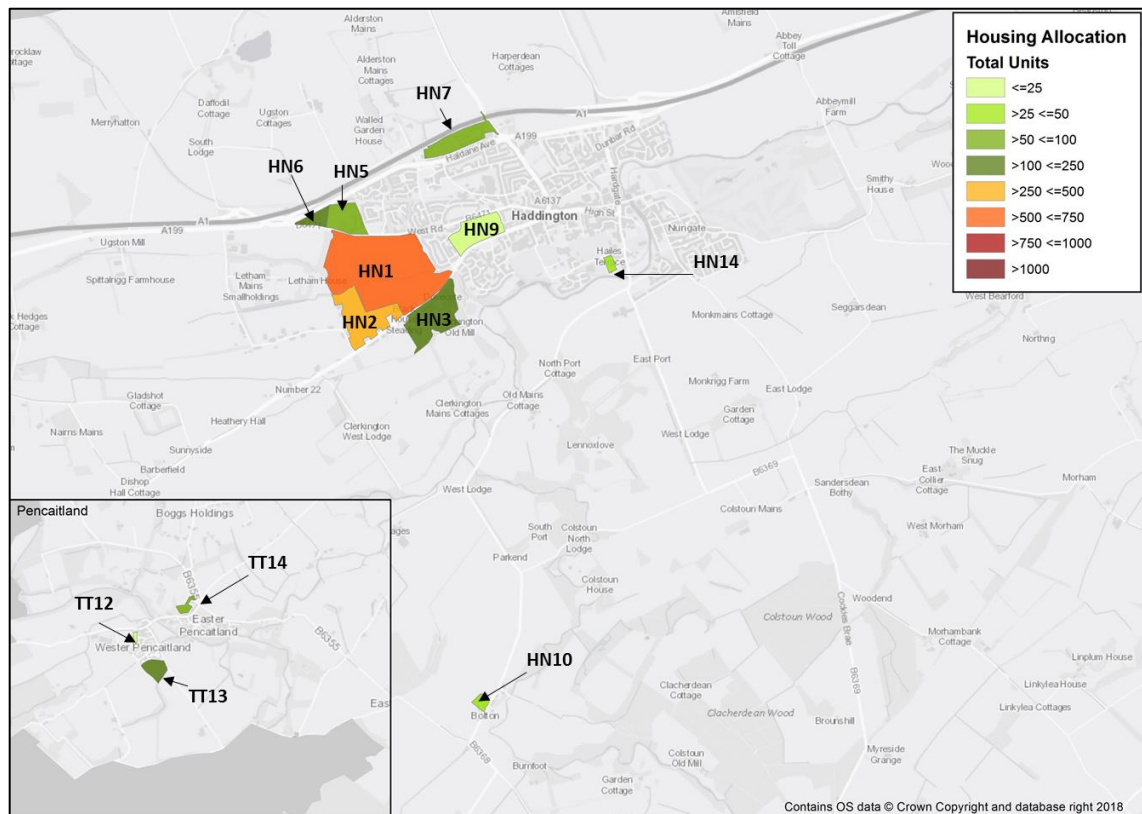
- 4.4.2 The most significant issue is the impact that additional development in the area would have on the local road network. A number of the effected roads provide access to and through coastal and inland settlements meaning that the impact of through traffic is a concern.

## 4.5 Haddington

### Development Proposals

- 4.5.1 The spatial strategy for the Haddington area defined in the LDP is shown in Figure 4.19. The majority of development is focussed in the west of Haddington with many of the sites at an advanced stage of construction. Haddington is expected to grow by ~1,000 houses over the next few years creating increased demand for travel. In addition, Haddington may also be the focus of future housing if additional allocations are required in the next LDP.

Figure 4.19 Spatial Strategy for the Haddington Cluster

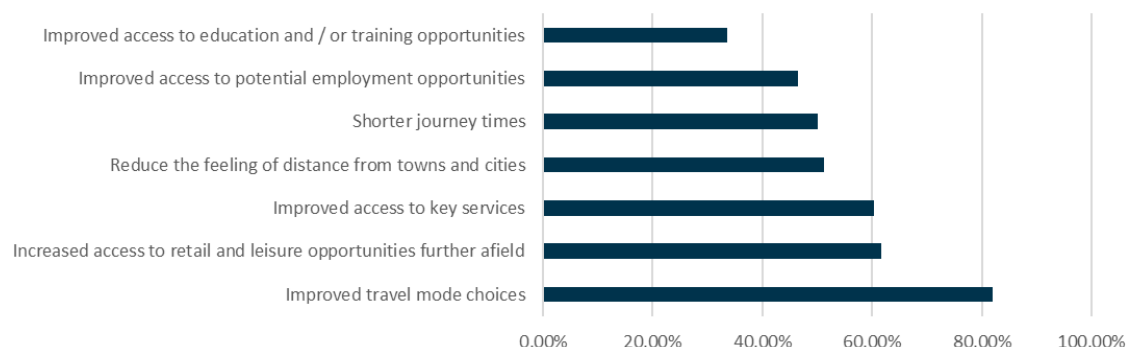


## Transport Impacts

- 4.5.2 The LDP and Local Transport Strategy (LTS) 2018 have identified that the cumulative impact of potential development sites in the west of Haddington may result in a limited traffic impact on the west Haddington / B6471 corridor and town centre.
- 4.5.3 The LTS identifies the following transport proposals which are currently being taken forward:
- Provision of an active travel corridor which includes segregated walk and cycle routes extending from Musselburgh to Dunbar, via Tranent and Haddington;
  - Development of a Town Centre Access Strategy and externally funded streetscape project which commenced in early 2017; and
  - Creation of a local transport based micro-simulation model to predict and model traffic demand in the Haddington area.
- 4.5.4 Although bus frequencies from Haddington into Edinburgh are excellent, they are subject to the same delays as all road traffic. Delivering modal shift will therefore be dependent upon offering a significant improvement in journey times compared to the car.
- 4.5.5 East Lothian Council has identified that the reinstatement of the Haddington branch line from Longniddry could potentially address these problems by serving the dual purpose of connecting the town to the rail network and providing additional services to alleviate overcrowding at stations west of Drem.
- 4.5.6 The public consultation identified that 63% of respondents felt that the reintroduction of a railway link to and new station at Haddington would have an impact on them. Figure 4.20 shows the

impacts that these respondents suggested would be achieved with improved travel mode choices being the main benefit followed by access to retail, leisure and other key services. However, it should be noted that 26% of the 1,601 respondents to the survey live in Haddington whereas only 9% of the total population of East Lothian live in Haddington. As such, it is likely that the findings have been skewed to some extent as a result.

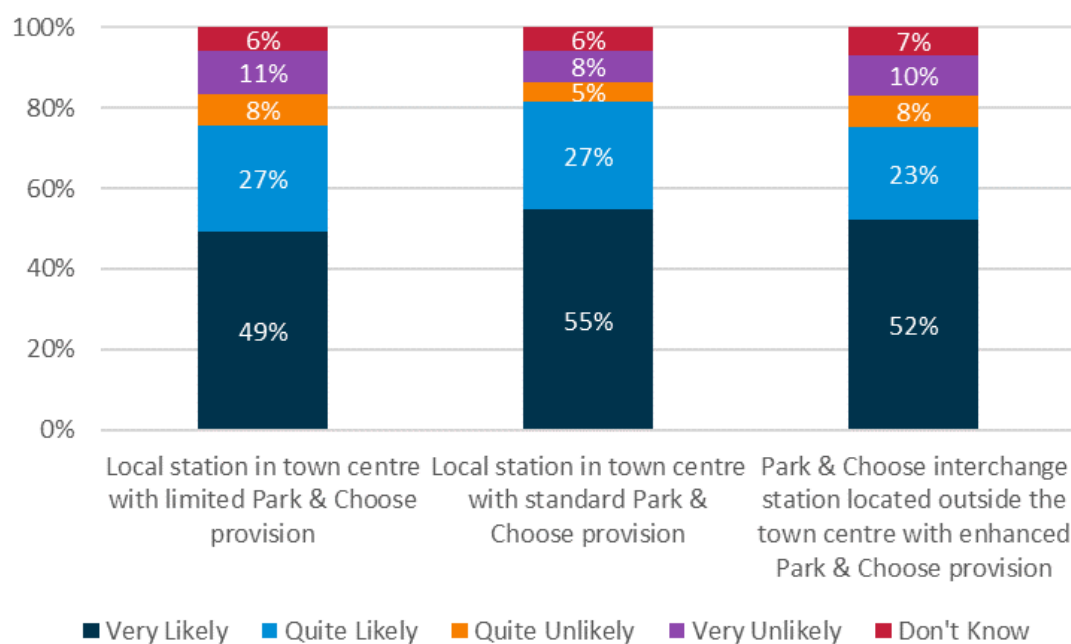
**Figure 4.20 Impacts Of Reinstating Railway Link And Station At Haddington (% of Total Respondents)**



Source: Public Consultation Survey, 2019

- 4.5.7 The respondents to the survey indicated that a local station in the town centre with standard Park and Ride provision would be the preferred option as shown in Figure 4.21. This shows that 82% of respondents (533 people) would be likely to use this station.

**Figure 4.21 Likelihood Of Using A New Station At Haddington (% of Total Respondents)**



Source: Public Consultation Survey, 2019

- 4.5.8 The track bed of the former Haddington branch line is in Council ownership and is safeguarded from development in the LDP ensuring it is retained in use as a route for walking, cycling and horse riding. A walkover of the former alignment indicated that it could be re-opened relatively easily to a point just to the north of the A1 bypass at the west end of Haddington.
- 4.5.9 The extension of the line to the site of the former station in the town centre would potentially be possible but with a considerable cost to construct a tunnel under the A1 close to the west Haddington interchange. In addition, it would likely require a new level crossing at Gateside



Road which are generally not permitted on new or re-opened railways. This is discussed in more detail in Appendix J.

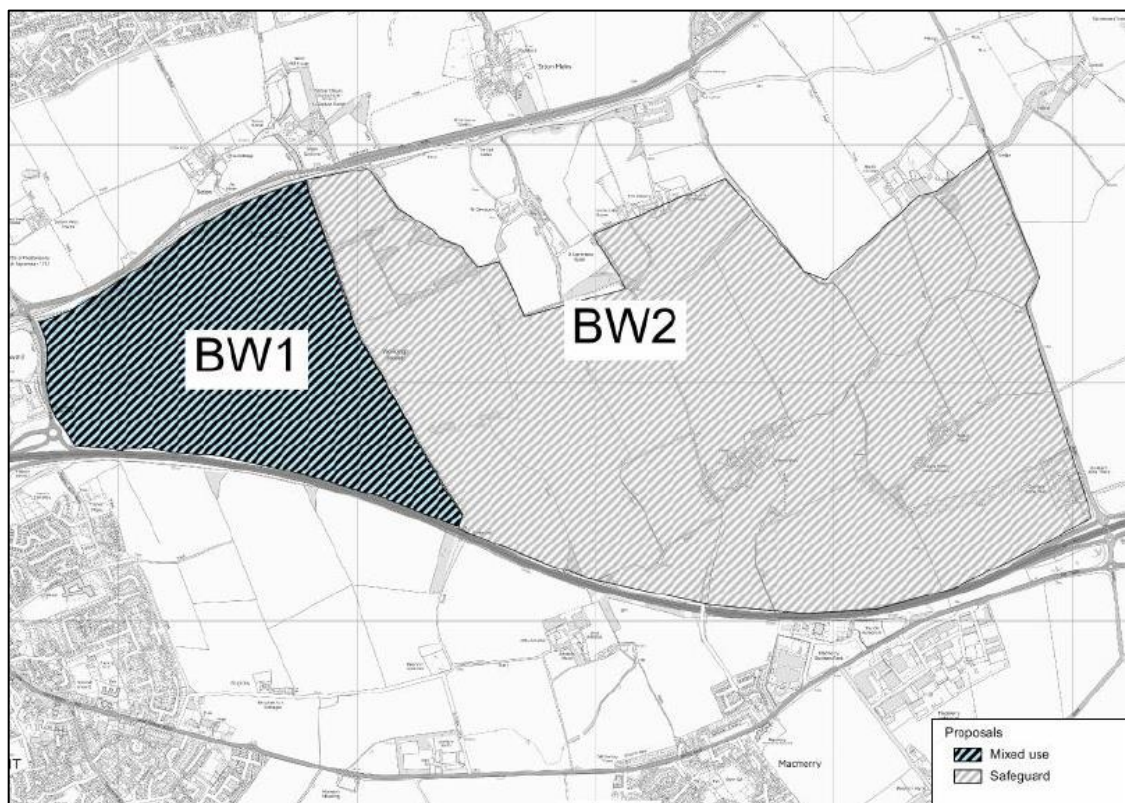
- 4.5.10 Furthermore, our initial analysis has identified that there may be difficulties in providing a viable service due to the capacity constraints upon the ECML and the competing interests of local and long-distance services. This is explored further in the timetable analysis set out in Appendix D.
- 4.5.11 On this basis there are no showstoppers but there are some complications that would need to be overcome to allow the reinstatement of a service on the Haddington branch line. Overall this suggests that the re-opening of the Haddington branch is, at best, a medium to longer term option and is likely to be dependent on other infrastructure upgrades.

## 4.6 Blindwells

### Development Proposals

- 4.6.1 The Council has identified the opportunity to develop a new town at Blindwells to accommodate the required growth in housing defined through the SESplan SDP. The ambition and emerging vision are for a high-quality new town of significant scale with regional influence and attraction. The vision is that Blindwells will be an influential, innovative, healthy and low carbon place to invest, live, learn, work and play. When considered together with the population of nearby communities<sup>3</sup> the new town could serve a population of around 50k-60k people.
- 4.6.2 The spatial strategy for the Blindwells Development Area (sites BW1 and BW2) is illustrated in Figure 4.22. The combined site totals ~540ha with ~130ha located in BW1 and ~410ha safeguarded within BW2 for an expansion of the new town.

Figure 4.22 Spatial Strategy for the Blindwells Cluster



<sup>3</sup> These include Prestonpans (10,410), Cockenzie and Port Seton (5,470), Tranent (12,140), Longniddry (2,420), Ormiston (1,970), Macmerry (1,410), Gladsmuir and Elphinstone (580)

- 4.6.3 Preliminary on-site work at BW1 has commenced. It is allocated in the LDP for a mixed development including ~1,600 homes, no less than 10ha of serviced employment land (assumed to accommodate at least 350 jobs), a local centre, education and community facilities, infrastructure and associated works.
- 4.6.4 In future, the Council has a vision to expand the new settlement in BW2. This development, referred to as Greater Blindwells, could accommodate up to 8,500 additional homes as well as further employment (assumed to accommodate a minimum of 1,200 jobs but potentially much more) and other mixed land uses.
- 4.6.5 The Council, in collaboration with relevant stakeholders, will seek to allocate the safeguarded land for development so that the national, regional and local benefits of the larger new town can be delivered as soon as possible and over the long term. The approach to this and to the Cockenzie site will be synergistic, with the aim being to promote a new nationally significant development area for sustainable and inclusive growth in the short, medium and long term. Importantly, these sites could have a direct role in facilitating the delivery of the transport and other infrastructure that would enable them to fulfil that role.
- 4.6.6 The Council and landowners have commenced initial work in preparation of the development of a Blindwells Area Design Framework (BADF) for the Greater Blindwells new settlement. The BADF will seek to draw together the case for the expanded allocation and articulate it into a spatial vision which outlines how the site can be accessed, constructed and serviced. It will consider options for the new town's development footprint and strategy as well as the preferred approach, mix of land uses, capacity, phasing and programme. It is anticipated that the BADF will be developed over the next 18 months.
- 4.6.7 The new town of Blindwells offers potential to be particularly attractive to businesses and families relocating from Edinburgh and the challenge is to ensure that the right services and infrastructure are in place to enable them to continue to live a car-lite lifestyle in a sub-urban location. It is particularly important that people moving into the new town of Blindwells are offered attractive sustainable travel options from the start, before new commuting habits are formed, and that the settlement offers a range of local, regional and national employment opportunities and community services to remain as 'self-contained' as possible. In addition, it could also serve as an attractor for inbound commuting making use of additional capacity in the opposite direction to the tidal flows in the peak periods. To that extent, links with the development of employment opportunities at the former Cockenzie Power Station are crucial, along with the creation of employment within Blindwells itself, to create complementary development.
- 4.6.8 Transport Scotland has advised that the BADF should be informed by a STAG appraisal and this appraisal will provide the evidence to support the BADF as it is developed.

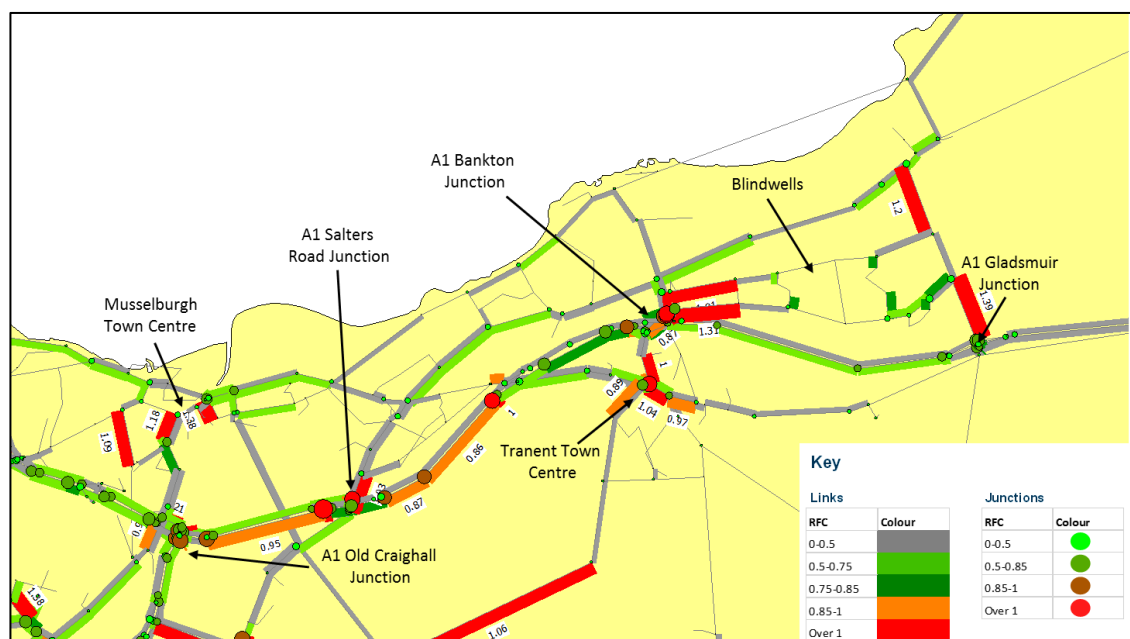
## Transport Impacts

- 4.6.9 The analysis undertaken to assess the impact of the LDP on the transport network identified the construction of BW1 could create problems at A1 Bankton Interchange and A198 Meadowmill Junction. The proposed mitigation includes introduction of signal control on the northern roundabout and redesign of both roundabouts with local widening and improved lane markings.
- 4.6.10 Additional transport modelling has been undertaken to identify the impacts that could arise from the Greater Blindwells development. For these tests a later forecast year was required to represent the longer build out time required. The analysis consequently used a new set of 2037 forecast scenarios defined as:
- A "Do Minimum" which includes:
    - LDP land-use and infrastructure inside East Lothian.



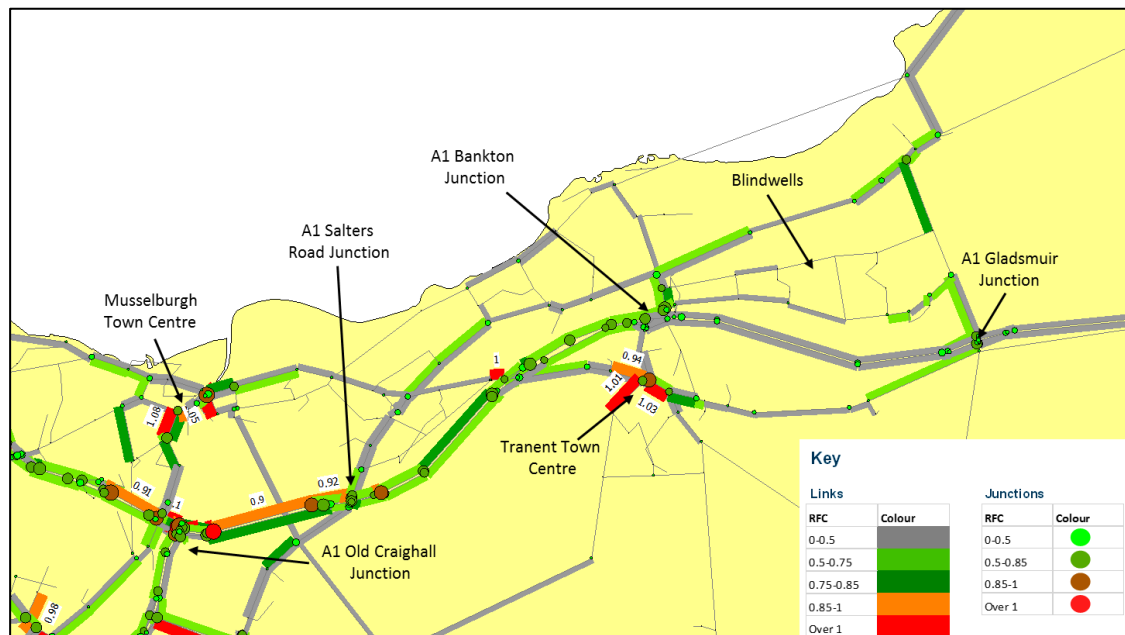
- 2037 SRM 'Do Minimum' land-use and infrastructure outside East Lothian.
  - A 'Reference Case' which includes:
    - The Do Minimum with the addition of Greater Blindwells land-use and 'local development infrastructure'<sup>4</sup>.
- 4.6.11 The road network performance in the vicinity of the Greater Blindwells development is illustrated by the Ratio of Flow to Capacity (RFC) plots shown in Figure 4.23 for the AM peak hour and Figure 4.24 for the PM peak hour.
- 4.6.12 The modelling identified that the access roads around Greater Blindwells (in all directions – to the A198 and A1) are predicted to exceed capacity, particularly in the AM peak hour. This causes the capacity on A1 Bankton and A1 Gladsmuir junctions to be exceeded.
- 4.6.13 In addition, in the 'Do Minimum' scenario the A1 Salters Road junction exceeds capacity in the AM peak hour. When the Greater Blindwells development is included these impacts are increased.
- 4.6.14 Capacity problems are also still apparent in Tranent town centre, Musselburgh town centre and at A1 / A720 Old Craighall junction.

**Figure 4.23 2037 Greater Blindwells 'Reference Case' Network Performance – AM Peak Hour**



<sup>4</sup> Local development infrastructure is an indicative transport network within the proposed development to provide access to the wider transport network. It does not include any mitigation to the surrounding transport network to cater for increased levels of travel demand.

Figure 4.24 2037 Greater Blindwells 'Reference Case' Network Performance – PM Peak Hour



- 4.6.15 Transport modelling of the impacts on the public transport network was also undertaken, particularly focussing on the local rail services between Edinburgh and North Berwick. It should be noted that in the forecast year scenarios, services are assumed to be operated by 8-car trains in line with the LDP mitigation proposals.
- 4.6.16 Figure 4.25 and Figure 4.26 show rail boardings and alightings at each of the stations and loadings on the North Berwick rail line as follows:
- Greater Blindwells 'Do Minimum' boardings (orange bar) and alightings (red bar);
  - Greater Blindwells 'Reference Case' boardings (light blue bar) and alightings (dark blue bar);
  - Greater Blindwells 'Do Minimum' loading on departure (red line with triangle markers);
  - Greater Blindwells 'Reference Case' loading on departure (blue line with triangle markers);
  - Seated capacities and crush capacities – square and circle marker series respectively.
- 4.6.17 The graphs show the forecast passenger loadings on the 8-car services exceed the seated capacity between Wallyford, Musselburgh and Edinburgh in both the 'Do Minimum' and 'Reference Case' scenarios. This is focused on westbound services in the AM and eastbound services in the PM, reflecting anticipated commuting patterns.
- 4.6.18 The inclusion of the Greater Blindwells development land-use and travel demand in the 'Reference Case' scenario is reflected in an increase in passenger volumes on the rail network notwithstanding the capacity restraint in the 'Do Minimum' scenario. This level of demand exceeds the crush capacity in the morning peak inbound to Edinburgh and is likely to represent a suppressed flow which would increase if greater capacity were provided.

Figure 4.25 2037 Greater Blindwells 'Reference Case' Westbound Rail Loadings – AM Peak Hour

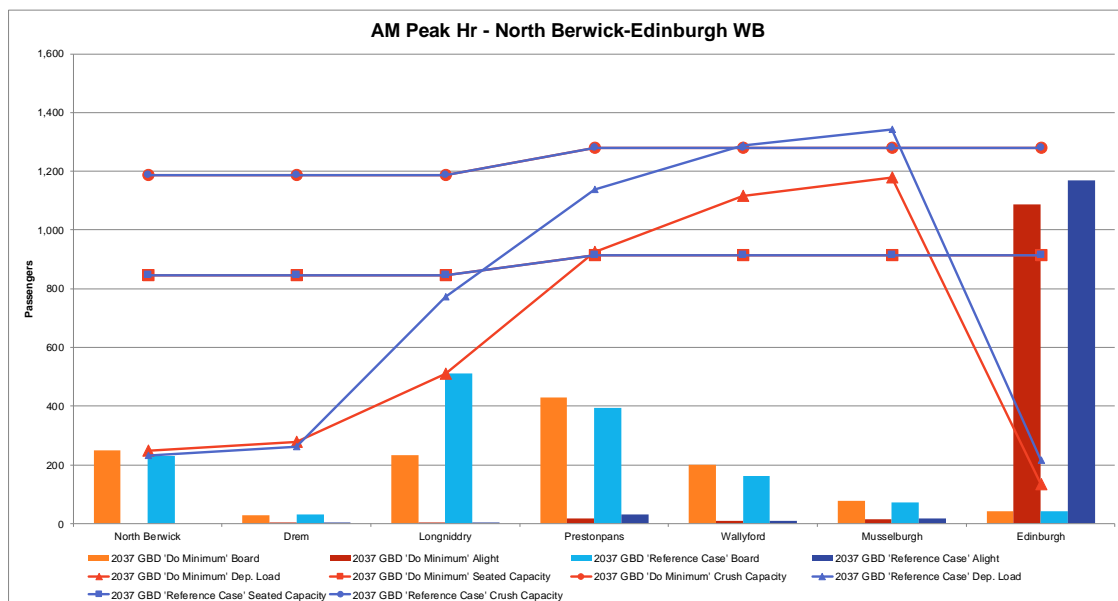
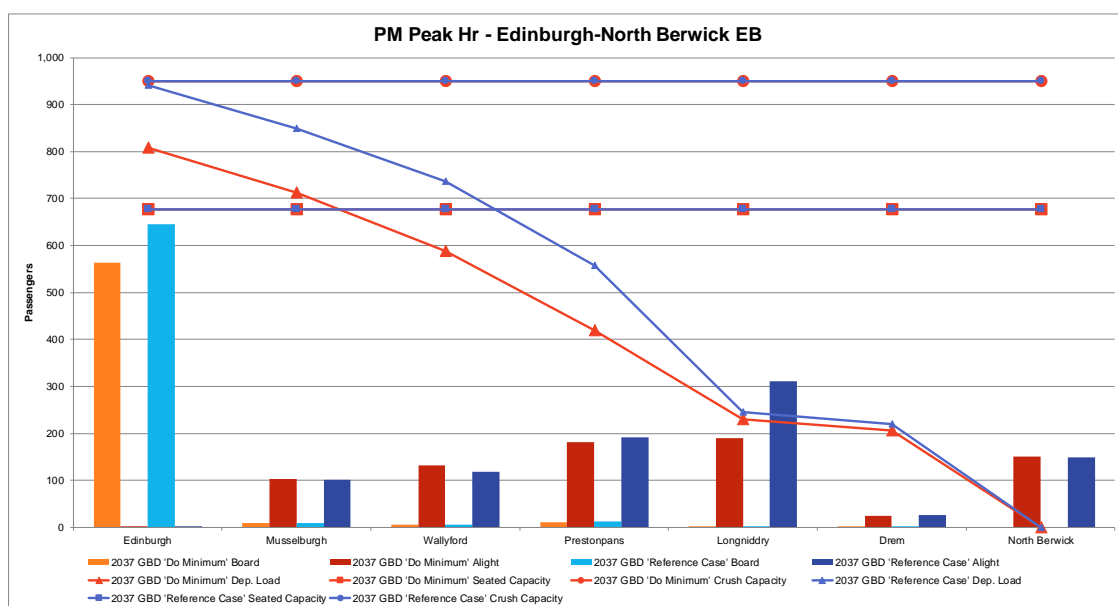


Figure 4.26 2037 Greater Blindwells 'Reference Case' Eastbound Rail Loadings – PM Peak Hour



4.6.19 Analysis has also been undertaken of the available capacity in the opposite direction to the tidal flow in the peak periods. Figure 4.27 and Figure 4.28 show there is ample capacity available on the rail network for travel in the opposite direction to the tidal flow whilst Figure 4.29 and Figure 4.30 highlight that capacity is also available on the strategic road network. There is consequently an opportunity to maximise use of available capacity by encouraging commuting in the opposite direction to the tidal flow.

Figure 4.27 2037 Greater Blindwells 'Reference Case' Eastbound Rail Loadings – AM Peak Hour

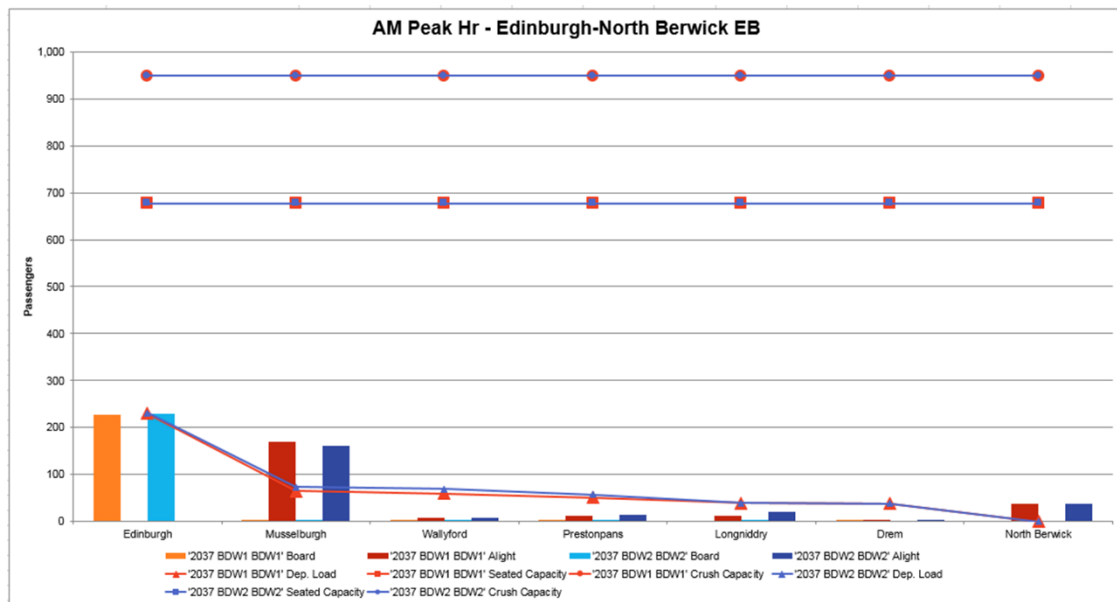


Figure 4.28 2037 Greater Blindwells 'Reference Case' Westbound Rail Loadings – PM Peak Hour

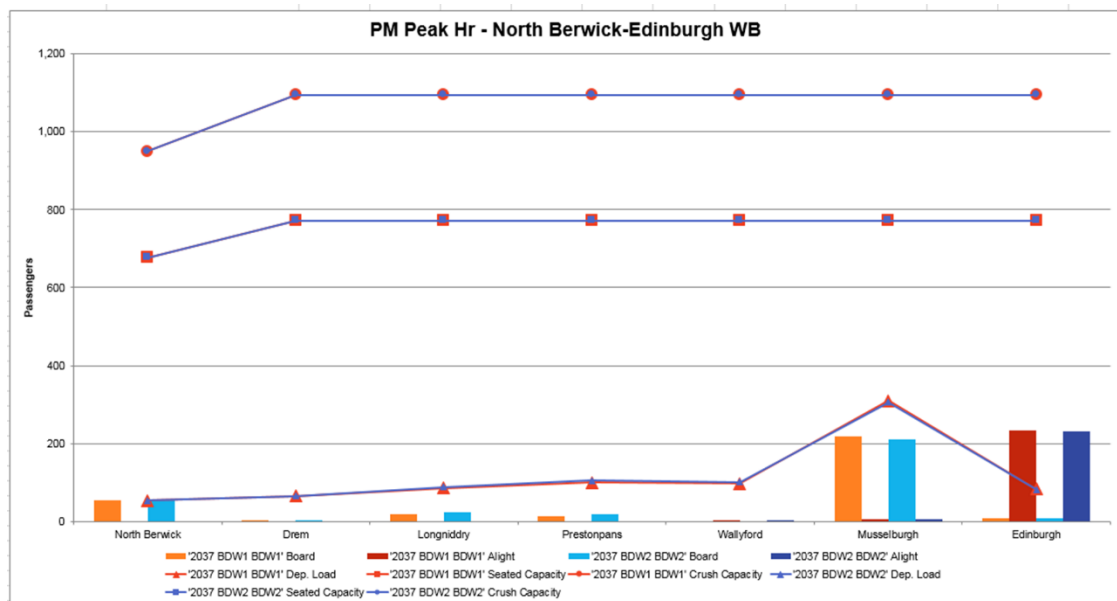


Figure 4.29 2037 Greater Blindwells 'Reference Case' Eastbound Available Road Network Capacity – AM Peak Hour

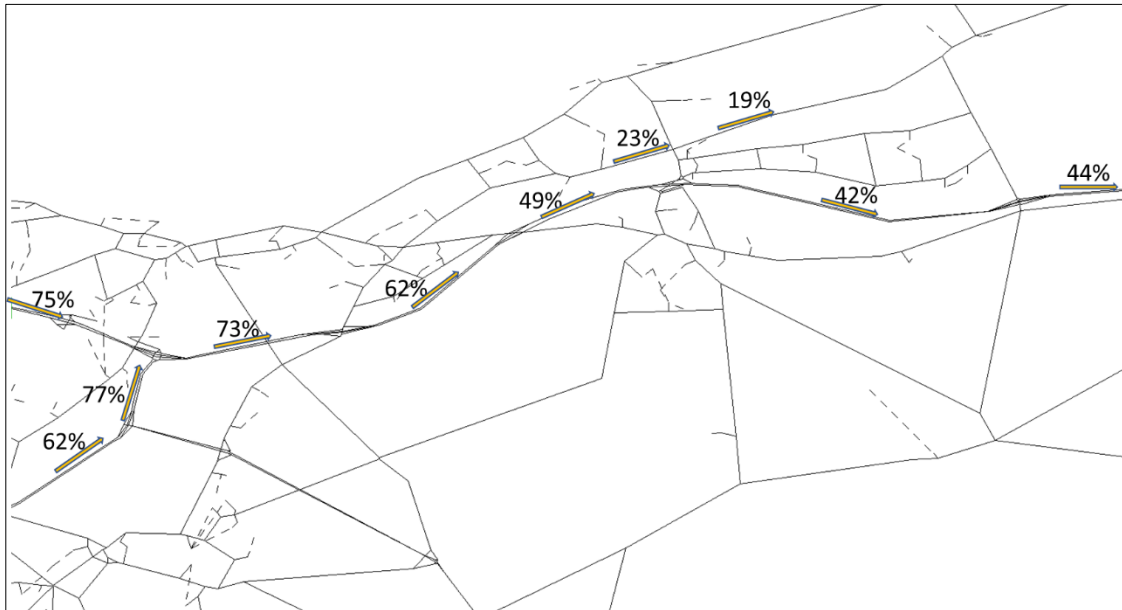
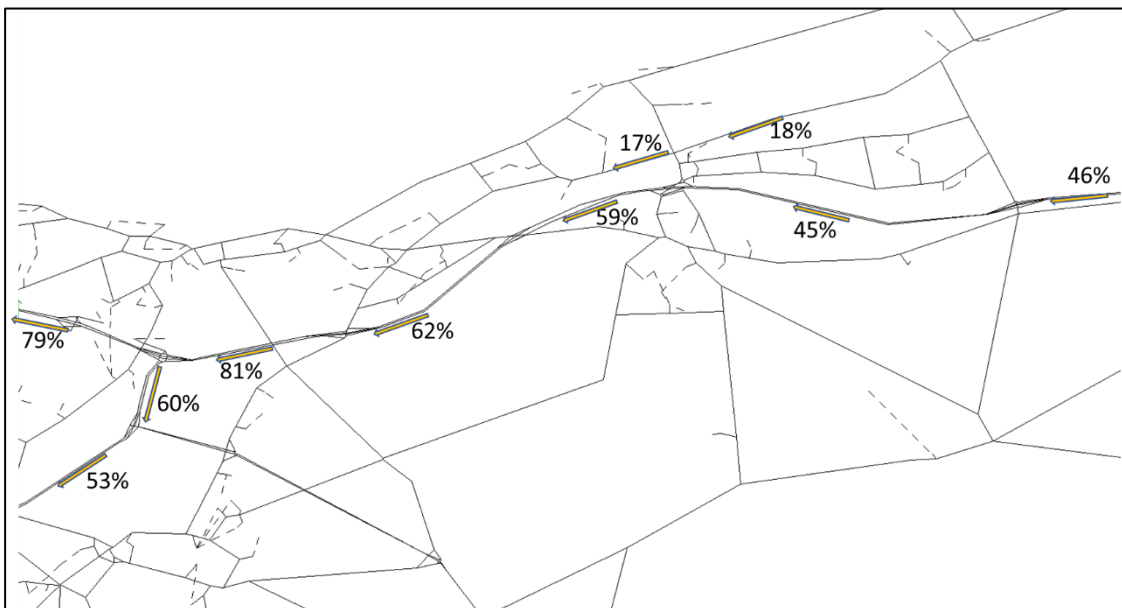


Figure 4.30 2037 Greater Blindwells 'Reference Case' Westbound Available Road Network Capacity – PM Peak Hour



4.6.20 Further details about the modelling methodology and results are attached as Appendix K.

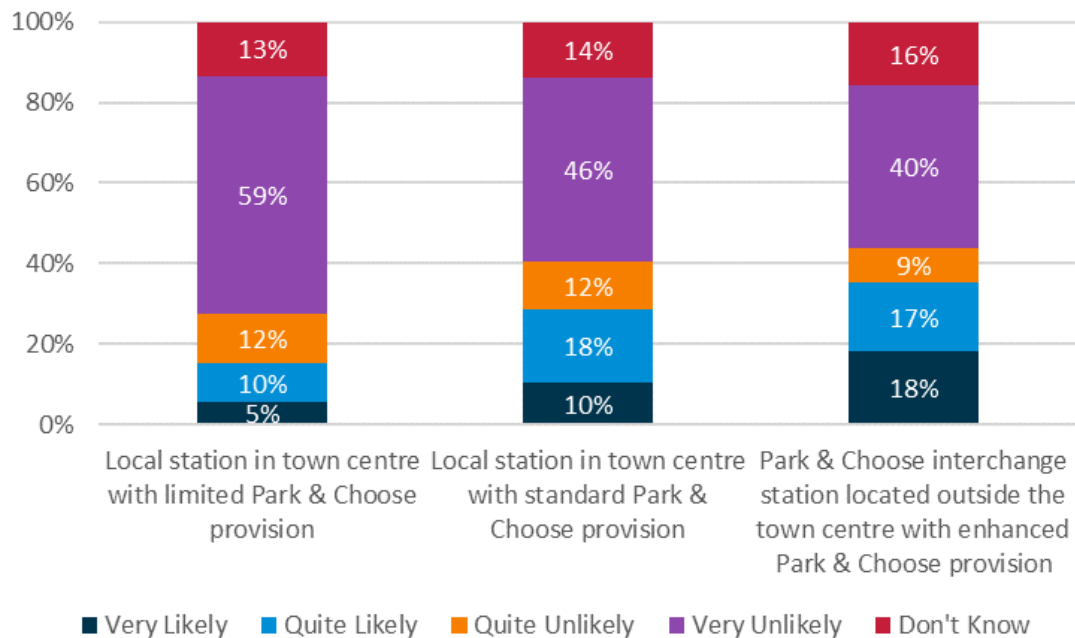
4.6.21 In addition, the work undertaken to date has also identified the potential to introduce a new railway station on the ECML to serve Blindwells with land subsequently being safeguarded in the LDP for this purpose. This could help to alleviate pressure on the road network but it is dependent upon further appraisal and the delivery of additional capacity from ECML four tracking or a HSR line. It is anticipated that any new railway station would also incorporate a car park, local access and overbridge of the rail line which could connect through the new town to a new A1 interchange providing access to the station and new town itself. This could form part of a regional multi-modal transport hub serving East Lothian.

4.6.22 The public consultation showed a preference for an interchange station located outside the town centre with enhanced Park and Ride provision as shown in Figure 4.31. It is notable that there



is currently much less public support for a station at Blindwells than at Haddington. However, as Blindwells does not currently exist it is natural that people will suggest they are less inclined to use it. This situation is likely to change though as the development is built out. On this basis, it is difficult to accurately determine the public's likely use of or desire for a station at Blindwells at this time.

Figure 4.31 Likelihood Of Using A New Station At Blindwells (% of Total Respondents)



Source: Public Consultation Survey, 2019

4.6.23 Alternative options for rail connectivity have previously been identified as well. These include:

- relocating Longniddry and / or Prestonpans stations;
- siting a new Blindwells station to the west, centre or east of the development;
- siting a new Blindwells station on a branch line such as a spur from ECML to Haddington.

4.6.24 The BADF will provide a coherent and comprehensive development and infrastructure strategy for the entire Blindwells site drawing on the findings from this STAG appraisal. This is essential to ensure development is not piecemeal and that the ambitions in the LDP for improved national, regional and local connectivity can be realised.

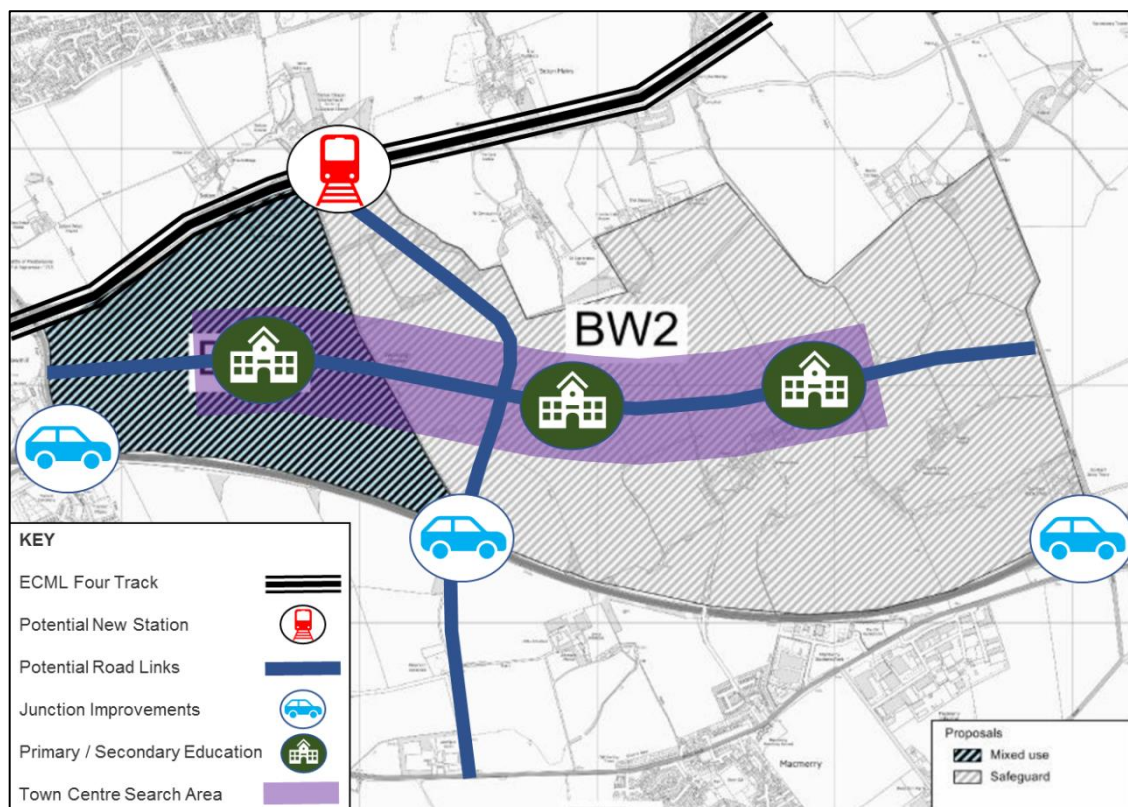
4.6.25 It is anticipated that the BADF will identify a range of rail, road and active travel infrastructure measures for the new town which will:

- create a new transport hub that maximises its strategic and local connections via a full range of transport routes and modes;
- provide shared access solutions for nearby settlements and economic sites;
- stimulate and support economic growth and unlock the potential for longer term growth in the area; and
- promote sustainable and inclusive growth across the region while maximising the use of existing capacity available in the opposite direction to peak tidal flows.

4.6.26 Based on a current, high level understanding of the problems and issues, development composition and layout an understanding of the potential infrastructure requirements has been developed. This is indicatively illustrated in Figure 4.32 and the key features include:

- Internal roads forming a west-east and north-south spine for the development;
- Enhanced junctions at A1 Bankton Interchange and A1 Gladsmuir Interchange with a potential new junction on A1 at Adniston;
- A town centre located somewhere along the west-east spine road;
- Pre and Primary School education facilities at three locations along the west-east spine road. One of these clusters could also serve as the Secondary School for Blindwells; and
- Four tracking the ECML or HSR along with a new station to serve Blindwells along with an over-bridge of the rail line to link the new town, surrounding communities and Cockenzie.

Figure 4.32 Blindwells Potential Infrastructure Requirements



4.6.27 These indicative infrastructure requirements draw upon the findings of the modelling undertaken to date which has identified the potential impacts of the proposed developments on the transport network as well as possible mitigation measures. This provides a foundation for the option generation and sifting stage of STAG. The findings from it will then inform which options will require detailed appraisal to be undertaken through the STAG process to identify the most appropriate package of measures and to explore issues such as:

- The potential to link Blindwells to the rail network via existing or new infrastructure and / or services;
- The scope to introduce a 'new mode' of public transport to provide connectivity between Blindwells and its local population catchment as well as the wider Edinburgh city region;

- Opportunities to create a multi-modal transport hub and interchange at Blindwells which could integrate a range of sustainable transport modes;
- How the existing bus network can be amended and enhanced to provide accessibility both to and from as well as within the development;
- The impact of potential enhancements at A1 Bankton Interchange and A1 Gladsmuir Interchange upon the capacity and operation of the network;
- Whether a west-east spine road in Blindwells would lead to routing that caused A1 Bankton Interchange to be over capacity;
- If there is a need for a new junction on the A1 at Adniston to help to relieve A1 Bankton Interchange and / or A1 Gladsmuir Interchange;
- Whether a new junction at A1 Adniston could be linked with a north-south spine road within the Blindwells development;
- The potential to link a north-south spine road in Blindwells with wider infrastructure development including an overbridge of the ECML, possible eastern bypass of Tranent and the redevelopment of the Cockenzie Power Station site;
- The potential to link a north-south spine road into a new transport interchange at Blindwells;
- What impact spine roads would have upon severance within the Blindwells community and how this could be minimised;
- How full access to jobs and community services can be achieved from across the development by a variety of transport modes including active travel and public transport;
- The optimum way to link the internal active travel network within Blindwells to the wider active travel network including the proposed segregated active travel corridor extending from Musselburgh to Dunbar via Prestonpans station, Blindwells and Haddington.

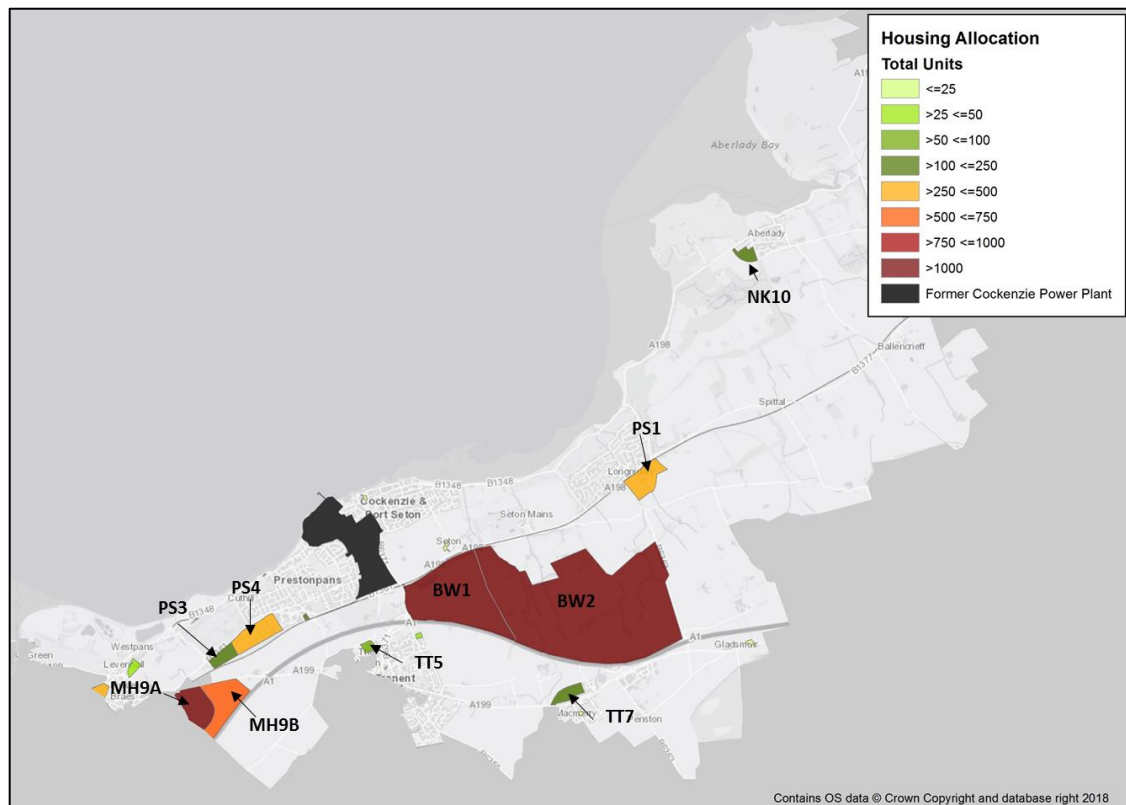
4.6.28 It will also be essential to create a mechanism for developer contributions to transport infrastructure improvements in line with the policy set out in the LDP.

## 4.7 Longniddry, Cockenzie & Prestonpans

### Development Proposals

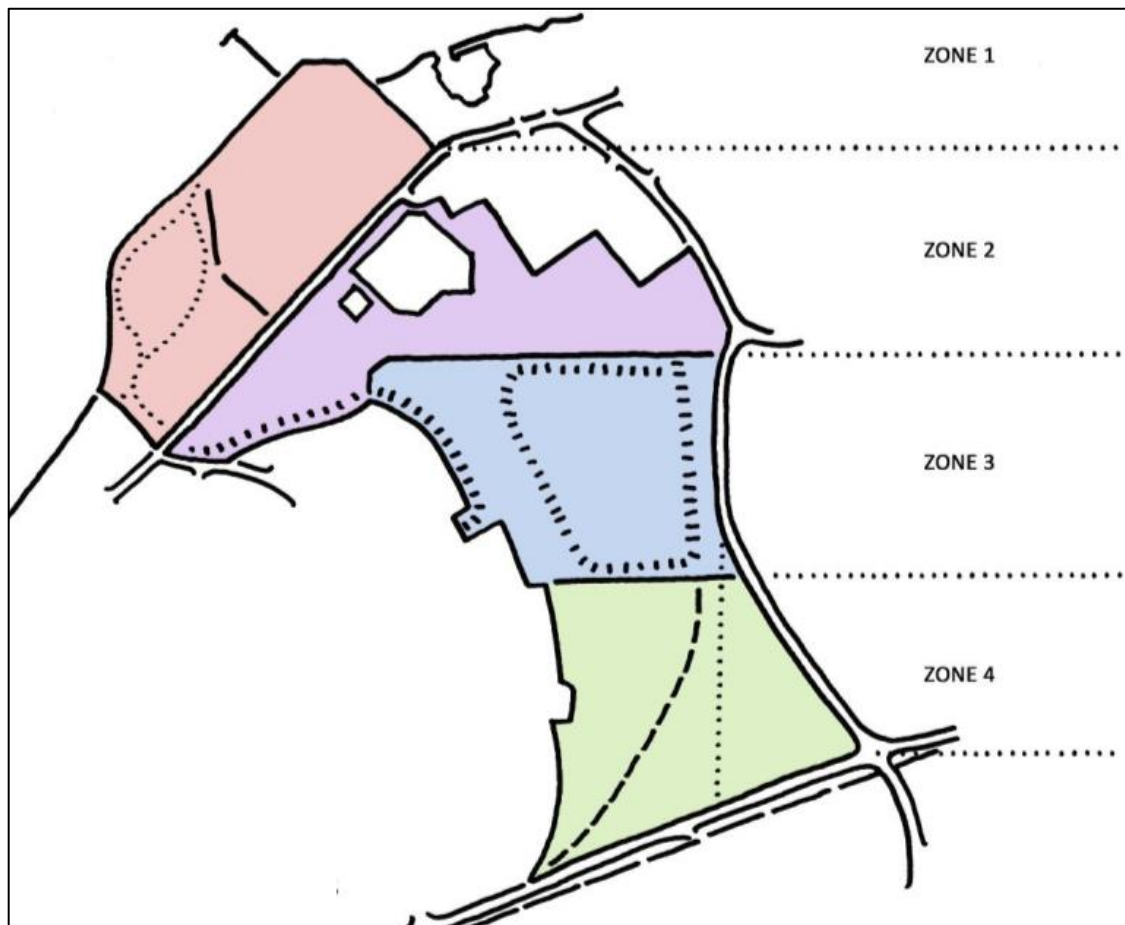
4.7.1 Located immediately adjacent to Blindwells the spatial strategy for the Longniddry, Cockenzie and Prestonpans cluster is shown in Figure 4.33.

Figure 4.33 Spatial Strategy for the Longniddry, Cockenzie and Prestonpans Cluster



- 4.7.2 This area incorporates the former Cockenzie Power Station which was decommissioned in March 2013 and subsequently demolished in September 2015. The site is still considered to be of strategic national significance with regards to energy as it contains significant infrastructure assets including a connection to the national grid, railhead and pier. It is now the focal point for a Masterplan that seeks to redevelop and regenerate it.
- 4.7.3 The Former Cockenzie Power Station & Surrounding Area Masterplan was published in August 2017. The Masterplan set out a vision for delivery of ~90,000 sq.m of employment space and ~3,500 jobs. It splits the site into four zones as shown in Figure 4.34 and summarised below.

Figure 4.34 Cockenzie Power Station Masterplan Zones



#### Zone 1 – Coastal

An energy and mixed-use area which could accommodate uses including employment (such as office and small-scale manufacturing or workshop uses), energy (such as handling off-shore energy), recreation, local limited residential accommodation as part of the mixed-use zone, retail and bar / café / restaurant uses, marine-based activity, and hotel, sports, health and fitness activities.

This area can be accessed easily from the Edinburgh Road for development at an early stage. Zone 1 is connected to the other zones and areas beyond the masterplan with a network of green space and a variety of extensive walking and cycle routes.

#### Zone 2 – Energy Quarter

This area is to some extent constrained by the presence of the transformer building, but this is also one of its primary assets, representing the opportunity to develop the site as a significant energy quarter, with energy production, handling incoming offshore energy, and other appropriate associated uses such as compounds, maintenance, workshops and office and other support facilities.

This zone may be accessed either from the Edinburgh Road to the north or via a new spur from the roundabout on the B6371 to the east to permit work to take place from an initial stage in the development of the site. Zone 2 is at the heart of the developed part of the masterplan and is connected to the other zones as well as settlements and spaces outwith the site boundary via an extensive series of paths and linked spaces.



### **Zone 3 – Coal Store**

Designated as an employment zone and contains the capacity for a range of uses from light industrial and manufacturing to the north, acting as a buffer zone to the energy quarter, through to office, education and HQ uses to the south, with a flexibility of gradation of use according to market forces and phasing.

This zone may be accessed from the B6371 to the east using the remodelled existing coal store access, which means that development may commence at any stage of the realisation of the masterplan.

### **Zone 4 – Battle of Prestonpans**

A landscape zone used for battlefield and other green space access as well as potentially agricultural use.

This zone is accessible on foot and cycle from a number of directions but improvements are proposed to link other existing attractions in a legible and meaningful way. Zone 4 acts as a green lung to counterbalance some of the other more intensely developed zones, and also has the potential to provide rail infrastructure into the larger site.

- 4.7.4 The Masterplan also incorporates a port variant in response to proposals for a cruise terminal raised during the consultation process. Furthermore, the NPF 3 recognises the potential for a port related to energy development which the former Cockenzie Power Station site could fulfil.
- 4.7.5 A port is technically feasible but would require substantial investment to achieve appropriate sea depths. In addition, it is not clear whether there would be a sufficient market hinterland to sustain a port at Cockenzie or sufficient additional land once the 'energy requirement' of the site is fulfilled.

## **Transport Impacts**

- 4.7.6 The proposals for Cockenzie are still at an early stage and there is consequently less understanding of what the development may look like and evidence of the impacts that it will have on the transport network.
- 4.7.7 In addition, it is vitally important that the transport infrastructure strategy for Blindwells and Cockenzie is closely integrated to ensure both can be developed to their full potential by locating new jobs, homes, services, facilities and amenities in close proximity to one another with easy and sustainable access.
- 4.7.8 The redevelopment of the Cockenzie Power Station site will undoubtedly have implications for demand on the strategic transport network including the A1 and train services via the ECML. Capacity at A1 Dolphingstone Interchange, A1 Bankton Interchange and A1 Gladsmuir Interchange needs to be examined taking into account the cumulative impact from the Blindwells development as well. In addition, the impacts are likely to be felt as far west as the strategically located A1 Old Craighall Junction.
- 4.7.9 More locally the Cockenzie Power Site development will impact upon A198 with previous analysis suggesting signalisation of Meadowmill Junction and local road widening may be required.
- 4.7.10 Further capacity may also be required at Longniddry and Prestonpans stations potentially including extended platforms and parking provision. However, this also needs considered in the context of any rail station proposals at Blindwells and how services to Blindwells would be accommodated within the timetable.

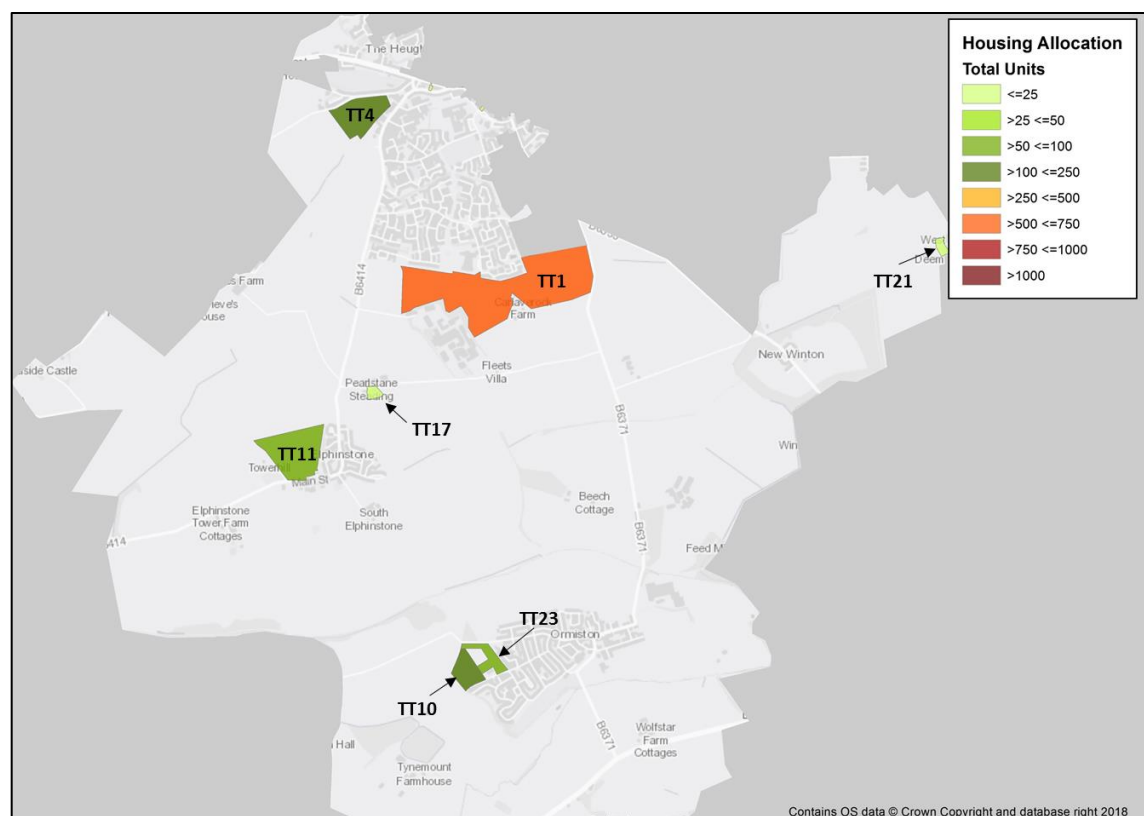
- 4.7.11 It should be noted that, with no certainty being available regarding the likely land-use composition at Cockenzie, it hasn't been included in any transport modelling undertaken to date. As such, as proposals emerge and more detailed modelling is undertaken to determine the most appropriate suite of interventions for East Lothian, it should be included within future model runs.

## 4.8 Tranent

### Development Proposals

- 4.8.1 The spatial strategy for Tranent is illustrated in Figure 4.35. A southern expansion of Tranent (TT1) is allocated for housing and to provide for the expansion of Windygoul Primary School campus to a size that will be sufficient to accommodate the cumulative impact of new housing allocations.
- 4.8.2 Smaller sites are allocated for housing in Tranent at Bankpark Grove and Lammermoor Terrace (TT4). There is also land allocated for the eastern expansion of Macmerry Industrial Estate and to the north of the settlement for housing. The settlements of Gladsmuir, Elphinstone, Ormiston and Pencaitland, East Saltoun and Humbie will also accommodate housing allocations.
- 4.8.3 Tranent town centre will continue to be the focus for active land uses in the cluster, including retail, commercial and business uses whilst the local centres at Macmerry and Ormiston will also be important locations for similar uses.

Figure 4.35 Spatial Strategy for the Tranent Cluster



## Transport Impacts

- 4.8.4 Tranent High Street experiences high levels of through traffic which has impacted on amenity and air quality in the town centre. It has been identified that the traffic impacts of housing allocations could be mitigated by introduction of a one-way system in the town centre.
- 4.8.5 However, it has been suggested through consultation that any significant expansion of Tranent may require an eastern bypass which would provide relief to the High Street. This could be linked to a new junction on the A1, potentially at Adniston, which could also tie into the network for Greater Blindwells. Land has been safeguarded for these purposes.
- 4.8.6 Furthermore, there may be a need to mitigate cumulative traffic impacts at A1 Bankton Interchange and Dolphingstone Interchange. Previous analysis found that local widening and traffic signal optimisation may be required at the latter.

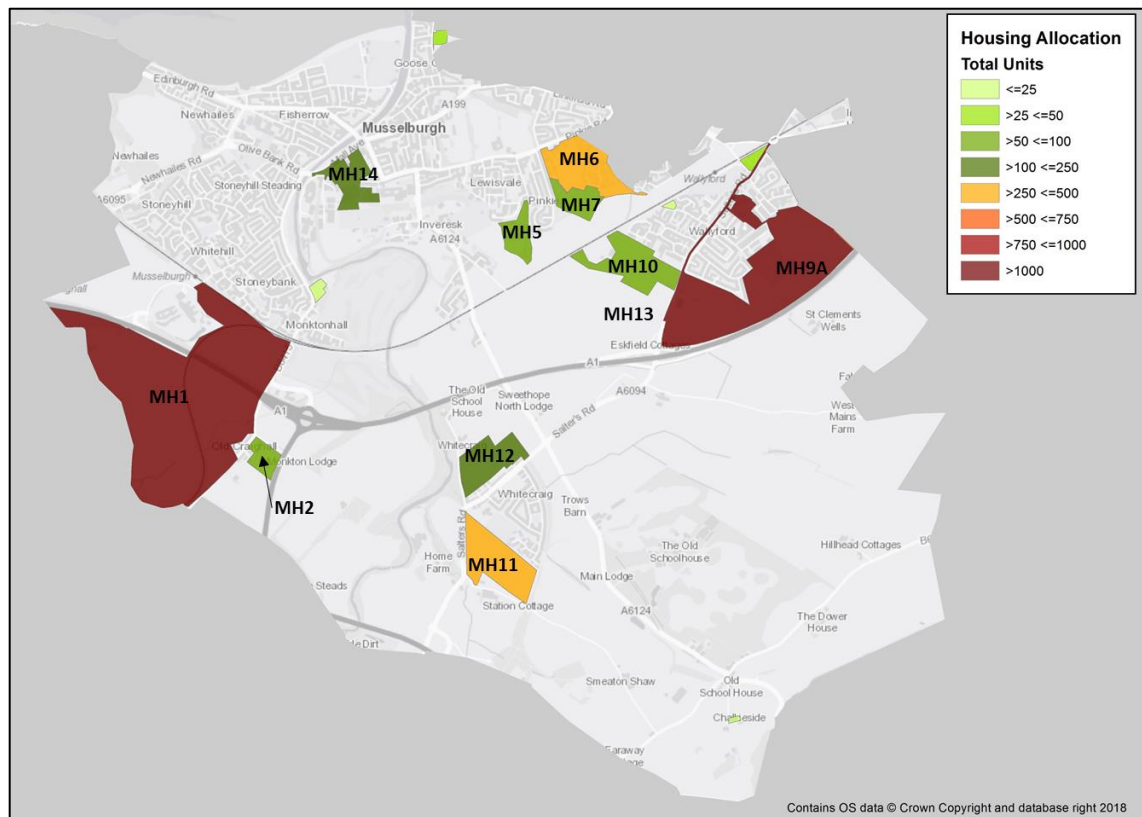
## 4.9 Musselburgh & Wallyford

### Development Proposals

- 4.9.1 The compact spatial strategy for the Musselburgh cluster is shown in Figure 4.36. It carries forward existing allocations and housing land supply whilst seeking to deliver additional employment and housing opportunities as well. Musselburgh town centre will be the focus for retail, commercial and business uses whereas new local centres will also be introduced at Craighall, Wallyford and Whitecraig.
- 4.9.2 Land at Craighall (site MH1) is allocated for a mixed-use development including 1,500 homes, around 41 ha employment land (centred around Queen Margaret University), a new local centre, a new primary school and community uses as well as infrastructure and associated works. This significant development is closely linked to the existing and proposed transport network in the area.
- 4.9.3 The Edinburgh Innovation Park (illustrated adjacent) is being taken forward next to Queen Margaret University. Proposals centre around creation of two distinct areas on the land adjacent to QMU's campus. A commercial hub will provide retail and leisure facilities for students, staff and the surrounding local communities. It will provide the UK's first National Food and Drink Enterprise Centre providing specialist facilities and services required to support R&D and food science. A second centre will provide facilities for the very wide range of SME sectors innovating across all the services required by the food and drink sector.
- 4.9.4 Wallyford and Whitecraig will provide locations for new development and local centres to contribute to the ongoing regeneration of these settlements. A replacement primary school and new secondary school will be provided at the expanded Wallyford whilst land is allocated at Dolphingstone for further expansion of the original Wallyford housing allocation.



Figure 4.36 Spatial Strategy for the Musselburgh Cluster



## Transport Impacts

- 4.9.5 The ongoing deliverability of the compact spatial strategy focused around Musselburgh will be dependent upon the delivery of solutions that have been found for infrastructure and environmental constraints. In terms of transport, there are concerns about the capacity of Musselburgh town centre to accommodate additional traffic and the potential cumulative impact of additional development. In addition, capacity at the already congested Old Craighall Junction is an issue as, being located at the intersection of the A1 and A720, it is likely to experience traffic from the majority of LDP developments across East Lothian.
- 4.9.6 Transport modelling has identified that signalising and widening the roundabout approaches and circulatory carriageway would provide more efficient operation and increase effective capacity at Old Craighall Junction. These improvements would also help to relieve Musselburgh High Street as through traffic transfers to the A1.
- 4.9.7 A number of other transport proposals have also been devised to facilitate the resolution of constraints and delivery of the development aspirations in the area. These include:

- **A1 QMU Interchange:** Addition of westbound on and off-slips to the junction providing access to the QMU campus and adjacent employment. Access and egress is currently only possible in an eastbound direction.
- **A1 Salters Road Interchange:** Local widening on Salters Road and optimisation of signal control staging, phasing and timings.
- **Musselburgh Town Centre Traffic Management:** Signalised controlled junctions at A199 / New Street, A199 / Linkfield Road and Pinkie Road / Inveresk Road to regulate demand



in the town centre along with management of vehicles and indiscriminate parking by promoting TROs and provision of enhanced walking and cycle infrastructure.

- **Active Travel Corridor:** Provision of a segregated walk and cycle route extending from Musselburgh to Dunbar, via Blindwells and Haddington.
- **Rail Station Capacity Enhancements:** Creation of extended platforms at Musselburgh and Wallyford to accommodate longer trains along with possible additional parking provision.

4.9.8 In addition to these measures, the Musselburgh cluster is also closely linked to the nearby Borders rail line, Newcraighall station and the proposed alignment of Edinburgh Tram Line 3 which would extend from Haymarket to Musselburgh.

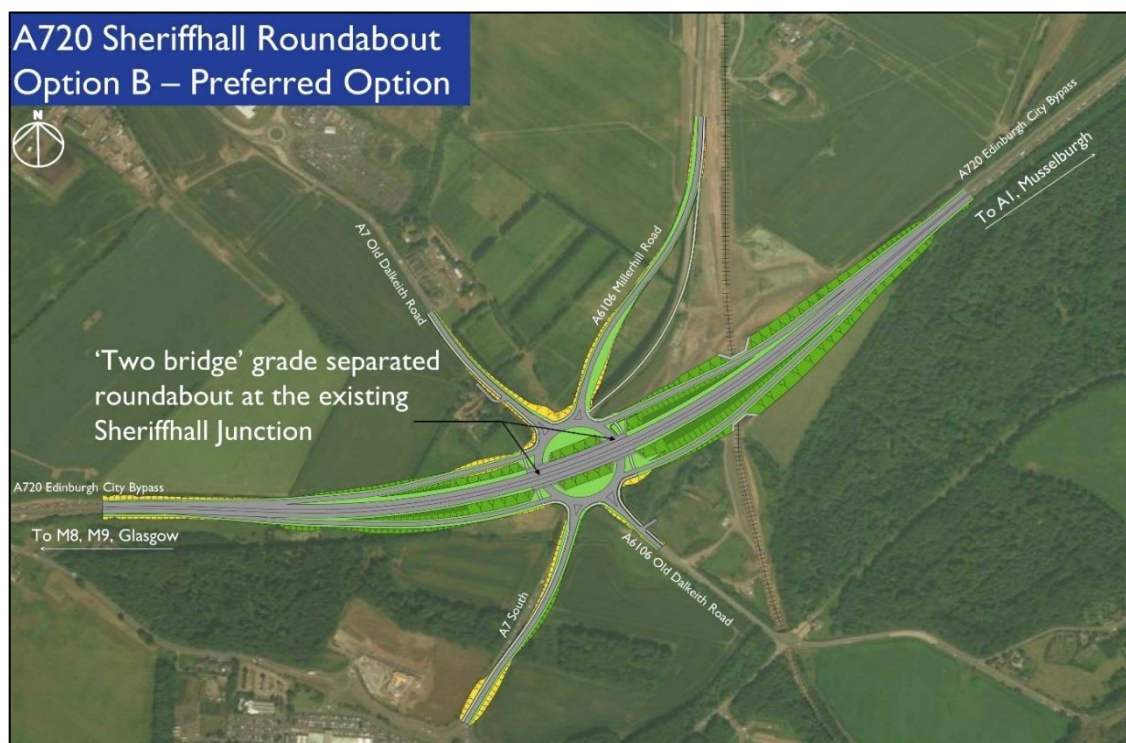
## 4.10 Edinburgh & The West

4.10.1 East Lothian forms a key part of the Edinburgh labour market which has a corresponding relationship with the demand for transport from East Lothian to Edinburgh and the wider city region. The A1, A720 City Bypass and rail network are key components of the wider strategic transport network connecting East Lothian to Edinburgh and beyond.

4.10.2 The A720 currently experiences peak period congestion particularly around Sheriffhall Roundabout. Junction improvements at Sheriffhall were identified as part of the Strategic Transport Projects Review (STPR) in 2008. Subsequent design work identified the preferred option as a grade separated junction as shown in Figure 4.37. This scheme will be delivered by Transport Scotland as part of the Edinburgh and South East Scotland City Region Deal.

4.10.3 Concerns were noted through the consultation that the resolution of the bottleneck at Sheriffhall may only shift the problem to Old Craighall junction as this will need to be kept under review as the study progresses.

Figure 4.37 Sheriffhall Roundabout Grade Separation Preferred Option





- 4.10.4 City of Edinburgh Council are currently consulting on two proposals that have the potential to significantly change how people access and travel around the city. The first is the Edinburgh City Centre Transformation project which outlines a programme to enhance public spaces by prioritising movement on foot, by bike and by public transport in central streets. The proposed interventions include extensions to tram lines, vertical elevators between streets, removing general traffic from key city centre streets and removal of on-street parking amongst other measures. The consultation concludes at the end of June 2019.
- 4.10.5 The Council has also published its draft proposals to roll-out a two-tier Low Emission Zone (LEZ) by the end of 2020. Under the proposals buses, coaches and commercial vehicles will have until the end of 2021 to meet the city centre standards, while cars will have until the end of 2024. The consultation will conclude in late July 2019.
- 4.10.6 Finally, it is understood that City of Edinburgh Council are also considering a workplace parking levy once legislation is in place to enable it to do so. It is anticipated that a charge of around £400 a year could be introduced on employers who provide parking spaces for their staff. It will be up to businesses to decide whether to pass this onto their employees or not.
- 4.10.7 These emerging proposals have the potential to radically change travel patterns within and to Edinburgh which will have implications for how people choose to travel in surrounding areas like East Lothian.

## 4.11 Summary

- 4.11.1 The work that has been undertaken to date has identified that the following network locations may have capacity and performance impacts related to demand generated by the introduction of LDP development:

### Road Network

- A1 Queen Margaret University Junction & A1 Old Craighall Junction;
- A1 Salters Road Junction;
- A1 Dolphingstone Junction;
- A1 Bankton Junction & A198 Meadowmill Junction;
- Musselburgh Town Centre; and
- Tranent Town Centre.

### Rail Network

- Crowding on North Berwick Line service at Musselburgh and Wallyford.

- 4.11.2 In addition, although bus frequencies from Haddington into Edinburgh are excellent, they are subject to the same delays as all road traffic and journey times are uncompetitive. With no direct access to the rail network Haddington suffers from a lack of public transport options. The reinstatement of the Haddington branch line from Longniddry could potentially address these problems but it is affected by the capacity constraints on the current rail infrastructure discussed in Chapter 2.
- 4.11.3 The resolution of access constraints will help to facilitate development of Edinburgh Innovation Park adjacent to Queen Margaret University which is in the vicinity of the capacity constrained A1 / A720 Old Craighall Junction.

- 4.11.4 The creation of a new town at Blindwells will, inevitably, have significant impacts for the transport network with modelling suggesting that junctions on key access roads, including the A1 and A198, are predicted to exceed capacity, particularly in the AM peak hour. It is also anticipated that capacity would be exceeded on westbound train services in the AM and eastbound train services in the PM, reflecting anticipated commuting patterns. To date the redevelopment of the former Cockenzie Power Station has not been modelled as the proposals are at a much earlier stage than those for Blindwells. There are close linkages between the two sites and there is a need to consider the cumulative impacts of the developments.
- 4.11.5 On this basis there is a need to consider the optimum package of transport interventions required to support the Blindwells and Cockenzie developments with sustainable transport options and mitigate impacts on the road network. This will enable the delivery of places which are destinations, attractors and economic drivers.
- 4.11.6 Potential options include a new station on the ECML, a multi-modal transport hub and interchange as well as a 'new mode' of public transport to provide connectivity between Blindwells and its local population catchment along with the wider Edinburgh city region. Active travel links to any major new infrastructure will also be of paramount importance.
- 4.11.7 In addition, the analysis has shown that there is available capacity in the opposite direction to the tidal flow in the peak periods. This presents an opportunity to encourage commuting into East Lothian which would maximise usage of available capacity.

## 5 Problems, Issues, Constraints & Opportunities

### 5.1 Introduction

5.1.1 This chapter summarises the findings from the preceding chapters to identify:

- **Problems:** where the transport network and services cannot accommodate demands placed upon them or do not provide adequate connectivity and accessibility.
- **Issues:** uncertainties that the study may not be in a position to resolve but must work within the context of.
- **Constraints:** the bounds within which a study is being undertaken including regulatory or physical limitations.
- **Opportunities:** where positive benefits can be achieved if particular circumstances are put in place.

5.1.2 The analysis has highlighted that East Lothian **currently** suffers from transport problems and that it will also face increasing transport pressures in the **future** as the significant land-use development plans for the area are implemented. On this basis the problems, issues, constraints and opportunities have all been allocated a timescale.

5.1.3 For each a description is provided along with a summary of the evidence that underpins it. The availability of relevant evidence has been graded on a Red, Amber, Green system as follows:

- **Red: None**
- **Amber: Limited**
- **Green: Comprehensive**

5.1.4 The findings from the evidence and their consistency with the identified problem, issue, constraint or opportunity are also graded using a Red, Amber, Green system as follows:

- **Red: Inconsistent**
- **Amber: Partially Consistent**
- **Green: Fully Consistent**

5.1.5 Finally, the problems, issues, constraints and opportunities have been set out in the remainder of this chapter under the headings of Public Transport, Road, Land-use Developments, Socio-Economic and Active Travel.

### 5.2 Public Transport

Problem	X	Issue		Constraint	X	Opportunity	
Description	Potential latent demand for rail travel which is constrained as services and infrastructure are currently operating at capacity. This is impacted upon by the constrained rail network capacity on the East Coast Main Line as well as at Edinburgh Waverley station.						
Evidence	Availability		Comprehensive		Findings		Fully Consistent
	<ul style="list-style-type: none"><li>Capacity information from Network Rail Scotland Route Study 2016 on capacity of the rail network.</li></ul>						

	<ul style="list-style-type: none"> <li>• Demand vs capacity from ScotRail's Top Ten Busiest Trains Report 2018.</li> <li>• Stations entries and exits from ORR data.</li> <li>• Survey of existing platform lengths at stations within East Lothian and at Waverley which determined maximum train lengths.</li> <li>• Timetable analysis of service frequencies, first and last services.</li> <li>• MOIRA origin – destination analysis of current demand for travel to and from stations in East Lothian.</li> <li>• Park and Ride site capacity and utilisation.</li> <li>• Journey time comparisons by mode and time period (peak v off peak).</li> <li>• Engagement with rail industry stakeholders.</li> <li>• Public consultation findings.</li> </ul>
Timescale	Current

Problem	X	Issue		Constraint		Opportunity	
Description	There are limited public transport links to Haddington.						
Evidence	Availability	Comprehensive		Findings		Fully Consistent	
	<ul style="list-style-type: none"> <li>• Census car ownership and usage of people living in and travelling to Haddington.</li> <li>• Mapping of current bus routes.</li> <li>• Bus service frequencies and length of operating day.</li> <li>• Public consultation findings.</li> </ul>						
Timescale	Current						

Problem		Issue		Constraint	X	Opportunity	
Description	Tension between the local and strategic roles of the East Coast Main Line within East Lothian with potential conflict between improving local services and facilitating more long-distance inter-urban services.						
Evidence	Availability	Limited		Findings		Fully Consistent	
	<ul style="list-style-type: none"> <li>• Engagement with rail industry stakeholders.</li> <li>• Timetable analysis.</li> <li>• Service frequencies of local and long-distance services in East Lothian.</li> <li>• Journey times of local and long-distance services in East Lothian.</li> </ul>						
Timescale	Current & Future						

Problem		Issue	X	Constraint		Opportunity	
Description	Decisions on future rail network capacity closely linked to conclusions on the feasibility of High Speed Rail links via East Lothian.						
Evidence	Availability	Limited		Findings		Fully Consistent	
	<ul style="list-style-type: none"> <li>• Engagement with rail industry stakeholders.</li> </ul>						
Timescale	Current & Future						

### 5.3 Road

Problem	X	Issue		Constraint		Opportunity	
Description	East Lothian residents have a high dependence upon car and road transport, partly due to limited rail network capacity and partly due to the rural nature of the area. This increases the further east you travel in the county.						
Evidence	Availability	Comprehensive		Findings		Fully Consistent	
	<ul style="list-style-type: none"> <li>• Census car ownership across East Lothian.</li> <li>• Census travel to work mode share analysis.</li> </ul>						
Timescale	Current						

Problem	X	Issue		Constraint		Opportunity	
Description	There is limited road network capacity on the A1 and its junctions within East Lothian and upon the A720 outwith East Lothian.						

Evidence	Availability	Comprehensive	Findings	Fully Consistent
	• LDP and Greater Blindwells modelling outputs.			
Timescale	Current & Future			

Problem	X	Issue		Constraint		Opportunity	
Description	High traffic flows through Tranent and Musselburgh town centres cause severance and congestion.						
Evidence	Availability	Comprehensive	Findings		Fully Consistent		
	• LDP and Greater Blindwells modelling outputs.						
Timescale	Current & Future						

## 5.4 Land-use Developments

Problem	X	Issue		Constraint		Opportunity	X
Description	Enabling infrastructure is required to facilitate proposed LDP developments (particularly Blindwells, Cockenzie and the Edinburgh Innovation Park adjacent to Queen Margaret University) and to mitigate their impacts upon the strategic transport network.						
Evidence	Availability	Comprehensive		Findings		Fully Consistent	
	<ul style="list-style-type: none"><li>• The identified problems and potential mitigation measures from the LDP and Greater Blindwells modelling.</li><li>• Transport interventions identified through the LTS and LDP.</li></ul>						
Timescale	Future						

## 5.5 Socio-Economic

Problem	X	Issue		Constraint		Opportunity	
Description	Access by sustainable modes to employment opportunities and the labour market of Edinburgh city region is limited by the capacity, coverage and attractiveness of existing public transport networks.						
Evidence	Availability		Comprehensive		Findings		Fully Consistent
	<ul style="list-style-type: none"><li>• Census travel to work origin – destination analysis demonstrates current demand for travel to the Edinburgh city region.</li><li>• Census travel to work mode share analysis.</li><li>• Bus route mapping.</li><li>• Bus service frequencies and length of operating day.</li><li>• Journey time comparisons by mode and time period (peak v off peak).</li><li>• The identified problems and potential mitigation measures from the LDP and Greater Blindwells modelling.</li><li>• Public consultation findings.</li></ul>						
Timescale	Current & Future						

Problem	X	Issue		Constraint		Opportunity	
Description	There is high forecasted growth in the population of East Lothian which is partially linked to land-use development proposals. Infrastructure needs to be put in place to accommodate this growth and to provide better access to local employment opportunities.						
Evidence	Availability	Comprehensive		Findings		Fully Consistent	
	<ul style="list-style-type: none"><li>• NRS population forecasts.</li><li>• LDP development mapping showing the scale and location of developments.</li><li>• LDP and Greater Blindwells modelling outputs.</li></ul>						
Timescale	Future						



Problem	Issue	Constraint	Opportunity	X
Description	There is scope to encourage greater containment within the labour market and economy of East Lothian by providing more local employment opportunities through the new land-use developments. In addition, there is available capacity on transport networks in the opposite direction to the main peak flow which could be used to accommodate commuting into the area for employment.			
Evidence	Availability	Comprehensive	Findings	Fully Consistent
	<ul style="list-style-type: none"><li>• LDP and Greater Blindwells modelling outputs.</li><li>• Census travel to work origin – destination analysis.</li></ul>			
Timescale	Current & Future			

Problem	Issue	Constraint	Opportunity	X
Description	Demand for commuting at peak periods could be reduced by increased agile working and working from home as digital connectivity continues to grow.			
Evidence	Availability	Comprehensive	Findings	Fully Consistent
	• Census travel to work mode share analysis.			
Timescale	Future			

## 5.6 Active Travel

Problem	X	Issue		Constraint		Opportunity	
Description	There are limited active travel links between settlements in East Lothian with the problem becoming more acute the further east you travel in the county. This requires people to travel further and by less sustainable modes to access employment opportunities and services.						
Evidence	Availability	Comprehensive	Findings		Fully Consistent		
	<ul style="list-style-type: none"><li>• Mapping of existing active travel routes including National Cycle Network and Core Paths.</li><li>• Census travel to work mode share analysis.</li><li>• Census travel to work distance travelled analysis.</li></ul>						
Timescale	Current & Future						

## 5.7 Environment

Problem	X	Issue		Constraint		Opportunity	X
Description	Air quality from transport emissions is already a problem in Musselburgh and Tranent town centres. Increased demand on the road network from new land-use developments will add to these problems and potentially create new pockets of poor air quality. However, there is an opportunity to enable sustainable development through modal shift to low carbon modes of public transport and active travel.						
Evidence	Availability		Limited		Findings		Fully Consistent
	<ul style="list-style-type: none"><li>• Air Quality Management Area in Musselburgh.</li><li>• LDP and Greater Blindwells modelling outputs.</li></ul>						
Timescale	Current & Future						

## 5.8 Summary

- 5.8.1 East Lothian is faced with a **massive opportunity** to support the nationally and regionally important growth of the Edinburgh city region, reinvigoration its own local economy and to deliver a step change in transport connectivity and accessibility to enable sustainable inclusive growth. However, changes of this scale also present challenges.
- 5.8.2 The analysis suggests that the proposed land-use developments will have significant implications for the strategic transport network particularly along the A1 and ECML corridor. In

particular, any significant new development that feeds traffic onto the A1, including at Blindwells and Cockenzie, will impact upon the capacity of the road and its junctions. Indeed all the junctions from Gladsmuir through to Old Craighall will be impacted by the proposed developments.

- 5.8.3 The cumulative impact of these developments along with East Lothian's close relationship with the Edinburgh labour market mean that the problems on the transport network are expected to be increasingly more acute the further west you travel.
- 5.8.4 Potential mitigation measures have been identified through the LDP process but these are likely to only be sufficient to return the network to the point of just operating within capacity with significant congestion and delays still expected at peak periods.
- 5.8.5 It is therefore essential that a comprehensive transport strategy is developed that will **deliver the opportunities** and allow all proposed development to be brought forward in a coordinated and efficient manner. To achieve this, it is anticipated that there will be a need to:
- Identify options which can provide a **step change in public transport** connectivity and accessibility particularly in the vicinity of the major new developments at Greater Blindwells and Cockenzie;
  - Make East Lothian a **more attractive place** for major employers to invest and for people to live, work, spend leisure time and access services by diversifying the mix of land-uses and making it an attractor of journeys; and
  - Encourage more flexible and agile working to **reduce demands placed upon transport networks and services** at peak periods and support the use of active travel for shorter journeys.
- 5.8.6 The delivery of these changes will only be achieved over the medium to long-term. However, it is essential that consideration is also given to the resolution of the problems that are currently manifesting themselves on transport networks and services.
- 5.8.7 On this basis, there is a need to consider **short-term, medium-term** and **long-term** options that will provide a deliverable package of transport interventions for East Lothian that support the ambitious plans for growth and accommodate the cumulative impact of developments. This is explored further in Chapter 7.

## 6 Transport Planning Objectives

### 6.1 Defining Transport Planning Objectives

6.1.1 Drawing upon the evidence set out in the preceding chapters along with the identified problems, issues, constraints and opportunities a set of Transport Planning Objectives (TPOs) have been identified. These are:

- **TPO 1:** To resolve the current capacity problems on the local rail network and services;
- **TPO 2:** To improve public transport connectivity to Haddington;
- **TPO 3:** To provide transport infrastructure necessary to facilitate the land-use developments proposed in East Lothian, particularly at Greater Blindwells and Cockenzie; and
- **TPO 4:** To maximise use of available capacity on the current and future transport network.

6.1.2 At this time the TPOs are high level and it is anticipated that they will be refined as the STAG progresses. In particular, the intention is to develop these into SMART TPOs so that they are:

- **Specific:** it will say in precise terms what is sought;
- **Measurable:** there will exist means to establish to stakeholders' satisfaction whether or not the objective has been achieved;
- **Attainable:** there is general agreement that the objective set can be reached;
- **Relevant:** the objective is a sensible indicator or proxy for the change which is sought; and
- **Timed:** the objective will be associated with an agreed future point by which it will have been met.

6.1.3 This will be achieved by the establishment of relevant Key Performance Indicators (KPIs) and setting of related Targets.

### 6.2 Consistency With Problems, Issues, Constraints and Opportunities

6.2.1 An assessment of the consistency between the identified problems, issues, constraints and opportunities and the TPOs is set out in Table 6.1.

**Table 6.1 Relationship Between TPOs And Identified Problems, Issues, Constraints and Opportunities**

	TPO 1	TPO 2	TPO 3	TPO 4
<b>Public Transport</b>				
Potential latent demand for rail travel which is constrained as services and infrastructure are currently operating at capacity. This is impacted upon by the constrained rail network capacity on the East Coast Main Line as well as at Edinburgh Waverley station.	X			X
There are limited public transport links to Haddington.		X		

	TPO 1	TPO 2	TPO 3	TPO 4
Tension between the local and strategic roles of the East Coast Main Line within East Lothian with potential conflict between improving local services and facilitating more long-distance inter-urban services.	X	X	X	X
Decisions on future rail network capacity closely linked to conclusions on the feasibility of High Speed Rail links via East Lothian.	X	X	X	X
<b>Road</b>				
East Lothian residents have a high dependence upon car and road transport, partly due to limited rail network capacity and partly due to the rural nature of the area. This increases the further east you travel in the county.	X	X		
There is limited road network capacity on the A1 and its junctions within East Lothian and upon the A720 outwith East Lothian.			X	X
High traffic flows through Tranent and Musselburgh town centres cause severance and congestion.				X
<b>Land-use Developments</b>				
Enabling infrastructure is required to facilitate proposed LDP developments (particularly Blindwells, Cockenzie and the Edinburgh Innovation Park adjacent to Queen Margaret University) and to mitigate their impacts upon the strategic transport network.	X		X	X
<b>Socio-Economic</b>				
Access by sustainable modes to employment opportunities and the labour market of Edinburgh city region is limited by the capacity, coverage and attractiveness of existing public transport networks.	X	X		X
There is high forecasted growth in the population of East Lothian which is partially linked to land-use development proposals. Infrastructure needs to be put in place to accommodate this growth and to provide better access to local employment opportunities.	X	X	X	
There is scope to encourage greater containment within the labour market and economy of East Lothian by providing more local employment opportunities through the new land-use developments. In addition, there is available capacity on transport networks in the opposite direction to the main peak flow which could be used to accommodate commuting into the area for employment.			X	X
Demand for commuting at peak periods could be reduced by increased agile working and working from home as digital connectivity continues to grow.				X
<b>Active Travel</b>				
There are limited active travel links between settlements in East Lothian with the problem becoming more acute the further east you travel in the county. This requires people to travel further and by less sustainable modes to access employment opportunities and services.			X	X

## 6.3 Summary

- 6.3.1 The assessment set out in Table 6.1 shows a high degree of consistency between the proposed TPOs and the identified problems, issues, constraints and opportunities. On this basis they are considered appropriate and have been used to assist in the option generation, sifting and development process set out in Chapter 7.



## 7 Option Generation, Sifting & Development

### 7.1 Introduction

7.1.1 As set out at the end of Chapter 5, there is a need to identify and appraise options across a range of timescales to address the current and anticipated future problems, issues, constraints and opportunities. To achieve this the options in this chapter have been separated, where appropriate, into:

- **Short-Term:** deliverable between 2020 and 2024;
- **Medium-Term:** deliverable between 2025 and 2029; and
- **Long-Term:** deliverable from 2030 onwards.

7.1.2 The options are also broken down by mode into:

- **Public Transport:** infrastructure and service enhancements for rail, bus and potential 'new modes' of public transport such as Light Rapid Transit (LRT) / Trams, Tram-Train and Bus Rapid Transit (BRT);
- **Active Travel:** infrastructure to improve linkages by walking and cycling; and
- **Road:** interventions to deliver necessary capacity on the local and strategic road networks.

7.1.3 The process has been informed by the previous analysis and appraisal that has been undertaken which has identified and examined a number of options that could potentially address the transport problems affecting East Lothian.

7.1.4 The option sifting has considered at a high level the feasibility and deliverability of the option as well as the extent to which it would resolve the identified problems and deliver the TPOs.

### 7.2 Public Transport Options

#### Short-Term Rail Capacity Enhancements

7.2.1 It has been identified that the rail network serving East Lothian is already under pressure at peak times and that measures are required to relieve congestion and facilitate the short-term growth in the area.

##### Option 1: Extend North Berwick services to 8 cars

7.2.2 The analysis and engagement with the rail industry have suggested that the easiest way to address the problems of overcrowding is by extending existing services from 6 to 8 cars. The only infrastructure likely to be required to make this achievable is the extension of the platform at North Berwick which, as a terminating station, must be long enough to accommodate the longest train. Initial assessment suggests this is possible although may require extension of the platform through the Ware Road bridge (shown adjacent). Further details are provided in Appendix C.



#### Option 2: Half hourly frequency on North Berwick services

- 7.2.3 However, it is likely to be more challenging to increase services beyond 8 cars due to constraints at Edinburgh Waverley. The next logical step is to increase service frequencies to provide a half hourly service on North Berwick services. The ability to achieve this though could be constrained by the existing capacity on the ECML and the conflicts between fast, long-distance services and slow, local services.

### KEY ISSUE

It is recommended that the detailed appraisal of these short-term options should be taken forward **as a priority** at the **earliest possible opportunity** with a view towards establishing the case for and implementing 8 car services and / or a half hourly frequency as early as the December 2020 timetable change. Close liaison with the rail industry will be a fundamental requirement of this process.

### Rail Links to Blindwells and Haddington

- 7.2.4 The analysis undertaken to date has identified the potential requirement to link Blindwells to the rail network. In addition, the limited public transport accessibility in Haddington has been repeatedly highlighted with a strong desire amongst the local community for the town to be linked into the rail network.
- 7.2.5 As such, a range of possible options to deliver these goals have been developed and assessed at a high level from those with little or no impact on existing services to those which will impact upon existing services and timetables. The conclusions of the initial option sifting are set out below.

#### Options With Low / No Impact On Existing Train Services / Timetables

- 7.2.6 Under these scenarios there would be no increase in the number of stations that are served by the Edinburgh – North Berwick services so the timetable would remain structurally the same. On this basis, they could be implemented relatively quickly in the short to medium-term. However, it should be noted that, in some instances, these changes may not adequately serve Blindwells and / or existing settlements.

#### Option 3: Retain and upgrade existing stations at Longniddry and Prestonpans

**Retain Option:** It offers a short-term solution to improve access by ensuring full Mobility Impaired Access (MIA) and to possibly provide additional Park and Ride capacity.

#### Option 4: Relocate Longniddry station to the west end of Longniddry

**Sift Out Option:** Greater Blindwells is located closer to the A1 to the south rather than the railway to the north. So, the reduction in accessibility for existing passengers in Longniddry will not be counter-balanced by an increase in accessibility from residents of Blindwells.

#### Option 5: Relocate Prestonpans station to the south east corner of Prestonpans

**Retain Option:** A potential medium-term solution located closer to the first phase of Blindwells at the western end of the site. However, it potentially impinges on the catchment for a dedicated Blindwells station suggesting Option 5 and Option 9 cannot co-exist. It does offer potential to provide better access to the new development at the former Cockenzie Power Station site.

Option 6: Relocate both stations as per Option 4 and Option 5

**Sift Out Option:** The relocation of Longniddry is not supported as discussed above.

### **Options That Impact On Existing Train Services / Timetables**

- 7.2.7 The following interventions are based on the retention of the existing Prestonpans and Longniddry stations and provision of new stations which will impact on the timetable by adding extra calls into local North Berwick and, potentially, Dunbar services.
- 7.2.8 The addition of extra calls and the resultant extended journey time will have an adverse impact on the passengers using these stations. However, it may be possible to accommodate the extended journey times through structural alteration of the current timetable.
- 7.2.9 Options 7, 8 and 9 are broadly the same in a railway context so the decisive factor is how they best integrate with and serve the new town of Blindwells. It is anticipated that they could be delivered in the medium-term.

Option 7: A new station approximately midway between Prestonpans and Longniddry

**Sift Out Option:** Likely to be located too far to the east to serve the part of Blindwells situated closest to the railway.

Option 8: A new station at the eastern end of the Blindwells site closest to Longniddry

**Sift Out Option:** It is broadly the same as Option 4 in its location and would not adequately serve Blindwells.

Option 9: A new station at the western end of the Blindwells site closest to Prestonpans

**Retain Option:** The station would be located adjacent to the part of Blindwells situated closest to the railway.

Option 10: Two new stations to serve Blindwells combining Option 8 and Option 9

**Sift Out Option:** On the existing line the speed differential between a stopping and an express train is too great meaning it would not be possible to timetable a service without new loops. In addition, as discussed above, Option 8 is not supported.

- 7.2.10 Options 11 to 15 involve the construction of new stations on an alignment off the ECML which would provide a turn back facility. This would facilitate an increase in the frequency and capacity of the service west of the junction with the ECML.
- 7.2.11 These are medium to long-term options which require substantial investment in infrastructure.

Option 11: Provide a new link and station at the former Cockenzie Power Station site

**Sift Out Option:** This would only be feasible as an alternative to Option 14 but it will not serve Blindwells making it unviable.

Option 12: Provide a new link and station at the former Cockenzie Power Station site and close existing Prestonpans station

**Sift Out Option:** This would only be feasible as an alternative to Option 14 but it will not serve Blindwells making it unviable. In addition, it would reduce accessibility for Prestonpans and Tranent.

Option 13: Rebuild the former branch line to Aberlady / Gullane and provide a new station to serve Blindwells

**Sift Out Option:** This would only be feasible as an alternative to Option 14 but Aberlady and Gullane are not expected to experience growth to the same extent that Blindwells and Haddington are.

Option 14: Rebuild the former branch line to Haddington and provide a new station to serve Blindwells

**Retain Option:** This follows the traditional railway approach to re-instating rail services by reopening a former route. It would also serve the new development at Blindwells.

Option 15: Build a new line through the Blindwells site and on to Haddington with new stations in each location

**Retain Option:** Whilst it is the most ambitious approach to linking Blindwells and Haddington to the rail network there is scope for integration with emerging High Speed Rail (HSR) plans. However, there are risks combining a local project with a major strategic project as it may be delayed, altered or cancelled without consideration of the local impact.

## Rail Option Development

- 7.2.12 Following this initial round of option sifting an option development process was undertaken to explore the remaining options in more detail.
- 7.2.13 The lack of paths on the ECML has a significant constraining effect on the train service that can be offered in East Lothian. It is anticipated that it will limit the extent of any service upgrade to at best a half hourly Edinburgh – North Berwick service, with the option of the Haddington branch reopening and possibly a new station at Blindwells.
- 7.2.14 As discussed in Section 2.3 the provision of additional capacity on this corridor could be delivered through emerging HSR proposals or existing proposals for four tracking the ECML. It is unlikely that both interventions will be taken forward.
- 7.2.15 On this basis, an assessment of the options was undertaken to identify what could be delivered with and without capacity upgrades and in what timescale. This also considers the variances that would occur between the provision of additional capacity via HSR or via ECML four tracking. This is summarised in Table 7.1.

**Table 7.1 Rail Option Development And Assessment With And Without Capacity Upgrades**

Option		Comments
Without ECML four tracking / HSR line	With ECML four tracking / HSR line	
Short-Term (2020 – 2024): No major infrastructure changes		
Option 1: Extend North Berwick services to 8 cars	As without ECML four tracking / HSR line.	Both scenarios require platform lengthening at North Berwick as a minimum.

Option		Comments
Without ECML four tracking / HSR line	With ECML four tracking / HSR line	
<u>Option 2</u> : Half hourly frequency on North Berwick services	As without ECML four tracking / HSR line.	<p>Both scenarios potentially require resolution of capacity constraints on Waverley eastern approaches.</p> <p><u>Without</u>: Potentially challenging. May not be possible to call at all stations.</p> <p><u>With</u>: Likely to be possible with all current calls made.</p>
<u>Option 3</u> : Retain and upgrade existing stations at Longniddry and Prestonpans	As without ECML four tracking / HSR line.	Upgrade to full MIA standards with accessible footbridges (lifts) and expand car parking. These are standard accessibility upgrades that have been implemented at numerous stations.
<u>Option 5</u> : Relocate Prestonpans station to the south east corner of Prestonpans	As without ECML four tracking / HSR line.	<p><u>Without</u>: There may be station design issues to address if ECML four tracking / HSR line is later implemented.</p> <p><u>With</u>: No issues anticipated.</p>
<u>Option 9</u> : A new station at the western end of the Blindwells site closest to Prestonpans	As without ECML four tracking / HSR line.	<p><u>Without</u>: There may be station design issues to address if ECML four tracking / HSR line is later implemented. It may not be possible to retain calls at some stations if Blindwells calls are added.</p> <p><u>With</u>: All calls should be possible.</p>
<b>Medium-Term (2025 – 2029): Potential CP6 infrastructure changes</b>		
<u>Option 14A</u> : Rebuild the former branch line to Haddington and provide a new station to serve Blindwells. One train per hour to each of North Berwick and Haddington.	As without ECML four tracking / HSR line.	<p><u>Without</u>: Could make operation of increased frequency on this corridor easier as Haddington train will require a shorter time on the ECML.</p> <p><u>With</u>: If Haddington is linked to HSR network it would offer an interchange point from local trains. If not HSR line, it might reduce the need for ECML four tracking all the route between Longniddry and Drem.</p>
<u>Option 14B</u> : Rebuild the former branch line to Haddington and provide a new station to serve Blindwells. Two trains per hour to each of North Berwick and Haddington.	As without ECML four tracking / HSR line.	<p><u>Without</u>: Unlikely to be possible with current ECML infrastructure.</p> <p><u>With</u>: Likely to be possible although there may be constraints on the eastern approaches to Waverley. If Haddington is linked to HSR network, it would offer an interchange point from local trains.</p>



Option		Comments
Without ECML four tracking / HSR line	With ECML four tracking / HSR line	
<u>Option 14C</u> : Rebuild former Haddington branch as an LRT shuttle service.	As without ECML four tracking / HSR line.	<u>Without</u> : Provides a link from Haddington to existing Edinburgh – North Berwick services.  <u>With</u> : HSR line or ECML four tracking would enable a half hourly North Berwick service to link into. However, it would potentially be redundant if an HSR station was provided at Haddington.
<u>Option 15A</u> : Build a new line through the Blindwells site and on to Haddington with new stations in each location. Potentially as the first part of an HSR line.	As without ECML four tracking / HSR line.	<u>Without</u> : This could facilitate a half hourly service from Edinburgh to Blindwells.  <u>With</u> : If no extra stops are provided at Blindwells this could form the first part of an HSR line. If extra calls are provided, they would need to be on loops not the HSR through line. Not viable as part of ECML four tracking.
<u>Option 15B</u> : Build a new mode line through the Blindwells site and on to Haddington with stations in each location.	As without ECML four tracking / HSR line.	Alternative to Option 14C (Rebuild former Haddington branch as an LRT shuttle service) which could serve a much larger population catchment, particularly if the route is extended through Prestonpans, Musselburgh and potentially linking in to Edinburgh Tramline 3.
<b>Long-Term (2030 Onwards): Assumed HSR line or ECML four tracking implemented</b>		
Not applicable.	<u>Option 15C</u> : New mode route from Option 16 (New station at Haddington on HSR line) and Option 9 (A new station at the western end of the Blindwells site closest to Prestonpans) with stops to serve both BW1 and BW2.	Alternative to Option 14C (Rebuild former Haddington branch as an LRT shuttle service) and 15B (Build a new mode line through the Blindwells site and on to Haddington with stations in each location) which could serve a much larger population catchment and provide links to the HSR network. Route could be through Prestonpans, Musselburgh and potentially linking in to Edinburgh Tramline 3. Not applicable as part of ECML four tracking.
Not applicable.	<u>Option 16</u> : New station at Haddington on HSR line.	A local service could include calls at Waverley, Musselburgh, Haddington, East Linton, Dunbar, Reston and Berwick. It could also potentially extend to Newcastle. Not applicable as part of ECML four tracking.

7.2.16 The only interventions that could be taken forward independent of the decision on ECML four tracking / HSR are likely to be:

- **Option 1:** Extend North Berwick services to 8 cars;
- **Option 2:** Half hourly frequency on North Berwick services; and
- **Option 3:** Retain and upgrade existing stations at Longniddry and Prestonpans.

- 7.2.17 However, further appraisal would be required to determine if Option 2 is deliverable without additional capacity whilst the upgrades proposed under Option 3 could require later amendments depending upon the decision on ECML four tracking / HSR.
- 7.2.18 Furthermore, the delivery of Option 9 (new station at Blindwells) may be challenging in terms of being able to design a timetable that could allow trains to call there on the current infrastructure.
- 7.2.19 Finally, the capacity constraints at Edinburgh Waverley are also a significant impediment to delivering a step change in the rail services to East Lothian.

### KEY ISSUE

The vast majority of rail options that could address the identified current and future needs of East Lothian are **completely dependent** upon decisions regarding the provision of **additional rail network capacity** and whether this takes the form of **ECML four tracking** or an **HSR line**. The resolution of capacity constraints at **Edinburgh Waverley** station is also likely to be fundamental to delivering a step change in public transport connectivity in East Lothian.

### Park and Ride

- 7.2.20 The provision of enhanced Park and Ride is closely related to the rail options as the vast majority of current Park and Ride provision in East Lothian is rail based. With the current capacity constraints on the rail network and services the provision of additional Park and Ride may not be viable without the prior delivery of options to provide additional capacity.
- 7.2.21 The following options have been identified as meriting further appraisal:

- **Option 17:** Extend Park and Ride provision at Prestonpans and Longniddry stations;
- **Option 18:** Bus based Park and Ride at Blindwells;
- **Option 19:** Rail based Park and Ride at Blindwells. This option is dependent upon the delivery of Option 9, 14A, 14B, 15A, 15B or 15C;
- **Option 20:** Multi-modal Interchange at Blindwells incorporating a combination of bus, rail, new mode and active travel links. This option is dependent upon the delivery of Option 9, 14A, 14B, 14C, 15A, 15B or 15C; and
- **Option 21:** Rail based Park and Ride at Haddington. This option is dependent upon the delivery of Option 14A, 14B, 14C, 15A, 15B, 15C or 16.

### Bus

- 7.2.22 These options are partially related to the new mode options identified previously which could take the form of an LRT, Tram, Tram-Train or BRT based solution. The relevant options include 15B and 15C.
- 7.2.23 The specific bus-based options which have been identified for further appraisal include:

- **Option 22:** Enhanced bus priority measures on key corridors linking East Lothian to and around Edinburgh. This option requires working in partnership with City of Edinburgh Council and is likely to be necessary for the successful delivery of Option 23;
- **Option 23:** Express bus service from Blindwells to Edinburgh city centre. This could potentially take the form of amendments to existing express services such as the East Coast Buses services X5, X7 and / or X24;
- **Option 24:** Local bus services linking to and within Blindwells. This could potentially take the form of amendments to existing local services such as the East Coast Buses service 124; and
- **Option 25:** Local bus service linking Haddington to Blindwells tying in with any new Park and Ride facility in either of these areas. This option is dependent upon the delivery of Option 18, 19, 20 or 21.

### 7.3 Active Travel Options

- 7.3.1 The provision of enhanced linkages between settlements within East Lothian has been identified as a key requirement to improve accessibility and maximise self-containment. The Active Travel Corridor being developed by the Council will provide an east – west spine linking Musselburgh to Dunbar, via Tranent and Haddington. This will be treated as **Option 26** for the Initial Appraisal whilst local active travel routes providing linkages from the Active Travel Corridor to local settlements are defined as **Option 27**.
- 7.3.2 These options will be considered alongside the emerging proposals for enhanced active travel links in Musselburgh, Haddington, Tranent and North Berwick which will be treated as part of the reference case for the appraisal.

### 7.4 Road Options

- 7.4.1 The analysis that has been undertaken to date has identified a range of potential road network interventions that could address the current and predicted future problems as well as mitigating the impact of the proposed developments in East Lothian. These have been subjected to initial testing but require detailed appraisal in the context of a comprehensive multi-modal package of measures to meet the future needs of East Lothian.
- 7.4.2 The road infrastructure options to be subjected to further appraisal include:

- **Option 28:** A1 Gladsmuir Interchange improvements;
- **Option 29:** A1 Adniston Grade Separated Junction connecting to spine road through Greater Blindwells and with A198;
- **Option 30:** A1 Bankton Interchange improvements including widening at north and south roundabouts on the dumbbell junction;
- **Option 31:** A198 Meadowmill Junction improvements including removal of existing roundabout, introduction of signal-controlled junction and upgrade of A198 between Meadowmill Junction and Bankton Interchange;
- **Option 32:** A1 Dolphingstone Interchange improvements including local widening and introduction of traffic signals;
- **Option 33:** A1 Salters Road Interchange improvements including widening on the southern arm of the junction and introduction of traffic signals;

- **Option 34:** A1 / A720 Old Craighall Interchange improvements including widening of A720 / A1 Old Craighall northbound slip road and A1 / A720 Old Craighall westbound slip road;
- **Option 35:** A1 QMU Junction improvements including addition of westbound on and off-slips to the junction;
- **Option 36:** A720 Sheriffhall Interchange grade separation as per Transport Scotland's preferred option;
- **Option 37:** Tranent town centre traffic management including creation of a one-way system;
- **Option 38:** Musselburgh town centre traffic management including traffic signal optimisation and junction improvements;
- **Option 39:** Construction of a Tranent eastern / southern bypass potentially tying into Option 26 (A1 Adniston Junction);
- **Option 40:** Three lane carriageway on the A1 between Bankton and Old Craighall Interchanges; and
- **Option 41:** Three lane carriageway on the A720 between Calder and Old Craighall Interchanges.

### KEY ISSUE

The appraisal of road options will need to take into consideration the **impacts of modal shift** as well as the changing role of East Lothian as both an **attractor and generator of trips**. In particular, it will be crucial to determine the package of measures which **maximises the usage of the available capacity** for travelling both in to and out of East Lothian at peak periods.

## 7.5 Summary

- 7.5.1 It is recommended that the options set out in this chapter are taken forward to Initial Appraisal to determine the extent to which they can resolve the current and future problems and issues in East Lothian and deliver the Transport Planning Objectives. Further considerations to be taken into account during the Initial Appraisal are set out in Chapter 8.

## 8 Next Steps

### 8.1 The Case for Change

#### The Opportunity for East Lothian

- 8.1.1 East Lothian is faced with a **massive opportunity** to support the nationally and regionally important growth of the Edinburgh city region, reinvigorate its own local economy and to deliver a step change in transport connectivity and accessibility to enable sustainable inclusive growth.



Blindwells Artists Impression (Hargreaves)

- 8.1.2 The growth of East Lothian is being driven by significant land-use development and regeneration proposals articulated through the Local Development Plan. This includes the creation of a **new town at Blindwells**, the **redevelopment of the former Cockenzie Power Station** site and creation of the **Edinburgh Innovation Park** adjacent to Queen Margaret University. The Innovation Park and new settlement at Blindwells are City Deal projects whilst Cockenzie is designated as a National Development site within the National Planning Framework 4. This highlights their importance at both the **regional** and **national** scale. The Council is seeking to **significantly increase job density** and housing delivery to create **new destinations, attractors** and **national, regional** and **local economic drivers** that facilitate regeneration and environmental improvement.
- 8.1.3 However, changes of this scale also present challenges with implications for the **transport network, infrastructure** and **services**. Given the close linkages between East Lothian and the Edinburgh labour market it will also impact upon **where** people want to travel to and **how** they get there. These changes will only be enabled by first class connectivity which presents the opportunity to **deliver transformational change** in both the public transport and active travel links serving East Lothian. Provision of more local employment opportunities will also **reduce the need to travel**.
- 8.1.4 It is clear then that for these sites to play a role in the future economic success of Scotland there is a need to make provision for the **delivery of the nationally, regionally and locally significant interventions** within their planning and design.

#### Current Transport Problems

- 8.1.5 The analysis has identified that the transport network and services serving East Lothian are **already under pressure** even before consideration is given to the impacts that the proposed land-use developments will have and their associated mitigation measures.
- 8.1.6 On the road network there are **high traffic flows in Tranent and Musselburgh town centres** which cause poor air quality, delays, severance and undermine the attractiveness of the town centres as places to visit, work and spend leisure time. Indeed, a traffic related **Air Quality Management Area** has been in place in Musselburgh since 2013. Alongside this, key junctions on the **A1 at Old Craighall and Bankton Interchange** are also suffering from congestion and delays at peak periods.



- 8.1.7 However, the most acute problems are faced on the rail network with **peak hour trains operating at or over capacity** and **limited train paths on the East Coast Main Line** that would enable extra services to operate. This is impacted upon by the conflicts occurring between fast, limited stop long-distance services and slower, frequently stopping local services.
- 8.1.8 It is evident that limited capacity on train services and at Park and Ride sites is **suppressing demand for rail travel**. The problems are most acute in the western part of East Lothian, particularly **Musselburgh** and **Wallyford**, located nearest to Edinburgh.
- 8.1.9 The provision of longer trains is constrained by existing platform lengths, particularly at Edinburgh Waverley, with **8, or possibly 9, coach trains being the likely maximum** that can be operated. In addition, it could be challenging to **increase service frequencies from hourly to half hourly** given existing capacity constraints on the East Coast Main Line and at Edinburgh Waverley.

### SHORT TERM RAIL MITIGATION MEASURES

It is recommended that the detailed appraisal of short-term options to increase rail service capacity is taken forward **as a priority** at the **earliest possible opportunity** with a view towards establishing the case for and implementing 8 car services and / or a half hourly frequency as early as the December 2020 timetable change. Close liaison with the rail industry will be a fundamental requirement of this process.

- 8.1.10 The previously identified solution to the East Coast Main Line capacity constraints was the provision of **four tracking between Prestonpans and Drem**. However, Transport Scotland is currently exploring the feasibility of **High Speed Rail** links between the east of Scotland and north east England. It is highly unlikely that both solutions would be implemented suggesting there will be **no decision on additional capacity for East Lothian until Q1 2020** at the earliest when Transport Scotland's HSR feasibility work is due to report. This has significant implications for resolving the rail problems facing East Lothian.

### LONG TERM RAIL INFRASTRUCTURE BARRIERS

The vast majority of rail options that could address the identified current and future needs of East Lothian are **completely dependent** upon decisions regarding the provision of **additional rail network capacity** and whether this takes the form of **East Coast Main Line four tracking** or a **High Speed Rail line**. The resolution of capacity constraints at **Edinburgh Waverley** station is also likely to be fundamental to delivering a step change in public transport connectivity in East Lothian.

- 8.1.11 Buses currently experience delays most frequently in Musselburgh town centre, Tranent town centre and Wallyford but **most delays to East Lothian services are experienced within the City of Edinburgh** boundaries suggesting close partnership working with City of Edinburgh Council as well as other key stakeholders is necessary to resolve these problems.
- 8.1.12 Haddington has excellent bus links but no direct rail connection. There is a high degree of car dependency in the area which can be attributed to its **limited public transport links**. There is

strong public support for improved public transport provision in Haddington with the **reintroduction of the former Haddington branch line** put forward as a potential solution.

## Transport Infrastructure Required to Deliver Growth Opportunities

- 8.1.13 The analysis has identified that, in the future, both the A1 Trunk Road and rail network are likely to experience capacity and performance impacts related to demand generated by the introduction of LDP developments. Mitigation measures were identified during the development of the LDP but these will only be sufficient to return the network to acceptable functionality. They **would not deliver a step change in public transport connectivity and accessibility** or realise the nationally significant economic benefits that these developments offer.
- 8.1.14 The creation of a new town at Blindwells will, inevitably, have **significant impacts for the transport network** with modelling suggesting that junctions on key access roads, including the A1 and A198, are predicted to exceed capacity, particularly in the AM peak hour. It is also anticipated that capacity would be exceeded on westbound train services in the AM and eastbound train services in the PM, reflecting anticipated commuting patterns. To date the redevelopment of the former Cockenzie Power Station has not been modelled as the proposals are at a much earlier stage than those for Blindwells. There are close linkages between the two sites and there is a need to consider the cumulative impacts of the developments. On this basis there is a need to consider the **optimum package of transport interventions** required to support the Blindwells and Cockenzie developments with sustainable transport options and mitigate impacts on the road network.
- 8.1.15 Delivery of sustainable transport links to Blindwells and Cockenzie also needs considered alongside the need to improve public transport links to Haddington as the two locations are closely related. This requires appraisal of potential options that could **link Blindwells, Cockenzie and / or Haddington to the rail network**, creation of **enhanced Park and Ride** provision as well as the viability of introducing a **'new mode'** which could take the form of a Light Rapid Transit, Tram, Tram-Train or Bus Rapid Transit based solution. This offers the opportunity to create a **multi-modal regional transport hub** to serve East Lothian and beyond.
- 8.1.16 Furthermore, **resolution of access constraints** is necessary to help facilitate development of Edinburgh Innovation Park adjacent to Queen Margaret University which is in the vicinity of the capacity constrained A1 / A720 Old Craighall Junction.
- 8.1.17 The reinvigoration of the economy of East Lothian also presents opportunities to **encourage greater self-containment** in the area as well as **more in commuting** from across the Edinburgh city region. This strategy seeks to **maximise use of the available network capacity** by encouraging travel in the opposite direction to the tidal commuting flow at peak periods.
- 8.1.18 It can therefore be seen that there is a strong Case for Change to **address the transport issues East Lothian is currently facing** and to develop a comprehensive transport strategy that will **deliver the future opportunities** and allow all proposed development to be brought forward in a coordinated and efficient manner which maximises national, regional and local benefits.

## 8.2 Initial Appraisal

- 8.2.1 The evidence set out here creates a compelling Case for Change for East Lothian and the transport network which serves it, both now and in the future, justifying taking options forward for Initial Appraisal.
- 8.2.2 The Initial Appraisal needs to consider the **short, medium and long-term options** defined in Chapter 7 which are all of equal importance. However, given the problems that are currently being experienced on the rail network and the **very tight window** available to feed into the ScotRail timetabling process it is recommended that Initial Appraisal of the **short-term rail options** is commenced **at the earliest possible opportunity**.

8.2.3 The process should build upon the option development and modelling work which has previously been undertaken taking into account the additional considerations that have arisen through the development of the Case for Change. This includes but is not limited to:

- **Inclusion of Cockenzie:** The modelling work to date has not included a detailed appraisal of the likely transport impacts of the redevelopment of the Cockenzie Power Station site. This needs to be incorporated into future test scenarios; and
- **Alternative Travel Demand Scenarios:** There are a wide range of uncertainties in forecasting long-term developments and traveller behaviours. Tests to date have been based upon 'business as usual' trends that are inherent in the SRM12 model and contained within current modelling guidance. However, as has been highlighted through this report, it is expected that there will be considerable socio-economic change within East Lothian and more broadly as digital connectivity changes the way we live and work. On this basis a series of sensitivity tests are recommended around aspects such as:
  - **Demographic change:** ageing and growing population;
  - **Economic scenario:** sectoral changes, employment trends and growth of East Lothian as a destination for employment trips;
  - **Short to medium-term transport changes:** as specified in DfT's Web Based Transport Appraisal Guidance (WebTAG) e.g. cost of travel, vehicle fleet assumptions;
  - **Transport:** reductions in personal trip making;
  - **Workplace:** changes in working practices like flexible and remote working, multiple jobs and the gig economy;
  - **Business travel:** improved video and digital communications;
  - **Shopping:** growth of online shopping and decline of the High Street;
  - **Car usage:** will younger people continue to learn to drive and will we reach 'Peak Car'?;
  - **Decarbonisation of vehicle fleet:** uncertainty around how this feeds into behavioural change and how road transport is paid for by the consumer in future with new charging regimes being likely;
  - **Automation & Connectivity:** partly or fully autonomous vehicles would create a wholly new paradigm in terms of the use of time spent whilst travelling, safety and network efficiency;
  - **Car Ownership models:** 'Car ownership' versus 'the car as a public service' models could also have a major impact on travel behaviour; and
  - **Other digital:** improved digital platforms may bring new travel opportunities and options. Developments in integrated payments and ticketing may also enhance public transport.

## DELIVERING TRANSFORMATIONAL SUSTAINABLE GROWTH

Overall, it is essential that the Initial Appraisal explores how to **deliver the opportunities in East Lothian** in a sustainable manner by:

1. Providing a **step change in public transport** connectivity and accessibility that will enable creation of a **multi-modal regional transport hub**;
2. Considering the transport impacts of the proposals to make East Lothian a **more attractive place to invest, work, spend leisure time and access services** thereby making it an **attractor of journeys** and **encouraging self-containment**; and
3. Exploring the impact of flexible and agile working to **reduce demands placed upon transport networks and services** at peak periods.