Future Proofing Musselburgh's Infrastructure for Sustainable Modes of Travel

East Lothian Council

10 October 2018

Quality information

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Revision History

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Executive Summary

Musselburgh is the fastest growing town in East Lothian and an ever increasing commuter town for the City of Edinburgh. With its planned developments, East Lothian Council has the opportunity to transform the transport network sustainably and bring economic growth to the town and its communities. The town also provides unique cross-boundary connections with the City of Edinburgh and Midlothian Council's, and high-profile development areas, to allow a holistic approach in connecting the wider region.

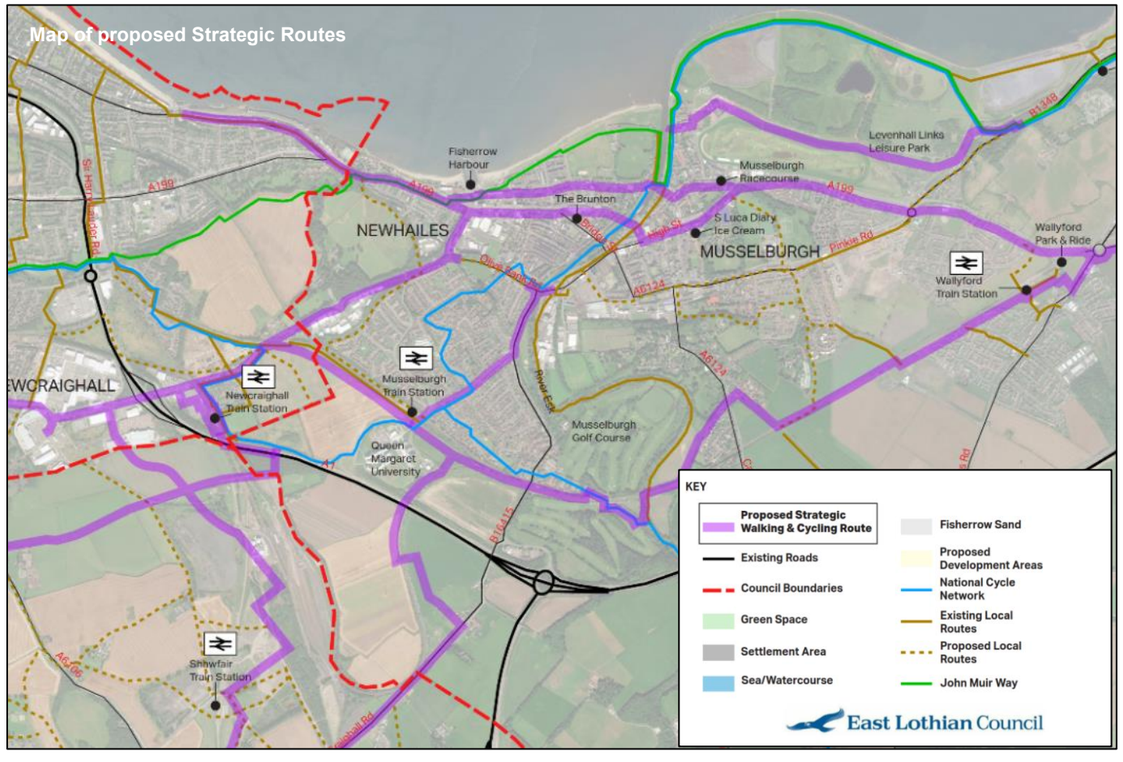
This report demonstrates the case and widespread support to shape the town towards a healthy, sustainable and vibrant future, and to enable and encourage the next generation to travel actively.

Walking and cycling represent a practical choice for everyday journeys for the majority of the local population with over 50% of trips to work within 10 km. With the busy local centre and amenities, Musselburgh is perfectly placed to create a healthy and active town.


Mock-up of Linkfield Road

Safe routes that are free from traffic will be key to attracting and enabling people to walk and cycle for everyday journeys. With the road network already experiencing areas of overcapacity, particularly in the town centre, it is critical that bold and ambitious plans are in place to ensure the town grows sustainably and has less reliance on the private car.

The proposed Masterplan for Musselburgh's Sustainable and Active Travel includes seven key strategic routes that safely and directly connect the key places people move around the town. Research and engagement with the communities and stakeholders has confirmed these routes are important to create the foundation of a wider network. Strategic routes connect with local routes and planned developments that will create a step-change in the access and way people travel around the town.



Objectives

The **objectives** associated with the masterplan are as follows:

- The **sustainable** growth of Musselburgh's **transport network**;
- **Enhancing** the **environment** in and around Musselburgh;
- **Improving** the **health** and **wellbeing** of people living, working and studying in Musselburgh, as well as those visiting;
- **Community**-led **decision making**;
- **Enhancing** the **local economy** and **tourism**;
- Creating a **high quality**, **safe** and **accessible network**; and
- **Improving equality** and **choices** of those living, working and studying in Musselburgh.

Consultation and Engagement

- 'Placecheck' online public engagement tool used in February-March 2018, with 237 comments received on the walking and cycling routes in the area.
- Stakeholder workshop held in February with interest groups that supported and approved the proposed seven Strategic Routes.
- Online survey ran between April-May to receive feedback on the Strategic Routes and outline design ideas gathered 120 responses, with the majority (>70%) supporting the proposals.
- Public drop-in event was held in May at the Brunton Theatre was attended by 80 local people with important local insight and suggestions on each of the routes. 77% supported the masterplan and its proposals, of the 31 people who completed feedback forms.

Design: Access for All

Through research and engagement, we have proposed outline designs for each of the routes that meet the needs of all ages and abilities. High-quality and safe routes will be required to meet the diverse needs of this sub-urban town and its communities.

A high level of ambition is required to ensure that a safe and attractive network is provided – with the outline proposals mainly showcasing traffic-free and segregated routes for all modes where possible. The route proposals also include some new structures including an underpass at Newcraighall railway station, a new bridge over the Esk and a retaining wall at Monktonhall Terrace, to ensure convenient and safe access.

Business Case

A phased delivery plan would need to be developed to deliver the Masterplan in a holistic approach. Initial high-level costs for each of the six routes in East Lothian range from £1.2m to £4.3m, with the overall cost to deliver the strategic route network estimated to be £14.6m. However, these costs include infrastructure within known planned development areas and future Council projects.

Initial estimates from Business Case assessments for each of the routes range between cost-benefit ratios of 0.25 and 5.88. The strongest performing route in the cost benefits is the East Lothian Segregated Active Travel corridor, which extends East-West across the southern edge of Musselburgh between Wallyford and Newcraighall railway stations as well as the Queen Margaret University campus.

Whilst the business case assesses local demand for routes, the wider leisure and tourism benefits of high-quality active travel routes are known to be particularly high for local economies. It is recommended that the tourism element is promoted and that branding and signage is enhanced along the prominent East Coast for walking and cycling, alongside the development of the Masterplan.

1. Introduction

AECOM have been commissioned by East Lothian Council (ELC) to develop a Masterplan for the greater Musselburgh area to provide for a sustainable transport network that is accessible by all. The Masterplan considers the future planned developments in and around Musselburgh to allow East Lothian Council to consider future opportunities in connecting the town sustainably.

1.1 Study Aims and Area

1.1.1 Study Aims

The aim of the study is to examine options and recommend solutions for a network of key routes that will encourage greater modal shift towards cycling and walking within the Musselburgh area. The design principles aim to provide a safe and accessible network that will give people of all ages and abilities a practical choice of walking, cycling and traveling sustainably for everyday journeys. Ultimately the aim is to reduce people's reliance on private cars and to encourage them to travel actively into and through Musselburgh, supporting the Town Centre and local economy.

1.1.2 Study Area

The study area comprises the urban area of Musselburgh, as well as links into Edinburgh, Midlothian and other settlements in East Lothian. The study area is shown in Figure 1-1, below:

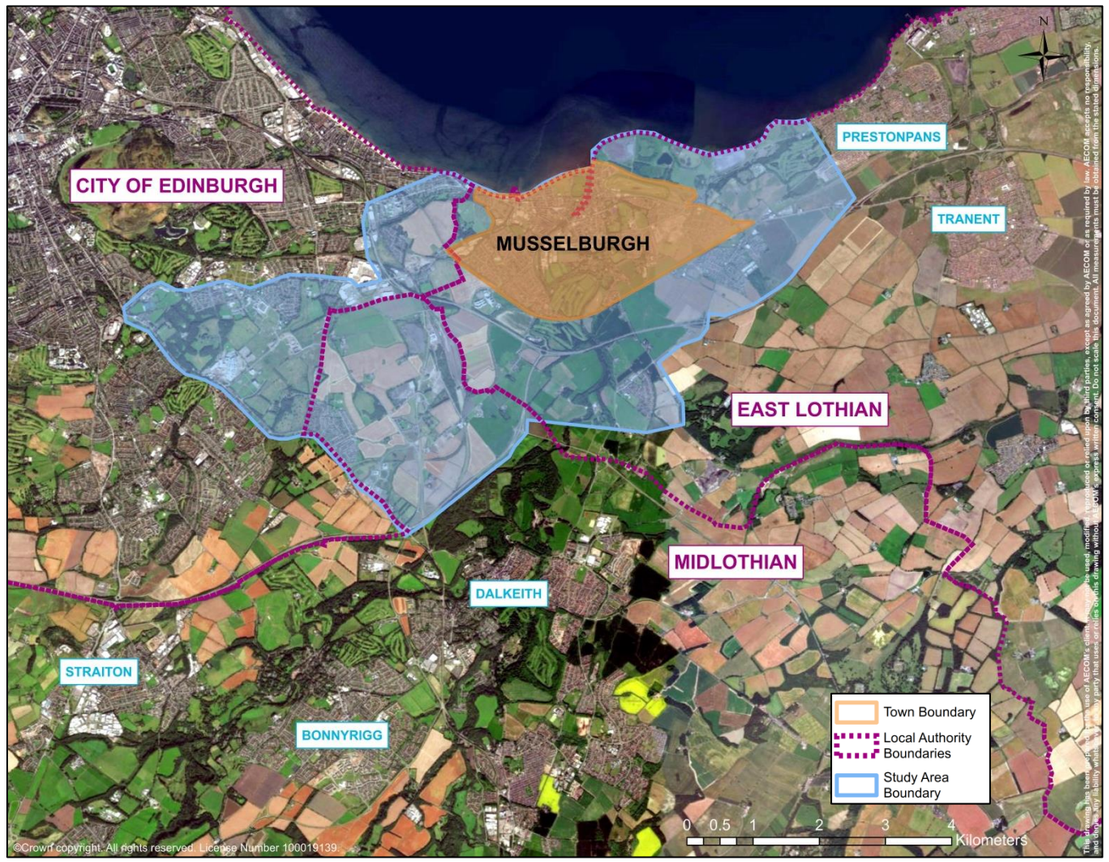


Figure 1-1: Study Area and Geographic Context

1.2 Methodology

The remainder of this report is set out as follows:

Section 2: Desktop Review – Relevant local and national policy documents, mapping and other information including core paths and links to the wider active travel network were reviewed to help gain an understanding of the local context and to inform the further stages of the report.

Section 3: Objectives – The objectives of the study are presented.

Section 4: Land Use and Cycling Demand – Land use in the area, as well as the cycling demand in and around Musselburgh, are discussed.

Section 5: Existing Routes, Facilities and Cycling Related Collisions –The study area was subject to a walkover survey and issues were identified, documented and photographed. The existing provision of active travel routes and infrastructure, as well as any gaps in the network, were identified to help inform the appraisal and to develop the masterplan.

Section 6: Opportunities and Constraints – The opportunities and constraints that are present within Musselburgh and the surrounding area are presented and discussed.

Section 7: Consultation and Engagement – The consultation and engagement that took place as part of the study is detailed. This includes consultation with stakeholders and members of the public.

Section 8: Masterplan Network Proposals – The Masterplan is presented.

Sections 9 to 17: Strategic Routes – The routes along the key strategic corridors in the Masterplan are each presented in separate sections. This includes: details of the consultation; the design specification; planning and environmental constraints along each of the route corridors; a road safety commentary; a cost estimate; a business case; and associated recommendations

Section 18: Prioritisation and Scheme Selection – The routes detailed in sections 9 to 17 are prioritised, and a strategy is proposed for their delivery.

2. Desktop Review

The purpose of the desktop study was to review and confirm existing and proposed active travel routes, objectives, constraints, opportunities and barriers in Musselburgh and the surrounding area. The desktop review was informed by a number of information sources, including:

- Local, regional and national policy documents;
- Environmental information;
- Core Path network plans;
- Local Plans and Local Development Plans;
- Previous reports relating to the study area;
- Census travel to work data; and
- Relevant design standards and guidance.

2.1 Geographic Context

Musselburgh is a town situated in East Lothian, located approximately 6 miles east of the centre of Edinburgh. It is the largest settlement in East Lothian, with a population of around 22,000.[1] Musselburgh is home to numerous businesses and several industrial estates, as well as care centres, schools, services and leisure facilities. The Queen Margaret University sits to the west side of Musselburgh with known high levels of walking, cycling and using public transport to access the campus. In addition, the Edinburgh Royal Infirmary and BioQuarter campus off Old Dalkeith Road are only approximately 3.5 miles from the centre of Musselburgh.

Musselburgh is an ideal commuter distance for those working in the business centre of Edinburgh and offers great potential to allow people to walk, cycle or use public transport to travel to work. The wider area is bound by other local centres: Portobello to the west in Edinburgh, Dalkeith to the south in Midlothian and Prestonpans to the east in East Lothian.

Musselburgh is also on the periphery of Edinburgh and is a gateway to the east coast for recreation and tourism. The national coast-to-coast walking and cycling route - the John Muir Way - follows the coast around Musselburgh as part of its 126 miles. The National Cycle Network also converges through Musselburgh and into the east coast with Routes 1, 76 and 196.

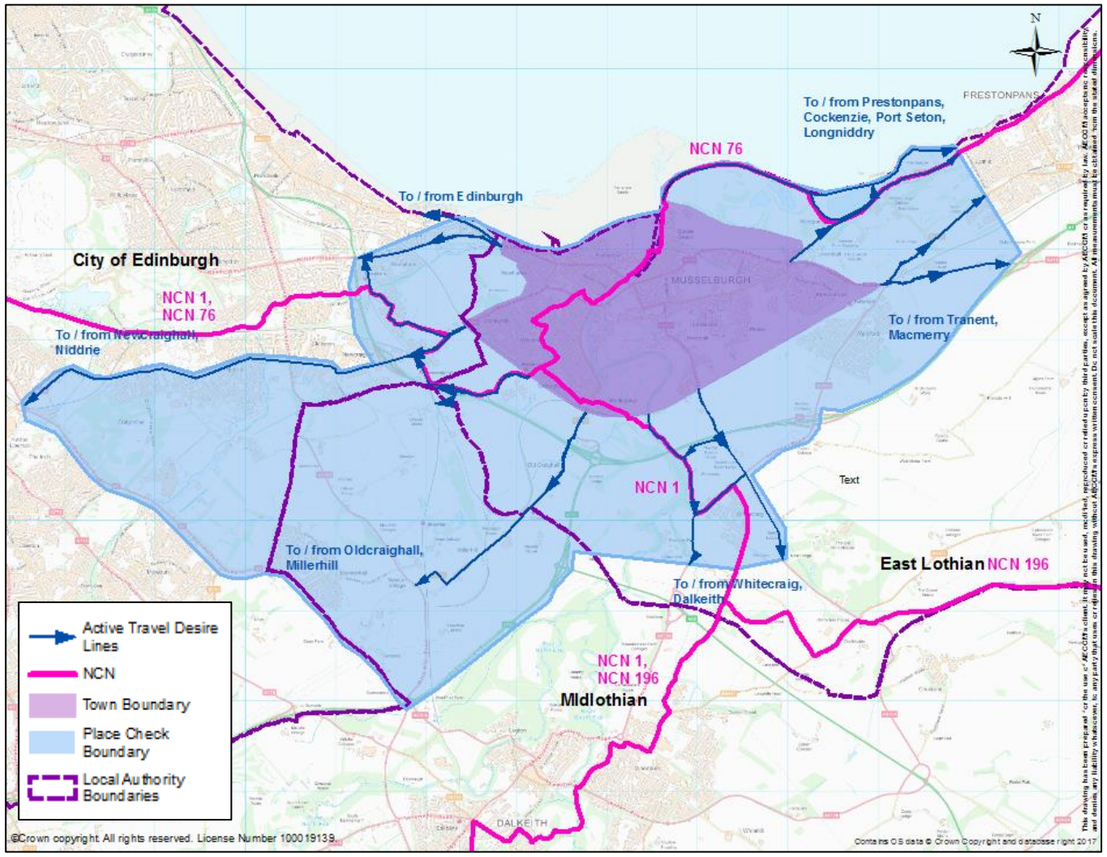


Figure 2-1: Active Travel Desire Lines to / from Study Area

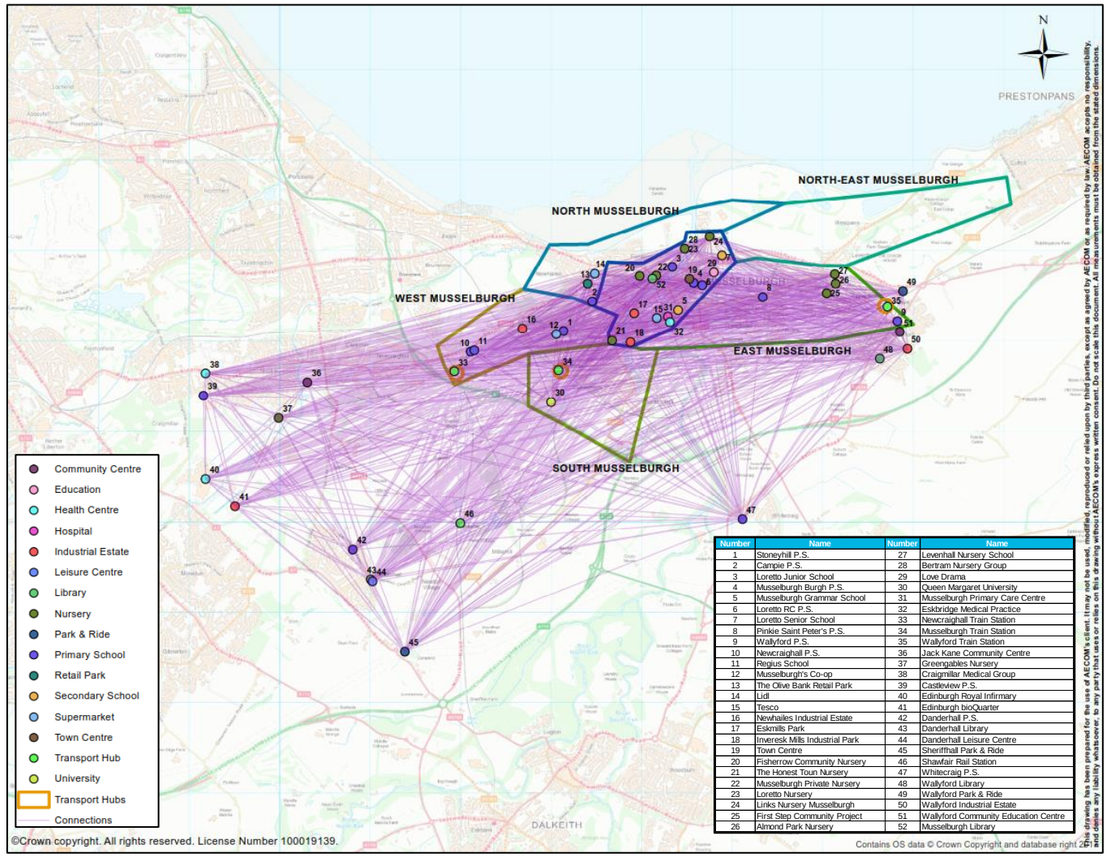
The wider desire lines to and from Musselburgh are shown in Figure 2-1. These were obtained using Strava Global Heatmap data, and by consideration of the active travel links and transport corridors in the area.

2.2 Transport Network and Journey Types

The primary routes into Musselburgh by road are the A199, A6095 and the A6124. Within the greater Musselburgh area, there are railway stations at Newcraighall, Musselburgh, Wallyford and Shawfair. Bus services connect the town with Edinburgh, Midlothian and other settlements in East Lothian.

In Figure 2-2 and Figure 2-3, the key trip attractors relating to utility and leisure journeys are illustrated graphically. The locations of these trip attractors, and of the desire lines between them, were used to split the greater Musselburgh area into six 'zones' for journeys and our initial route mapping.

[1] "Musselburgh." *Eastlothian.gov.uk*. N.p., 2018. Web. 13 Feb. 2018.

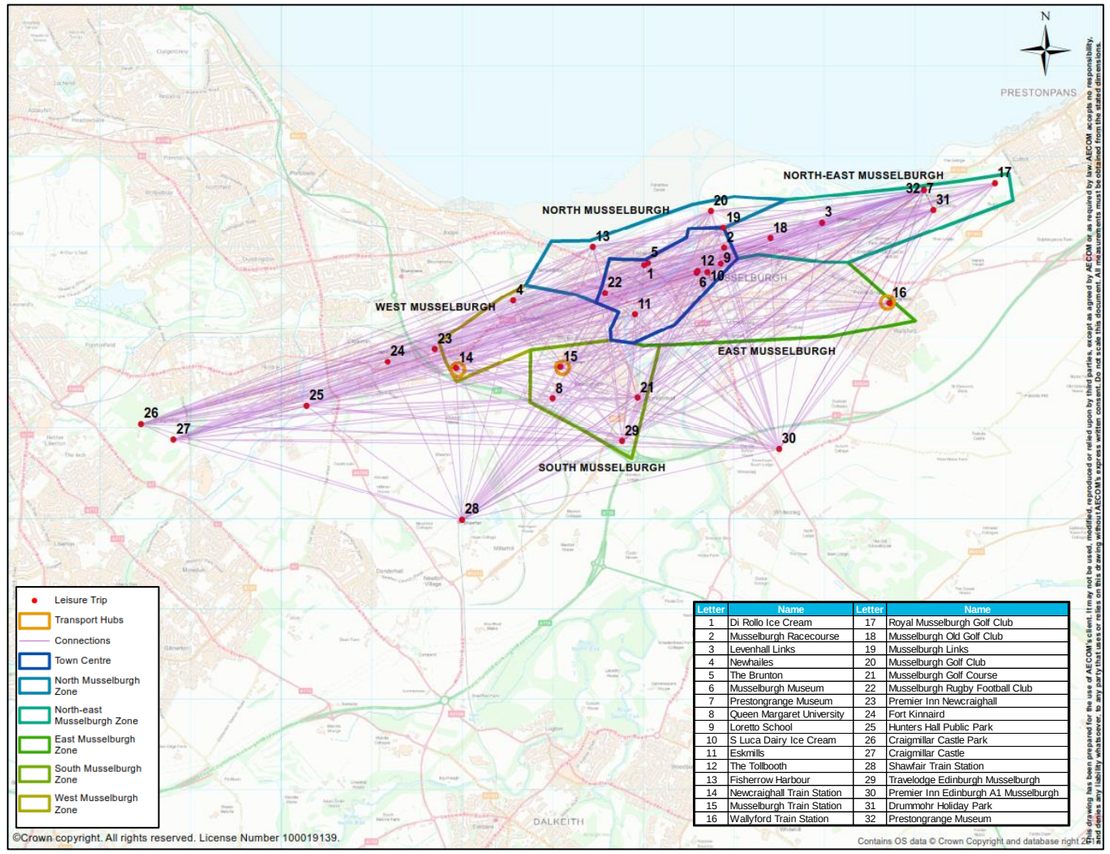


Number	Name	Number	Name
1	Stoneyhill P.S.	27	Levenhall Nursery School
2	Campie P.S.	28	Bertram Nursery Group
3	Loretto Junior School	29	Love Drama
4	Musselburgh Burgh P.S.	30	Queen Margaret University
5	Musselburgh Grammar School	31	Musselburgh Primary Care Centre
6	Loretto RC P.S.	32	Eskbridge Medical Practice
7	Loretto Senior School	33	Newcraighall Train Station
8	Pinkie Saint Peter's P.S.	34	Musselburgh Train Station
9	Wallyford P.S.	35	Wallyford Train Station
10	Newcraighall P.S.	36	Jack Kane Community Centre
11	Reglus School	37	Greengables Nursery
12	Musselburgh's Co-op	38	Craigmillar Medical Group
13	The Olive Bank Retail Park	39	Castleview P.S.
14	Lidl	40	Edinburgh Royal Infirmary
15	Tesco	41	Edinburgh bioQuarter
16	Newhailes Industrial Estate	42	Danderhall P.S.
17	Eskmills Park	43	Danderhall Library
18	Inveresk Mills Industrial Park	44	Danderhall Leisure Centre
19	Town Centre	45	Sheriffhall Park & Ride
20	Fisherrow Community Nursery	46	Shawfair Rail Station
21	The Honest Toun Nursery	47	Whitecraig P.S.
22	Musselburgh Private Nursery	48	Wallyford Library
23	Loretto Nursery	49	Wallyford Park & Ride
24	Links Nursery Musselburgh	50	Wallyford Industrial Estate
25	First Step Community Project	51	Wallyford Community Education Centre
26	Almond Park Nursery	52	Musselburgh Library

Figure 2-2: Utility Trip Attractors Within the Study Area

Many of the utility trip attractors are located in or close to the town centre, as shown in the figure above. Outwith the town centre, the trip attractors are generally educational facilities.

Figure 2-2 illustrates utility trip journeys, which represent the daily trips people make to reach employment, education or services in the area. Utilities attractors in Musselburgh are mainly clustered around the Town Centre, with some connections expanding into the east around the Wallyford area, and west zones around Queen Margaret University and the nearby stations. This potentially enables a concentration of investment into a few strategic corridors that connect these key locations with the town centre and residential areas.



Letter	Name	Letter	Name
1	Di Rollo Ice Cream	17	Royal Musselburgh Golf Club
2	Musselburgh Racecourse	18	Musselburgh Old Golf Club
3	Levenhall Links	19	Musselburgh Links
4	Newhailes	20	Musselburgh Golf Club
5	The Brunton	21	Musselburgh Golf Course
6	Musselburgh Museum	22	Musselburgh Rugby Football Club
7	Prestongrange Museum	23	Premier Inn Newcraighall
8	Queen Margaret University	24	Fort Kinnaird
9	Loretto School	25	Hunters Hall Public Park
10	S Luca Dairy Ice Cream	26	Craigmillar Castle Park
11	Eskmills	27	Craigmillar Castle
12	The Tollbooth	28	Shawfair Train Station
13	Fisherrow Harbour	29	Travelodge Edinburgh Musselburgh
14	Newcraighall Train Station	30	Premier Inn Edinburgh A1 Musselburgh
15	Musselburgh Train Station	31	Drummohr Holiday Park
16	Wallyford Train Station	32	Prestongrange Museum

Figure 2-3: Leisure / Tourism Trip Attractors Within the Study Area

The leisure / tourism attractors in the study area are more evenly distributed throughout the study area, as shown in the figure above. There is a greater focus around the eastern coastal area for leisure and tourism, which aligns with the already established and popular walking and cycling routes available.

Some of the key trip attractors in the greater Musselburgh area include:

- Musselburgh Racecourse – the oldest racecourse in Scotland;[2]
- Newhailes – a 17th century Palladian house;
- The Brunton Theatre – an events and wedding venue;
- Musselburgh Museum – a museum exploring the history of the town;
- S. Luca Dairy Ice Cream – an ice cream shop that has been making ice cream for over 100 years;
- Queen Margaret University – a public university located in Musselburgh;
- Fort Kinnaird – a large retail park located adjacen to the A1 within the City of Edinburgh Council boundary; and
- the railway stations at Musselburgh, Newcraighall, and Wallyford.

[2] Visitscotland.com. (2018). *Musselburgh Visitor Guide - Accommodation, Things To Do & More*. [online] Available at: https://www.visitscotland.com/info/towns-villages/musselburgh-p240751 [Accessed 30 Mar. 2018].

2.3 Travel Patterns

2.3.1 2011 Census Data

The 2011 Census data indicates that the majority of residents in Musselburgh, work within the local area. As illustrated in Figure 2-4, 50.6% of residents live within 10 km (6 miles) of their workplace and a further 24% of residents live within 20 km (12 miles) suggesting a large number work within the East Lothian and City of Edinburgh areas.

Within Edinburgh, the vast majority (77.3%) of residents live within 10 km of their workplace, whilst the figures for Midlothian are broadly similar to those for East Lothian.

The Scottish Transport Statistics 2017 report suggests that the average distance travelled by bikes is 7.6 km (4.7 miles), whereas Strava's 'Year in Sport' report suggests that the average commuting distance in the United Kingdom is 13.1 km (8.1 miles). This suggests there may be opportunity in Scotland to improve cycling rates amongst those with slightly further commutes. However, the disparity in the statistics may be due to the difference in terrain between Scotland and the rest of the UK.

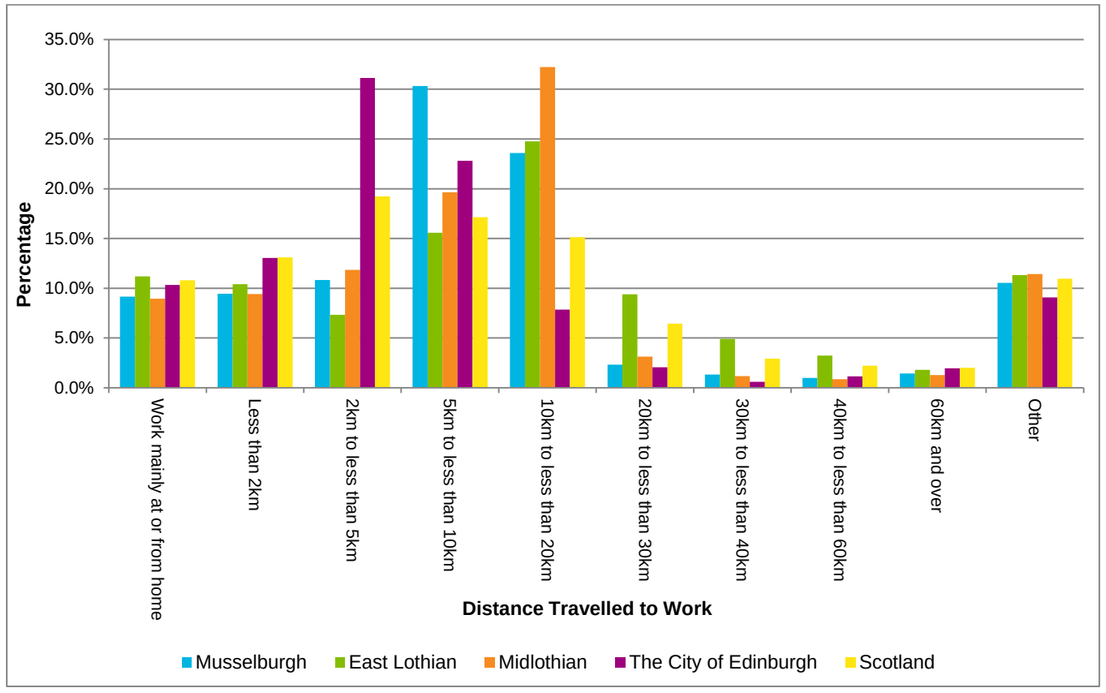


Figure 2-4: Distance Travelled to Work

Notes

(1) The distance travelled is a calculation of the straight line between the postcode of place of residence and postcode of workplace.

(2) "Other" includes no fixed place of work, working on an offshore installation and working outside the UK.

Source: Scotland's Census 2011 (Table QS703SC)

As shown in Table 2-1, in Musselburgh, 18% of residents walk to their place of work or study. Furthermore, 1.6% of the working population of Musselburgh cycle to their place of work or study, which is above the national average. Overall in East Lothian, around 18% of residents walk and 1.6% cycle for commuting purposes.

The figures for Midlothian are broadly similar to those for East Lothian, with the exception that more people travel by bus, minibus or coach to their place of work or study, while in East Lothian more people travel by train.

In The City of Edinburgh local authority area, more people travel on foot or by bike compared to East Lothian or Midlothian, which is to be expected given that the typical distance travelled to work is shorter. This is also reflected in the percentage of people travelling to their place of work or study by car or van, with the average percentage being around 40% in Musselburgh, East Lothian, Midlothian and in Scotland, while in Edinburgh the percentage is significantly lower at 26.3%.

Table 2-1: Method of Travel to Work / Study Modal Share

Area	Driving a car or van	Passenger in a car or van	Taxi or minicab	Motorcycle, scooter or moped	Bus, minibus or coach	Train	Underground, metro, light rail or tram	Bicycle	On foot	Work or study mainly at or from home	Other
Musselburgh	37.5%	7.2%	0.5%	0.4%	20.3%	4.0%	0.0%	1.6%	18.0%	10.1%	0.4%
East Lothian	41.9%	7.8%	0.4%	0.4%	13.1%	4.4%	0.0%	1.6%	18.6%	11.3%	0.5%
Midlothian	43.8%	8.5%	0.6%	0.5%	19.2%	0.3%	0.0%	0.9%	16.3%	9.3%	0.5%
The City of Edinburgh	26.3%	5.4%	0.4%	0.3%	24.9%	1.6%	0.1%	3.8%	25.4%	11.3%	0.6%
Scotland	40.9%	9.0%	0.7%	0.2%	13.4%	3.5%	0.3%	1.3%	18.5%	11.3%	0.9%

Source: Scotland's Census 2011 (Table QS702SC)

Based on the local travel statistics outlined above, there appears to be a significant potential to promote greater levels of cycling and walking. The number of residents in Musselburgh that take the bus to work or study is higher than the national average by around 6% and the vast majority of residents in Musselburgh live within 20 km of the workplace, with 50.6% within 10 km of the workplace. There is a clear opportunity to create an improved sustainable transport network for walkers and cyclists factoring in public transport as a facilitator.

2.3.2 Vehicle Trip Data

Musselburgh and the surrounding area attracts a large number of motor vehicles each day. The Mall Avenue / High Street junction in Musselburgh is the busiest junction in East Lothian with 25,000 vehicles per day.[3] However, despite the A1 bypass, not all traffic in Musselburgh is destined for the town, with 30% of the traffic in High Street understood to be through traffic.[4]

Traffic data relating to Musselburgh, Wallyford, Tranent, Prestonpans, Cockenzie, Port Seton, Macmerry, and Longniddry was provided. The data comprised traffic flows at the primary junctions in this area, with 5 minute counts being provided on individual days, between 07:00 and 19:00. The data was collected between March and May 2015, on neutral weekdays.

Data was not provided for all of the junctions in and around Musselburgh. The junctions that were analysed are listed below (within Musselburgh, unless otherwise stated):

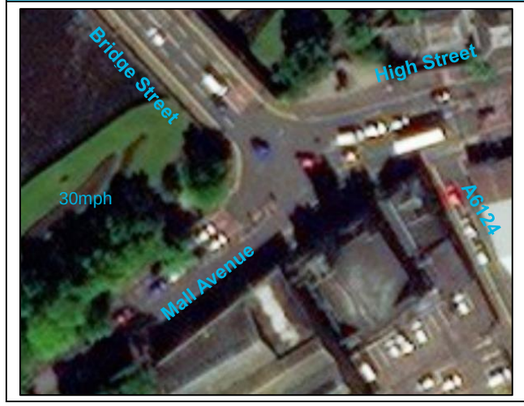
1) A199 / B1361 / Salters Road roundabout, Wallyford;
2) A199 / B6454 / Ravensheugh Road roundabout;
3) A1 / Salters Road, Wallyford;
4) Olive Bank Road / Eskview Terrace; and
5) Mall Avenue / Bridge Street / High Street.

The locations of the junctions are shown in Figure 2-5, below. The number of the junction in the list above corresponds to that in the figure.

Figure 2-5: Junction Locations

Image	Comments
1) Wallyford Toll (A199 / B1361 / Salters Road Roundabout), Wallyford	
	In the AM peak period the highest movements are the ahead movements on the B1361, A199 W/B and A199 E/B (794, 798 and 539 vehicles respectively). The highest movements in the PM peak period are the ahead movements on Salters Road, the A199 W/B and the A199 E/B (1085, 618 and 925 vehicles respectively).
2) Levenhall (A199 / B6454 / Ravensheugh Road) Roundabout	
	In the AM peak period, the highest movements are the ahead movements on the A199 W/B and A199 E/B (932 and 598 vehicles respectively) and the right turn from the B1348 (463 vehicles). The highest movements in the PM peak period are the ahead movements on the A199 E/B and A199 W/B (1048 and 676 vehicles respectively), and the left turn from the A199 E/B (633 vehicles).
3) A1 / Salters Road, Wallyford	
	Excluding the ahead movements on the A1, the highest flows are the S/B movement on Salters Rd at the northern slips (1571 vehicles), and the right turn onto the A1 W/B slip from Salters Road (1224 vehicles) in the AM peak period. In the PM peak period, the highest movements are the left turn from the A1 E/B off slip (1388 vehicles), and the ahead movements on Salters Rd at the northern and southern slips (1140 and 1048 vehicles for the S/B movement at the northern slips and the N/B movement at the southern slips respectively).

[3] Draft Musselburgh Town Centre Strategy, 2013
[4] Musselburgh Development Study Halcrow, November 1999

Image	Comments
4) Olive Bank Road / Eskview Terrace	
	In the AM peak period, the right turn from Eskview Terrace is the heaviest movement at the junction (731 vehicles). The W/B approach on Olive Bank Road is also observed to be busy (548 and 564 vehicles for the left turn and ahead movements respectively). In the PM peak period, the highest flows are on Olive Bank Road W/B (813 and 792 vehicles for the left turn and ahead movements respectively). The right turn from Eskview Terrace (672 vehicles) and the ahead movement on Olive Bank Road E/B (725 vehicles) are also busy movements.
5) Mall Avenue / Bridge Street / High Street	
	In the AM peak period, the W/B approach is observed to be busy, with the right turn (1218 vehicles) and ahead movements (751 vehicles) from this approach being the two heaviest at the junction. The left turn from Bridge Street is also observed to be a heavy movement (769 vehicles). In the PM peak period, the heaviest movement is the left turn from Bridge Street (1377 vehicles). The right turn from High Street (1106 vehicles) and the ahead movement on Mall Avenue (845 vehicles) are also observed to be busy.

2.3.3 Department for Transport AADF Data

Annual average daily flow data was obtained for the study area from the Department for Transport traffic counts. Data was filtered down to include only locations within the study area. Count locations were numbered from 1 to 32 and mapped in Figure 2-6.

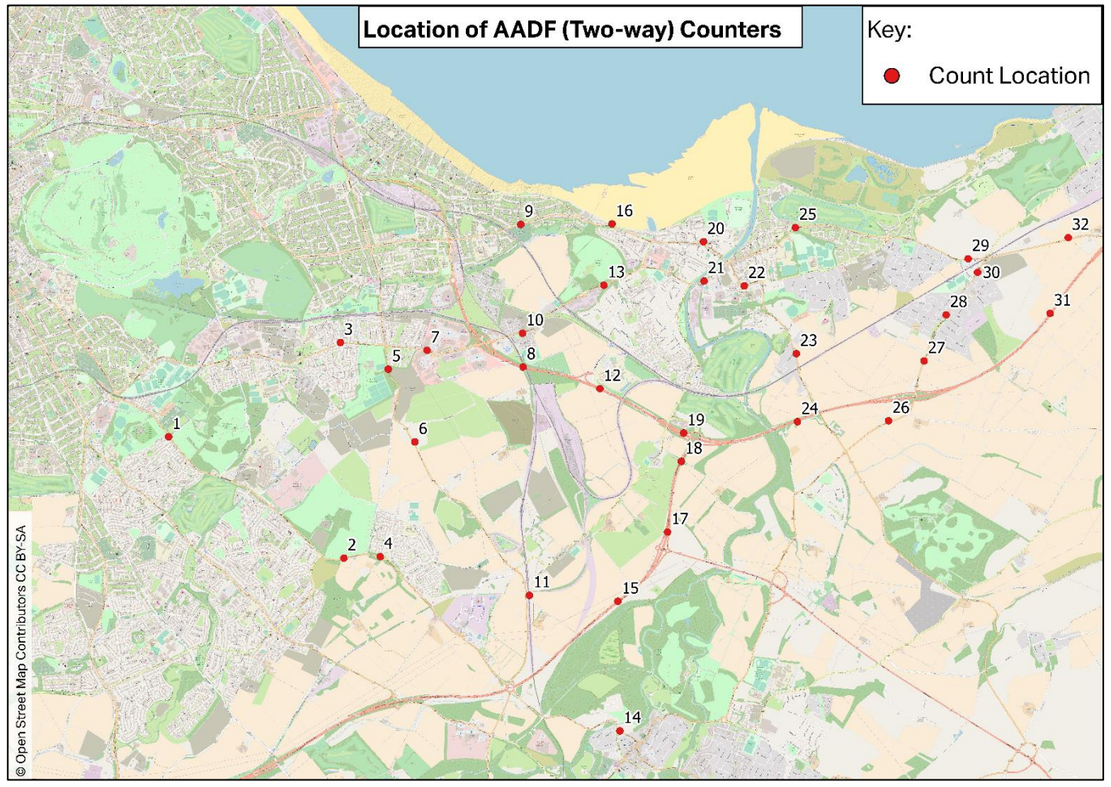


Figure 2-6: Department for Transport AADF (Two-way) Counter Locations

Annual average daily flows were filtered to only include the most recent data available (2016), and are shown in Table 2-2.

Table 2-2: Department for Transport Estimated AADF (Two-way, 2016, All Motor Vehicles)

Point Number	Road	AADF All Motor Vehicles	Point Number	Road	AADF All Motor Vehicles
1	A7	14356	17	A720	46382
2	A7	19093	18	A720	46382
3	A6095	14285	19	A1	47316
4	A7	13206	20	A199	13764
5	A6106	7132	21	A6095	10707
6	A6106	7132	22	A6124	5200
7	A6095	15391	23	A6124	4684
8	A1	47316	24	A1	45247
9	A199	6032	25	A199	12671
10	A6095	10242	26	A6094	5418
11	A6106	8850	27	A6094	10066
12	A1	47316	28	A6094	10485
13	A6095	10242	29	A199	10066
14	A68	13202	30	A6094	11531
15	A720	46219	31	A1	49171
16	A199	14537	32	A199	7148

The largest traffic counts occur on the A1 and the A720, however both of these roads are dual carriageway, which allows for a higher capacity. Other areas with high counts are Old Dalkeith Road (A7); the A6094 joining Musselburgh/Wallyford to the A1; the A6095 joining Newhailes to Musselburgh; and the A199 from Edinburgh, through Musselburgh and into Wallyford. This demonstrates that traffic is consistently heavy across a number of the main routes in and around Musselburgh.

2.3.4 2016 Scottish Household Survey Data

The Transport and Travel in Scotland 2016 data associated with the Scottish Household Survey 2016, published on 26th September 2017, provides some insight into existing levels of cycling and walking in East Lothian.

Table 2-3: Number of Bikes Available for Private Use by Households

	None	One	Two	Three or more	Sample size (=100%)
East Lothian	67.9%	10.0%	16.0%	6.1%	310
South East Scotland	66.4%	15.8%	12.3%	5.5%	2950
All	66.2%	16.3%	11.9%	5.6%	10470

East Lothian has a higher percentage of households without access to a bike than Scotland as a whole, but has a higher percentage of households with multiple bikes.

Table 2-4: Adults (16+) - frequency of walking in previous 7 days

	None	1-2 days	3-5 days	6-7 days	1+ days	Sample size (=100%)
East Lothian	29.7%	13.1%	29.9%	27.4%	70.3%	290
South East Scotland	23.8%	17.8%	25.2%	33.2%	76.2%	2690
All	31.4%	19.4%	26.3%	22.9%	68.6%	9580

East Lothian has a higher percentage of adults who had at least one day where they made a trip on foot of more than a quarter of a mile within the seven days prior to the survey compared to Scotland as a whole. However, this percentage was higher across South East Scotland. Over half of respondents in East Lothian had made a trip of this type on more than three out of the previous seven days.

Table 2-5: Employed adults (16+) not working from home - usual method of travel to work

	Walking	Driver Car/Van	Passenger Car/Van	Bicycle	Bus	Rail	Other	Sample size (=100%)
East Lothian	11.5%	54.6%	7.5%	2.3%	12.8%	11.3%	.	120
South East Scotland	16.9%	56.5%	5.8%	2.7%	12.7%	3.6%	1.8%	1130
All	12.3%	61.7%	5.3%	2.6%	10.4%	5.2%	2.4%	3970

The percentage of adults who usually walk to work is lower for East Lothian than Scotland as a whole. Similarly, the percentage of adults who cycle to work in East Lothian is lower than the Scottish average. This is in contrast to South East Scotland, which had a higher percentage of people travelling to work both on foot and by bike compared to the national average.

Table 2-6: Pupils in full time (school) education - usual main method of travel to school

	Walking	Car or van	Bicycle	Bus (school, works, or ordinary / service)	All other modes (e.g. rail, taxi, ferry etc.)	Sample size (= 100%)
East Lothian	47.2%	18.1%	8.0%	25.7%	1.0%	60
South East	56.5%	20.6%	1.7%	20.2%	1.1%	2710
All	51.8%	25.6%	1.4%	19.1%	2.1%	1890

The percentage of pupils who usually walk to school in East Lothian is slightly lower than the average for Scotland. However, East Lothian had the highest cycling rate to school in the whole of Scotland, with pupils in East Lothian over 5 times as likely to cycle to school as their usual mode of transport than in Scotland as a whole.

SHS Travel Diary - Main mode of travel: 2016

The results from the Scottish Household Survey Travel Diary show that although South East Scotland has a higher than average rate of people walking and cycling as their main mode of travel for Scotland, East Lothian is actually below average for both active travel modes.

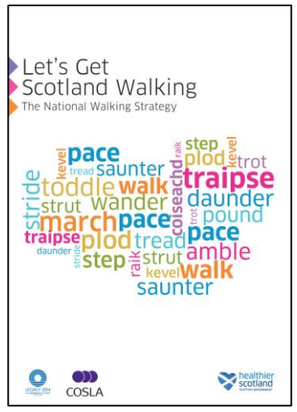
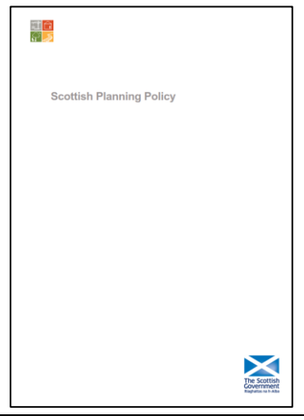
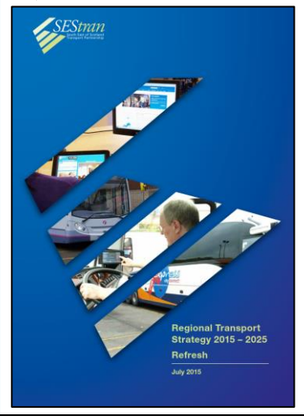
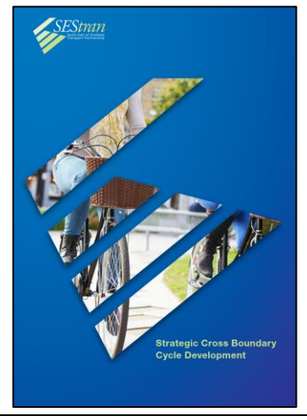
2.4 Policy, Guidance and Other Studies

A number of other policy, guidance and other studies were reviewed as a component of the desktop review. These are detailed in sections 2.4.1 to 2.4.6.

2.4.1 Policy and Guidance

The development of walking and cycling is strongly supported in various local, regional and national transport policy documents. The documents shown below, relating to regional and national policy, are of particular relevance.

Table 2-7: Relevant Regional and National Policy Documents

Title	National Transport Strategy	Cycling Action Plan for Scotland	National Walking Strategy
Date Adopted	January 2016	January 2017	June 2014
			
Title	**Scottish Planning Policy**	**SEStran Regional Transport Strategy**	**Strategic Cross Boundary Cycle Development within SEStran: A Strategy for Investment**
Date Adopted	June 2014	July 2015	June 2015
			

The National Transport Strategy (NTS) sets a number of high level objectives, which includes *"Protect our environment and improve health by building and investing in public transport and other types of efficient and sustainable transport…"*.[5] The National Walking Strategy and Cycling Action Plan for Scotland are the policy vehicles designed to promote active travel and achieve the NTS objective. Of particular note is the vision of the Cycle Action Plan for Scotland of *"10 % of all journeys taken in Scotland will be by bike, by 2020"*.[6]

Guidance documents that were used to inform the study included:

- Cycling by Design (Transport Scotland, 2011);
- Designing Streets (The Scottish Government, 2010);
- Edinburgh Street Design Guidance (The City of Edinburgh Council, 2015);
- Local Cycling and Walking Infrastructure Plans – Technical Guidance for Local Authorities (Department for Transport, 2014);
- London Cycling Design Standards (Transport for London, 2014);
- Network Planning for Cyclists (Draft) [Sustrans, 2014];
- Planning for Cycling (CIHT, 2014);
- Roads for All – Good Practice Guide for Roads (Transport Scotland, 2013); and
- Sustrans Design Manual – Handbook for Cycle-Friendly Design (Sustrans , 2014).

2.4.2 Planning Documents

Planning documents relating to the East Lothian, Midlothian and City of Edinburgh Council Local Authority areas are discussed below with particular relevance to our study and walking, cycling and public transport

SESplan Proposed Strategic Development Plan

SESplan's Proposed Strategic Development Plan communicates strategic and cross-boundary planning policy and applies national policy and guidance from the Scottish Government.

The City Region Vision for 2038 includes the following:

> ***"A series of cross-boundary transport projects has made travel by public transport easier and more people are cycling and walking to work."***[7]

The Strategic Development Plan includes housing supply targets of 29,040, 6,228 and 6,408 between 2018 and 2030 for the City of Edinburgh, East Lothian and Midlothian respectively.

Cycling and walking are mentioned throughout the document, with SESplan supporting the Scottish Government's objective that by 2020, 10% of all journeys will be made by bike. A strategic functional route linking Musselburgh, Tranent and Haddington is proposed in the Proposed Strategic Development Plan.

East Lothian

ELC's Local Development Plan (2018), details ELC's strategy and policies to *"help stimulate, guide and manage future development within East Lothian"*.[8] The Plan illustrates the volume and scale of development in the greater Musselburgh area. This includes:

- **Approximately 3,700 homes, in addition to the established supply (approximately 1,600 homes), with the largest additional allocations being at Craighall, Dolphingstone and Wallyford, Whitecraig South and Whitecraig North;**
- **Approximately 56 ha of undeveloped sites and new allocations relating to employment areas, with the largest sites being at Craighall, adjacent to Queen Margaret University.**

[5] Transport Scotland (2016). *National Transport Strategy*. [online] Available at: http://transport-scotland-national-transport-strategy-january-2016-final-online.pdf [Accessed 29 Mar. 2018].
[6] Transport Scotland (2017). *Cycling Action Plan for Scotland 2017-2020*. [online] Available at: http://transport-scotland-policy-cycling-action-plan-for-scotland-january-2017.pdf [Accessed 29 Mar. 2018].
[7] SESplan (2016). *Proposed Strategic Development Plan*. [online] Available at: http://www.sesplan.gov.uk/assets/publications/SDP2/Proposed%20Strategic%20Development%20Plan.pdf [Accessed 29 Mar. 2018].
[8] East Lothian Council (2018). *Local Development Plan*.

The East Lothian Segregated Active Travel Corridor is included in the Local Development Plan as 'PROP T3'. This is discussed further in section 2.4.5.

Proposal T5 ("PROP T5") relates to the development and enhancement of the cycle route network in East Lothian, while Policy T6 ("Reallocation of Road Space and Pedestrian Crossing Points") states that the Council will *"explore opportunities to reallocate road space to pedestrians and cyclists where this can be achieved without significant adverse impacts on the efficiency of the road network."*[9]

The East Lothian Draft Local Transport Strategy (LTS) was produced by East Lothian Council to cover the period from 2018 to 2024 and was released for consultation on 30th March 2018. The LTS has a vision of an East Lothian that "will have well-connected communities with increased use of sustainable transport modes to access services and amenities."[10]

The Draft LTS identified five core policies, aspects of which included *"Safe cycling and walking routes"*; *"Accessibility for all"*; and *"Influencing Active Travel"*.[10] These policies align with the aims of this study.

As part of the delivery of Policy 3, an Active Travel Improvement Plan (ATIP) is being developed, which supports the LTS in addressing issues specifically related to active travel. The ATIP includes a series of aims and objectives associated with the primary aim of making "active travel the first choice for all users who must undertake a journey".[11]

The following excerpt from the ATIP demonstrates the relevance of this study in tackling existing problems within the area:

> ***"Musselburgh, as the main entry point into Edinburgh, [is] experiencing capacity issues caused by population growth and commuters travelling to and from the area. The traffic volumes through Musselburgh accompanied by the age, quality and frequency of buses in Musselburgh Town Centre is the main factor in deteriorating air quality in this area.***
>
> ***East Lothian must respond to the lack of capacity in the current transport infrastructure by ensuring that good quality transport infrastructure is in place to offer commuters and those making every day journeys, such as visits to the supermarket or taking children to school, viable alternatives to motorised transport, particularly single occupancy cars".***[11]

Midlothian

Midlothian Council's Local Development Plan (LDP) was adopted in November 2017. The document details a *"clear vision of how places should develop"*, with one of the purposes of the document being to *"promote sustainable travel"*.[12] One of the social objectives of the plan is to:

> ***"secure active and sustainable transport options for existing communities and future growth areas, and promote opportunities for walking, cycling and public transport, including links to shared open spaces."***[12]

Midlothian's LDP contains a policy on Sustainable Travel, Policy TRAN 1. This policy states that the Council *"will seek to develop an active travel network to promote sustainable travel and give priority to walking, cycling and public transport initiatives and developments over provision for car-based travel."*[12]

The part of Midlothian that is relevant to this study, the South East Edinburgh Strategic Development Area ('Shawfair'), which lies to the north of the A720 Edinburgh City Bypass, contains the villages of Danderhall, Newton and Millerhill. There are a number of developments in this area, with land allocations for 4,000 houses, 23.5 hectares of employment land, and a new town centre.

City of Edinburgh Council

Edinburgh' Local Development plan, adopted in November 2016, set out policies and proposals to guide development within the City of Edinburgh Council local authority area. Sustainable and active travel is promoted throughout the LDP.

The key developments relating to the study area are shown in Table 2-8.

Table 2-8: Development Proposals in the City of Edinburgh Local Authority Area

Proposal	Information
HSG 26 – Newcraighall North	Capacity: 220 (9 hectares)
HSG 27 – Newcraighall East	Capacity: 275 – 385 (17 hectares)
HSG 29 – Brunstane	Capacity: 950 – 1,330 (48 hectares)
HSG 14 – Niddrie Mains	Capacity: 814 (21 hectares)
HSG 15 – Greendykes Road	Capacity: 145 (3 hectares)
HSG 16 – Thistle Foundation	Capacity: 256 (8hectares)
HSG 17 – Greendykes	Capacity: 990 (12 hectares)
HSG 18 – New Greendykes	Capacity: 878 (26 hectares)
HSG 40 – South East Wedge South: Edmonstone	Capacity: 170 – 370 (28 hectares)
HSG 41 – South East Wedge South: The Wisp	Capacity: 71 (2 hectares)
Emp2 (Special Economic Area) – Edinburgh BioQuarter	72 hectares

As shown in the table above, there is a large quantity of development in the study area, particularly around Brunstane, Newcraighall, Greendykes and the South East Wedge.

2.4.3 Musselburgh to Portobello Study

SEStran's 'Strategic Cross Boundary Cycle Development within SEStran: A Strategy for Investment', published in 2015, identified the lack of cycling infrastructure between Portobello Promenade and the John Muir Way as a barrier to cycling in the coastal area of East Lothian.

Ironside Farrar were commissioned to undertake a feasibility study of a link connecting Portobello and Musselburgh. Two options were investigated: 1) utilising the B6415 and A199; and 2) a Coastal Route. The feasibility study concluded that the option of utilising the B8415 and A199, incorporating a two-way segregated cycleway on the north side of the road corridor, was achievable, and recommended taking forward this option. Construction of the Coastal Route option was considered to be feasible, but due to potential issues with deliverability it was considered that this should be a longer-term project.

The alignment of the recommended link is shown in Figure 2-7.

[9] East Lothian Council (2018). *Local Development Plan*.
[10] East Lothian Council (n.d.). *East Lothian Local Transport Strategy 2018 - 2023 Draft*.
[11] East Lothian Council (n.d.). *Active Travel Improvement Plan 2018 - 24*.
[12] Midlothian Council (2017). *Midlothian Local Development Plan*.

Figure 2-7: Proposed Alignment – Musselburgh to Portobello Study

2.4.4 East Lothian on the Move

The East Lothian on the Move study was undertaken by Peter Brett Associates, on behalf of East Lothian Council, Smarter Choices, Smarter Places, Transport Scotland and Musselburgh Area Partnership. The aim of the study was to produce *"a series of effective, achievable, community endorsed Action Plans"* for people walking and cycling in the area.[13]

Comments were invited and were mapped accordingly. Several of the suggested routes and interventions are relevant to this study:

- Proposed link from Portobello Promenade to Musselburgh;
- Improved link along Coastal Path, north of Levenhall Links (personal security, surfacing, quality);
- Improved link through Levenhall Link and onwards to Prestonpans;
- Proposed link between Wallyford and B1348;
- Improved route along A199;
- Proposed East Lothian Segregated Corridor alignment – upgrade existing provision;
- Link between Whitehill Farm Road and Newcraighall Road;

Two measures that the consultation identified as having the capacity to encourage people to walk and cycle more *were "Better quality walking / cycling routes"* and *"Greater choice of walking / cycling routes"*.[13]

Two of the key issues that were identified in the consultation that was carried out are relevant to this study:

- ***"A need to better integrate the existing walking routes and give pedestrians more priority on the High Street"***; and
- ***"A need for safer cycle routes which are segregated from other traffic which should hopefully encourage cyclist (sic) off pavements!"***[13]

[13] Peter Brett Associates (2015). *East Lothian on the Move - Phase 1 Consultation Feedback Summary*.

2.4.5 The East Lothian Segregated Active Travel Corridor

The East Lothian Segregated Active Corridor is proposed in ELC's Local Development Plan, as mentioned in section 2.4.2. The aim of the route is to *"promote a priority route for pedestrians and cyclists"*.[14] An *"A199 cycle superhighway"* was mentioned in SEStran's 'Strategic Cross Boundary Cycle Development within SEStran: A Strategy for Investment' as a key action.[15] The A199 connects Leith in Edinburgh to West Barns (south-west of Dunbar) in East Lothian.

The route would connect Edinburgh in the west to Dunbar in the east. The proposed alignment of the route is shown in Figure 2-8, below:

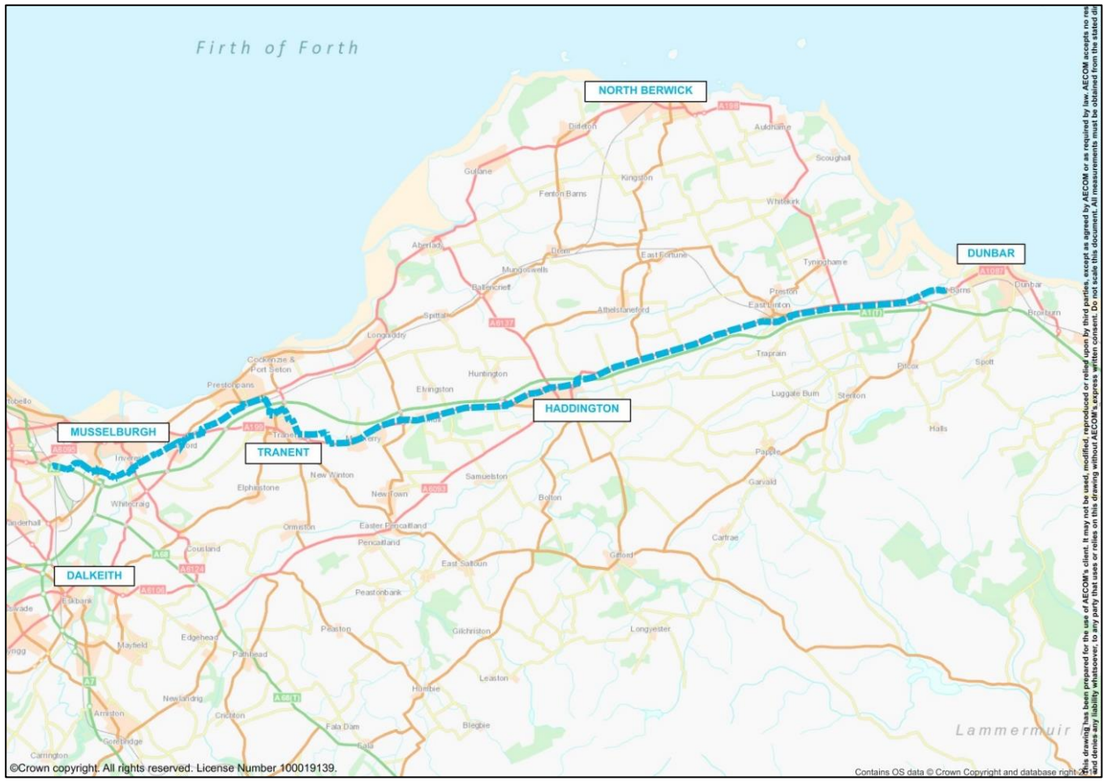


Figure 2-8: Proposed Alignment of East Lothian Segregated Active Travel Corridor

2.4.6 Musselburgh Town Centre Strategy

Published in 2013 and prepared by Policy and Projects East Lothian Council in conjunction with the Musselburgh Local Area Forum, 'Musselburgh Town Centre Strategy' had the aim of maintaining and enhancing the vitality of Musselburgh town centre. This is to be promoted through business, encouraging investment, enhancing the setting of the town centre and building on its unique identity. The report proposed a 24 point Action Plan for the period between 2014 and 2019. Action 8, *"Review path links to Musselburgh town centre and improve directional signage and other small scale improvements"*, is directly relevant to this study.[16] As part of this study a design scoping report has been explored for the streetscape of the town centre, to capitalise on the opportunities available for improving the place as a destination for people and to enhance the proposed Masterplan network. This is summarised in Section 9.9 and can be found in full in Appendix A.

[14] East Lothian Council (2016). *Proposed Local Development Plan*.
[15] SEStran (2015). *Strategic Cross Boundary Cycle Development*. [online] Available at: http://www.sestran.gov.uk/publications/sestran-strategic-cross-boundary-cycle-development-final-report/ [Accessed 29 Mar. 2018].
[16] Policy and Projects East Lothian Council, Musselburgh Local Area Forum (2013). *Musselburgh Town Centre Strategy*.

2.5 Best Practice Review

The best practice review that was undertaken comprised two elements: a review of masterplan documents in other towns and regions; and a review of infrastructure best practice. These two elements are discussed in sections 2.5.1 and 2.5.2 respectively.

2.5.1 Master Planning

As part of the best practice review, masterplans from other towns and regions have been reviewed. The masterplans that have been reviewed are summarised in the following paragraphs:

- Aberdeenshire Council – Integrated Travel Towns

  Aberdeenshire Council is working with communities in Huntly, Inverurie, Fraserburgh, Portlethen and Ellon to help support more sustainable and active travel in these towns. The Integrated Travel Towns (ITT) project, supported by Sustrans and Paths for All, will engage with local communities to develop ideas that will inform a Masterplan of proposals that Aberdeenshire Council will aim to deliver in the coming years.

- Mid and East Antrim Borough Council – Cycling Routes Masterplan

  The Masterplan illustrates the existing and future potential cycling networks for Ballymena, Larne and Carrickfergus, Northern Ireland, as well as Borough wide plans illustrating the existing and potential wider area network, including strategic greenways and links into neighbouring local authorities. A number of opportunity areas are highlighted, including:

  – A safe routes to school programme;
  – Safe routes to public transport centres;
  – Safe routes to community / leisure facilities; and
  – Planning for the future.

  The plans illustrate a 10 year Vision for the Borough. Many of the opportunity areas listed above can also be considered to be opportunities in Musselburgh and the surrounding area.

- City of Burlington – Cycling Masterplan

  The Plan is intended to guide the City of Burlington, Canada, in creating a network of on-road cycleways and multi-use pathways throughout Burlington and neighbouring areas, along with supportive policies, practices and programmes to encourage more people to cycle. New infrastructure will be built to support the City's transportation demands, optimising traffic flow and encouraging alternative modes of transportation.

- Halton Region – Active Transportation Masterplan

  The Regional Municipality of Halton, Canada, is initiating this plan to the year 2031 to develop the required strategy, infrastructure, initiatives and programmes to promote non-motorised travel throughout the Region. The Region's objective is to create an Active Transportation Masterplan (ATMP) that is safe, affordable and sustainable. A major component of the ATMP is improving bike lane infrastructure to make it easier and safer to choose cycling as a mode of transportation. Since the ATMP was implemented, the Region has created more lanes, widened shoulders and created new multi-use paths.

The masterplan review has highlighted the importance of encouraging community input and gaining the support of the community; linking key trip attractors and integrating with public transport networks; and thinking aspirationally and planning for a more sustainable future.

2.5.2 Infrastructure

Several documents were reviewed to familiarise the project team with best practice relating to cycle infrastructure:

- International Cycling Infrastructure Best Practice Study

  Transport for London commissioned a study of selected cities, to understand better what makes for success in relation to cycle infrastructure, safety and culture. The study was tasked to focus on design approaches in cities with high levels of cycling and / or recent significant growth in cycling numbers. The study was based around visits during 2013 to 14 cities of different character, to learn from them by interviews with local practitioners, by observation and by riding. The cities were chosen to enable different types of lesson to be learned: from what works best in cities where mass cycling is established, to how cities lower down the curve have applied learning from those further up (as London now seeks to); and from physical techniques to systems of governance.

- London Cycling Design Standards (LCDS)

  LCDS sets out requirements and advice for cycle network planning and of the design of dedicated cycle infrastructure, cycle-friendly streets and cycle parking. This guidance applies to all streets in London and must be adhered to for relevant funding programmes. The design guide has 8 Chapters: Design requirements; Tools and techniques; Cycle friendly streets and spaces; Cycle lanes and tracks; Junctions and crossings; Signs and markings; Construction, including surfacing; and Cycle parking.

  LCDS should be read and understood by all those involved in the design of infrastructure for cycling and all those who help shape the street environment. It carries no legal obligation, but gives advice on and options for the design and delivery of infrastructure that will support the planned increase in cycling.

- Edinburgh Streets Design Guidance

  The guidance brings together previously separate City of Edinburgh Council guidance on street design and has been put in place to help deliver a world-class network of vibrant, safe, attractive, effective and enjoyable streets in Edinburgh. This Guidance will be the first point of reference for all street design whether it is for renewals schemes, improvements to existing streets, or new streets (including urban paths) in Edinburgh. Such projects include:

  – Carriageway and footway maintenance and renewals;
  – New streets associated with development or redevelopment;
  – Alterations to existing streets including surfaced paths; and
  – Utility installations and reinstatements.

  It will not apply to the design of unsurfaced rural paths or tracks, or to the Scottish Government's trunk roads and motorways.

Infrastructure Examples

Figure 2-9 to Figure 2-17 illustrate different street types and potential solutions, from different locations across Scotland and the United Kingdom. Figure 2-18 to Figure 2-28 illustrate different types of cycling and walking infrastructure. Please note that any dimensions shown are indicative.

Street Types and Potential Solutions

Traffic-free — **Traffic Volume: Quiet Streets** — **Busy Road**

Figure 2-9: Cycle Path

Figure 2-10: Quiet Street / Home Zone, Fraserburgh

Figure 2-11: Segregated Cycleway – One-way, Edinburgh

Figure 2-12: Shared Use Footway / Cycleway, No Segregation

Figure 2-13: Streetscape / Shared Surface Principles, Dingwall

Figure 2-14: Segregated Cycleway – Two-way, Glasgow

Figure 2-15: Shared Use Footway/Cycleway with Segregation, York

Figure 2-16: Quiet Street, London

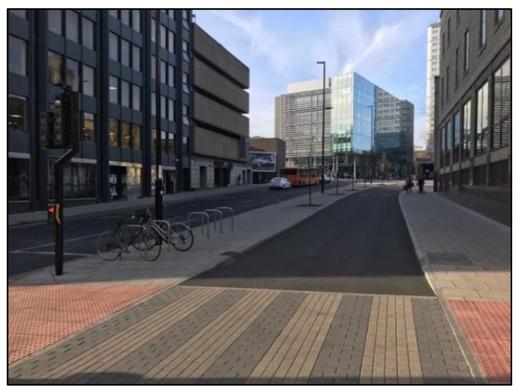


Figure 2-17: Dual Carriageway Converted to Single Carriageway with Cycleway, Newcastle

Infrastructure Examples

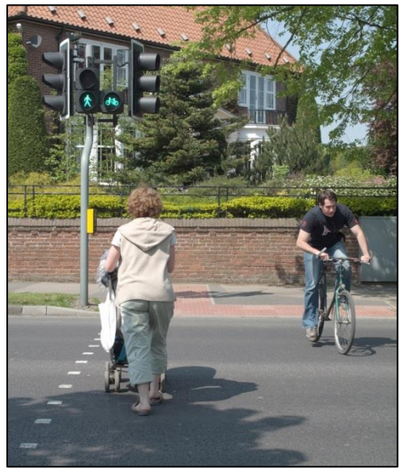


Figure 2-18: Toucan Crossing

Figure 2-19: Pedestrian and Cycle Crossing

Figure 2-20: Advanced Stop Line

Figure 2-21: Integration between Cycleway and Carriageway

Figure 2-22: Two-Stage Right Turn

Figure 2-23: Full Segregation

Figure 2-24: Light Segregation

Figure 2-25: Cycle Access Through Road Closure

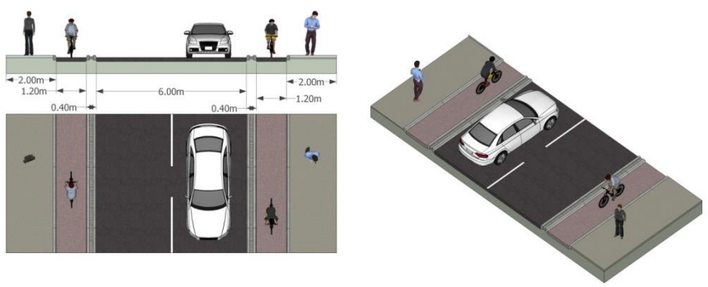


Figure 2-26: One-way Segregated Cycleway on Both Sides of Carriageway

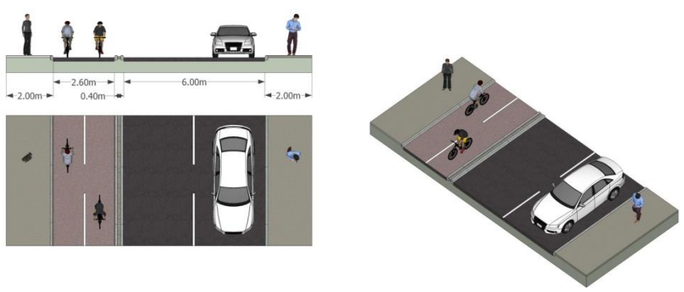


Figure 2-27: Two-way Segregated Cycleway on One Side of Carriageway

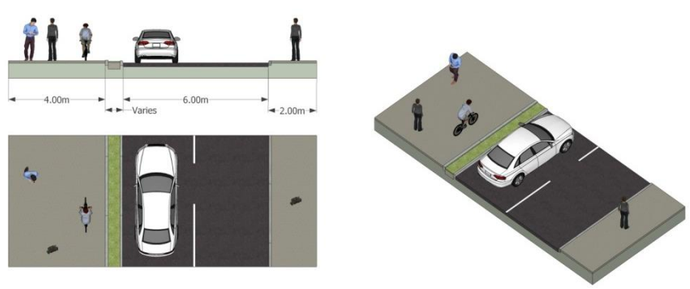


Figure 2-28: Shared Use Footway

3. Objectives

As stated in Section 1.1.1, the aim of the study is to examine options and recommend solutions that will encourage greater modal shift towards cycling and walking within the Musselburgh area.

The objectives associated with the masterplan are as follows:

- The **sustainable** growth of Musselburgh's **transport network**;
- **Enhancing** the **environment** in and around Musselburgh;
- **Improving** the **health** and **wellbeing** of people visiting, living, working and studying in Musselburgh;
- **Community**-led **decision making**;
- **Enhancing** the **local economy** and **tourism**;
- Creating a **high quality**, **safe** and **accessible network**; and
- **Improving equality** and **choices** of those living, working and studying in Musselburgh.

4. Land Use

Land use in Musselburgh and East Lothian, Shawfair and Midlothian and Edinburgh is discussed in sections 4.1, 4.2 and 4.3 respectively.

4.1 Musselburgh and East Lothian

Figure 4-1 illustrates the existing and proposed land use in Musselburgh and the surrounding area. These were obtained from East Lothian Council's Local Development Plan.

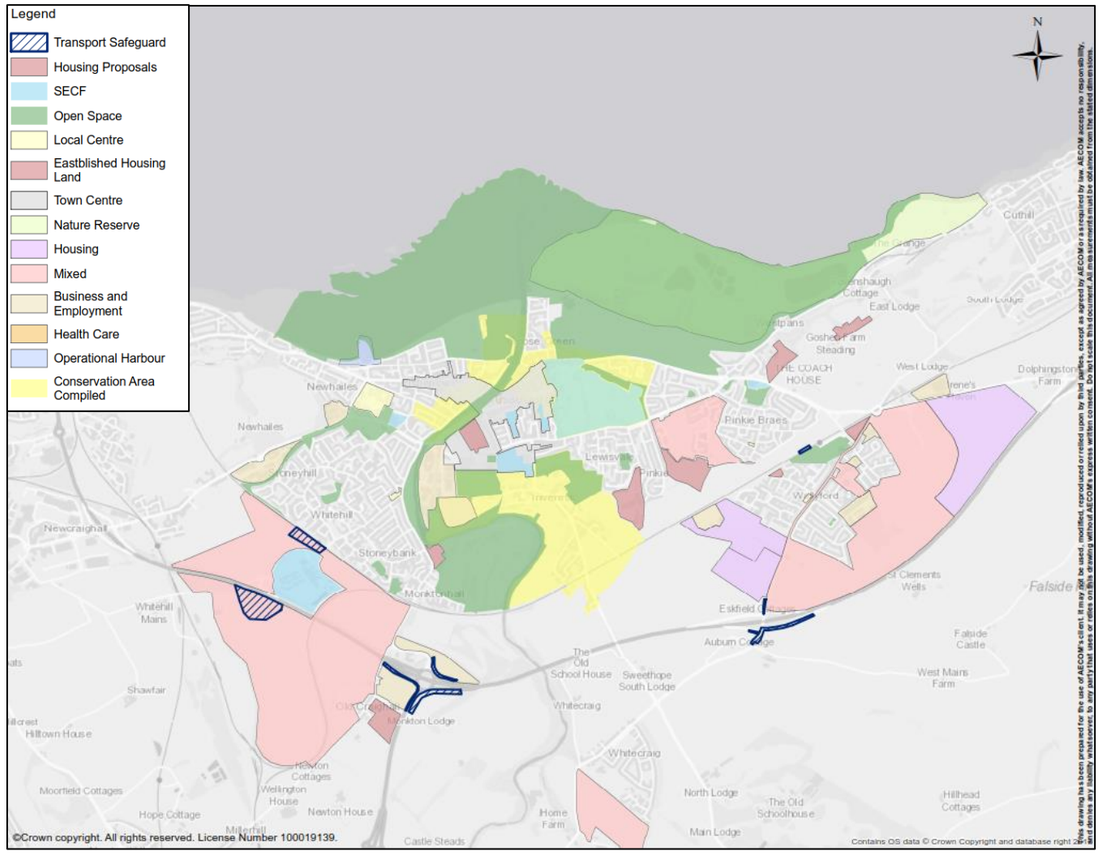


Figure 4-1: Existing and Proposed Land Use in Musselburgh

As shown in the figure, there are a number of proposals in the study area, relating to housing and mixed-use developments. The areas that are neither built up nor shown highlighted in Figure 4-1 are primarily Edinburgh Green Belt land.

4.2 Shawfair and Midlothian

In Figure 4-2, the existing and proposed land use in the Shawfair and Danderhall area of Midlothian is presented.

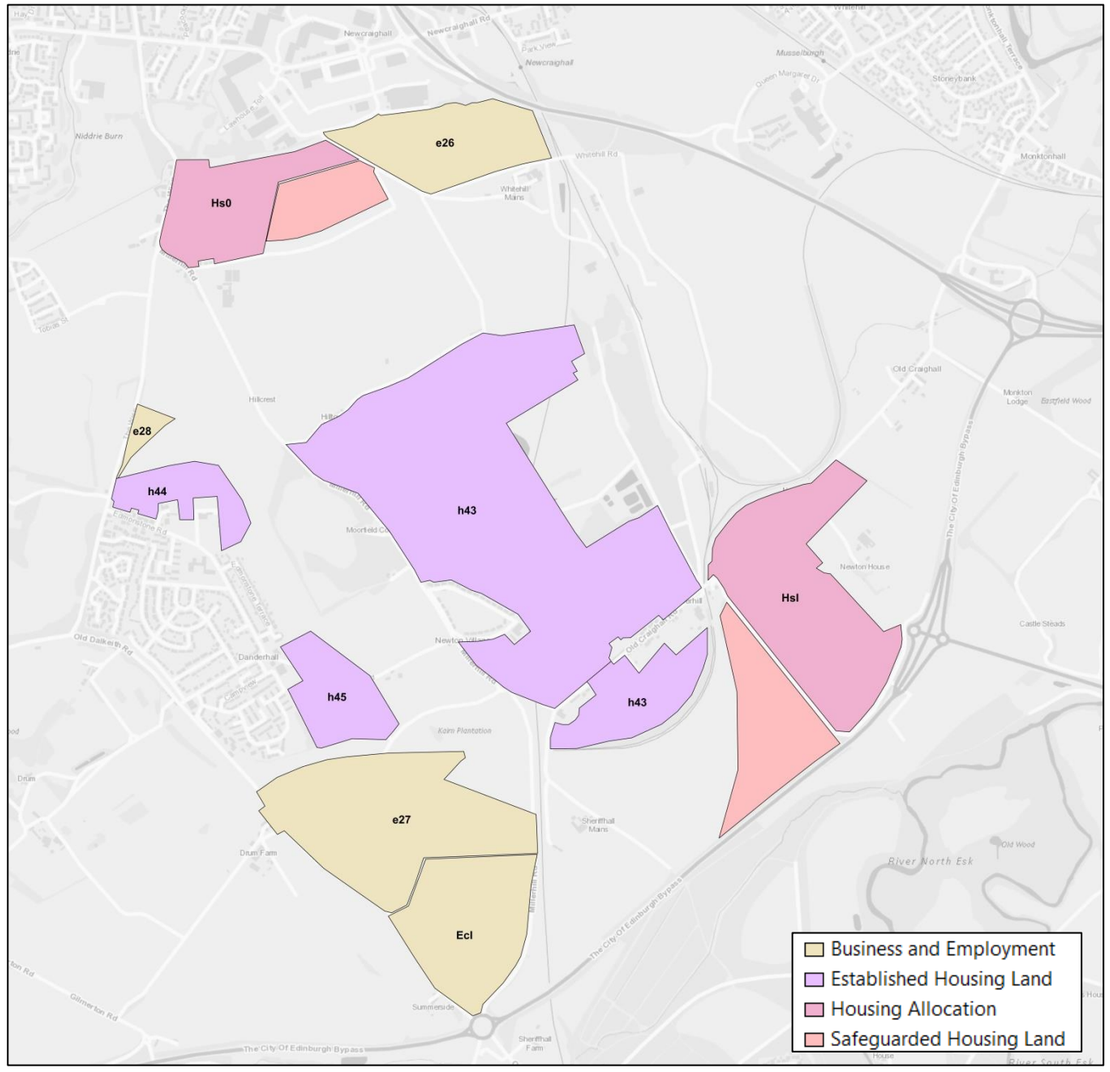


Figure 4-2: Danderhall / Shawfair Existing and Proposed Land Use

As shown in the figure, this area is the location of a number of developments. This includes an outstanding capacity of nearly 4,000 homes across the Shawfair, North Danderhall and South Danderhall sites (h43, h44 and h45 respectively).

4.3 Edinburgh

Figure 4-3 illustrates the existing and proposed land use in Edinburgh. These were obtained from the Edinburgh Local Development Plan. It should be noted that allocations outwith the study area are not shown on the plan.

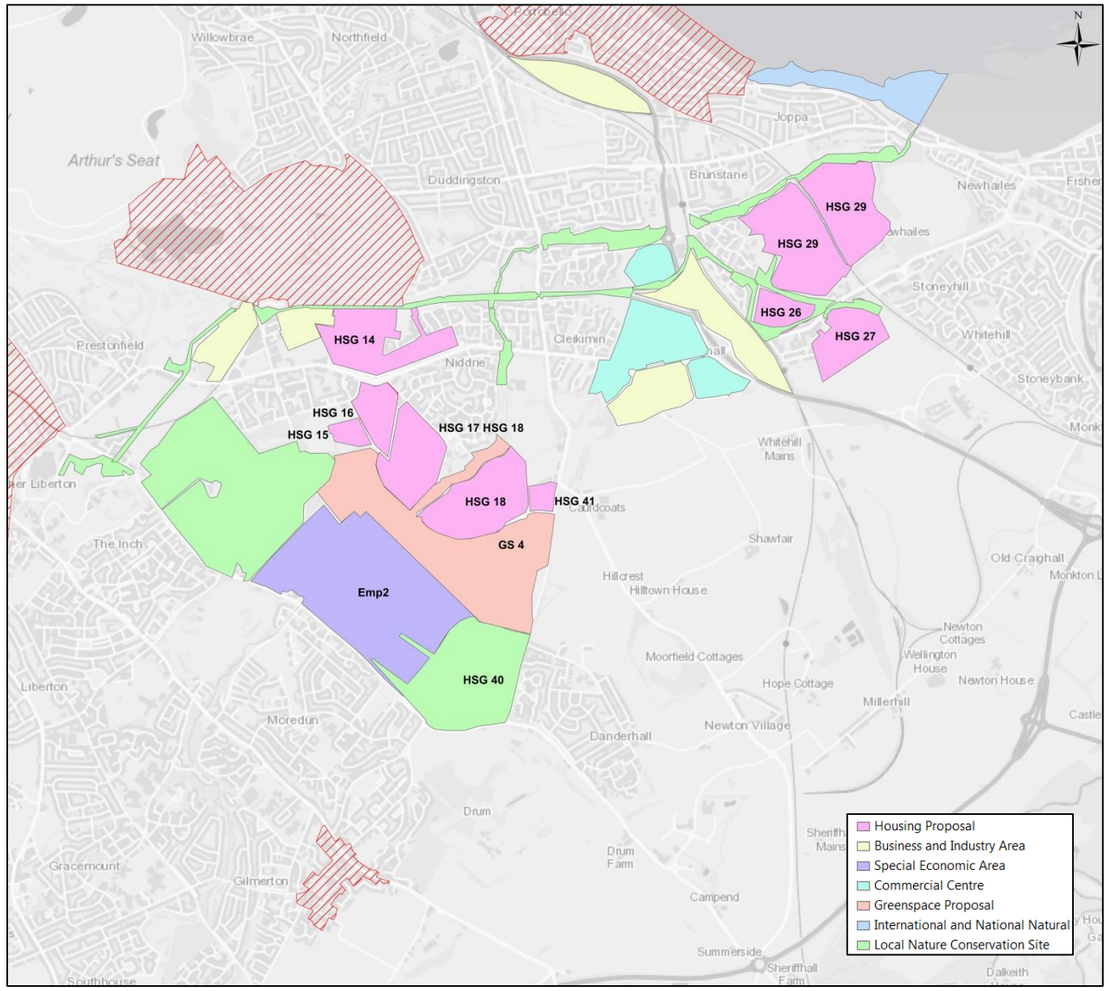


Figure 4-3: Edinburgh Existing and Proposed Land Use

There are a number of large developments in the area, as previously outlined in section 2.4.2. There are also a number of areas of open space and areas of green belt, which are not shown on the plan.

01 Musselburgh High Street, looking eastwards

5. Existing Routes, Facilities and Cycling-Related Collisions

5.1 Existing Routes

The existing walking and cycle routes in the study area include the following:

- National Cycle Routes 1, 76 and 196;
- The John Muir Way;
- City of Edinburgh QuietRoute 10 (Leith and Portobello Promenade),
- Regional Route, connecting the A8 Glasgow Road at the City of Edinburgh Bypass and Musselburgh;
- The River Esk Walkway; and
- Core paths in East Lothian, City of Edinburgh and Midlothian.

Routes are considered as those paths that have a specific origin and destination, rather than local links or paths. The existing walking and cycle routes are shown graphically in Figure 5-1.

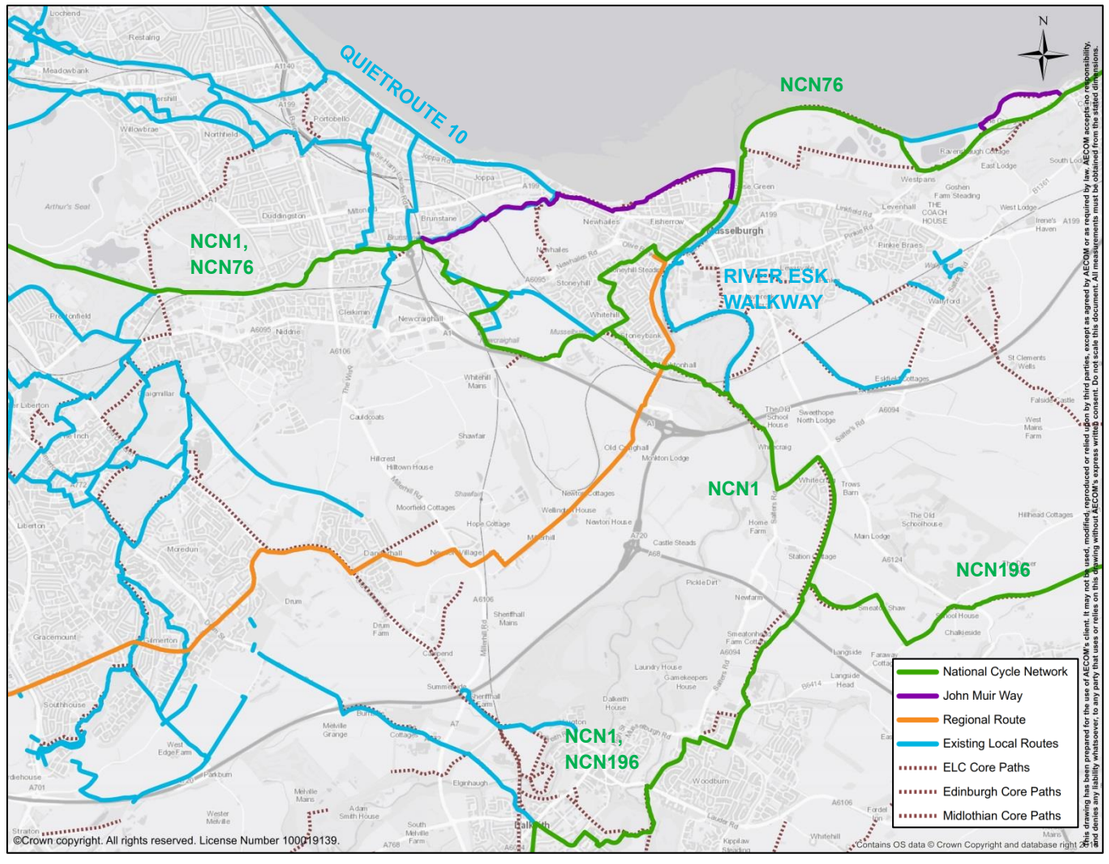


Figure 5-1: Existing Cycle Routes

As shown in Figure 5-1, the existing provision of routes in Musselburgh is primarily centred around the River Esk and to the north of the town. There are a number of routes in Edinburgh, but the provision in Midlothian is currently very limited.

Each of these routes are discussed in more detail in sections 5.1.1 to 5.1.6.

5.1.1 National Cycle Routes

There are three National Cycle Routes in the study area:

- National Cycle Network Route 1:

  The route connects Dover in the south of England with the Shetland Islands in Scotland. In the study area, the route connects Whitecraig and Brunstane via a combination of on-road and off-road facilities. The alignment connects Whitecraig, the River Esk Walkway, Monktonhall, Stoneybank, Queen Margaret University, Newcraighall and Brunstane.

- National Cycle Network Route 76 (Round the Forth);

  NCN76 connects Berwick-upon-Tweed with Edinburgh, Stirling and Kirkcaldy. Within the study area, and considering the route from east to west, the route connects Prestonpans, Musselburgh town centre and Stoneybank, before joining Route 1 (see above) and connecting to Edinburgh. Much of the alignment to the north-east of Musselburgh town centre is along the alignment of the John Muir Way (see Section 5.1.2).

- National Cycle Network Route 196;

  NCN196 connects Haddington and Penicuik. The route is primarily traffic-free, and skirts to the south of the study area. To the south of Whitecraig, the route connects with Route 1, before branching off in Eskbank towards Penicuik.

Figure 5-2: National Cycle Route 1, South of Newcraighall Public Park

Figure 5-3: National Cycle Route Signage at Musselburgh Station

5.1.2 The John Muir Way

The John Muir Way stretches 134 miles across Scotland, between Helensburgh and Dunbar, and is a long distance walking and cycling route.[17] Within the study area, the John Muir Way follows the alignment of NCN76 (see Section 5.1.1) along the coast between Prestonpans and Musselburgh. Within Musselburgh, the route runs along the Promenade, Edinburgh Road, and the Brunstane Burn Walkway, before reaching Brunstane.

[17] Johnmuirway.org. (2018). *John Muir Way | Coast to Coast*. [online] Available at: http://johnmuirway.org/ [Accessed 29 May 2018].

Figure 5-4: John Muir Way Signage in Levenhall Links

Figure 5-5: John Muir Way Signage, North-east of Musselburgh

Source: http://www.geograph.org.uk/photo/3393839

5.1.3 City of Edinburgh QuietRoute 10

The City of Edinburgh Council's QuietRoute 10 connects Leith and Portobello, primarily along off-road paths. The route is located to the north-west of the study area, with the route terminating where Portobello Promenade meets the B6415 Joppa Road / Musselburgh Road.

Figure 5-6: East End of Portobello Promenade

Source: http://www.geograph.org.uk/photo/4100614

Figure 5-7: Portobello Promenade Looking East

Source: https://www.geograph.org.uk/photo/5023815

5.1.4 Regional Route

The Regional Route connects the A8 Glasgow Road at the City of Edinburgh Bypass and Musselburgh and is entirely on-road. Within the study area, the route approaches from the south-west, running along Old Dalkeith Road, through Danderhall, Millerhill, and Old Craighall, and then continuing on the B6415 through Monktonhall to Olive Bank Road.

Figure 5-8: Regional Route on B6415, near The Fairways

Figure 5-9: Regional Route on B6415, Looking South

5.1.5 The River Esk Walkway

The River Esk Walkway connects Cowpits Road and Station Road, and is entirely off-road. The route is located on the east / north side of the River Esk and follows the alignment of the river. The route is surfaced but is not lit.

Figure 5-10: River Esk Walkway

Figure 5-11: River Esk Walkway Signage

Source: https://en.wikipedia.org/wiki/File:Esk_sign.jpg

5.1.6 Core Paths

There are a number of core paths within the study area in all three local authority areas. The standard of these paths vary greatly, from being surfaced and lit paths in urban environments to being informal trodden paths in rural environments, and everything in-between.

Figure 5-12: Core Path 272, at Fisherrow Harbour

Figure 5-13: Core Path 170, North-west of Underpass under Railway Line

5.2 Existing Facilities

The existing facilities in the study area comprise the cycle routes described above, as well as the following:

- Advisory cycle lanes on Haddington Road;
- Advisory cycle lanes on Linkfield Road;
- Advisory cycle lanes on A199 Eastfield;
- Advisory cycle lane on Newcraighall Road;
- Advisory cycle lanes on the A7 Old Dalkeith Road; and
- Advanced Stop Lines (ASLs).

5.3 Collision Data Analysis

Collision data was obtained from www.cyclestreets.net, which uses STATS19 data from the Department for Transport. Data was analysed for the period between the 1st of January 2012 and the 31st of December 2016 (5 years).

5.3.1 General Collision Clusters

There are clusters of collisions at Sherriffhall Roundabout and the roundabout linking the City of Edinburgh Bypass to the A1. These are both very busy roundabouts, with high traffic throughput, linking roads with higher speed limits. Figure 5-15 shows that the majority of these collisions involved cars or other motor vehicles. Figure 5-14 demonstrates that the majority of casualties were classed as slight, although there were also a few serious casualties at each location.

Another cluster of collisions were recorded at the Bridge Street end of Musselburgh High Street, and also further along the A199 (Linkfield Road) leading up to the Millhill Junction, as well as along towards Fisherrow, on North High Street. These are central locations in Musselburgh, and there is a high level of traffic. Figure 5-15 shows that a high proportion of these collisions involved pedestrians. Due to the town centre location, there is likely to be a high level of pedestrian traffic, and an increased likelihood that people are going to attempt to cross the road. There may also be reduced visibility due to on-street parking. Figure 5-15 also shows that quite a high proportion of these casualties were on buses. This is likely to be due to the fact that a high proportion of local bus routes will pass through the town centre, and it is likely to be one of the busiest locations through which they pass. Figure 5-14 shows that the vast majority of these casualties were slight, with a small number of serious casualties. This is likely to be due to reduced speeds along this stretch of route.

There were a large number of collisions along the length of Newcraighall Road and onto Niddrie Road, including one fatality, as shown in Figure 5-14. This route is single carriageway, but carries a large number of vehicles, due to its proximity to Fort Kinnaird. There are also likely to be a large number of goods vehicles using this route to access the shops and, in line with this, Figure 5-15 shows a number of casualties involving the occupants of goods vehicles.

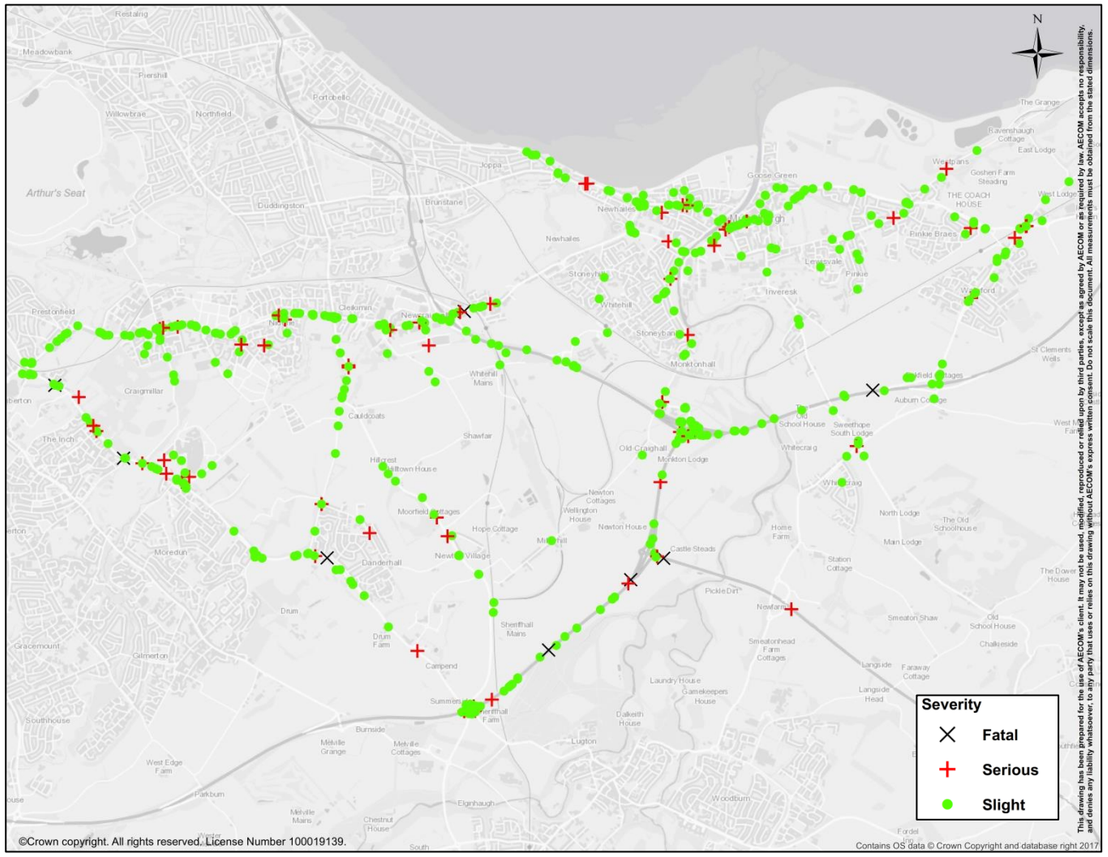


Figure 5-14: Collision Data by Severity

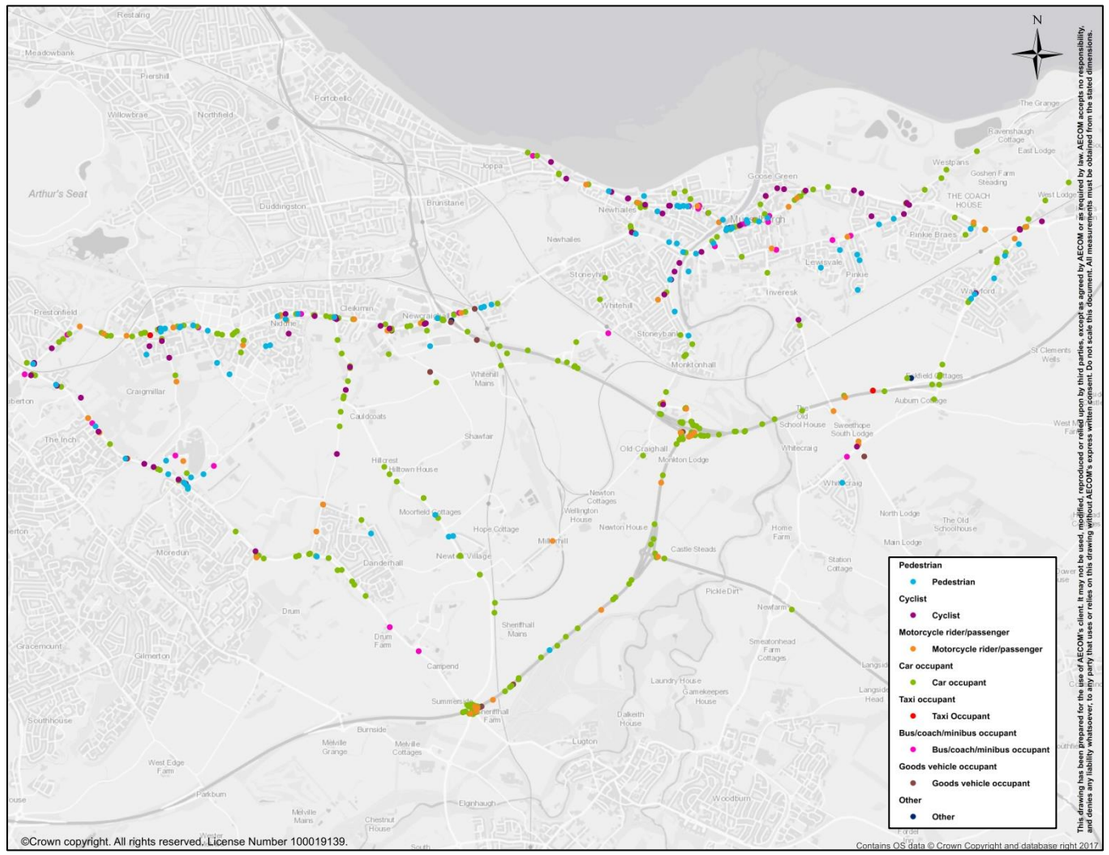


Figure 5-15: Collision Data by Vehicle Type of Injured Party

5.3.2 Pedestrian Collision Clusters

Figure 5-16 shows pedestrian collision clusters in Musselburgh High Street and Fisherrow, as previously identified.

There was also a large cluster of pedestrian casualties in the vicinity of Edinburgh Royal Infirmary. The junction of the A7 and Little France Drive is signalised and there are pedestrian crossings across two of the three arms, but there are likely a high number of pedestrian movements due to the proximity to the hospital. Additionally the access to the shared use path that leads to the John Muir Way and National Cycle Network routes 1 and 76 is located on the north side of A7 north-westbound, and no crossing is provided at this location.

Another cluster of pedestrian collisions was observed at the junction of Craigmillar Castle Road with Peffermill Road, Duddingston Road West and Niddrie Mains Road. This is a signalised junction, with pedestrian crossings and islands in the road.

There were also a number of collisions involving pedestrians on Newcraighall Road near Niddrie Bowling club. This is a busy section of road, with quite narrow pavement on both sides of the road. It has traffic calming cushions in place, however there are no pedestrian crossings available nearby, so the road may be difficult to cross.

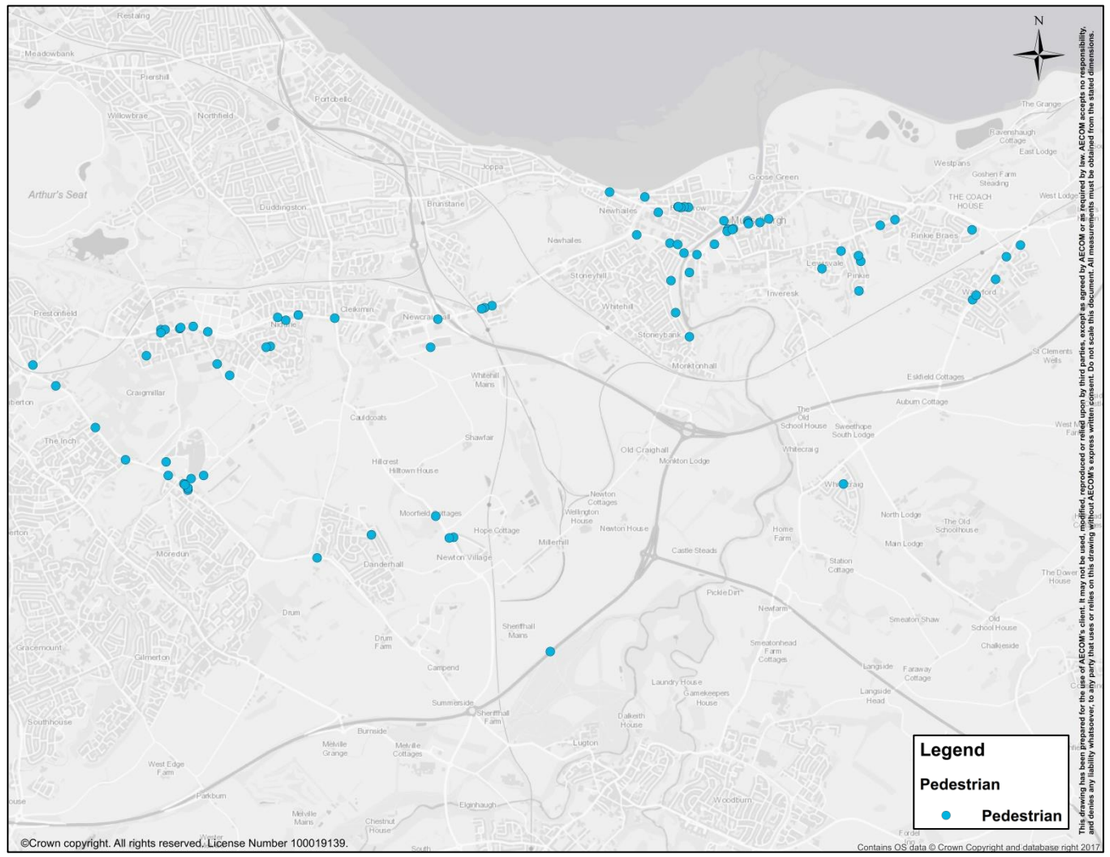


Figure 5-16: Pedestrian Collision Map

5.3.3 Cyclist Collision Clusters

Figure 5-17 shows that there were 3 collisions involving cyclists on Eskview Terrace, and one on Stoneybank Terrace close to the junction with Eskview Terrace. Eskview Terrace is a constrained, residential street, with on-street parking causing one side of the road to be narrower. It connects Musselburgh with the A1, The City of Edinburgh Bypass, Millerhill, Old Craighall and onwards toward Sheriffhall. The constrained width and the fact that there is a significant gradient could lead to conflicts between vehicles and cyclists.

There were a number of collisions involving cyclists along Old Dalkeith Road between Cameron Toll and Edinburgh Royal Infirmary. There are advisory cycle lanes along this route, however these are narrow in place, are not provided along the entire length of the road and it is understood that vehicles park along the kerbline in some sections, restricting use of the cycle lane. One side of the road becomes a bus, bike and taxi lane during peak hours (7.30am-9.30am and 4pm-6.30pm), however outside these hours, there is no marked cycle lane for this section of route.

There were 7 collisions involving cyclists on the A199 between Milton Road East and Lochend Road South. This is a busy road and is a bus route. There is on-street parking along the kerbline at various points and there are bus stops on both sides of the road along its entire length. West of New Street, the A199 is wide and there are advisory cycle lanes

11 collisions took place along the A6095 (Peffermill Road / Niddrie Mains Road / Newcraighall Road), between Cameron Toll Roundabout and Fort Kinnaird, or on side roads adjacent to the A6095. The majority of these collisions took place at junctions, including the roundabouts that provide access to Fort Kinnaird, the signalised junction with the A6106, the access to the Jack Kane Centre (priority junction), the priority junction with Niddrie Marischal Road, and the signalised junction with Duddingston

Road West / Craigmillar Castle Road. The A6095 carries a high volume of traffic and connects Cameron Toll, Fort Kinnaird, the A1 and the residential areas that lie to the north and south of the road.

3 collisions took place at Levenhall Roundabout, while another 3 took place at Wallyford Roundabout. Both of these roundabouts are large, 4 arm roundabouts, with limited or no provision of cycle infrastructure.

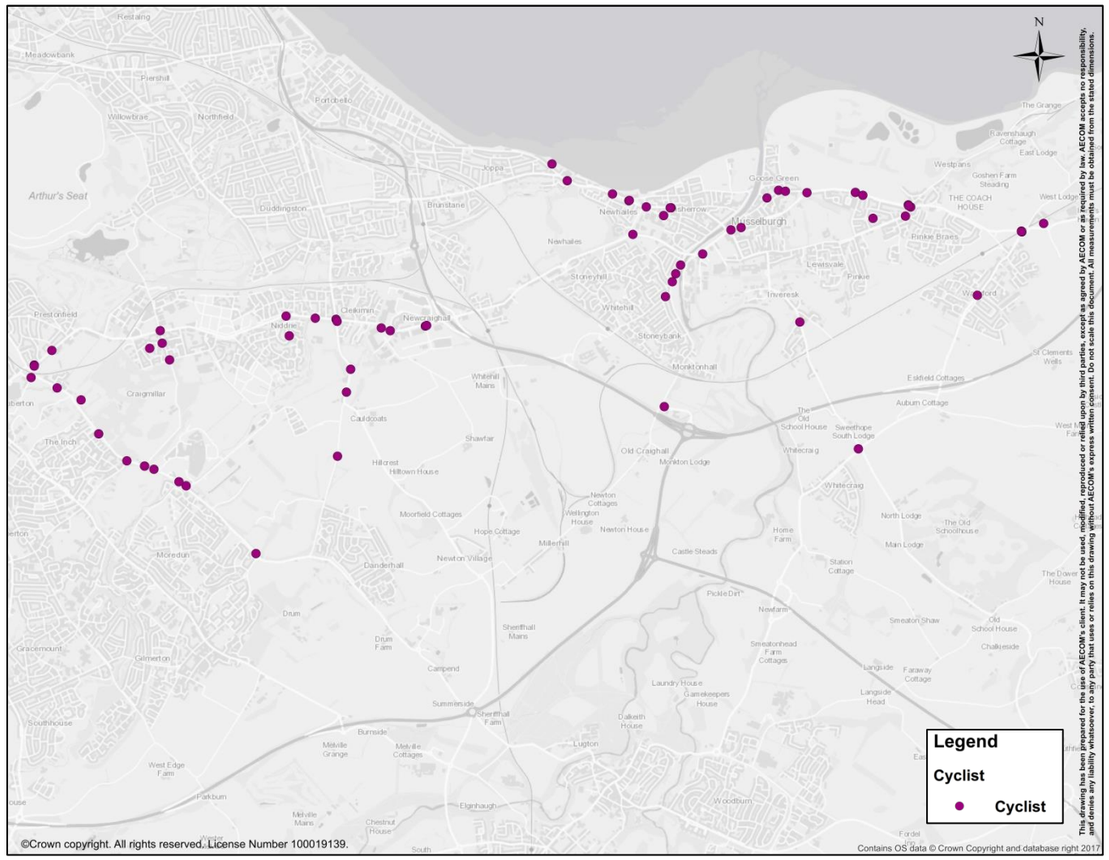


Figure 5-17: Cyclist Collision Map

01 Musselburgh High Street at War Memorial

6. Opportunities and Constraints

Whilst there are a significant opportunities within the study area, there are also associated constraints. These are detailed in the following six sections.

6.1 Developments

There are a number of developments in the study area. The primary developments within Musselburgh and East Lothian are as follows:

- Pinkie Mains (450 homes);
- Craighall (1,500 homes);
- Wallyford (1,450 homes); and
- Whitecraig North and South (500 homes).

Within the City of Edinburgh Council area, there are the following large developments:

- Brunstane (950 – 1,330 homes);
- Niddrie Mains (814 homes),
- Greendykes (2013 homes, across the Greendykes Road, Greendykes, and New Greendykes developments); and
- Newcraighall (495-905 homes, across the Newcraighall North and East developments).

Finally, within the Midlothian local authority area, the South East Edinburgh Strategic Development Area contains a number of developments, with land allocations for 4,000 houses, 23.5 hectares of employment land, and a new town centre.

The number of developments within the study area represent a key opportunity for implementing infrastructure. Whilst some of the developments are already under construction, there are a number that are at the early stages of the planning process. Designing routes that are ready to be constructed allows the local authorities to implement routes using developer funding or by integrating them into the development.

6.2 Flood Protection Works

It is understood that Jacobs (CH2M Hill) are currently undertaking a study investigating flood protection works in Musselburgh for ELC. Outputs of the study are not expected until the end of 2018. This project represents an opportunity to implement active travel infrastructure in the vicinity of the River Esk, which is a key corridor for people walking and cycling, as well as along the coast line. It is recommended that the project team investigating the flood protection works are informed of the outputs of this study and that these are integrated with their study, where appropriate.

6.3 Statutory and Non-Statutory Designated Sites

A review of designated sites using the Registers of Scotland identified a mixed Site of Special Scientific Interest covering much of the Firth of Forth coastline (7423 hectares) including Lothian and Musselburgh. The SSSI is also classified as a Special Protection Area under the European Wild Birds Directive and designated as a Ramsar Wetland of International Importance. Further environmental considerations are presented in sections 9 to 17, which are relevant to each route.

6.4 Tree Preservation Orders

There are a number of tree preservation orders with the City of Edinburgh Council area. These are shown in Figure 6-1.

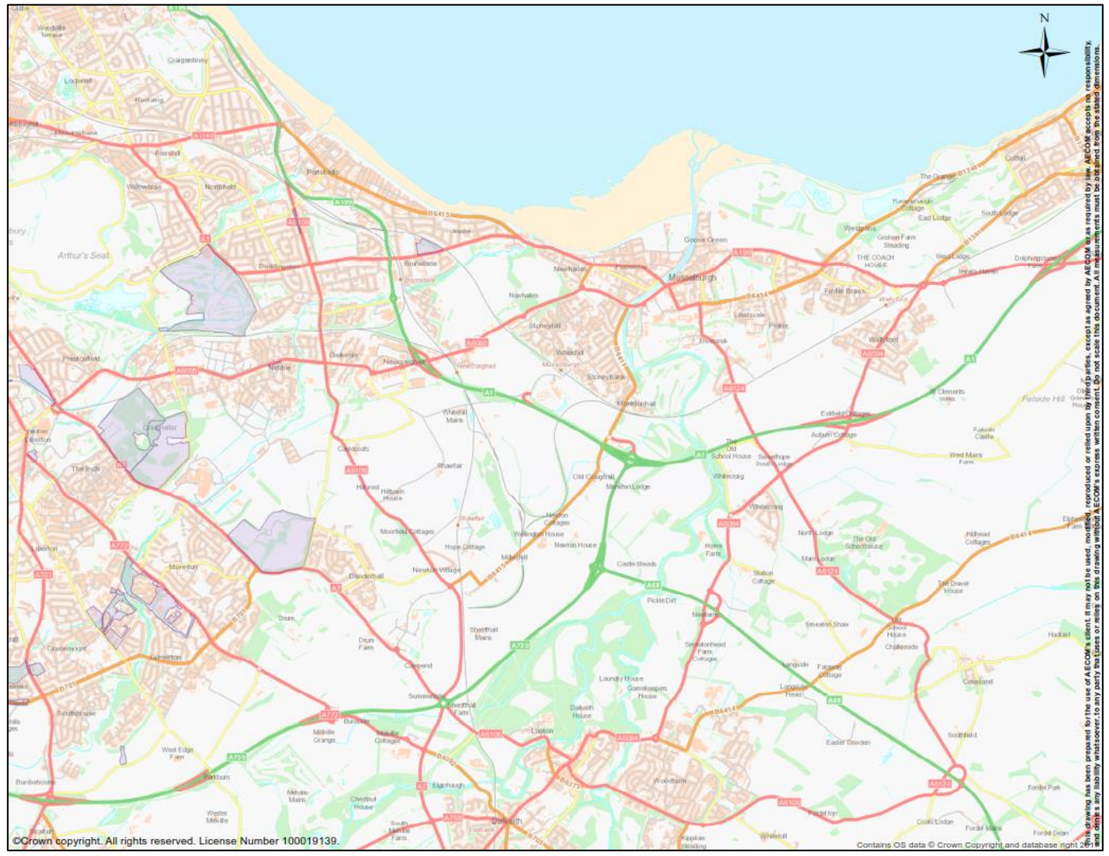


Figure 6-1: City of Edinburgh Council - Tree Preservation Orders

6.5 Water Bodies and Flood Risk

Using the SEPA flood risk map, a number of locations in the Study Area have been identified as having varying levels of flood likelihood due to river, surface water or coastal risks.

The stretch of coast within the Study Area from Prestonpans to Portobello beach is at high risk of coastal flooding, as shown in Figure 6-2.

There are several areas which are at risk of surface water flooding, notably Wallyford Roundabout and the area around Cowpits Road, as well as at Newcraighall near QMU and Musselburgh rail station, as shown in Figure 6-2. The area surrounding Sheriffhall Park & Ride is also at high risk of surface flooding, as is the area where Carberry Road passes over the A1, as shown in Figure 6-3. There is also an area of high risk for surface water flooding between Danderhall and Millerhill, to the north of The City of Edinburgh Bypass, and also around the Edinburgh Royal Infirmary, as shown in Figure 6-4.

The main risk of river flooding comes from the River Esk as shown in Figure 6-2, but there is also high risk at the Ash Lagoon and to the west of Craigmillar (due to Figgate Pond, Figgate Burn, Dunsapie Loch, Hunter's Bog, Duddingston Loch and St Margaret's Loch), as well as to the south of Craigmillar (due to Burdiehouse Burn and Niddrie Burn) as shown in Figure 6-4.

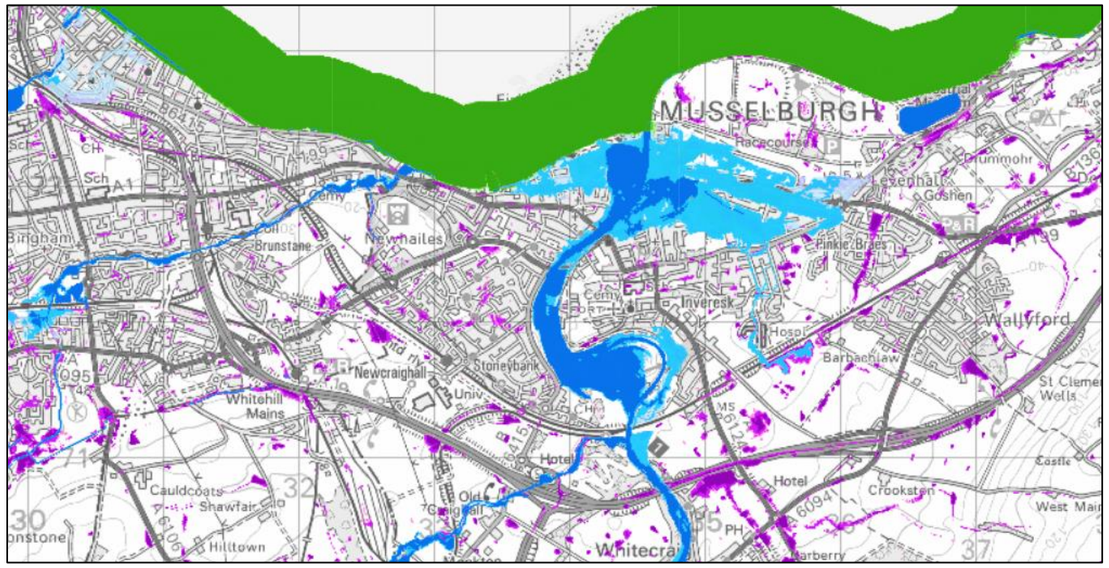


Figure 6-2: SEPA Flood Risk Map Musselburgh Area

Source: http://map.sepa.org.uk/floodmap/map.htm

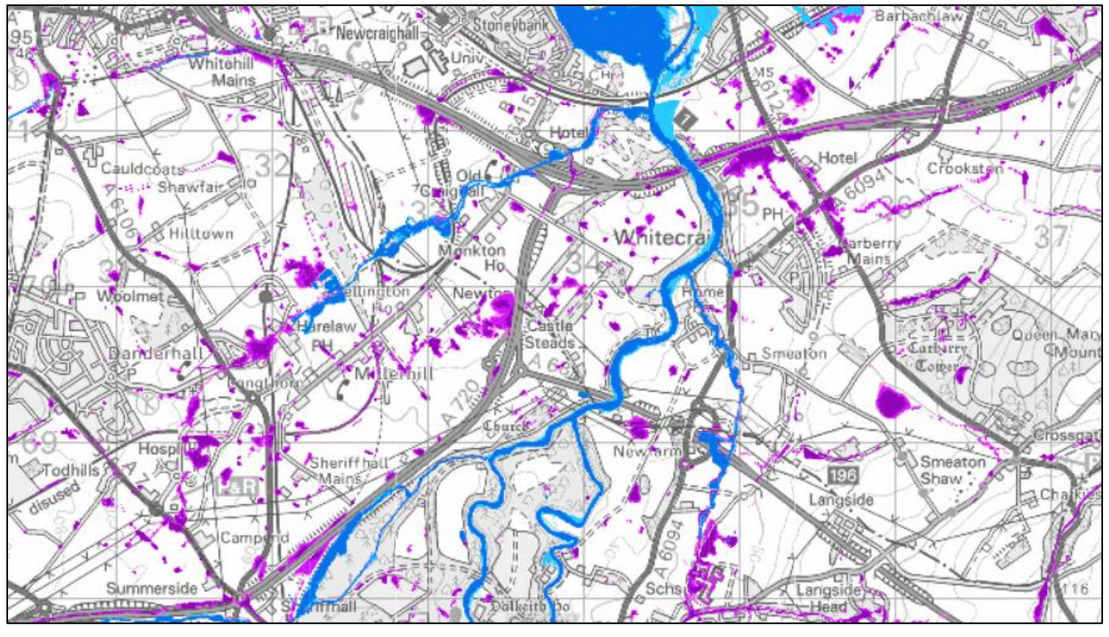


Figure 6-3: SEPA Flood Risk Map Whitecraig Area

Source: http://map.sepa.org.uk/floodmap/map.htm

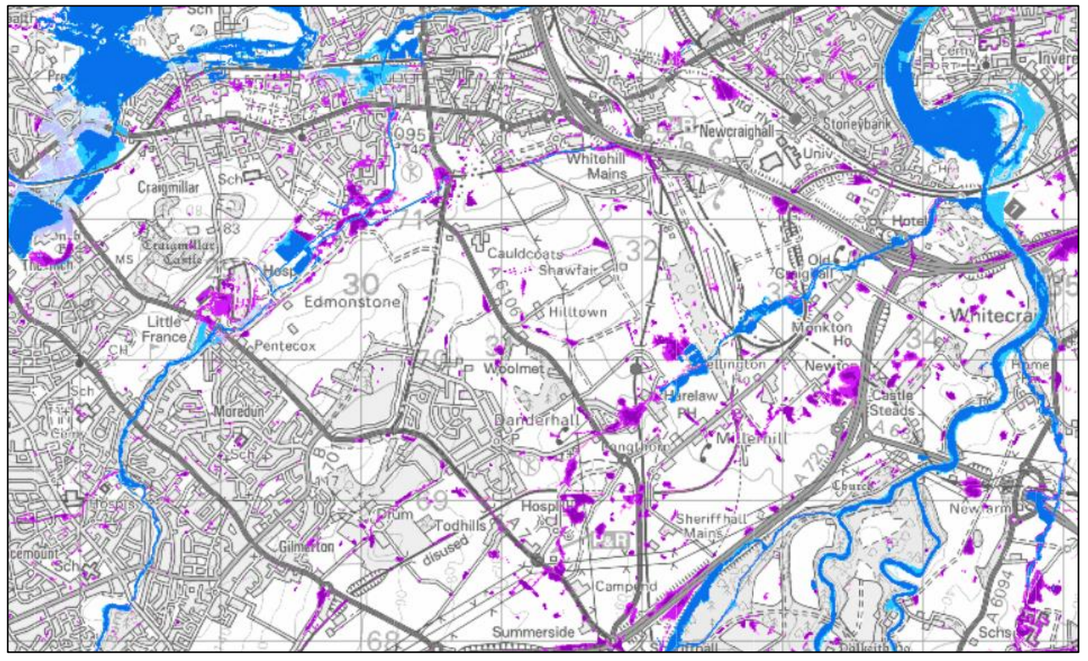


Figure 6-4: SEPA Flood Risk Map Newcraighall Area

Source: http://map.sepa.org.uk/floodmap/map.htm

6.6 Conservation Areas

The conservation areas within the study area comprise the following:

- Musselburgh conservation area (East Lothian);
- Inveresk conservation area (East Lothian); and
- Thistle Foundation (City of Edinburgh).

These are shown graphically in Figure 6-5. The Thistle Foundation is a “unique development of specially adapted housing with integrated streetscapes linked to public buildings that serve the special needs of the tenants”.[18]

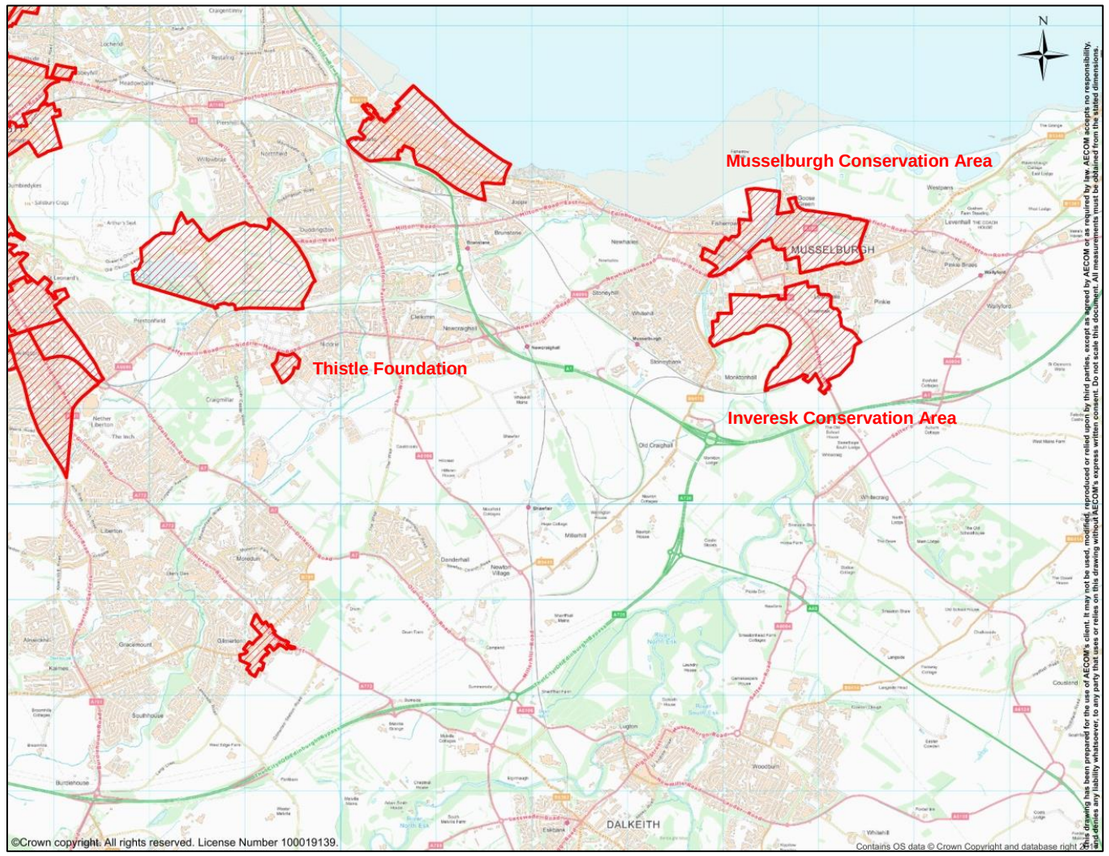


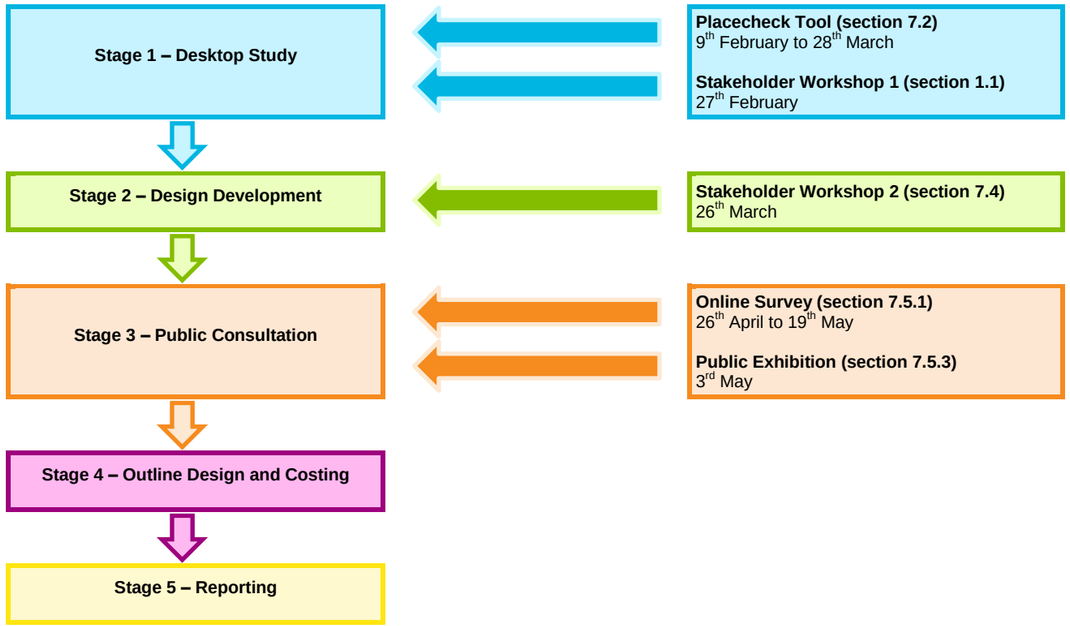
Figure 6-5: Conservation Areas

01 National Cycle Network Routes 1 and 76 at Queen Margaret University

[18] Edinburgh.gov.uk. (2018). *Conservation Area Character Appraisals - Thistle Foundation conservation area | The City of Edinburgh Council*. [online] Available at: https://www.edinburgh.gov.uk/directory_record/377060/thistle_foundation_conservation_area [Accessed 30 May 2018].

7. Consultation and Engagement

In the following 5 sections details of the consultation and engagements that took place are presented. The consultation and engagement timeline was as follows:



7.1 VOiCE

Visioning Outcomes in Community Engagement (VOiCE) is a piece of software that is used to design and deliver effective community engagement, which was developed and supported by the Scottish Government. It is split into four sections (analyse, plan, do and review), and allows users to analyse:

- What engagement is being (and has been) conducted;
- What issues and needs the engagement needs to address;
- Where the engagement is happening;
- Who is involved in the engagement;
- Who is not involved in the engagement that could be; and
- What has been effective, and what has been ineffective.[19]

VOiCE was used to develop the engagement for the Future Proofing Musselburgh's Infrastructure for Sustainable Modes of Travel project. This was shared and discussed with East Lothian Council, to ensure that the community engagement was as effective as possible.

7.2 Placecheck

A Placecheck tool was implemented online, allowing people to tag locations on a map of the network with comments identifying “Things I like”, “Things I don’t like” and “Things we need to work on”. A total of 237comments were received.

Responses were grouped by theme, and clusters of comments in the same area were analysed.

[19] Voicescotland.org.uk. (2018). *VOiCE*. [online] Available at: http://www.voicescotland.org.uk/voice/ [Accessed 23 May 2018].

Clusters of comments were identified at the following locations:

1. Footbridge / Electric Bridge (at New Street / James Street);
2. Inveresk Road;
3. Edinburgh Road / Maitland Park Road;
4. Eastfield Road / Milton Road;
5. Bridge Street / High Street (Junction);
6. Pinkie Road;
7. A1 (Queen Margaret University); and
8. High Street.

A map of the locations of the comments that were provided is shown in Figure 7-1.

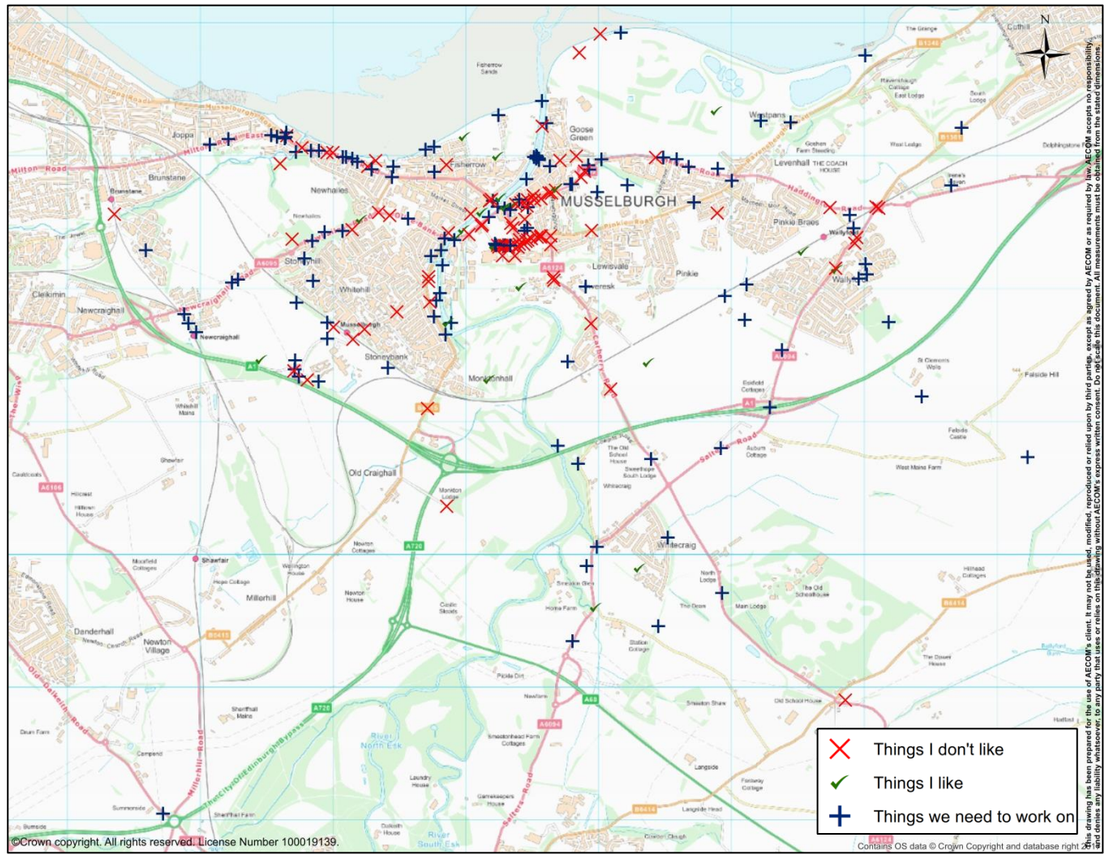


Figure 7-1: Location of Placecheck Comments

A full list of the comments received is provided in Appendix B.

7.2.1 Key Themes

The following key themes were identified:

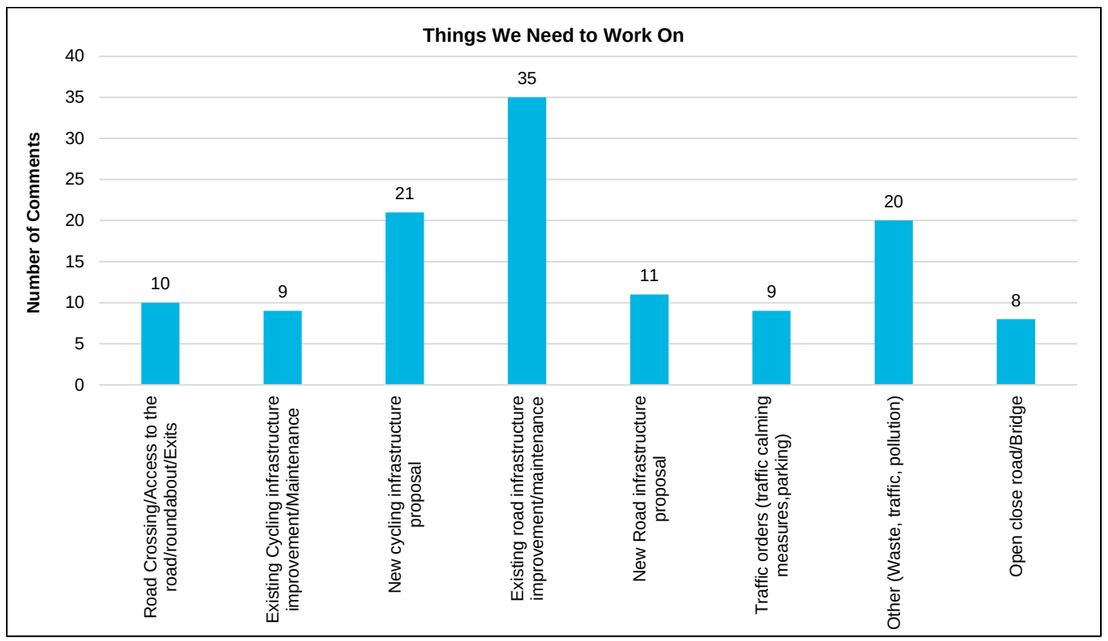


Figure 7-2: Placecheck Comments – Things We Need to Work On

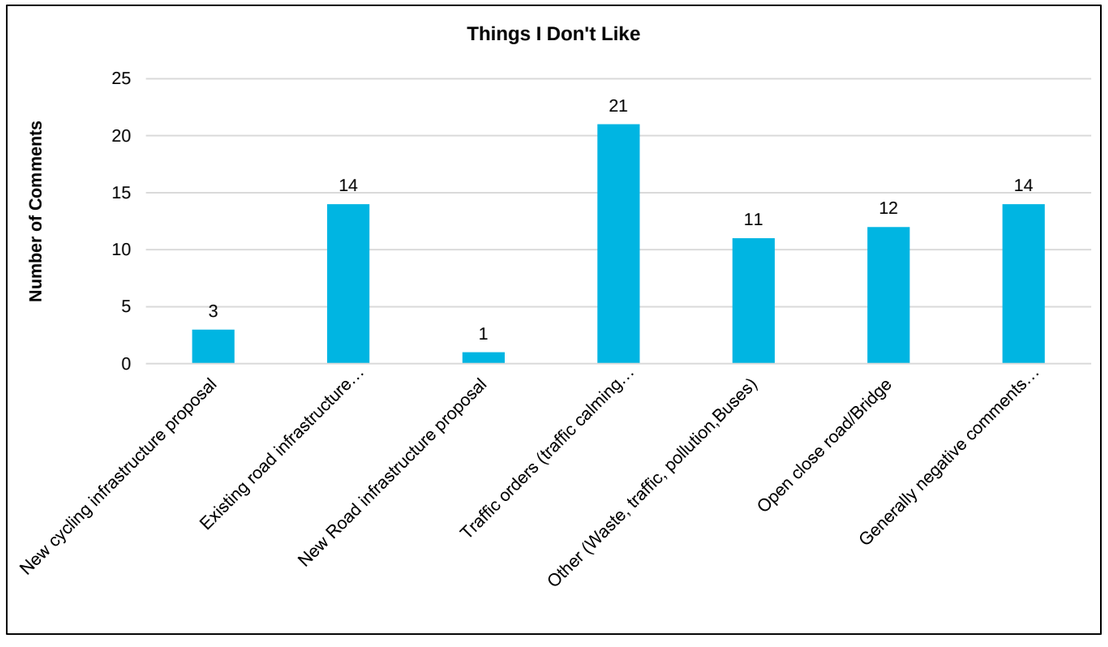


Figure 7-3: Placecheck Comments – Things I Don't Like

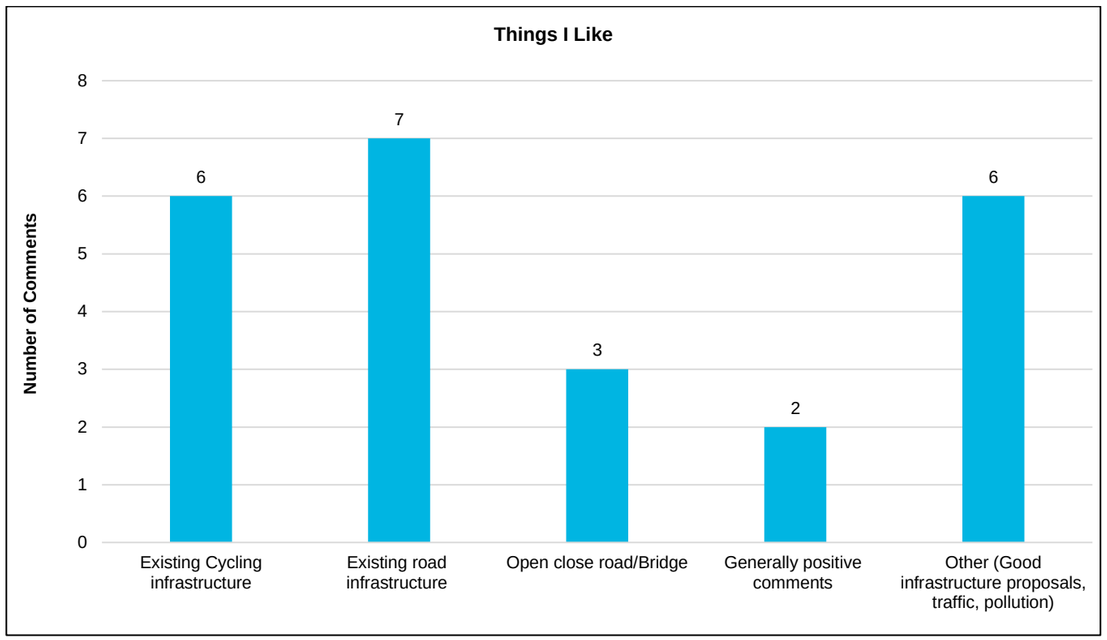


Figure 7-4: Placecheck Comments – Things I Like

7.2.2 Clusters

Clusters of responses were observed at the following locations, with themes identified as below:

1. Footbridge / Electric Bridge
   - Open access to "Electric Bridge" (4 comments).
2. Inveresk Road
   - Keep the west end of Inveresk Road closed (16 comments); and
   - Crossing unsafe (5 comments).
3. Edinburgh Road / Maitland Park Road
   - Segregated cycle lanes (3 comments).
4. Eastfield Road / Milton Road
   - Segregated cycle lanes (2 comments).
5. Bridge Street / High Street (Junction)
   - Shared use path needs widened (3 comments).
6. Pinkie Road
   - Traffic calming measures / speed reduction measures are required (3 comments); and
   - Junctions along the road are too wide and are a danger to pedestrians.
7. A1 (Queen Margaret University)
   - The slip road is unsafe (4 comments).
8. High Street
   - Improved walking / cycling infrastructure could / should be implemented (8 comments).

7.3 Stakeholder Workshop 1

A stakeholder workshop, comprising the project steering group, was held on 27 February 2018 to discuss the following points:

- The current objectives for the overall masterplan;
- The engagement plan & equality impact assessment;
- Mapping; and
- Key strategic routes and objectives for each of the areas.

The workshop was attended by the following attendees:

Name	Organisation	Name	Organisation
Paul Cameron	AECOM	Nadia Othman	East Lothian Council
Paul Matthews	AECOM	Iain Reid	East Lothian Council
William Prentice	AECOM	Grant Talac	East Lothian Council
Jamie Baker	East Lothian Council	Paul Zochowski	East Lothian Council
Stuart Baxter	East Lothian Council	Moira Nelson	SEStran
Peter Forsyth	East Lothian Council	Matthew Davis	Sustrans
Jennifer Lothian	East Lothian Council		

The key objectives of the workshop were to get consensus on the proposed engagement plan and on the proposed strategic routes. The following strategic routes were presented:

1. Town Centre – Milton Road East to Millhill;
2. A199 and New Street;
3. Levenhall Links;
4. ELC Segregated Corridor – Wallyford Roundabout to Monktonhall;
5. Old Craighall to Musselburgh town centre; and
6. Newcraighall to Musselburgh town centre.

There was consensus that these strategic routes were those that should be progressed. It should be noted that at this stage, the extension of the study area into Edinburgh and Midlothian was still being finalised.

7.4 Stakeholder Workshop 2

A second stakeholder workshop was held on Monday 26 March from 10:00 to 14:00 in the Regent Room at Brunton Hall, Musselburgh. The workshop comprised the appraisal of 7 strategic routes / areas that were initially proposed:

1. Town Centre – A199 / Millhill to A199 / Milton Rd East;
2. A199 / B6454 / Ravensheugh Rd to A199 / New St Corridor;
3. Levenhall Links and Coastal Path;
4. ELC Segregated Corridor – A199 / B1361 / Salters Rd to Inveresk;
5. Old Craighall to Town Centre;
6. Newcraighall to Town Centre; and
7. Shawfair development wedge.

The workshop was attended by the following attendees:

Name	Organisation	Name	Organisation
Paul Cameron	AECOM	Paul Zochowski	East Lothian Council
Paul Matthews	AECOM	Paul Ince	East Lothian Cycle Forum
William Prentice	AECOM	James Wyllie	East Lothian Local Access Forum
Martyn Lings	The City of Edinburgh Council	Robin Wickes	Edinburgh Access Panel
Jamie Baker	East Lothian Council	Elizabeth Ramsden	Musselburgh & Inveresk Community Council
Stuart Currie	East Lothian Council	Anna Potter	Musselburgh Active Schools Primary
Peter Forsyth	East Lothian Council	Vivienne Gray	Scottish Natural Heritage
Jennifer Lothian	East Lothian Council	Euan Renton	Spokes
Iain Reid	East Lothian Council	Andrew Coulson	Spokes
Grant Talac	East Lothian Council	Tierney Lovell	Sustrans

Other stakeholders were invited to the workshop, but were unable to attend.

Facilitated group discussions took place to discuss each of these areas, during which attendees were given the chance to comment on the proposals and to appraise the identified options. The attendees listed in the table above were split into four groups, with staff from AECOM and East Lothian Council acting as facilitators. The groups were provided the opportunity to comment on each of the routes.

7.4.1 Key Points from Workshop Groups

Each of the routes was discussed in detail. A full list of comments is provided in Appendix C. the outcomes of these discussions associated with each of the routes are provided below:

1. Town Centre – A199 / Millhill to A199 / Milton Rd East

Of the options that were presented, route alignment Option 1B scored the highest – taking the route behind the Brunton Theatre and using the existing bridge over the Esk (illustrated by the purple line in Figure 7-5).

Other points that were raised included:

- Cycle priority / early release at the Caprice junction was mentioned as being attractive to cyclists.
- Closing Shorthope Street to vehicles and redetermining it was mentioned as being favourable.
- Possible budgetary constraints relating to the construction of any new bridge across the River Esk were raised.
- A desire to see enhanced urban realm was mentioned.
- Segregation between all modes was mentioned as being important.
- The possibility of providing cycle rental and cycle parking was raised.

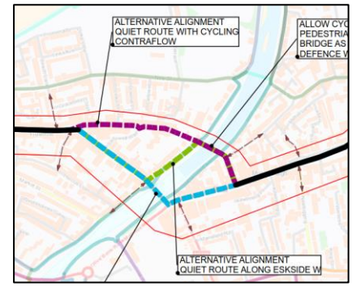


Figure 7-5: Route 1 - Options for Alignment

2. A199 / B6454 / Ravensheugh Rd to A199 / New St Corridor

Opening the "Electricity Bridge" for cyclists was mentioned as being desirable. Other points that were raised included:

- Segregation – 2-way segregation on one side of the road was mentioned as being the preferred solution for segregation on the A199, and questions were raised as to how bus stops would be incorporated into the design;
- Roundabouts – The option of segregation at roundabouts was mentioned as being attractive, and it was stated that solutions should be at-grade; and
- New Street – There was not consensus as to whether New Street feels safe for cycling in its current state.

3. Levenhall Links, Coastal Path and Ash Lagoons

All groups consulted were in favour of upgrading and formalising the existing network in this area and agreed it offered a good opportunity for commuters, as well as leisure cyclists. Two key points that were raised were:

- The location of the proposed bridge would need to consider areas of wading birds; and
- Any lighting options would need to take cognisance of the local wildlife and may be restricted.

4. ELC Segregated Corridor – A199 / B1361 / Salters Rd to Inveresk

Of the options that were presented, Option 4A and 4C scored the highest (the blue and orange lines in Figure 7-6).

Option 4A runs along the north side of the railway line, while Option 4C runs along Crookston Road, Wedderburn Terrace and the informal path connecting Wedderburn Terrace and the River Esk.

Option 4A was considered to be more attractive, comfortable, direct and deliverable than Option 4B, while Option 4C was considered to be more adaptable, attractive, coherent, direct and deliverable than Option 4D.

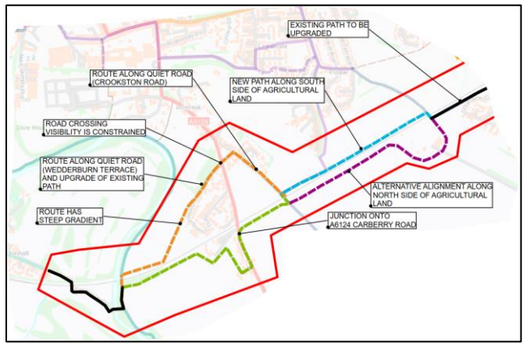


Figure 7-6: Route 4 - Options for Alignment

5. Old Craighall to Town Centre

The provision of a link into Musselburgh railway station was highlighted as being important, with utilisation of Stoneybank Terrace and Whitehill Farm Road being potential options.

There was generally a consensus that a route down Monktonhall Terrace and Eskview Terrace would be very challenging to implement due to the residents parking, topography and available road width. The route that proposed a new alignment over the River Esk was seen as being more attractive.

6. Newcraighall to Town Centre

The alignment of National Cycle Network routes 1 and 76 was identified as being too narrow in some locations, particularly the link through Newcraighall Public Park.

Of those who expressed an opinion, attendees preferred shared use footways without white line segregation. Regarding the Connection to Newcraighall railway station from NCN 1 and 76, there was consensus that a tunnel / underpass would be preferable to an on-road route, and that this should be investigated. Additionally, there was consensus that a link to Fort Kinnaird would be beneficial and attractive.

7. Shawfair Development Wedge

The requirement for a strategic link between Old Craighall / Queen Margaret University and the railway stations to Edinburgh Royal Infirmary was identified. It was agreed that a suitable crossing (bridge / underpass) would be investigated and a route alignment proposed. Consideration was to be given to using the existing road bridge at Whitehill Mains.

There was agreement that links to Sheriffhall is important for linking to Midlothian and Dalkeith. Wider links via Dalkeith Country Park are outside the scope of this study.

It was agreed that the Niddrie Mains Road corridor is important as it links to National Cycle Network route into Edinburgh city centre. Niddrie Mains Road is a popular bus corridor with heavy traffic, which should be considered at next stage.

A new road is being considered to bypass the Old Craighall centre that may create opportunities. This will be investigated.

More information was to be gathered and assessed on the land-use proposed for Shawfair. Key questions such were asked such as "Does Shawfair have a town centre?" and "Where are the key trip attractors in this area?". This information will be considered in recommending a new strategic route.

A new bus route proposed within the Old Craighall development wedge was highlighted as potentially creating opportunities. This is to be investigated further.

7.4.2 General Comments

Some general comments were provided over the course of the workshop, which are listed below:

- The possibility of having development briefs available to view for the public consultation was mentioned;
- The need to provide a link from the development areas in Wallyford to Musselburgh town centre was mentioned. It was suggested that the route could connect under the railway through Pinkie, Pinkie playing fields and "Loretto Corner" to S Luca. The alignment is shown in the figure on the right;
- The importance of providing connections across the strategic routes was stated; and
- A potential improvement to the method of appraising routes was mentioned, with scores being weighted according to their importance, e.g. safety and deliverability being two of the more important criteria.

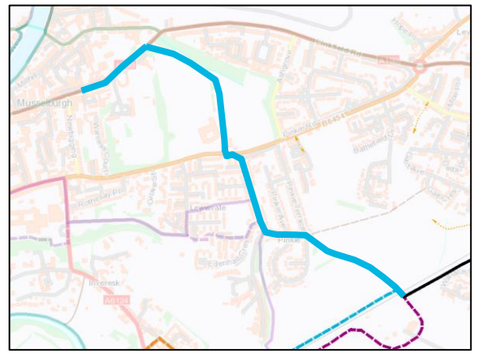


Figure 7-7: Suggested Route Alignment – Musselburgh Town Centre to Wallyford Development Areas

7.5 Public Consultation

Leaflets were produced to inform the public of an online survey and a public exhibition. These leaflets were distributed to residents and businesses in and around Musselburgh, in addition to being placed in The Brunton theatre and displayed online. The purposes of this was to raise awareness of the public consultation taking place, particularly the public exhibition and online survey.

A dedicated email address, MusselburghCycle.uki@aecom.com, was set up in order that additional comments could be captured.

7.5.2 Online Survey

The online survey was opened at http://www.eastlothianconsultations.co.uk.

A five point response system was used, shown in Table 7-1.

Table 7-1: Level of Support

Strongly oppose	Oppose	Neither support nor oppose	Support	Strongly support

The following questions were asked:

1) To what extent do you support the aim of improving conditions for people cycling in Musselburgh and into Edinburgh and Midlothian?
2) To what extent do you support the aim of improving conditions for people walking in Musselburgh and into Edinburgh and Midlothian?
3) To what extent do you support Masterplan's proposed network of key Strategic Routes?
4) Do you feel any other key Strategic Routes should be considered as part of the Masterplan?
5) Please provide comment:
6) To what extent do you support the proposals for improving walking and cycling conditions in the town centre, between Milton Road East and Millhill?
7) To what extent do you support the proposals for improving walking and cycling conditions along the A199, between Wallyford Roundabout and New Street?
8) To what extent do you support the proposals for improving walking and cycling conditions through Levenhall Links?
9) To what extent do you support the proposals for improving walking and cycling conditions between Wallyford Roundabout and Monktonhall?
10) To what extent do you support the proposals for improving walking and cycling conditions between Old Craighall and Musselburgh town centre?
11) To what extent do you support the proposals for improving walking and cycling conditions between Fort Kinnaird and Musselburgh town centre?
12) To what extent do you support the proposals for improving walking and cycling conditions along Niddrie Mains Road, between Fort Kinnaird and Cameron Toll Roundabout?
13) To what extent do you support the proposals for improving walking and cycling conditions between Musselburgh and Edinburgh Royal Infirmary?
14) To what extent do you support the proposals for improving walking and cycling conditions between Shawfair and Sheriffhall?

Additional questions were asked in order to analyse the demographic of the respondents.

After each response, participants were also given the opportunity to provide additional comments.

A full list of the comments received is provided in Appendix E.

7.5.3 Public Exhibition

A public exhibition was held on Thursday 3rd May 2018 from 16:00 to 20:00. A proposal overview was displayed alongside individual route plans. In total, 80 people attended the event and engaged well, with positive discussions taking place around each of the routes and the initial proposals.

Figure 7-8: Public Exhibition at The Brunton, Musselburgh

A full list of the comments received during the public exhibition, both through the comments sheets that were distributed and comments on individual route maps (discussed further in sections 7.5.3.1 and 7.5.3.2 respectively), is provided in Appendix E.

7.5.3.1 Comment Sheets

Comment sheets were distributed to all attendees, asking "Do you support the proposed masterplan to improve walking and cycling in Musselburgh?" Tick box responses were requested using the same 5 point scale as in Table 7-1, with a box for general comments. Level of support is shown in Figure 7-9. 40 of the 80 event attendees completed comment sheets at the event, with others choosing to follow-up with the online questionnaire.

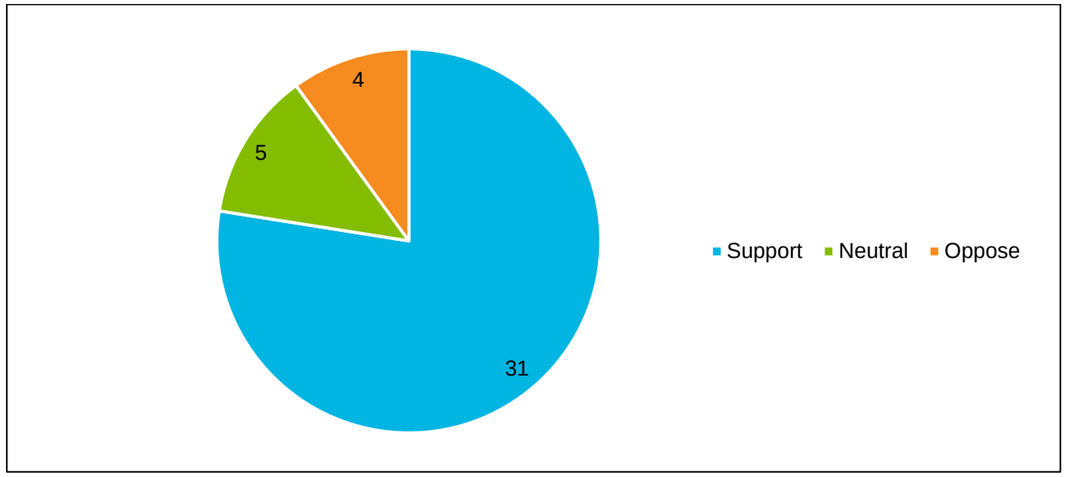


Figure 7-9: Support for Masterplan

Of the 40 respondents to the comment sheets, 31 (77.5%) supported the proposed masterplan and improvements for people walking and cycling.

The key themes identified from the comments are outlined in Table 7-2.

Table 7-2: Key Themes Identified from Comments

Theme Number	Theme	Number of Comments
1	Consider public transport	7
2	Need to manage traffic	5
3	Benefits/improves area	4
4	Limit car access to Musselburgh High Street	4
5	May cause bus delays	4

7.5.3.2 Route Comments

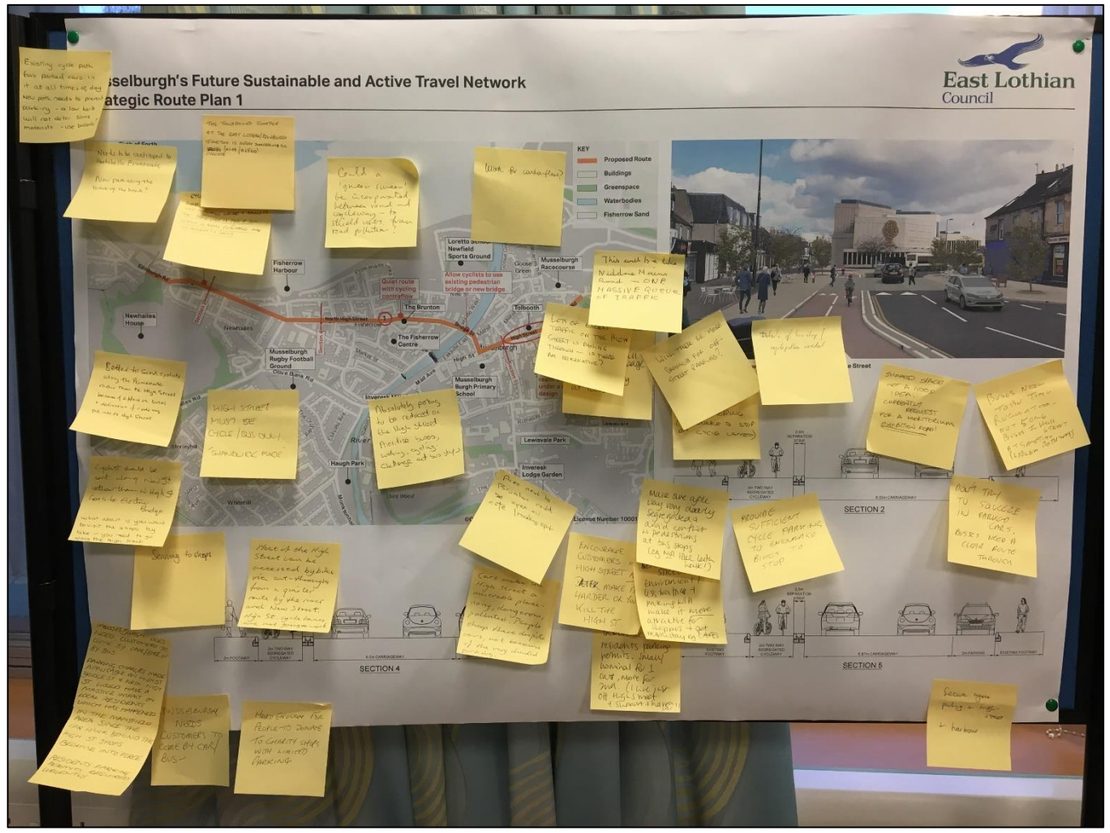


Figure 7-10: Route Comments at Public Forum

In addition to the general comment sheets, attendees were encouraged to provide feedback for individual routes using post-it notes stuck onto the route diagrams. Overall themes identified from the route comments are shown in Table 7-3 . Individual route comments are considered in more detail in Section 9 route chapters.

Table 7-3: Key Themes Identified from Comment Boards

Theme Number	Theme	Number of Comments
1	Consider buses	7
2	Safety	6
3	Improve coastal route/ ash lagoons	5
4	Traffic	5
5	Repair electric bridge	5

8. Masterplan Network Proposals

The overall Masterplan is shown in Figure 8-1, below:

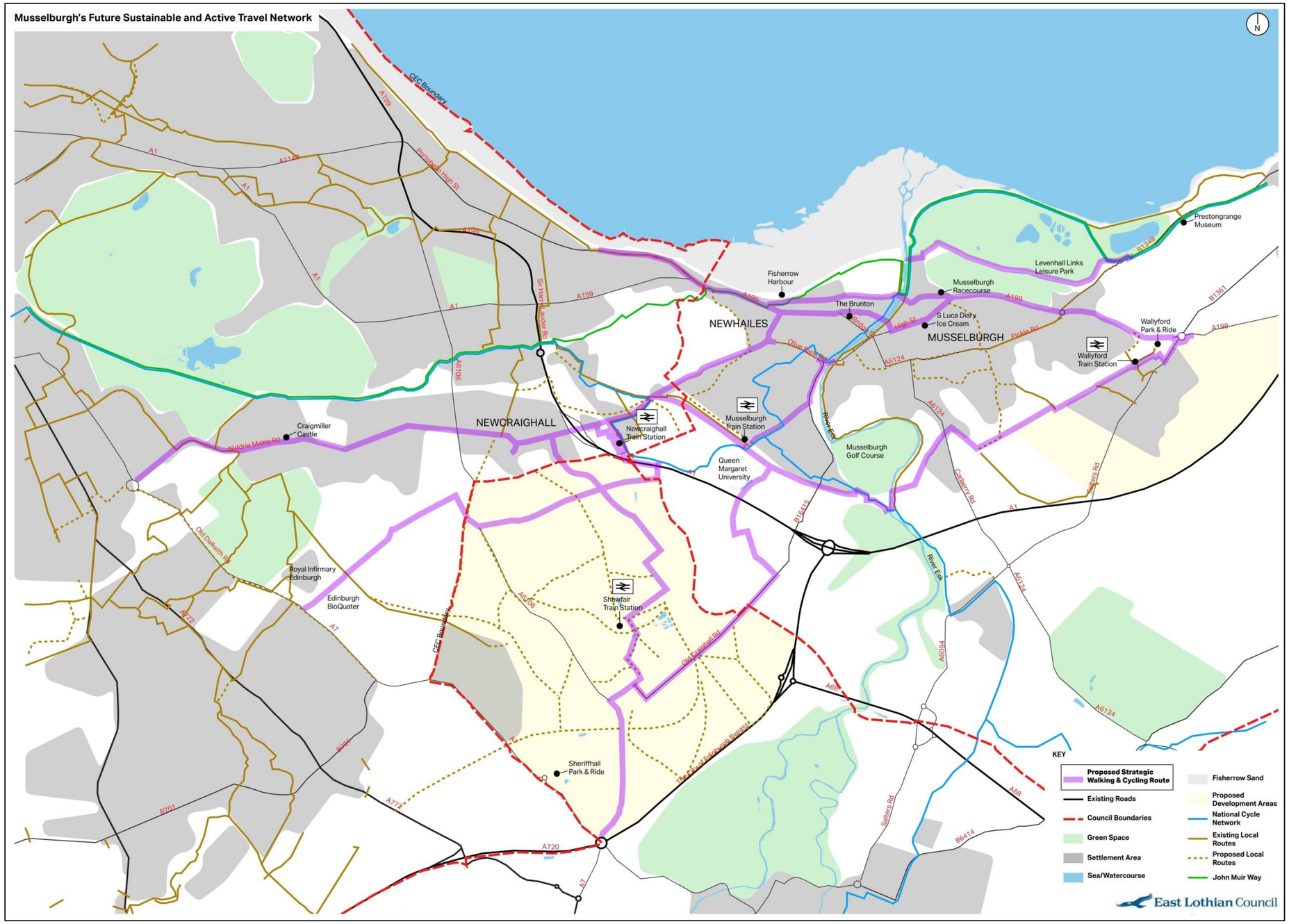


Figure 8-1: Proposed Masterplan

9. Route 1: Milton Road East to Millhill

9.1 Route Overview & Recommendations

A strategic corridor along the A199 between New Street and Millhill was identified, linking the A199 / Eastfield junction in the west with Musselburgh town centre, The Brunton, the High Street and the A199 / Millhill junction in the east.

Connecting through the town centre, this route offers great potential to transform the heart of Musselburgh and create a destination for people walking and cycling. Furthermore, a well-connected High Street will attract local people to use the amenities and create a more vibrant and prosperous town centre for businesses.

We know that the Linkfield Road, High Street and Edinburgh Road corridor is a main transport corridor from Edinburgh to East Lothian and that it is currently congested with traffic. With the planned developments in the area, treating this route as a high-quality sustainable transport corridor will be crucial in the success and prosperity of the town and its environment for future generations.

Early design work has established that a segregated cycle route could be provided along the majority of the road corridor on North High Street and Linkfield Road, which would provide a safe and well-connected route for everyday journeys, and also those across town such as commuting journeys. Additionally, town centre street-scape enhancements are proposed to give more priority to people walking and cycling. Initial engagement showed high levels of support for the route and initial designs.

9.1.1 Proposed Route

The proposed route is shown in Figure 9-1.

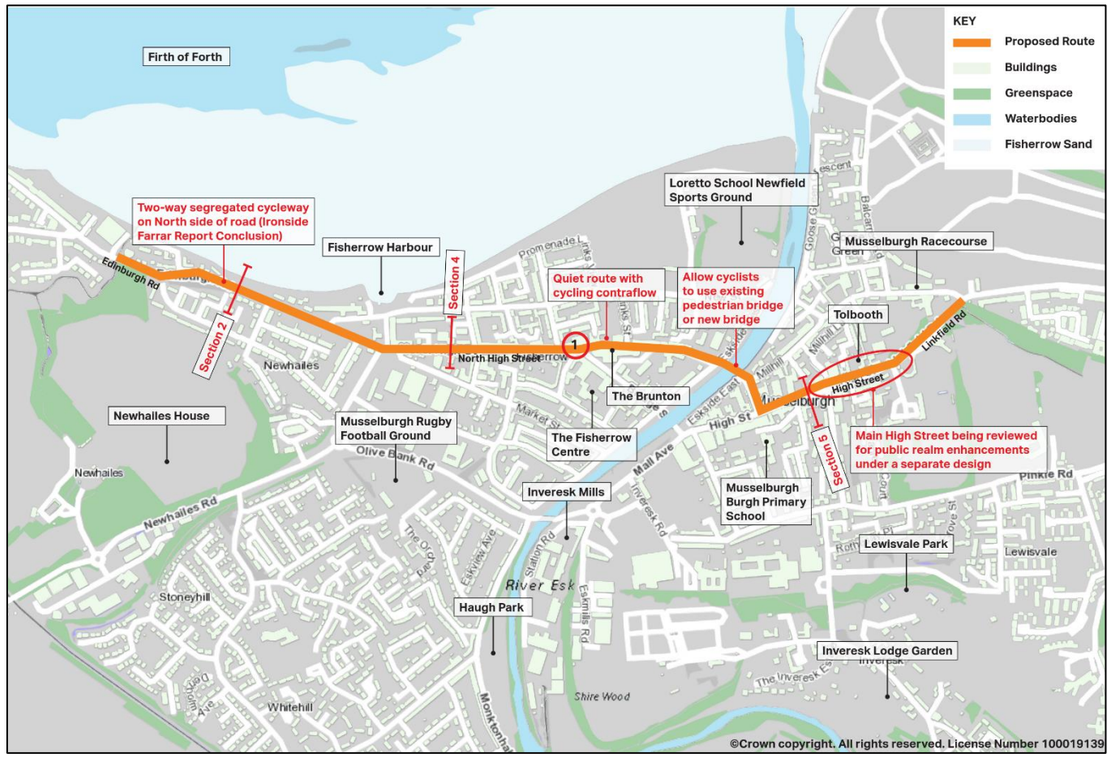


Figure 9-1: Design Proposals - Route 1

9.1.2 Indicative Route Design

The following indicative street layouts were selected for consultation and cost estimation. Various configurations which meet the design objectives were initially tested in the route corridor. These indicative layouts represent those which are considered most deliverable at this early stage.

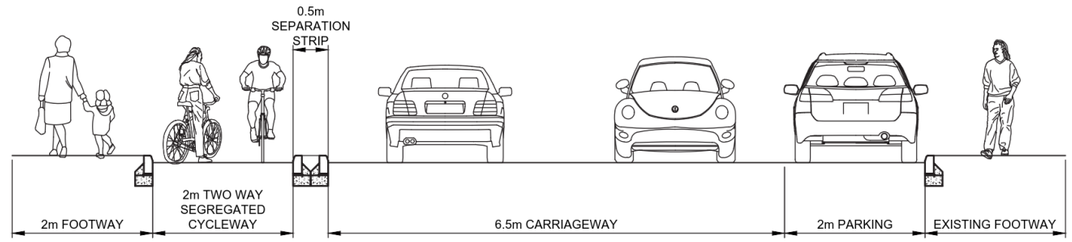


Figure 9-2: Cross Section Route 1 - North High Street, New Street to Brunton Hall

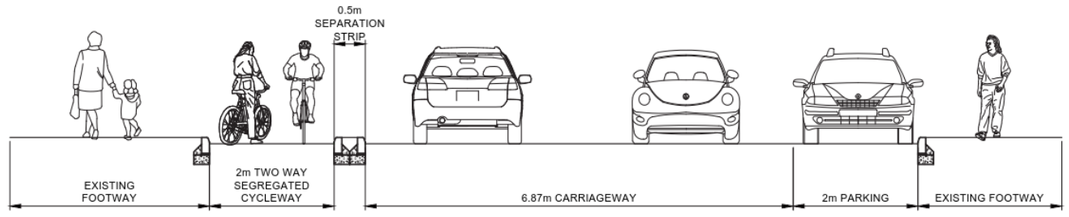


Figure 9-3: Cross Section Route 1 - High Street, Shorthope Street to Millhill

9.1.3 Cost Estimate Summary

A cost estimate is provided in Table 9-1 below. A 'low', 'medium' and 'high' cost has been provided, based on the standard of the intervention. Further detail regarding the costings is provided in section 9.5.3.

Table 9-1: Cost Estimate Summary – Route 1

Route	Low Cost	Medium Cost	High Cost
1	£2,342,793.60	£4,290,642.00	£10,765,146.40

As shown in Table 9-2, the benefit cost ratio for Route 1 is less than 1, suggesting that this route provides poor value for money in line with WebTAG guidance.

However, a conservative approach to calculating benefits was taken, which excluded any benefits from journeys made to reach the new routes. Due to the numerous connections from the proposed network to other local and national active travel routes, the resulting benefits may be justifiably higher than has been assumed.

Additionally, an increased cyclist collision rate has been assumed, accounting for the fact that increased levels of cycling leads to increased probability of cycle related collisions. This equates to an economic disbenefit. However, the improved cycle infrastructure may actually lead to a decrease in the number of cycle collisions.

Table 9-2: Business Case Summary – Route 1

	Core Demand Scenario (and Medium Costs)						Sensitivity Demand Scenario (and Medium Costs)					
	Without GCP			With GCP			Without GCP			With GCP		
	PVB	PVC	BCR	PVB	PVC	BCR	PVB	PVC	BCR	PVB	PVC	BCR
Route 1	688	3,724	0.18	899	3,724	0.24	1,223	3,724	0.33	1,540	3,724	0.41

9.1.4 Recommendations

The key recommendations for the next stage of the route development include:

1. Early engagement with local residents and businesses to inform future designs;
2. Early engagement with bus companies to ensure integration with public transport;
3. Consider parking surveys and wider parking strategy which could present opportunities along route;
4. Early engagement with ELC Planning regarding Streetscape proposals and requirements; and
5. Determination as to whether new bridge is required and engage with Flood Prevention project.

9.2 Route Context

Figure 9-4 shows Strategic Route 1 in relation to other existing and proposed walking and cycling routes.

Route 1 passes through Musselburgh via North High Street and High Street onto Linkfield Road.

Strategic Route 1 partially follows the coastal route John Muir Way, before diverging along North High Street. This links the proposed strategic network into the popular leisure route.

Route 1 would also connect to Pinkie Road from Linkfield Road along a proposed local route past Pinkie Saint Peter's Primary School.

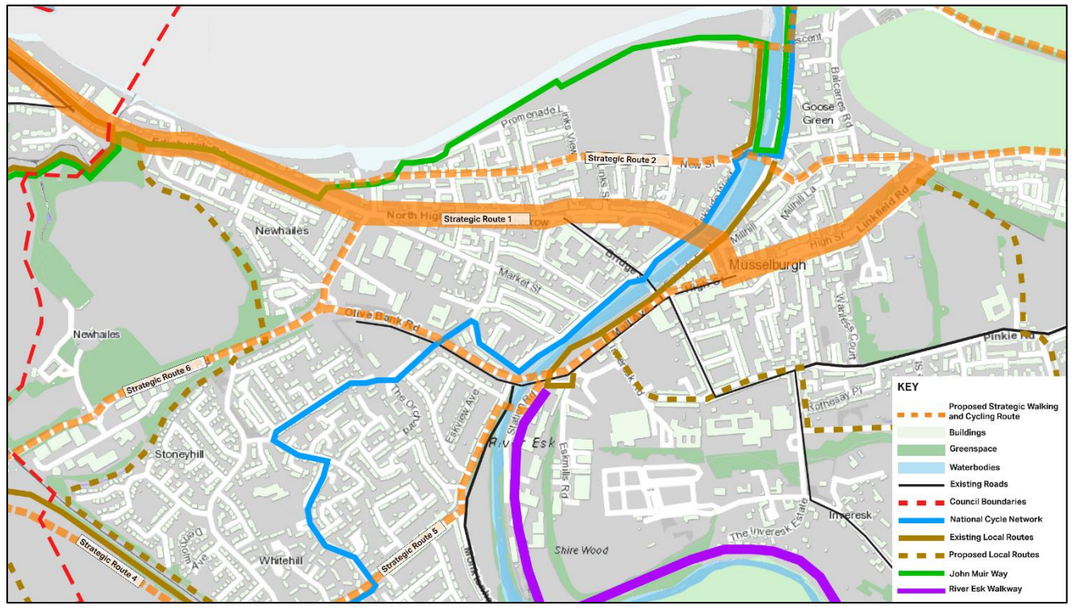


Figure 9-4: Context Plan – Route 1

9.3 Route Option Appraisal

The potential route alignments that were identified and presented to external stakeholders are shown in Figure 9-5.

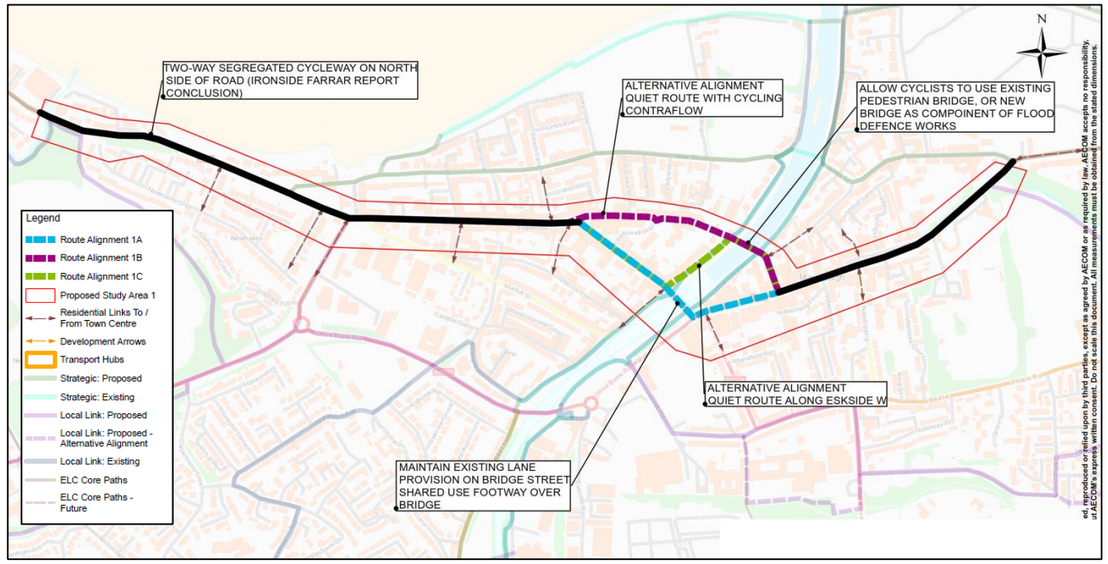


Figure 9-5: Route Alignments

The three identified route alignments are as follows (note that all routes are considered west to east):

- **Route Alignment 1A –** Bridge Street and High Street, with segregation on Bridge Street and a shared use footway over the bridge;
- **Route Alignment 1B –** North High Street and Shorthope Street, with a cycling contraflow on North High Street; and
- **Route Alignment 1C –** Bridge Street, Eskside West and Shorthope Street.

The three route options shown in Figure 9-5 above were appraised against the route planning objectives (Adaptability; Attractiveness; Coherence; Comfort; Directness; Safety and Deliverability) at Stakeholder Workshop 2. The scores that were assigned to each of the alignments by the four groups during the workshop were combined with the route option appraisal that was carried out by AECOM prior to the workshop. The averages of the 5 scores for each of the route planning objectives are shown in Table 9-3 and Figure 9-6.

Table 9-3: Route 1 Option Appraisal – Average Score

NAME	AVERAGE		
	Route 1A	Route 1B	Route 1C
Adaptability	7	8	7
Attractiveness	6	7	7
Coherence	8	8	6
Comfort	6	8	7
Directness	8	8	5
Safety	6	7	7
Deliverability:	6	9	7
TOTAL	**47**	**55**	**46**

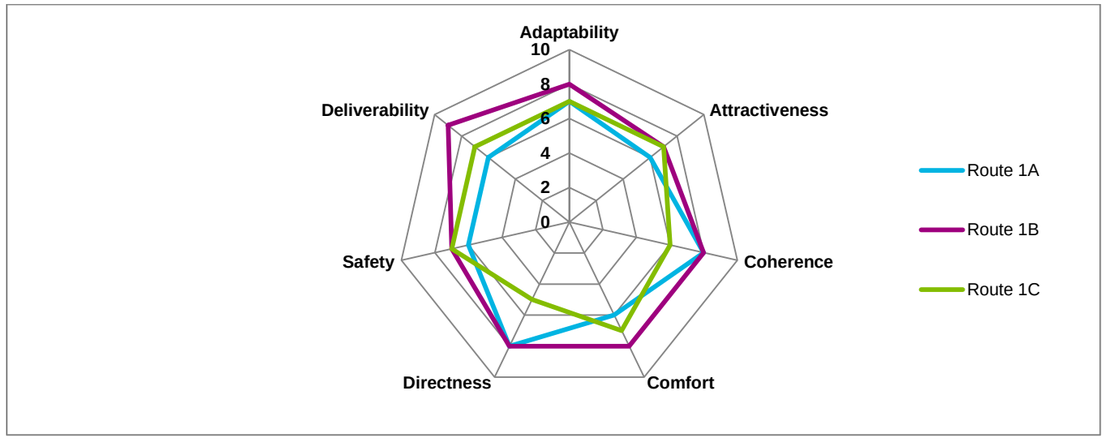


Figure 9-6: Route 1 Option Appraisal – Spider Diagram

As shown in Table 9-3 and Figure 9-6, the option that scored best was Route 1B.

The following points should be noted:

- The scoring for safety was given a range for each of the options (5-9, 7-9 and 7-9 for routes A, B and C respectively). For the purposes of calculating an average score, the mean value was used; and
- The scoring for adaptability for routes B and C were given scores depending on whether the existing bridge was replaced or whether the existing bridge was used. For the purposes of calculating an average score, it was assumed that the bridge would be replaced. It is worth noting that Route B would still be the option that scored highest even if the existing bridge were to be utilised.

9.4 Public Consultation

The preferred route, Route Alignment 1B (shown in Figure 9-1), was presented to the public via the online survey and at the Public Exhibition. Indicative cross-sections of the route were also shown to demonstrate the type of infrastructure that is considered feasible for the route and that would meet the design objectives (See section 9.4.2). The key themes that emerged from each of these consultation events are discussed in sections 9.4.1 and 9.4.2 respectively.

9.4.1 Online Survey

The online survey revealed that the majority of respondents supported the route and proposals presented, as shown in Figure 9-7.

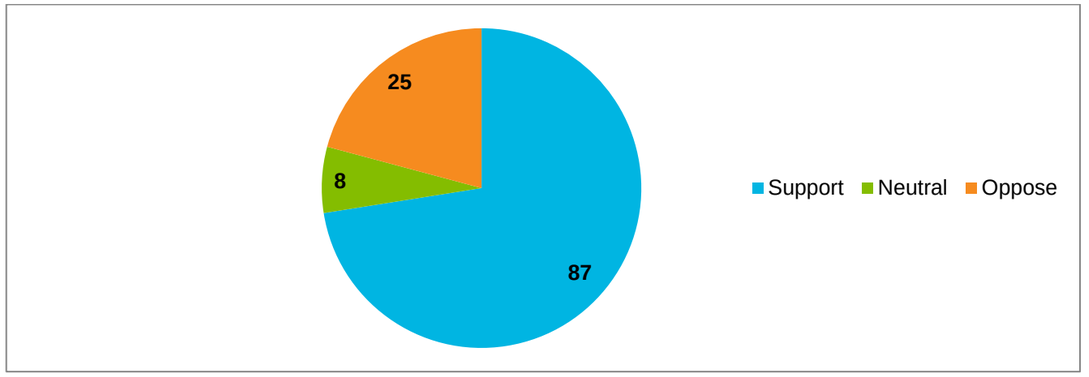


Figure 9-7: Route 1 – Level of Support

Of the 120 respondents, 87 (72.5%) supported the proposals for Route 1.

The key themes from the online survey regarding Route 1 were as follows:

Table 9-4: Key Themes from Online Survey - Route 1

Key Themes	Number
Proposals will increase safety	21
Challenges with traffic	18
May be parking losses	9
Alternative routes are available	7
Pedestrian bridge not ideal for shared use	6
Road not wide enough	6
Access to businesses	6
Path not wide enough	5

9.4.2 Public Exhibition

The key themes that emerged from the public exhibition regarding Route 1 were as follows:

Table 9-5: Key Themes from Public Exhibition – Route 1

Key Themes	Number
Consider buses	4
Service access to shops	3
Cycle route should not go through high street	3
Cyclists need access to high street	3

9.5 Route Design & Costings

9.5.1 Design Testing

Following the identification of the alignment of the strategic route, the feasibility of different levels of intervention was evaluated by sketching options using AutoCAD and identifying the likely impacts and constraints of each option.

In Table 9-6, the options that were tested for Route 1 are outlined, along with an appraisal of its deliverability (on a scale of 0-5, with 0 meaning the route has issues that are considered to be insurmountable and 5 indicating that there are no significant barriers to the implementation of the option).

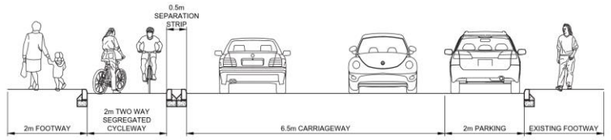
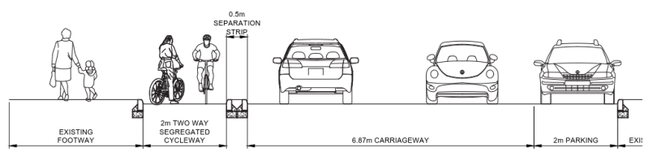
Table 9-6: Design Testing – Route 1

Design Option	Deliverability (Score 0-5)	Impacts and Constraints (Footways, Parking, Traffic lane widths/capacity, other?)	Comments
1. 3m Segregated cycleway 2-way north side	2	High impact on parking: All on-street parking (both north and south side) along North High Street would have to be removed to accommodate 2 lanes of traffic.	
2. Minimum segregated cycleway with parking on south side	3	Cycleway would need to be reduced to less than 2m along sections of North High Street in order to maintain parking on one side of the street. 2m could be achieved by narrowing the existing footway.	
3. 1-way (preferred 2m width, min 1.5m) cycleway on both sides of street	1	Cycleways would need to be narrowed to 1.5m on both sides along North High Street, parking on both sides removed and existing footway would require narrowing over some sections	

9.5.2 Design Specification

The design specification for Route 1 is shown in Table 9-7.

Table 9-7: Design Specification – Route 1

Section	Level of Intervention	Detail	Cross-section
North High Street, New Street to Brunton Hall	Segregated Cycleway	3m wide cycleway with 0.5m segregation strip Cycleway to be at carriageway level	
North High Street, Brunton Hall to Eskside West	Quiet Streets	Road markings, traffic calming where appropriate	 Example of Quiet Street with Traffic Calming Measures (London)
Shorthope Street	Quiet Streets	Prohibition of motor vehicles ('pedestrianisation')	 Example of Pedestrianised Quiet Street (London)
High Street, Shorthope Street to Millhill	Segregated Cycleway	3m wide cycleway with 0.5m segregation strip	

9.5.3 Costings

Costings have been produced for the route shown in Table 9-8, below. Low, medium and high costs are presented, which reflect the fact that various levels of intervention could be considered. Regarding the business case for the route, the Median costs are used for calculating the potential scheme benefits.

Note these costs represent a very high level estimate based on the information available at this early stage of the project, assumptions made by the design team and the outline design testing that has been done.

Table 9-8: Cost Estimates - Route 1

Route	Route Extents	Item	Extents (m)	Quantity	Unit	Typical Cost Low	Typical Cost Median	Typical Cost High	Total Cost Low	Total Cost Median	Total Cost High
Route 1	Route 1: Town Centre – Milton Road East to Millhill Approx Distance 2.52 km	3m wide two way segregated cycle facility - Edinburgh Road	765	765	m	£ 350.00	£ 800.00	£ 1,200.00	£ 267,750.00	£ 612,000.00	£ 918,000.00
		2m wide two way segregated cycle facility - North High Street	545	545	m	£ 350.00	£ 590.00	£ 880.00	£ 190,750.00	£ 321,550.00	£ 479,600.00
		On Road Facility - North High Street	454	454	m	£ 10.00	£ 55.00	£ 100.00	£ 4,540.00	£ 24,970.00	£ 45,400.00
		On Road Facility - Shorthope Street	105	105	m	£ 10.00	£ 55.00	£ 100.00	£ 1,050.00	£ 5,775.00	£ 10,500.00
		2m wide two way segregated cycle facility - High Street	352	352	m	£ 350.00	£ 590.00	£ 880.00	£ 123,200.00	£ 207,680.00	£ 309,760.00
		3m wide two way segregated cycle facility - High Street	294	294	m	£ 350.00	£ 800.00	£ 1,200.00	£ 102,900.00	£ 235,200.00	£ 352,800.00
		High Street Urban Realm: Hard Landscaping			m				£ 936,750.00	£ 1,572,437.50	£ 4,264,625.00
		Sub-Total (Without OB)							**£ 1,626,940.00**	**£ 2,979,612.50**	**£ 6,380,685.00**
		Optimism Bias 44%							**£ 715,853.60**	**£ 1,311,029.50**	**£ 2,807,501.40**
		New Green Bridge Structure (Incl. 66% OB)							**£ -**	**£ -**	**£ 1,576,960.00**
		Total							**£ 2,342,793.60**	**£ 4,290,642.00**	**£ 10,765,146.40**

The rates in the table above have been taken from a number of sources, including:

- Transport for Greater Manchester's 'Greater Manchester Cycling Design Guidance & Standards';
- Recent project experience and benchmark data; and
- Spon's Civil Engineering and Highway Works Price Book 2018.

Optimism Bias provided in line with Transport Scotland, Scottish Transport Appraisal Guidance (STAG) Technical Database guidance based on early concept stage of study and nature of uncertainty and likely variance.

Please see Appendix H: Cost Estimate Summary report with full details on the rates, assumptions and exclusions.

9.6 Planning & Environmental Studies

Figure 9-8 shows the environmental constraints of the proposal. Route 1 goes through a Conservation Area, and passes a number of listed buildings. The Musselburgh area, including this route, is also a Registered Battlefield. The seafront area to the north of the route is a Specific Site of Scientific Interest, a RAMSAR wetland site and a Special Protection Area under the Birds Directive. To the south of the route, there is an area of Gardens and Designed Landscapes, which contains areas of Ancient Woodland.

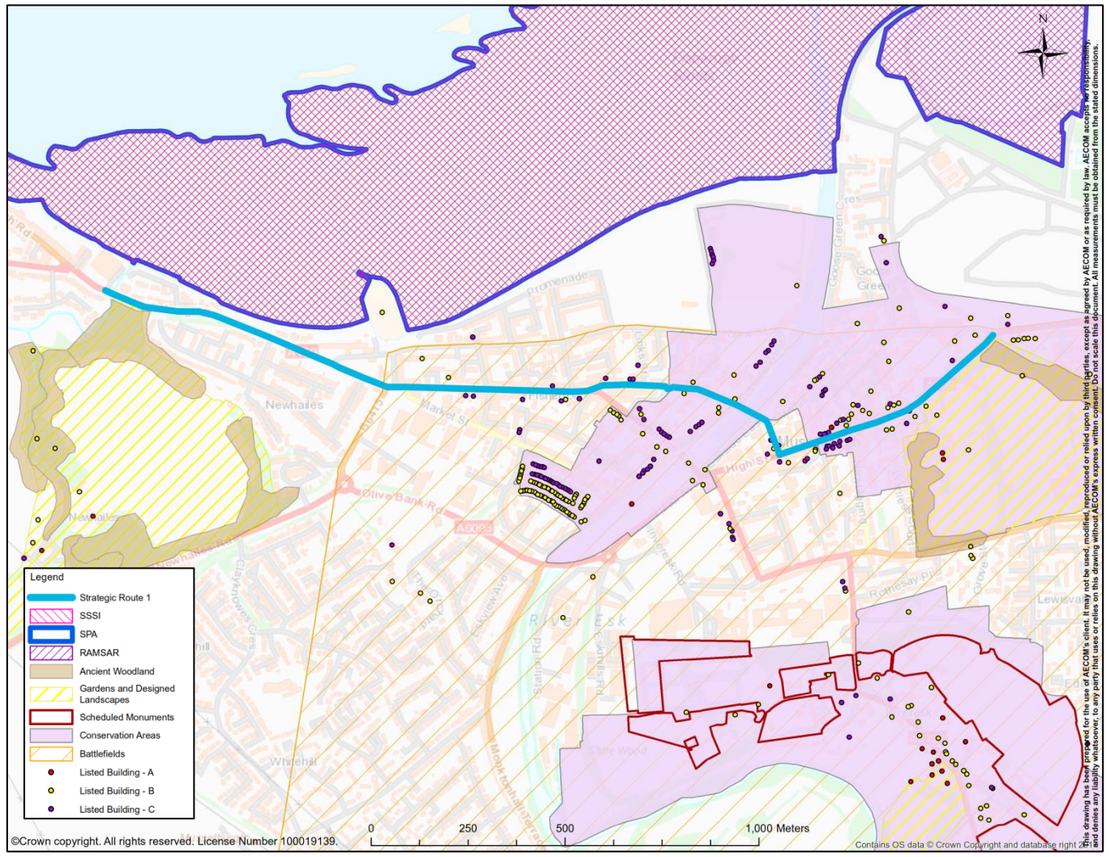


Figure 9-8: Route 1 Environmental Constraints

9.7 Land Ownership

No areas have been identified that are expected to be privately owned within the Route 1 corridor.

9.8 Road Safety Commentary

A Road Safety Review was carried out by a senior member of AECOM's Road Safety team in Scotland. This comprised a review of the route corridor and indicative design cross-sections which are presented in the report. Potential issues relating to road safety were identified.

The following issues were raised relating to Route 1:

- Due to on street parking, there is a risk that nearside vehicle doors could be opened which could result in cyclists colliding into them.
- Access to bus stops – pedestrians will require crossing the segregated cycle way to gain access to or from a bus. There is a potential conflict with passing cyclists.
- Where pedestrians cross the carriageway, provision will require to be made to allow gaps in the segregated cycleway for wheelchair or pram access with necessary dropped kerbs.
- Cross-section for Section 2 indicates that a carriageway width of 8.32m is provided. This width appears excessive for a two way road and could result in higher traffic speeds or drivers attempting to overtake. This is detrimental to road safety at this location.
- It is noted that it is proposed to allow cyclists to use the existing pedestrian footbridge over the River Esk. There is concern if the height of the boundary fence / parapet over this bridge is not suitable, users could fall from the bridge. There is also concern that the width of the bridge is not adequate for shared use.

9.10 Town Centre Urban Design Scoping

AECOM's Urban Design team produced a 'Streetscape Design Scoping Report' for Musselburgh town centre, which considers options and opportunities to improve the High Street in particular.

The focus of the report is on people and public life, and creating an environment that allows this to flourish. This includes:

- Supporting interaction;
- Providing adaptable and inclusive space;
- Encouraging healthy, resilient streets; and
- Creating and enhancing the sense of place and character.

The document reimagines the High Street using the question "What if?". This explores precedent ideas for the key areas of streetscape within the town centre.

The document suggests the following next steps:

Step 1

Think aspirationally and with boldness. Employ blue sky / green thinking. Review projects already in the Council's pipeline, or future plans, for possible enhancement or synergies with a streetscape project e.g. flood prevention, opportunity sites, or other major development.

Step 2

Define and agree the High Street 'Vision' and 'Objectives' through collaboration with the public, working groups, key stakeholders and access groups.

The full report can be found in Appendix A.

10. Route 2: A199 and New Street

10.1 Route Overview & Recommendations

A strategic route along New Street and the A199 was identified. This route would like the west of Musselburgh town centre with Loretto, Musselburgh Racecourse and onwards to Wallyford, including the station and park and ride.

The route bypasses the busiest sections of the town centre, which would benefit cyclists passing through the town, whilst also providing links into the town centre for leisure cyclists or those wishing to stop in the town. With the alignment of the route taking in Fisherrow Harbour, Loretto School properties, Musselburgh Racecourse, Wallyford Park & Ride, and the new development areas in Wallyford, the route would service both leisure and utility purposes.

Early design work has suggested that a 3 metre wide, two-way segregated cycleway can be accommodated along the A199, between Millhill and Wallyford Roundabout. Residents' kerbside parking would be retained on the south side of the road, while Millhill and New Street would be traffic calmed.

10.1.1 Proposed Route

The proposed route alignment is shown in Figure 10-1.

Figure 10-1: Design Proposals - Route 2

10.1.2 Indicative Route Design

The following indicative street layouts were selected for consultation and cost estimation. Various configurations which meet the design objectives were initially tested in the route corridor. These indicative layouts represent those which are considered most deliverable at this early stage.

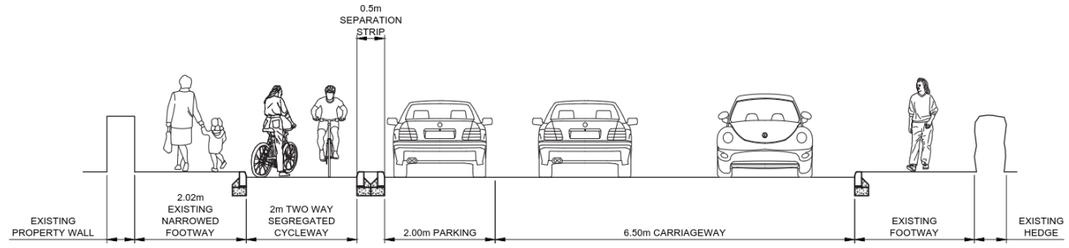


Figure 10-2: Cross Section Route 2 - Linkfield Road (A199) to Levenhall Roundabout

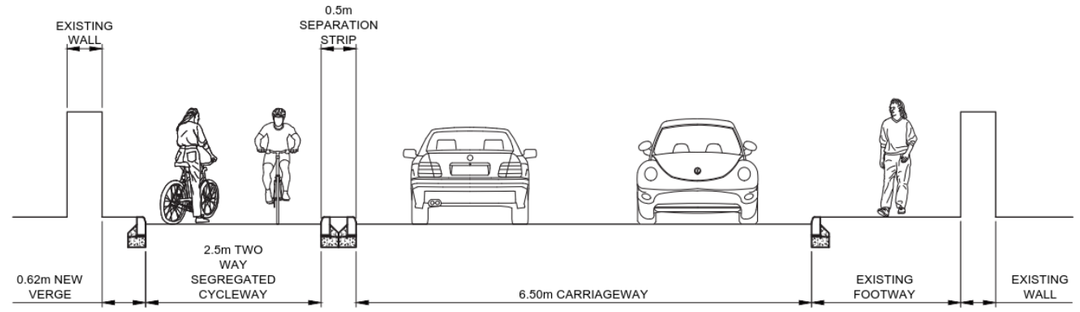


Figure 10-3: Cross Section Route 2 - Linkfield Road (A199) to Wallyford

10.1.3 Cost Estimate Summary

A cost estimate is provided in Table 10-1 below. A 'low', 'medium' and 'high' cost has been provided, based on the standard of intervention. Further detail regarding the costings is provided in section 10.6.3.

Table 10-1: Cost Estimate Summary – Route 2

Route	Low Cost	Medium Cost	High Cost
2	£1,148,299.20	£2,244,499.20	£4,064,659.20

As shown in Table 10-2, the benefit cost ratio for Route 2 is less than 1, suggesting that this route provides poor value for money in line with WebTAG guidance.

However, a conservative approach to calculating benefits was taken, which excluded any benefits from journeys made to reach the new routes. Due to the numerous connections from the proposed network to other local and national active travel routes, the resulting benefits may be justifiably higher than has been assumed.

Additionally, an increased cyclist collision rate has been assumed, accounting for the fact that increased levels of cycling leads to increased probability of cycle related collisions. This equates to an economic disbenefit. However, the improved cycle infrastructure may actually lead to a decrease in the number of cycle collisions.

Table 10-2: Business Case Summary – Route 2

	Core Demand Scenario (and Medium Costs)						Sensitivity Demand Scenario (and Medium Costs)					
	Without GCP			With GCP			Without GCP			With GCP		
	PVB	PVC	BCR	PVB	PVC	BCR	PVB	PVC	BCR	PVB	PVC	BCR
Route 2	664	1,948	0.34	927	1,948	0.48	1,334	1,948	0.68	1,727	1,948	0.89

10.1.4 Recommendations

The key recommendations for the next stage of the development of the route include:

1. Early engagement with local residents and businesses to inform future designs;
2. Consider parking surveys and wider parking strategy that could present opportunities along route;
3. Early engagement with Musselburgh Racecourse owner;
4. Consider junction at the end of New Street;
5. Engage with ELC Planning for works around Conservation area at Millerhill; and
6. Consult with Flood Prevention team and ELC departments on the use of Electric Bridge.

10.2 Route Context

Figure 10-4 shows Strategic Route 2 in relation to other existing and proposed walking and cycling routes.

Route 2 passes through Musselburgh via New Street, Millhill and Linkfield road, avoiding Musselburgh High Street.

Similarly to Route 1, Route 2 partially follows the coastal route John Muir Way, before diverging along New Street. This links the proposed strategic network in with the popular leisure route.

Route 2 would also connect from Haddington Road to Salters Road via Wallyford rail station, through proposed and existing local routes.

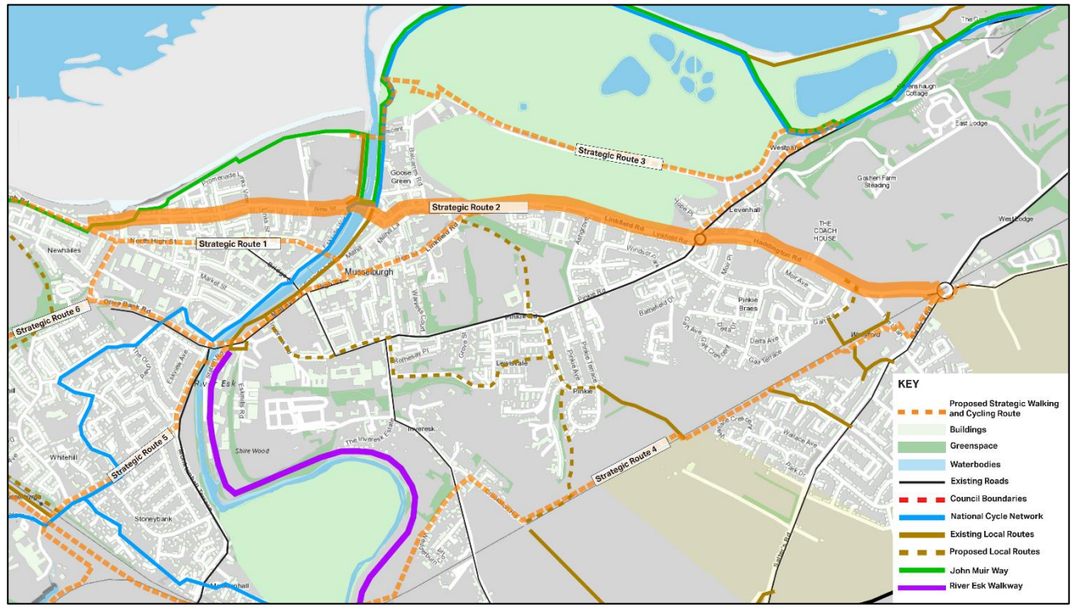


Figure 10-4: Context Plan - Route 2

10.3 Route Option Appraisal

One of the key decisions that had to be made regarding Route 2 was deciding on which side of the road to position the segregated cycleway. In order to inform this decision, an options appraisal was carried out, the results of which are shown in Figure 10-5.

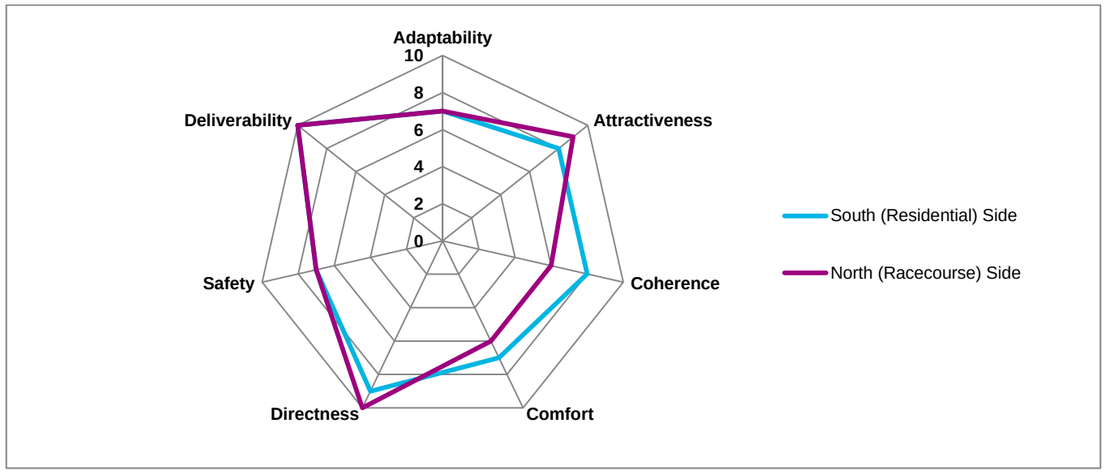


Figure 10-5: Route 2 Option Appraisal – Spider Diagram

The option that was found to score best was positioning the segregated cycleway on the south side of the road. This option was found to be more coherent, owing to the fact that it provides a better connection between the segregated cycleway and the residential areas to the south, while it was also considered to be more comfortable for users.

Positioning the cycleway on the north side of the road was considered to be more direct and more attractive, however the fact that cyclists would have to cross the A199 in order to travel to / from the cycleway meant that positioning the cycleway on the south side was considered to be the better option.

10.3.1 Stakeholder Input

The route alignment that was presented to external stakeholders at Stakeholder Workshop 2 was as shown in Figure 10-7.

The general points raised regarding Route 2 were:

- Opening the “Electric Bridge” for cyclists was mentioned as being desirable;
- Segregation;
  - 2-way segregation on one side of the road was mentioned as being the preferred solution for segregation on the A199; and
  - Questions were raised as to how bus stops would be incorporated into the design.
- Roundabouts;
  - There was consensus that a segregated solution should be implemented at Levenhall Roundabout;
  - The option of segregation at roundabouts was mentioned as being attractive, and it was stated that solutions should be at-grade; and
  - It was stated that it would be difficult to deliver a solution at Wallyford Toll.
- New Street;
  - Two groups stated that they felt that New Street feels safe for cycling, as it is traffic calmed and vehicle speeds have reduced as a result;
  - The remaining two groups felt that the existing conditions could be improved:
    - Group 1 mentioned that attractiveness and safety are important on New Street, and that the Promenade may be a better option; and
    - Group 2 wanted to see one-way vehicle flow and increased / improved signage on New Street.
- The option of utilising The Loan and connecting into Route 4 instead of continuing to Wallyford Toll as demonstrated in Figure 10-6.

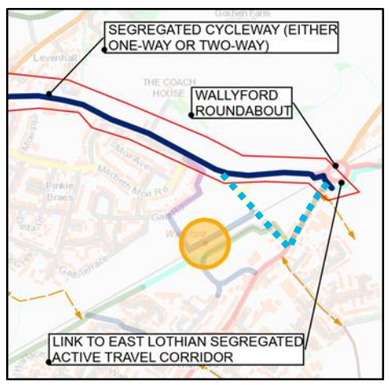


Figure 10-6: Alternative Alignment Utilising The Loan and Salters Road

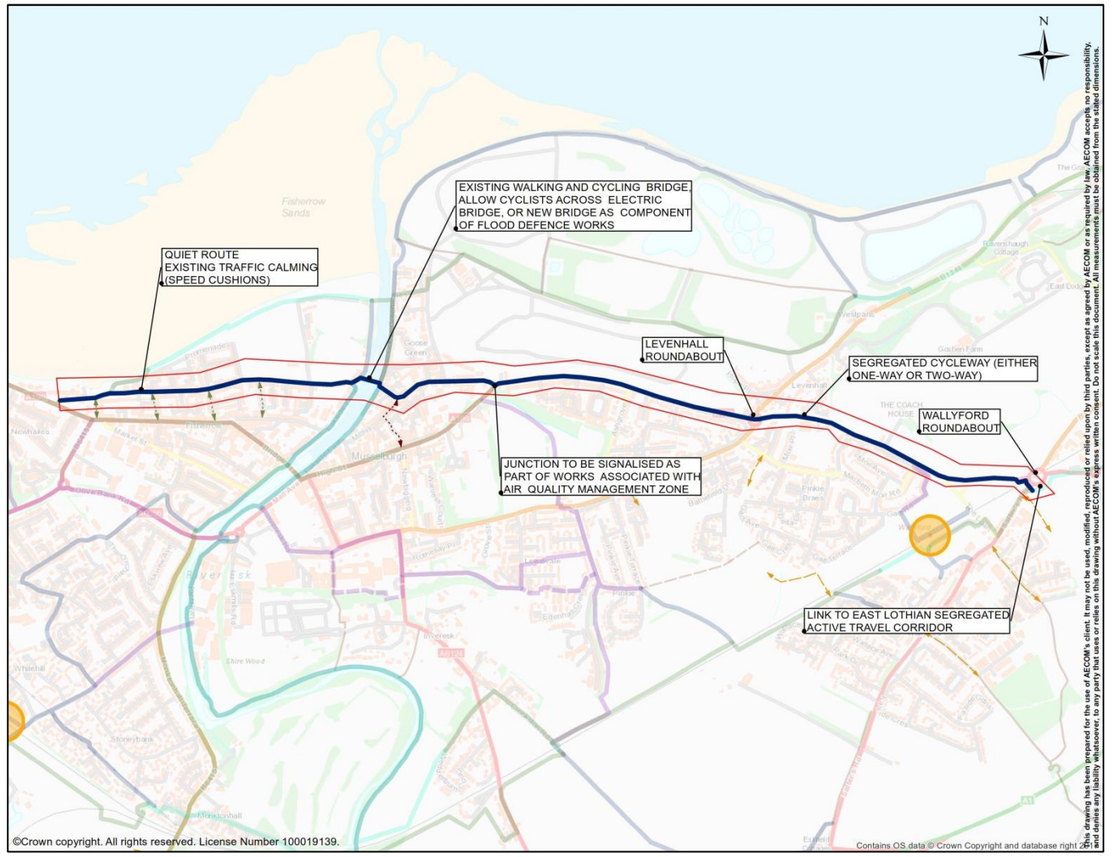


Figure 10-7: Route 2 – Consultation Drawing

10.5 Public Consultation

The route, shown in Figure 10-1, was presented to the public via the online survey and at the Public Exhibition. The key themes that emerged from each of these consultation events are discussed in sections 10.5.1 and 10.5.2 respectively.

10.5.1 Online survey

The online survey revealed that the majority of respondents supported the route, as shown in Figure 10-8.

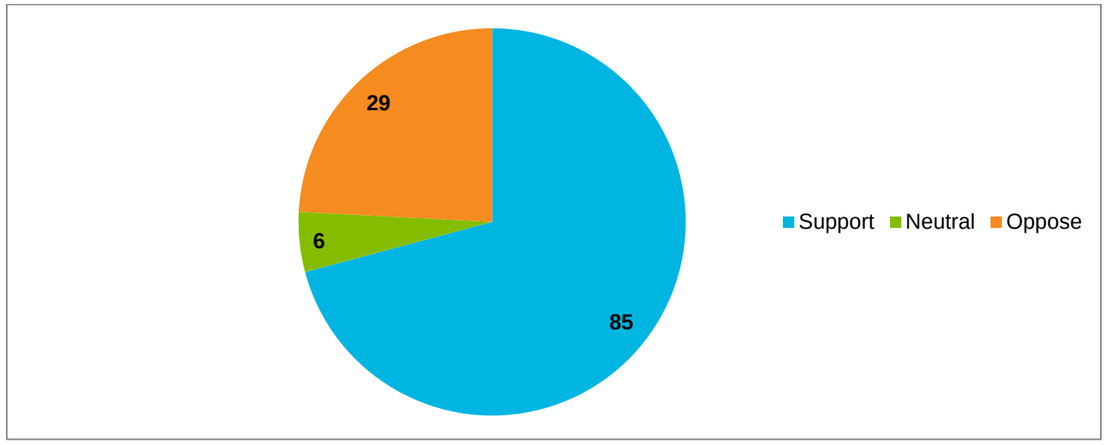


Figure 10-8: Route 2 – Level of Support

Of the 120 respondents, 85 (70.8%) supported the proposals for Route 2.

The key themes from the online survey regarding Route 2 were as follows:

Table 10-3: Key Themes from Online Survey - Route 2

Key Themes	Number
Safer	13
May be parking losses	10
Traffic	7
Road not wide enough	5
Route would be better on racecourse side	5

10.5.2 Public Exhibition

The key themes that emerged from the public exhibition regarding Route 2 were as follows:

Table 10-4: Key Themes from Public Exhibition – Route 2

Key Themes	Number
Have the cycleway on the racecourse side of the road	4
Safety	3
Improve coastal route / ash lagoons	2

10.6 Route Design & Costings

10.6.1 Design Testing

Following the identification of the alignment of the strategic route, the feasibility of different levels of intervention were evaluated by sketching options using AutoCAD and identifying the likely impacts and constraints of each option.

In Table 10-5, the options that were tested for Route 2 are outlined, along with an appraisal of its deliverability (on a scale of 0-5, with 0 meaning the route has issues that are considered to be insurmountable and 5 indicating that there are no significant barriers to the implementation of the option).

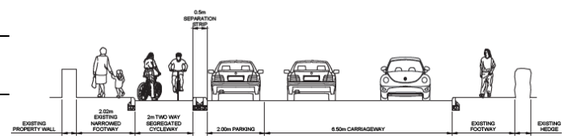
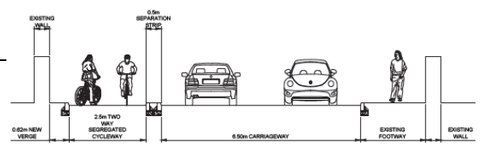
Table 10-5: Design Testing – Route 2

Design Option	Deliverability (Score 0-5)	Impacts and Constraints (Footways, Parking, Traffic lane widths/capacity, other?)	Comments
1. Segregated cycleway (preferred 3m width) 2-way north side	5	2m segregated cycleway can be provided along Linkfield Road with parking maintained on the south side. A 2.5m segregated cycleway can be provided along Haddington Road.	
2. Minimum segregated cycleway with parking on south side	4	2m segregated cycleway can be provided along Linkfield Road and maintain parking on South side.	Parking can be provided where sufficient width allows
3. 1-way (preferred 2m width, min 1.5m) cycleway on both sides of street	0	High impact on parking to accommodate cycle lanes on both sides: removal of all parking on Linkfield Road. High impact on traffic as carriageway width reduced to Xm and would require alternative traffic arrangements i.e. 1-way.	A 50m section the segregated cycleway has to be reduced to 2m to fit so to achieve a min carriageway width of 6.5m a 1.5m cycleway on both sides of street cannot be accommodated.

10.6.2 Design Specification

Table 10-6: Design Specification - Route 2

Section	Level of Intervention	Detail	Cross-section
New Street	Quiet Streets	Existing traffic calming (speed cushions)	 Existing Traffic Calming Measures on New Street

Section	Level of Intervention	Detail	Cross-section
Existing Walking and Cycling Bridge	Allow cyclists across Electric Bridge		 **Electric Bridge, Musselburgh** *(Source https://www.geograph.org.uk/photo/5795426)*
Millhill to Linkfield Road	Quiet Streets	New signalised junction, existing traffic calming (speed cushions)	 **Existing Traffic Calming Measures on Millhill**
Linkfield Road (A199) to Levenhall Roundabout	Segregated Cycleway	2m wide cycleway with 0.5m segregation strip 2m wide parking adjacent to cycleway Cycleway to be at carriageway level	
Linkfield Road (A199) to Wallyford	Segregated Cycleway	2.5m wide cycleway with 0.5m segregation strip Cycleway to be at carriageway level	

10.6.3 Costings

Costings have been produced for the route shown in Table 10-7, below. Low, medium and high costs are presented, which reflect the fact that various levels of intervention could be considered. Regarding the business case for the route, the Median costs are used for calculating the potential scheme benefits.

Note these costs represent a very high level estimate based on the information available at this early stage of the project, assumptions made by the design team and the outline design testing which has been done.

Table 10-7: Cost Estimates - Route 2

Route	Route Extents	Item	Extents (m)	Quantity	Unit	Typical Cost Low	Typical Cost Median	Typical Cost High	Total Cost Low	Total Cost Median	Total Cost High
Route 2	Route 2 - A199 and New Street Approx Distance 3.92 km	On Road Facility - New Street	1203	1203	m	£ 10.00	£ 55.00	£ 100.00	£ 12,030.00	£ 66,165.00	£ 120,300.00
		On Road Facility - Millhill	495	495	m	£ 10.00	£ 55.00	£ 100.00	£ 4,950.00	£ 27,225.00	£ 49,500.00
		Signalised Junction - Millhill/ Millhill Lane	1	1	no	£ -	£ -	£ 430,000.00	£ -	£ -	£ 430,000.00
		2m wide two way segregated cycle facility - Linkfield Road	519	519	m	£ 350.00	£ 590.00	£ 880.00	£ 181,650.00	£ 306,210.00	£ 456,720.00
		2.5m wide two way segregated cycle facility - Linkfield Road	508	508	m	£ 350.00	£ 695.00	£ 1,040.00	£ 177,800.00	£ 353,060.00	£ 528,320.00
		Roundabout Crossing at Levenhall Roundabout *	1	1	no	£ 15,200.00	£ 15,200.00	£ 62,000.00	£ 15,200.00	£ 15,200.00	£ 62,000.00
		2.5m wide two way segregated cycle facility - Linkfield Road	1116	1116	m	£ 350.00	£ 695.00	£ 1,040.00	£ 390,600.00	£ 775,620.00	£ 1,160,640.00
		New Zebra Crossing - Salters Road	1	2	No	£ 7,600.00	£ 7,600.00	£ 7,600.00	£ 15,200.00	£ 15,200.00	£ 15,200.00
		Sub-Total (Without OB)							**£ 797,430.00**	**£ 1,558,680.00**	**£ 2,822,680.00**
		Optimism Bias 44%							**£ 350,869.20**	**£ 685,819.20**	**£ 1,241,979.20**
		Total							**£ 1,148,299.20**	**£ 2,244,499.20**	**£ 4,064,659.20**

The rates in the table above have been taken from a number of sources, including:

- Transport for Greater Manchester's 'Greater Manchester Cycling Design Guidance & Standards';
- Recent project experience and benchmark data; and
- Spon's Civil Engineering and Highway Works Price Book 2018.

Optimism Bias provided in line with Transport Scotland, Scottish Transport Appraisal Guidance (STAG) Technical Database guidance based on early concept stage of study and nature of uncertainty and likely variance.

Please see Appendix H: Cost Estimate Summary report with full details on the rates, assumptions and exclusions.

10.7 Planning & Environmental

Figure 10-9 shows the environmental constraints of the proposal. Route 2 goes through a Conservation Area, and passes a number of listed buildings. The Musselburgh area, including this route, is also a Registered Battlefield. The seafront area to the north of the route is a Specific Site of Scientific Interest, a RAMSAR wetland site and a Special Protection Area under the Birds Directive. To the south of the route, there is an area of Gardens and Designed Landscapes, which contains areas of Ancient Woodland.

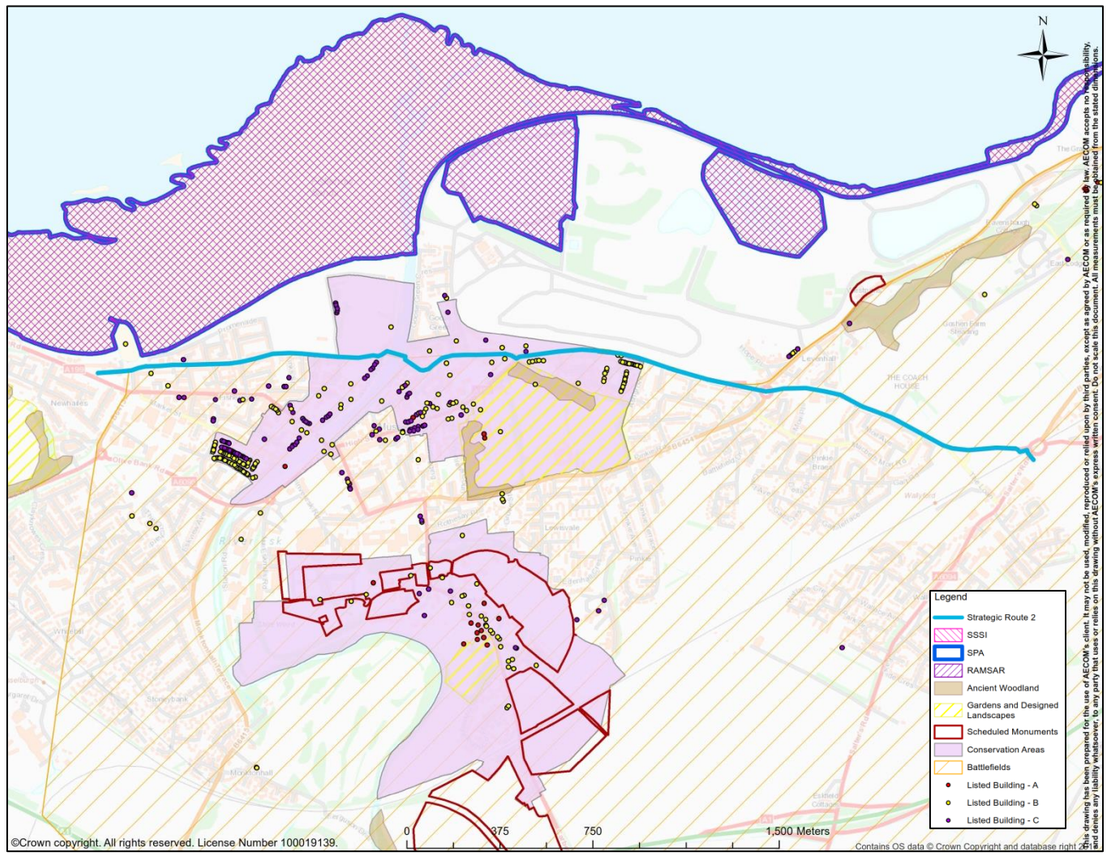


Figure 10-9: Route 2 Environmental Constraints

10.8 Land Ownership

No areas have been identified that are expected to be privately owned within the Route 2 corridor.

10.9 Road Safety Commentary

A Road Safety Review was carried out by a senior member of AECOM's Road Safety team in Scotland. This comprised a review of the route corridor and indicative design cross-sections which are presented in the report. Potential issues relating to road safety were identified.

The following issues were raised relating to Route 2:

- On street parking adjacent to the segregated cycleway where there is a separation strip formed with kerbing could result in issues for vehicle occupants wishing to access the footway. There is a risk that car occupants could trip over the separation kerbs or disabled, elderly or infirm pedestrians may not be able to access the footway.
- There is also a risk that nearside vehicle doors could be opened which could result in cyclists colliding into them.
- Access to bus stops – pedestrians will require crossing the segregated cycle way to gain access to or from a bus. There is a potential conflict with passing cyclists.
- Where pedestrians cross the carriageway, provision will require to be made to allow gaps in the segregated cycleway for wheelchair or pram access with necessary dropped kerbs.
- The segregated route along Linkfield Road passes a number of private driveways and accesses. Vehicles attempting to exit these driveways could block the cycle route resulting in cyclists colliding with vehicles. There is also a risk that drivers could reverse in or out of these driveways which increases the risk of collision with cyclists.
- Section 2 shows a footway on one side of the carriageway only. It is unclear where this section is and if a footway is required on both sides of the carriageway.

11. Route 3: Levenhall Links

11.1 Route Overview and Recommendations

Strategic Route 3 runs on an east-west alignment between Levenhall Links and Musselburgh Old Course Golf Club. The route would connect the B1348 with the River Esk, providing onward connections to the north-east, west and south.

Upgrading the existing path would allow the route to be used by users of all abilities. The alignment and surrounding environment would likely appeal to leisure cyclists and would represent an upgrade on the alignment and infrastructure of the NCN 76 and the John Muir Way.

Early design work has suggested that the existing informal path could be upgraded to a 4 metre wide shared use path, with the eastern section of the route, an existing unbound carriageway, being upgraded and surfaced. A new bridge is proposed at the western end of the route, providing a direct link across the River Esk for cyclists and walkers.

11.1.1 Proposed Route

The proposed route alignment is shown in Figure 11-1.

Figure 11-1: Design Proposals - Route 3

11.1.2 Indicative Route Design

The following indicative street layouts were selected for consultation and cost estimation. Various configurations which meet the design objectives were initially tested in the route corridor. These indicative layouts represent those which are considered most deliverable at this early stage.

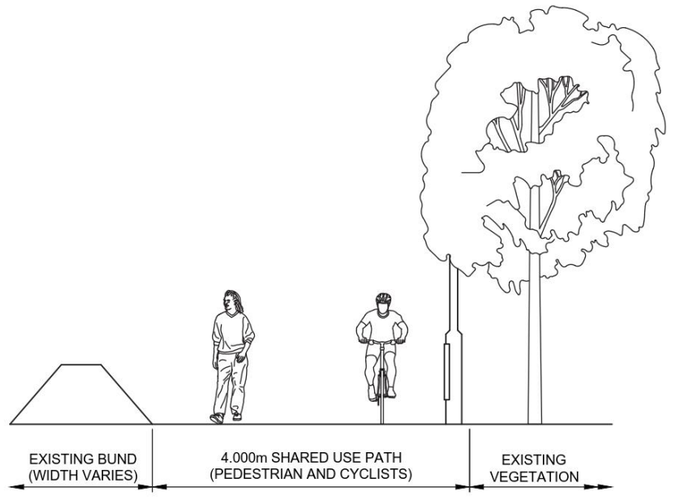


Figure 11-2: Cross Section Route 3 – Existing Informal Path between Goosegreen Place and Existing Road

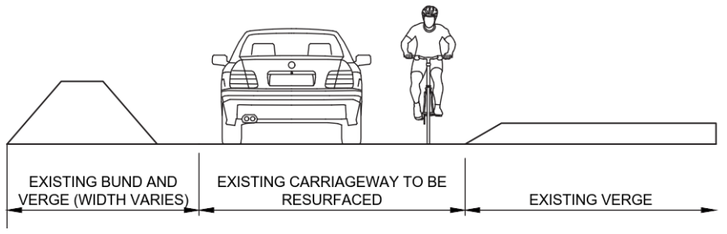


Figure 11-3: Cross Section Route 3 – Existing Road between Existing Informal Path and B1348

11.1.3 Cost Estimate Summary

A cost estimate is provided in Table 11-1 below. A 'low', 'medium' and 'high' cost has been provided, based on the standard of intervention. Further detail regarding the costings is provided in section 11.5.3.

Table 11-1: Cost Estimate Summary – Route 3

Route	Low Cost	Medium Cost	High Cost
3	£553,276.92	£1,245,125.49	£2,383,448.69

As shown in Table 11-2, the benefit cost ratio for Route 3 is less than 1, suggesting that this route provides poor value for money in line with WebTAG guidance.

However, a conservative approach to calculating benefits was taken, which excluded any benefits from journeys made to reach the new routes. Due to the numerous connections from the proposed network to other local and national active travel routes, the resulting benefits may be justifiably higher than has been assumed.

Additionally, an increased cyclist collision rate has been assumed, accounting for the fact that increased levels of cycling leads to increased probability of cycle related collisions. This equates to an economic disbenefit. However, the improved cycle infrastructure may actually lead to a decrease in the number of cycle collisions.

Table 11-2: Business Case Summary – Route 3

	Core Demand Scenario (and Medium Costs)						Sensitivity Demand Scenario (and Medium Costs)					
	Without GCP			With GCP			Without GCP			With GCP		
	PVB	PVC	BCR	PVB	PVC	BCR	PVB	PVC	BCR	PVB	PVC	BCR
Route 3	788	2,058	0.38	892	2,058	0.43	1,366	2,058	0.66	1,522	2,058	0.74

11.1.4 Recommendations

The key recommendations for the next stage of the development of the route include:

1. Engage with ELC Outdoor Access officer regarding Levenhall Links;
2. Early engagement with Musselburgh Racecourse owner;
3. Engage with ELC Planning for proposals regarding nature / conservation reserve at the ash lagoons; and
4. Consult with Flood Protection team regarding the proposals for a new bridge across the River Esk at Goosegreen Crescent.

11.2 Route Context

Figure 11-4 shows Strategic Route 3 in relation to other existing and proposed walking and cycling routes.

Route 3 passes between the Levenhall and the Musselburgh Lagoons on one side, and the Musselburgh Old Golf Course on the other side. This route provides a more direct route to Prestongrange Museum, Drummohr Holiday Park, the Royal Musselburgh Golf Club and Prestonpans than via the John Muir Way/ National Cycle Network coastal route, with both ends of the route linking back into the coastal route.

Figure 11-4: Context Plan - Route 3

11.3 Route Option Appraisal

The route alignment that was presented to attendees of Stakeholder Workshop 2 is shown in Figure 11-5.

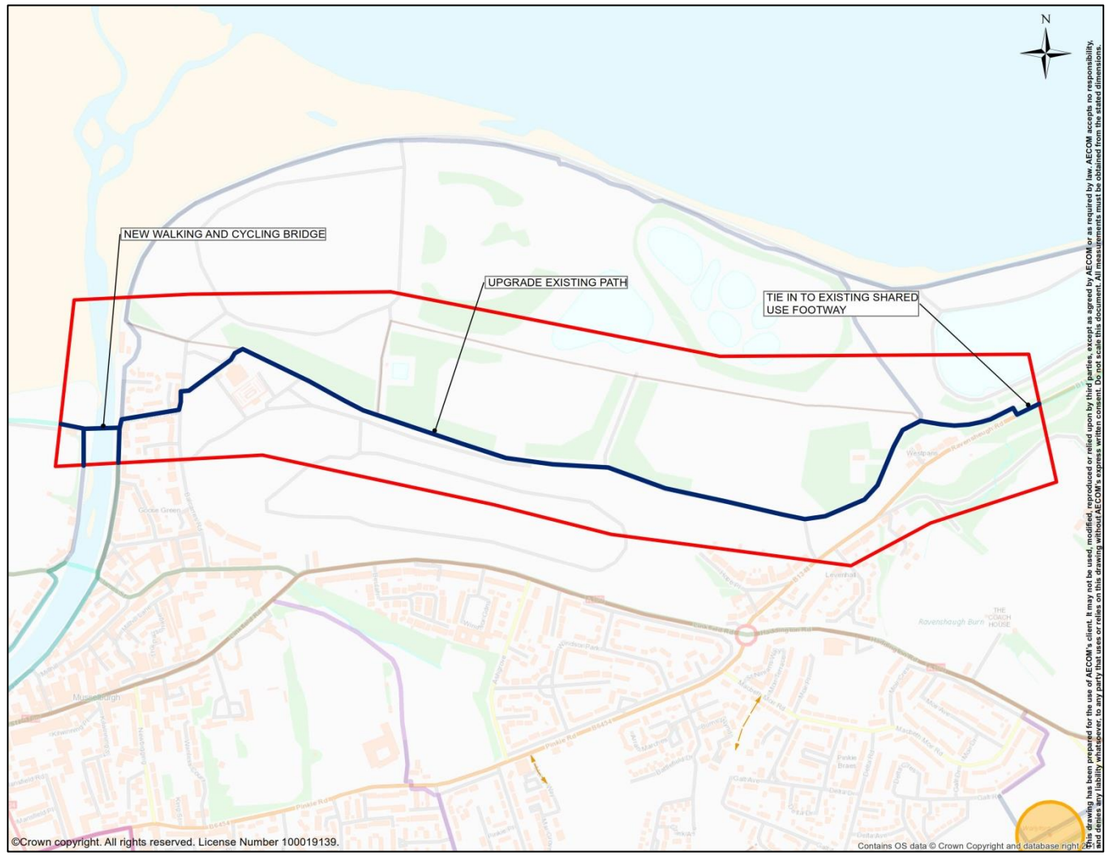


Figure 11-5: Route 3 – Consultation Drawing

All groups consulted were in favour of upgrading and formalising the existing network in this area and agreed it offered a good opportunity for commuters, as well as leisure cyclists. The key points that were raised included:

- Route is currently not used to its full potential as many are not aware of its existence;
- The site may have an SSSI (Site of Special Scientific Interest) designation, denoting a protected area;
- The location of the proposed bridge would need to consider areas of wading birds;
- Any lighting options would need to take cognisance of the local wildlife and may be restricted; and
- The key contact at East Lothian Council for this area was highlighted.

11.4 Public Consultation

The route, shown in Figure 11-1, was presented to the public via the online survey and at the Public Exhibition. The key themes that emerged from each of these consultation events are discussed in sections 11.4.1 and 11.4.2 respectively.

11.4.1 Online Survey

The online survey revealed that the majority of respondents supported the route, as shown in Figure 11-6.

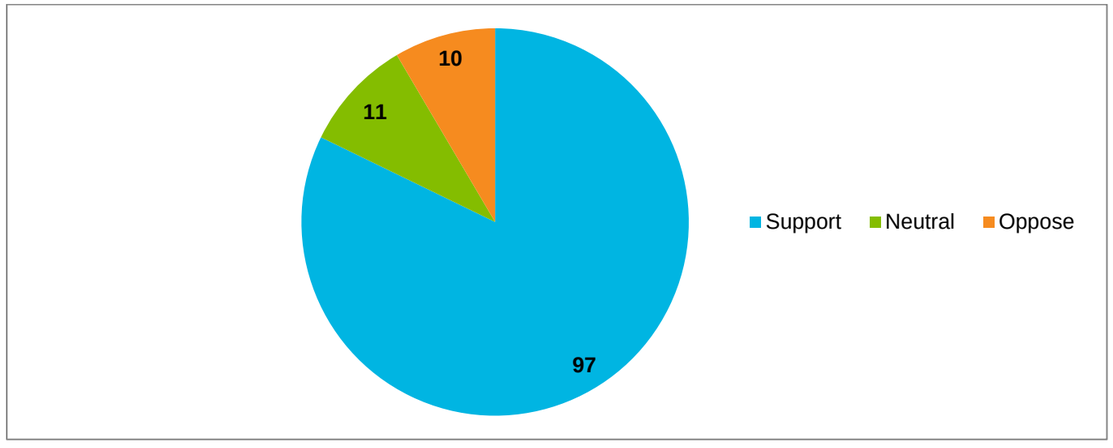


Figure 11-6: Route 3 – Level of Support

Of the 118 respondents, 97 (80.8%) supported the proposals for Route 3.

The key themes from the online survey regarding Route 3 were as follows:

Table 11-3: Key Themes from Online Survey - Route 3

Key Themes	Number
Shared use paths are not a good solution	12
Safer	8

11.4.2 Public Exhibition

The key themes that emerged from the public exhibition regarding Route 3 were as follows:

Table 11-4: Key Themes from Public Exhibition – Route 3

Key Themes	Number
Improve coastal route / ash lagoons	3
Repair electric bridge	3
Improve signs	3

11.5 Route Design and Costings

11.5.1 Design Testing

Following the identification of the alignment of the strategic route, the feasibility of different levels of intervention was evaluated by sketching options using AutoCAD and identifying the likely impacts and constraints of each option.

In Table 11-5, the options that were tested for Route 3 are outlined, along with an appraisal of its deliverability (on a scale of 0-5, with 0 meaning the route has issues that are considered to be insurmountable and 5 indicating that there are no significant barriers to the implementation of the option).

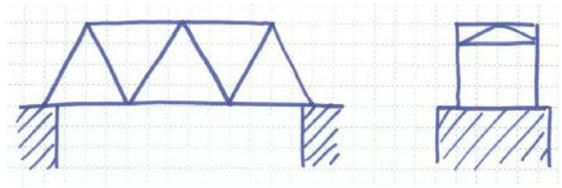
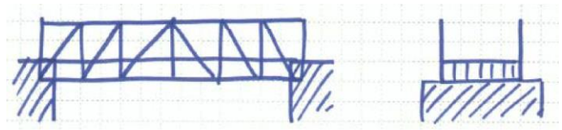
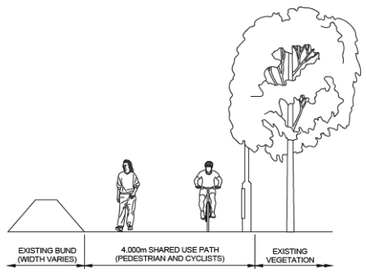
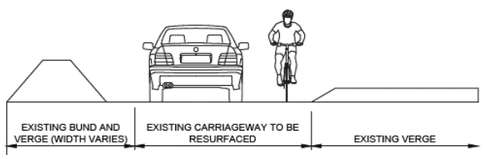
Table 11-5: Design Testing – Route 3

Design Option	Deliverability (Score 0-5)	Impacts and Constraints (Footways, Parking, Traffic lane widths/capacity, other?)	Comments
1. 3.0m wide shared use path with light columns	4	Provision would be needed for either a new cycle bridge at Goose Green, or reclassify existing footway and footbridge.	200m section at Eastern end encroaches on Levenhall Links land, currently along an unclassified road, possibly shared use facility on road.
2. 4.0m wide shared use path with light columns	3	As above. Provision would be needed for either a new cycle bridge at Goose Green or widen existing footway for shared use link to existing footbridge, (existing footway link would need to be widened by 1m).	200m section at Eastern end encroaches on Levenhall Links land, currently along an unclassified road, possibly shared use facility on road.
3. 4.0m wide shared use path with light columns plus placemaking areas	3	As above with existing rough parking area formalised and shared use route providing off-road access to existing walking routes. John Muir Way widened and improved access to BMX facility. Connections to existing walking areas improved along edge of Musselburgh golf course.	200m section at Eastern end encroaches on Levenhall Links land, currently along an unclassified road, possibly shared use facility on road.

11.5.2 Design Specification

The design specification for Route 3 is shown in Table 11-6.

Table 11-6: Design Specification - Route 3

Section	Level of Intervention	Detail	Cross-section
River Esk Crossing	New pedestrian & cycle bridge	Single span structure	 Potential form of bridge 1 of 2 (truss girder)  Potential form of bridge 2 of 2 (through girder)
River Esk Crossing to Levenhall Links	Shared Use Path	Upgrade existing path	
Levenhall Links to Ash Lagoon	Quiet Streets	Upgrade existing road surface	
Link to Existing Path	Shared Use Path	Link to existing shared use footway	 Existing link to shared use footway

11.5.3 Costings

Costings have been produced for the route shown in Table 11-7, below. Low, medium and high costs are presented, which reflect the fact that various levels of intervention could be considered. Regarding the business case for the route, the Median costs are used for calculating the potential scheme benefits.

Note these costs represent a very high level estimate based on the information available at this early stage of the project, assumptions made by the design team and the outline design testing which has been done.

Table 11-7: Cost Estimates - Route 3

Route	Route Extents	Item	Extents (m)	Quantity	Unit	Typical Cost Low	Typical Cost Median	Typical Cost High	Typical Cost Low	Total Cost Median	Typical Cost High
Route 3	Route 3 - Levenhall Links Approx Distance 2.52 km	On Road Facility - New Surfacing - Goose Green Crescent	184	184	m	£ 10.00	£ 55.00	£ 100.00	£ 1,840.00	£ 10,120.00	£ 18,400.00
		4m wide Shared use Path	1247	1247	m	£ 306.64	£ 306.64	£ 306.64	£ 382,380.08	£ 382,380.08	£ 382,380.08
		5m rural road upgrade	1094	1094	m	£ -	£ 431.60	£ 431.60	£ -	£ 472,170.40	£ 472,170.40
		Sub-Total (Without OB)							**£ 384,220.08**	**£ 864,670.48**	**£ 872,950.48**
		Optimism Bias 44%							**£ 169,056.84**	**£ 380,455.01**	**£ 384,098.21**
		Goose Green Bridge Structure (Incl. 66% OB)							**£ -**	**£ -**	**£ 1,126,400.00**
		Total							**£ 553,276.92**	**£ 1,245,125.49**	**£ 2,383,448.69**

The rates in the table above have been taken from a number of sources, including:

- Transport for Greater Manchester's 'Greater Manchester Cycling Design Guidance & Standards';
- Recent project experience and benchmark data; and
- Spon's Civil Engineering and Highway Works Price Book 2018.

Optimism Bias provided in line with Transport Scotland, Scottish Transport Appraisal Guidance (STAG) Technical Database guidance based on early concept stage of study and nature of uncertainty and likely variance.

Please see Appendix H: Cost Estimate Summary report with full details on the rates, assumptions and exclusions.

11.6 Planning & Environmental

Figure 11-7 shows the environmental constraints of the proposal. Route 3 passes to the north of a Conservation Area. The east end of this route passes into a Registered Battlefield. The seafront area to the north of the route is a Specific Site of Scientific Interest, a RAMSAR wetland site and a Special Protection Area under the Birds Directive. The east end of the route passes to the north an area of Scheduled Monuments, which is adjacent to an area of Ancient Woodland.

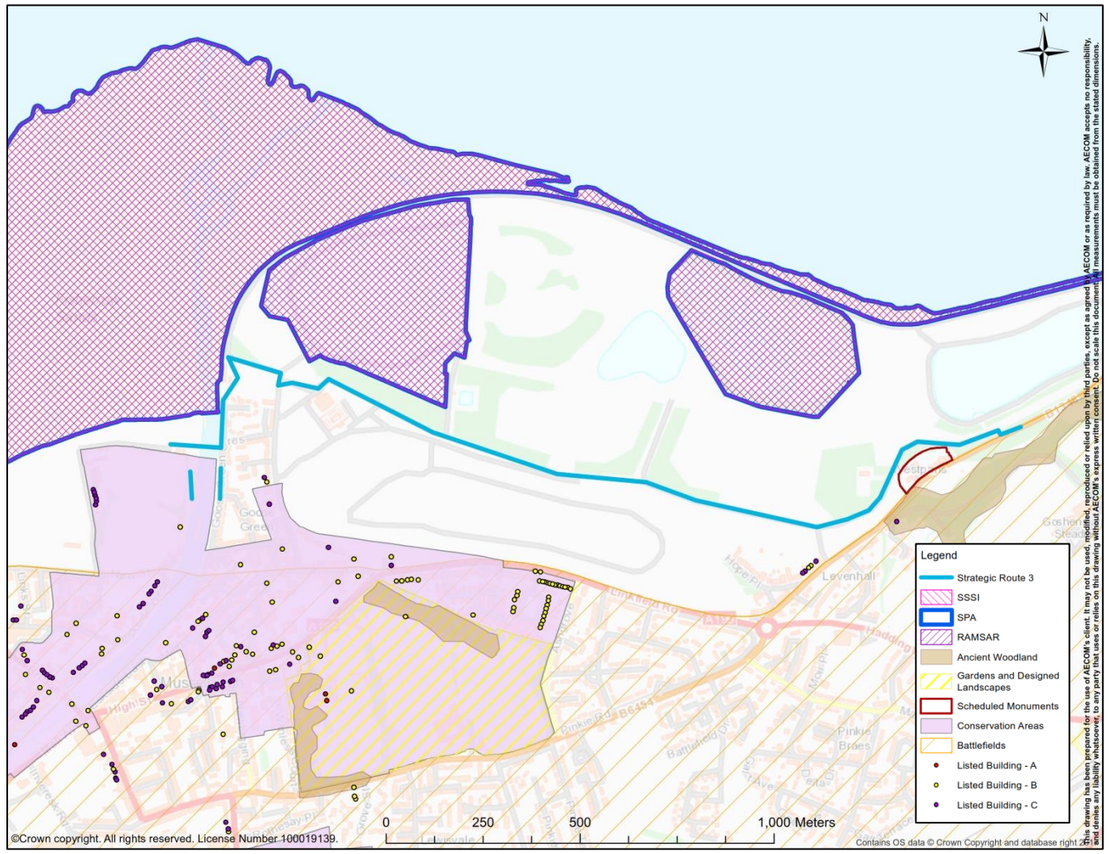


Figure 11-7: Route 3 Environmental Constraints

11.7 Land Ownership

The following areas were identified as potentially being in private ownership:

1) The area to the north and north-east of Loretto School Newfield Sports Ground; and

2) The paths through Levenhall Links.

These areas are shown graphically in Figure 11-8.

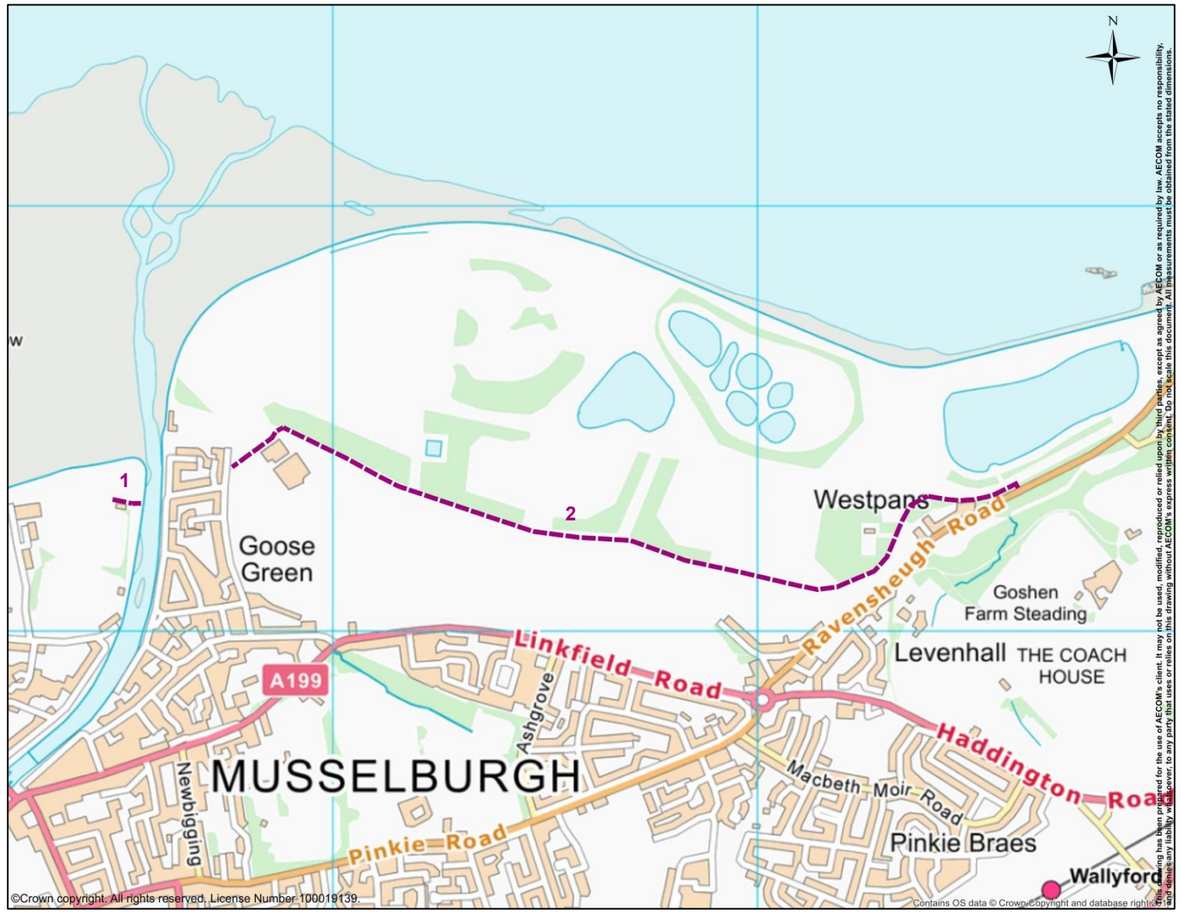


Figure 11-8: Land Ownership Map Route 3

Both areas of land were found to be owned or managed by East Lothian Council.

11.8 Road Safety Commentary

A Road Safety Review was carried out by a senior member of AECOM's Road Safety team in Scotland. This comprised a review of the route corridor and indicative design cross-sections which are presented in the report. Potential issues relating to road safety were identified.

The following issues were raised relating to Route 3:

- Due to on street parking on the quiet route section, there is a risk that nearside vehicle doors could be opened which could result in cyclists colliding into them.
- Section 2 shows an existing carriageway to be resurfaced however there is no indication of the width. If this carriageway is intended for vehicles and cyclists the width must be adequate to allow both users.
- Where the shared use path is shown with lighting columns and vegetation, there is a risk that tree canopies could obscure lamps resulting in dark spots or shadows which can result in users not being visible during darkness hours.

12. Route 4: ELC Segregated Corridor – Wallyford Roundabout to Newcraighall

12.1 Route Overview and Recommendations

Strategic Route 4 is the East Lothian Council Segregated Active Travel Corridor, discussed further in section 2.4.5. The route would connect Newcraighall, Musselburgh railway station, Queen Margaret University, the River Esk and Wallyford, including the station and park and ride. The route would also serve the developments to the south of Wallyford, Musselburgh and Inveresk.

Between Wallyford and Newcraighall, the East Lothian Council Segregated Active Travel Corridor would be a key route for connecting communities with amenities, places of study and employment, and transport hubs. The route would also provide onward connections to the east (towards Haddington and Dunbar) and west (towards Edinburgh), as well as linking with NCN 1 and NCN 196, which provide onward routes to Penicuik, Dalkeith and Bonnyrigg.

The design work that has been carried out has indicated that there is sufficient width to implement 4 metre wide shared use paths between Wallyford railway station car park and Crookston Road, Wedderburn Terrace to Ferguson Drive, and Monktonhall Place to Newcraighall Road. This would be complemented by a segregated cycleway on Salters Road and a signalised crossing on Carberry Road.

12.1.1 Proposed Route

The proposed route alignment is shown in Figure 12-1.

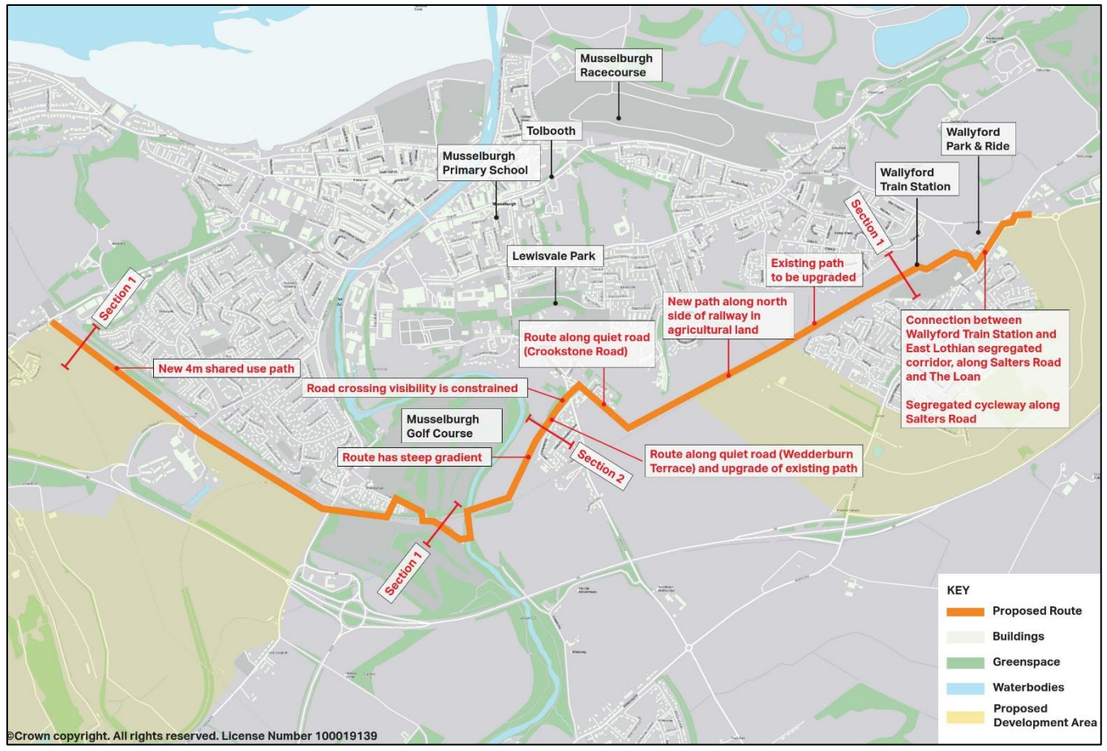


Figure 12-1: Design Proposals - Route 4

12.1.2 Indicative Route Design

The following indicative street layouts were selected for consultation and cost estimation. Various configurations which meet the design objectives were initially tested in the route corridor. These indicative layouts represent those which are considered most deliverable at this early stage.

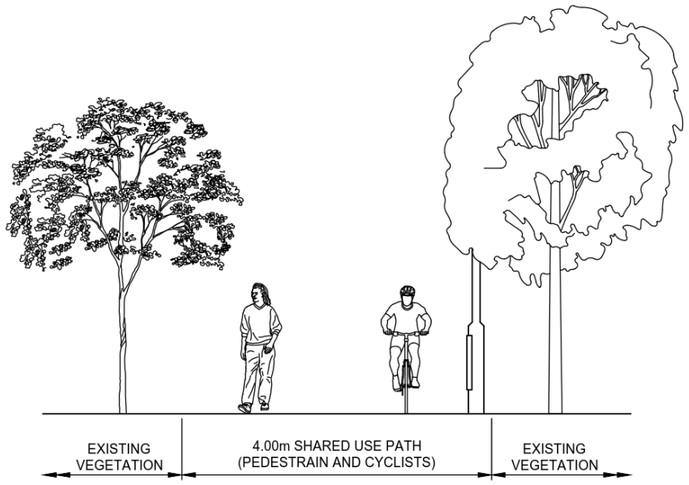


Figure 12-2: Cross Section Route 4 – Wallyford Railway Station Car Park to Crookston Road; Existing Informal Path adjacent to Wedderburn Terrace to Ferguson Drive; Monktonhall Place to Newcraighall Road

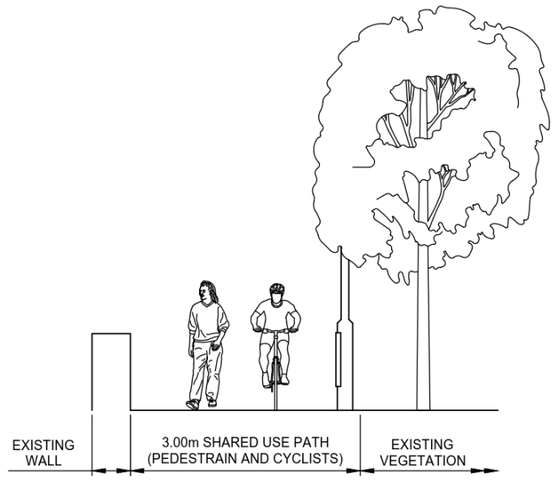


Figure 12-3: Cross Section Route 4 – Existing Informal Path adjacent to Wedderburn Terrace

12.1.4 Cost Estimate Summary

A cost estimate is provided in Table 10-1 below. A 'low', 'medium' and 'high' cost has been provided, based on the standard of intervention. Further detail regarding the costings is provided in section 12.5.4.

Table 12-1: Cost Estimate Summary – Route 4

Route	Low Cost	Medium Cost	High Cost
4	£2,034,076.72	£2,217,338.32	£3,076,439.92

As shown in Table 12-2, the benefit cost ratio for Route 4 is between 2 and 4 for the Core Demand Scenario, suggesting that this route provides high value for money, and is greater than 4 for the Sensitivity Demand Scenario, suggesting this route provides very high value for money in line with WebTAG guidance.

Table 12-2: Business Case Summary – Route 4

	Core Demand Scenario (and Medium Costs)						Sensitivity Demand Scenario (and Medium Costs)					
	Without GCP			With GCP			Without GCP			With GCP		
	PVB	PVC	BCR	PVB	PVC	BCR	PVB	PVC	BCR	PVB	PVC	BCR
Route 4	6,123	1,922	3.19	6,878	1,922	3.58	10,092	1,920	5.26	11,224	1,920	5.84

12.1.5 Recommendations

The key recommendations for the next stage of the development of the route include:

1. Early engagement with local residents and businesses to inform future designs;
2. Engage with ELC Planning for proposals regarding Salters Road; and
3. Further engagement with private land owners.

12.2 Route Context

Figure 12-4 shows Strategic Route 4 in relation to other existing and proposed walking and cycling routes.

Route 4 connects the Queen Margaret University with Wallyford railway station and Wallyford Park and Ride, largely following the railway.

The route links in with the River Esk Walkway, a popular leisure route following the path of the River Esk.

The route also partially connects with the National Cycle Network, through which it links into the Queen Margaret University, as well as connecting into residential areas, including Stoneybank, Monktonhall and Whitecraig.

Through existing and proposed local connections, Route 4 would also link to Salters Road, Pinkie and Lewisvale.

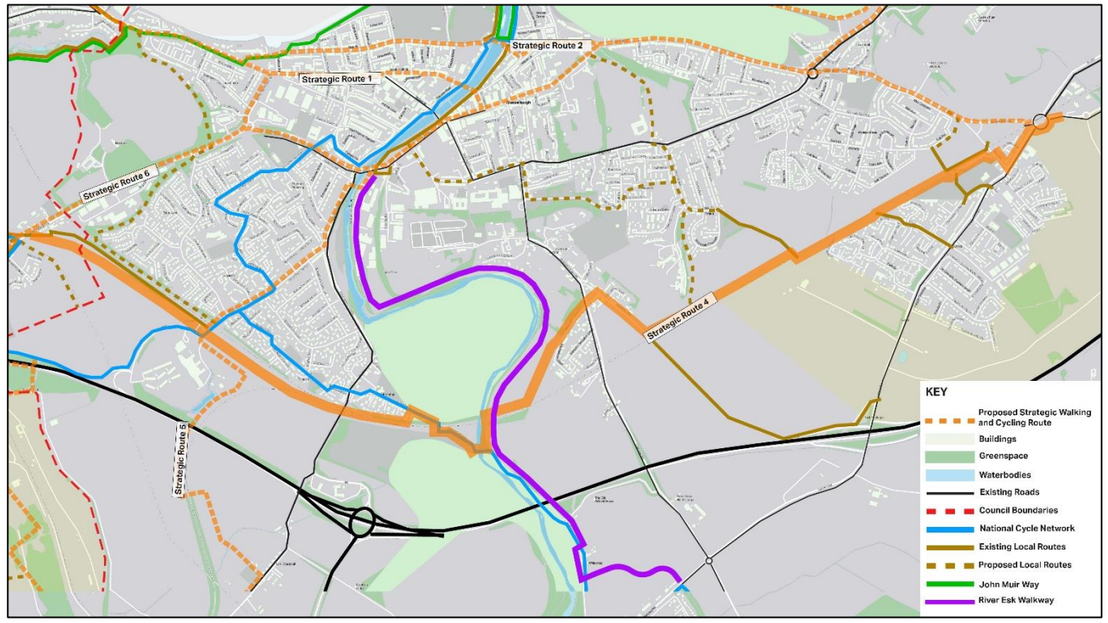


Figure 12-4: Context Plan - Route 4

12.3 Route Option Appraisal

For Route 4, four alignments were proposed, as shown in Figure 12-5. These were as follows:

- 4A: New path along south side of agricultural land to the north of the railway line;
- 4B: New path along north side of agricultural land to the south of railway line;
- 4C: New path along south side of railway line, along Carberry Road, to the south of the residential properties, and a new path along the south side of railway line;
- 4D: Along Crookston Road and Wedderburn Terrace (quiet roads) and upgrade of existing path to the north-west of residential properties linking to the River Esk Walkway.

The four route options were appraised against the route planning objectives (Adaptability; Attractiveness; Coherence; Comfort; Directness; Safety and Deliverability) at Stakeholder Workshop 2. The scores that were assigned to each of the alignments by the four groups during Stakeholder Workshop 2 were combined with the route option appraisal that was carried out by AECOM prior to the workshop. The averages of the 5 scores for each of the route planning objectives are shown in Table 12-3, Figure 12-6 and Figure 12-7.

Table 12-3: Route 4 Option Appraisal - Average Score

NAME	AVERAGE		AVERAGE	
	Route A	Route B	Route C	Route D
Adaptability	8	8	7	6
Attractiveness	7	6	6	5
Coherence	8	8	6	5
Comfort	9	8	4	6
Directness	9	7	5	4
Safety	6	6	6	6
Deliverability	8	7	8	6
TOTAL	**55**	**50**	**43**	**38**

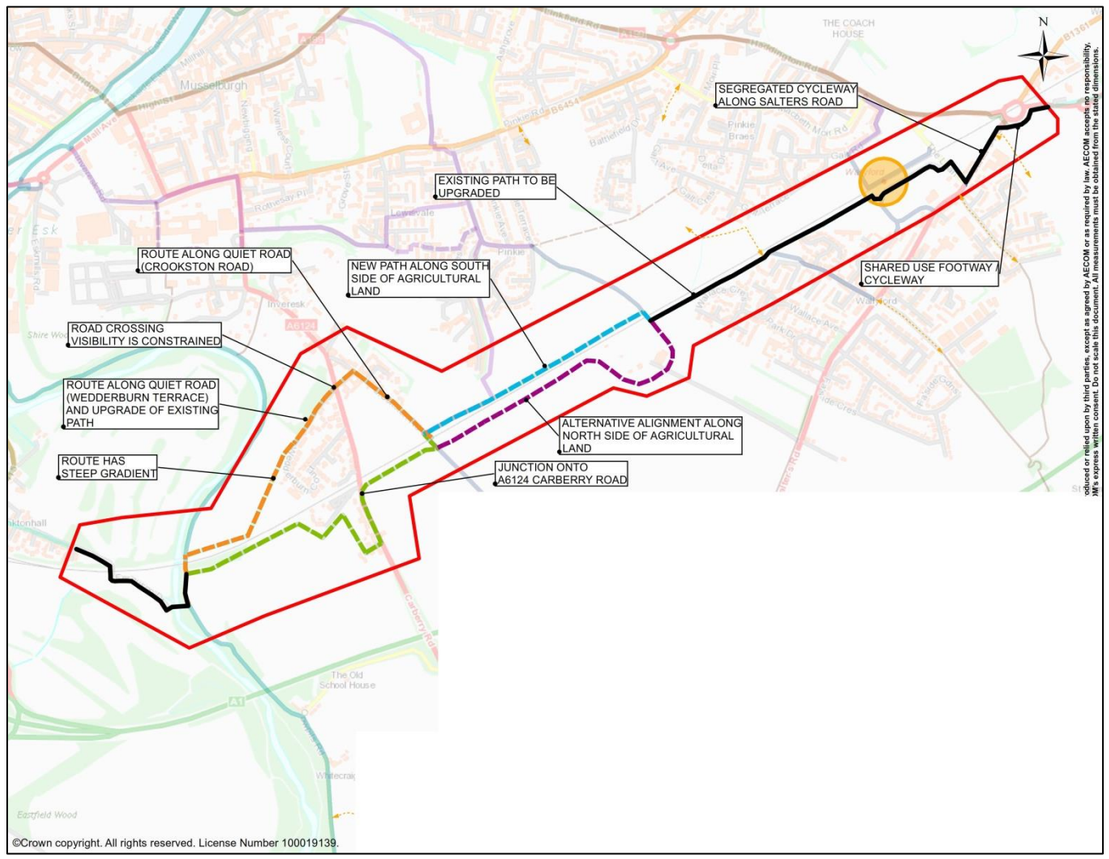


Figure 12-5: Route 4 – Consultation Drawing

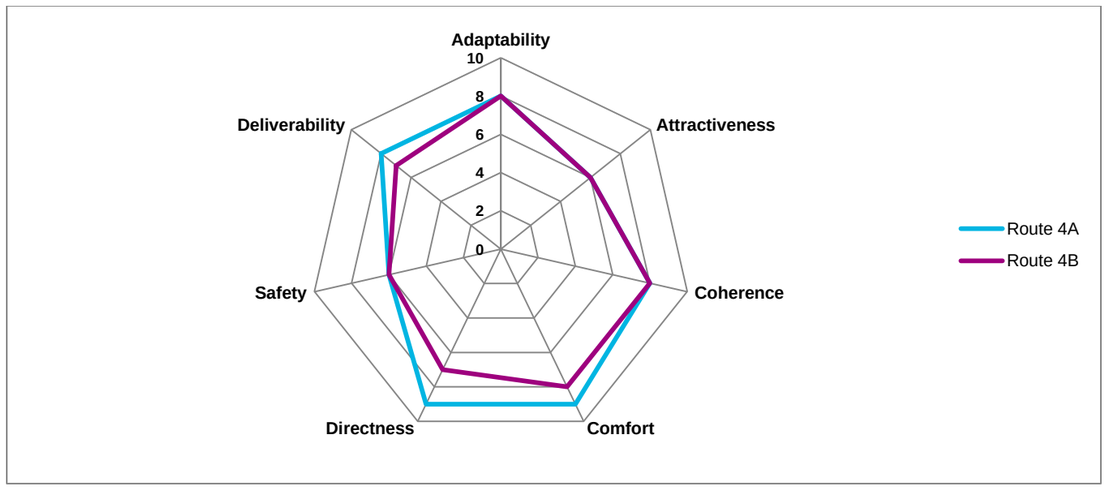


Figure 12-6: Route 4 Option Appraisal - Spider Diagram Route A / B

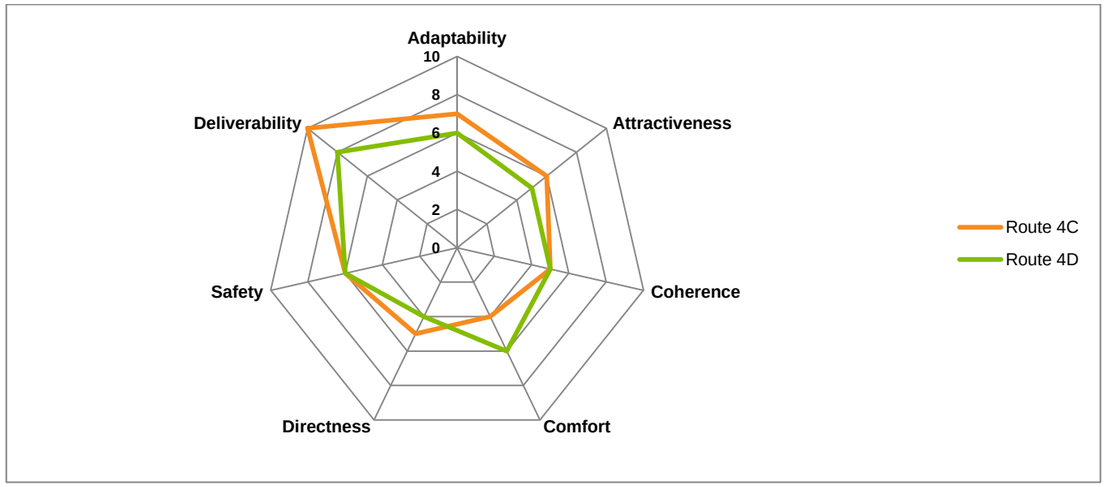


Figure 12-7: Route 4 Option Appraisal - Spider Diagram Route C / D

As shown in Table 12-3, Figure 12-6 and Figure 12-7, the option that scored better for the first section was Route 4A, and that which scored better for the second section was Route 4C.

12.4 Public Consultation

The preferred route, Route Alignment 4A for the first section and 4C for the second section (shown in Figure 12-1), was presented to the public via the online survey and at the Public Exhibition. The key themes that emerged from each of these consultation events are discussed in sections 12.4.1 and 12.4.3.

12.4.2 Online Survey

The online survey revealed that the majority of respondents supported the route, as shown in Figure 12-8.

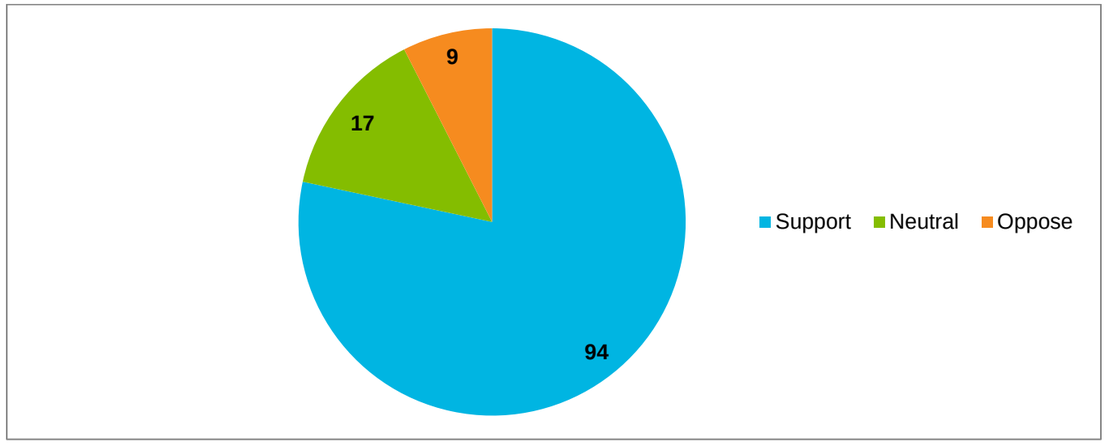


Figure 12-8: Route 4 - Level of Support

Of the 120 respondents, 94 (78.3%) supported the proposals for Route 4.

The key themes from the online survey regarding Route 4 were as follows:

Table 12-4: Key Themes from Online Survey - Route 4

Key Themes	Number
Shared use paths are not a good solution	11

12.4.3 Public Exhibition

No overall themes were identified from the public exhibition comments for Route 4.

12.5 Route Design and Costings

12.5.1 Design Testing

Following the identification of the alignment of the strategic route, the feasibility of different levels of intervention was evaluated by sketching options using AutoCAD and identifying the likely impacts and constraints of each option.

In Table 12-5, the options that were tested for Route 4 are outlined, along with an appraisal of its deliverability (on a scale of 0-5, with 0 meaning the route has issues that are considered to be insurmountable and 5 indicating that there are no significant barriers to the implementation of the option).

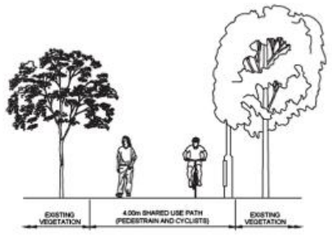
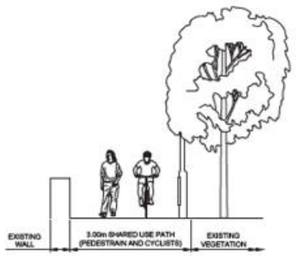
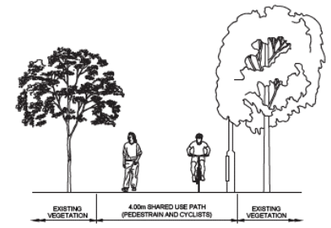
Table 12-5: Design Testing – Route 4

Design Option	Deliverability (Score 0-5)	Impacts and Constraints (Footways, Parking, Traffic lane widths/capacity, other?)	Comments
1. 4.0m wide shared use path with light columns	5	Existing path network width varies in excess of 4m so 4m can be accommodated.	Existing footpath is over 4m in width so 4m will fit.
2. 4.0m wide shared use path with light columns plus placemaking areas	5	Existing path network width varies in excess of 4m so 4m can be accommodated.	Existing footpath is over 4m in width so 4m will fit.

12.5.3 Design Specification

The design specification for Route 4 is shown in Table 12-6.

Table 12-6: Design Specification - Route 4

Section	Level of Intervention	Detail	Cross-section
Newhailes to River Esk	Shared Use Path	4m wide shared use path	 SECTION 1
River Esk to Wedderburn Terrace	Shared Use Path	3m wide shared use path	
Wedderburn Terrace	Quiet Routes	Upgrade existing path	 **Wedderburn Terrace at junction with Carberry Road**
Crookston Road	Quiet Routes	Existing route	 **Example of quiet street with traffic calming measures, London**
Railway Path	New shared use path	Along north side of railway in agricultural land	

12.5.4 Costings

Costings have been produced for the route shown in Table 12-7, below. Low, medium and high costs are presented, which reflect the fact that various levels of intervention could be considered. Regarding the business case for the route, the Median costs are used for calculating the potential scheme benefits.

Note these costs represent a very high level estimate based on the information available at this early stage of the project, assumptions made by the design team and the outline design testing which has been done.

Table 12-7: Cost Estimates - Route 4

Route	Route Extents	Item	Extents (m)	Quantity	Unit	Typical Cost Low	Unit Rate	Typical Cost High	Total Cost Low	Total Cost Median	Total Cost High
Route 4	Route 4 - ELC Segregated Corridor – Wallyford Roundabout to Monktonhall Approx Distance 6.40km	4m wide new shared use path	1774	1774	m	£ 306.64	£ 306.64	£ 306.64	£ 543,979.36	£ 543,979.36	£ 543,979.36
		On Road Facility - Monktonhall Place and Ferguson Drive	498	498	m	£ 10.00	£ 55.00	£ 100.00	£ 4,980.00	£ 27,390.00	£ 49,800.00
		4m wide new shared use path	1114	1114	m	£ 306.64	£ 306.64	£ 306.64	£ 341,596.96	£ 341,596.96	£ 341,596.96
		On Road Facility - Wedderburn and Crookston	630	630	m	£ 10.00	£ 55.00	£ 100.00	£ 6,300.00	£ 34,650.00	£ 63,000.00
		New Crossing - Pinkiehill	1	1	No	£ 62,000.00	£ 62,000.00	£ 62,000.00	£ 62,000.00	£ 62,000.00	£ 62,000.00
		4m wide new shared use path	1239	1239	m	£ 306.64	£ 306.64	£ 306.64	£ 379,926.96	£ 379,926.96	£ 379,926.96
		4m wide shared use path - Upgrade/ Resurface / Widen (existing facility)	620	620	m	£ 150.00	£ 228.32	£ 306.64	£ 93,000.00	£ 141,558.40	£ 190,116.80
		On Road Facility - Wallyford Station area	147	147	m	£ 10.00	£ 55.00	£ 100.00	£ 1,470.00	£ 8,085.00	£ 14,700.00
		2m wide two way segregated cycle facility - Salters Road	241	241	m	£ 300.00	£ 590.00	£ 880.00	£ 72,300.00	£ 142,190.00	£ 212,080.00
		Sub-Total (Without OB)							**£ 1,412,553.28**	**£ 1,539,818.28**	**£ 1,667,083.28**
		Optimism Bias 44%							**£ 621,523.44**	**£ 677,520.04**	**£ 733,516.64**
		New Pedestrian / Cycle Bridge at Newcraighall Road (Incl. 66% OB)							**£ -**	**£ -**	**£ 675,840.00**
		Total							**£ 2,034,076.72**	**£ 2,217,338.32**	**£ 3,076,439.92**

The rates in the table above have been taken from a number of sources, including:

- Transport for Greater Manchester's 'Greater Manchester Cycling Design Guidance & Standards';
- Recent project experience and benchmark data; and
- Spon's Civil Engineering and Highway Works Price Book 2018.

Optimism Bias provided in line with Transport Scotland, Scottish Transport Appraisal Guidance (STAG) Technical Database guidance based on early concept stage of study and nature of uncertainty and likely variance.

Please see Appendix H: Cost Estimate Summary report with full details on the rates, assumptions and exclusions.

12.6 Planning & Environmental

Figure **12-9** shows the environmental constraints of the proposal. Route 4 passes through a Conservation Area, which includes an area of Gardens and Designed Landscapes, a number of Listed Buildings and Scheduled Monuments. The Musselburgh area, including this route, is also a Registered Battlefield. The route also passes through an area of Ancient Woodland.

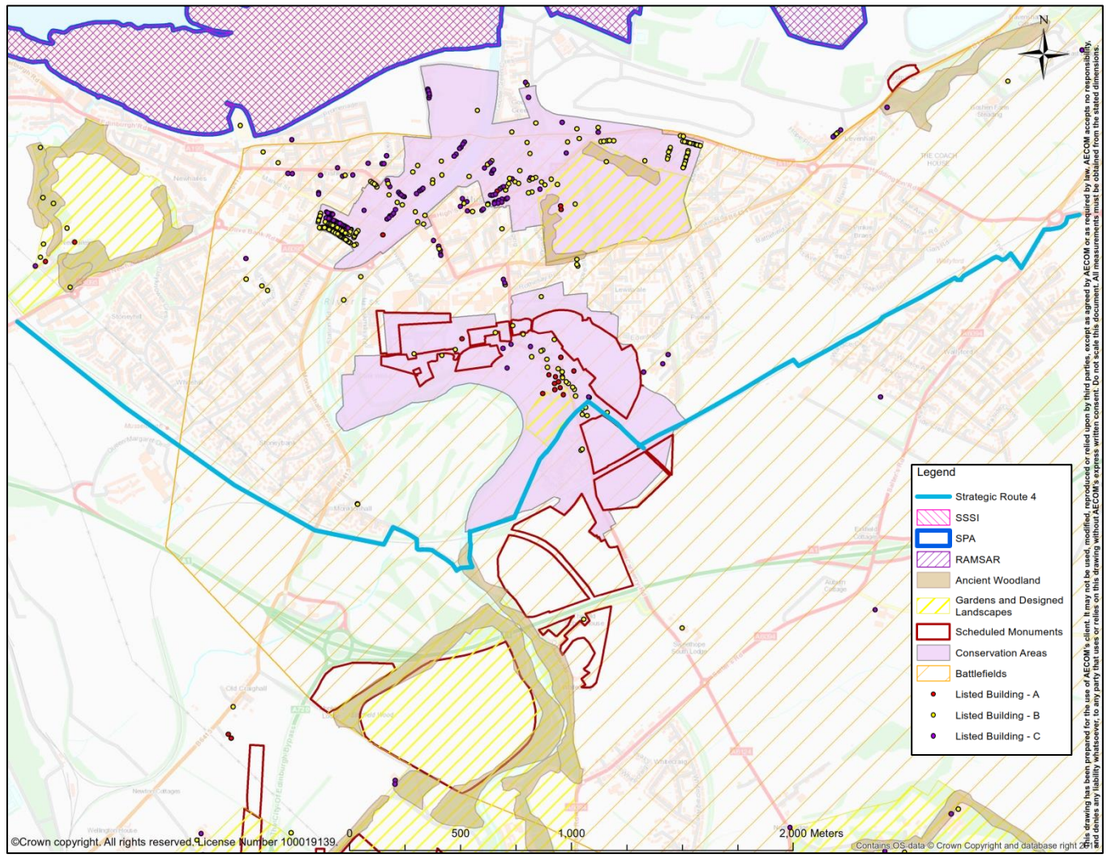


Figure 12-9: Route 4 Environmental Constraints

12.7 Land Ownership

The following areas were identified as potentially being in private ownership:

1) The land between the existing path and the underpass;
2) The land between the underpass and Crookston Road;
3) The private road between Crookston Road and Carberry Road; and
4) The paths between Wedderburn Terrace and Ferguson Drive.

These areas are shown graphically in Figure 12-10.

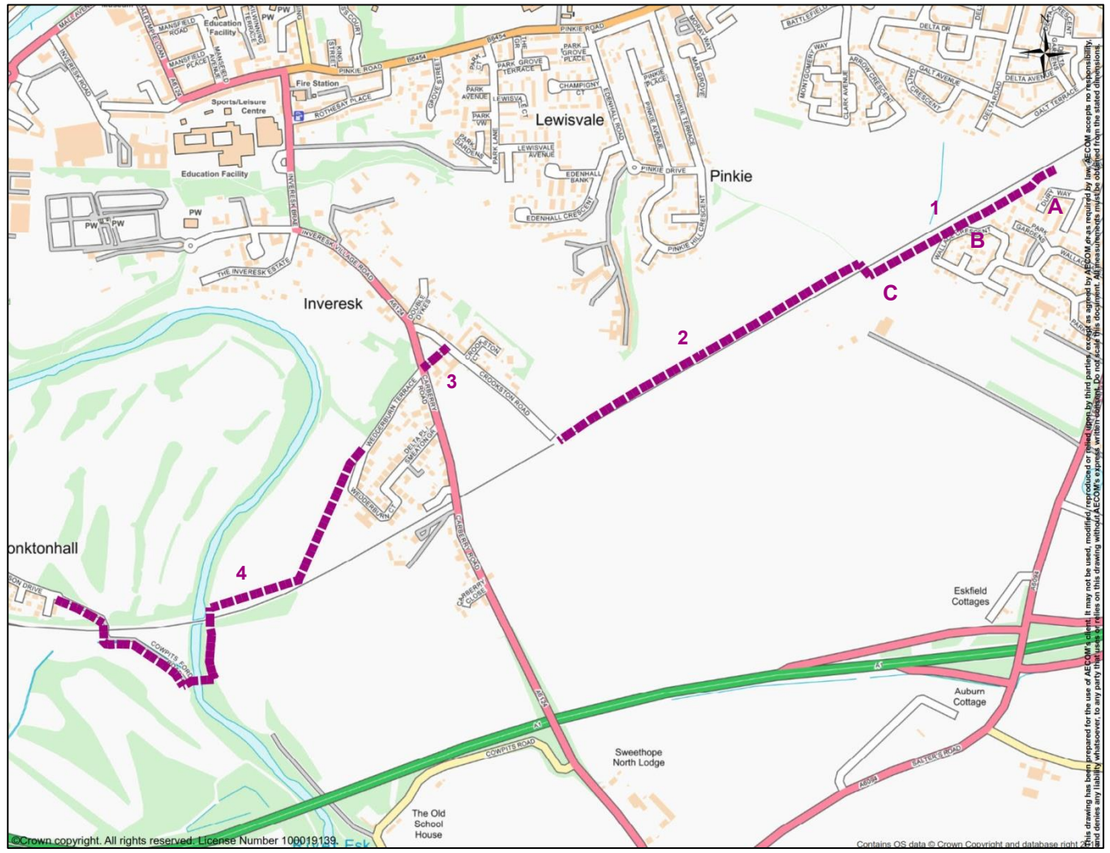


Figure 12-10: Land Ownership Map Route 4

The land agent of one of the private land owners has responded to the proposals with a proposed alternative route to the south-west of this section, through agricultural land.

For Location 1, from point A to B the land is owned privately by an individual and from B to C, the land is owned by David Wilson Homes. This section has been identified as part of the Segregated Active Travel Corridor and is a Sustrans Community Links project for the financial year 2018-19. At the time of writing, a 3m wide shared use path from point A to C and the rail underpass was under construction. Both landowners have given permissions, where necessary, to widen the existing core path to provide the 3m wide path.

12.8 Road Safety Commentary

A Road Safety Review was carried out by a senior member of AECOM's Road Safety team in Scotland. This comprised a review of the route corridor and indicative design cross-sections which are presented in the report. Potential issues relating to road safety were identified.

The following issues were raised relating to Route 4:

- Due to on street parking on the quiet route sections, there is a risk that nearside vehicle doors could be opened which could result in cyclists colliding into them.
- The route is shown to follow a new path along the north side of the railway line. There is concern that the boundary fence may not be suitable to prevent access to the railway. This requires to be investigated to ensure a suitable boundary fence.
- Noted that there is indication of a steep gradient; cyclists could travel at higher speeds which increases the risk of collision with other users.
- Noted that there is a road crossing with reduced visibility. This matter requires to be addressed.
- Where the shared use paths are shown with lighting columns and vegetation, there is a risk that tree canopies could obscure lamps resulting in dark spots or shadows which can result in users not being visible during darkness hours.

13. Route 5: Old Craighall to Musselburgh Town Centre

13.1 Route Overview and Recommendations

A strategic route connecting Old Craighall, Monktonhall, Stoneybank and Musselburgh town centre was identified. This route would provide connections to the aforementioned areas, as well as Queen Margaret University and Musselburgh railway station.

The route would provide a key connection between Musselburgh town centre and the residential areas to the south, as well as to the key trip attractors of Queen Margaret University and Musselburgh railway station. Implementation of such a route would likely enhance the attractiveness of cycling between these locations, and through this area as part of a longer journey. Furthermore, enhancing the walking and cycle infrastructure around Musselburgh railway station will improve the accessibility of Musselburgh town centre for tourists.

The design work that has been carried out has indicated that the most deliverable option would be to provide traffic calming on Whitehill Farm Road and Stoneybank Terrace, in addition to 4 metre wide shared use paths between Old Craighall Road and Whitehill Farm Road, and between Haugh Park and Station Road. This is due to the restricted width on Whitehill Farm Road and Stoneybank Terrace caused by residential on-street parking.

A new bridge is also proposed over the River Esk, connecting Haugh Park on the west side with Station Road on the east.

13.1.1 Proposed Route

The proposed route alignment is shown in Figure 13-1.

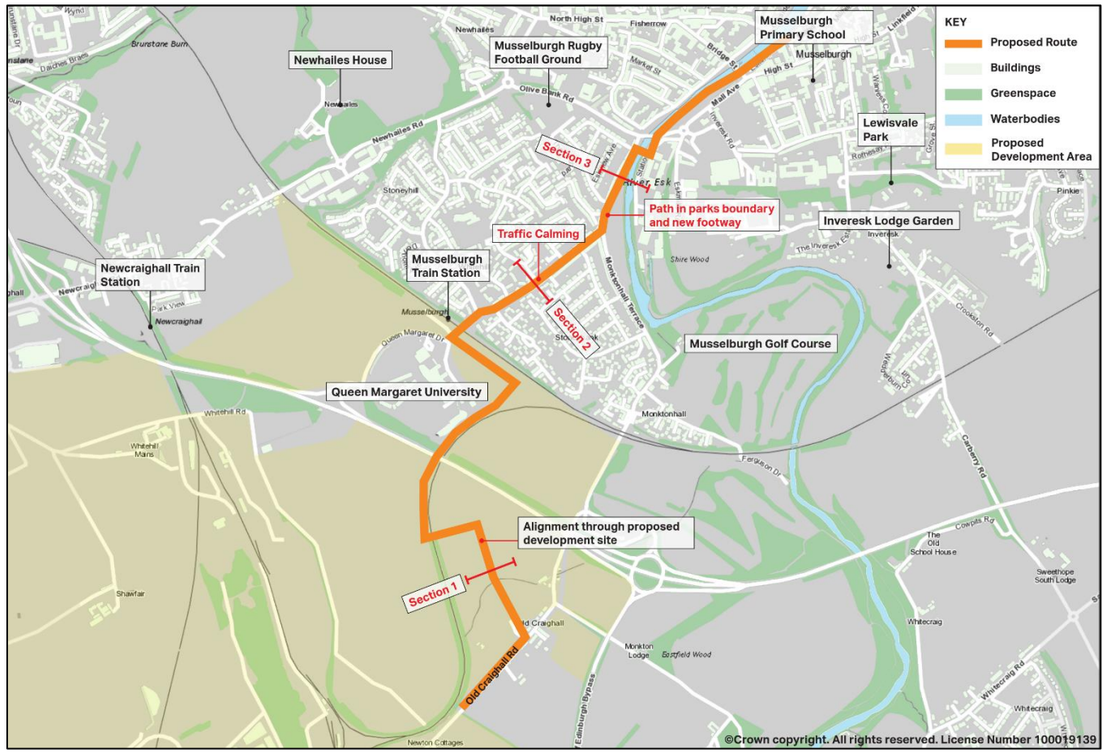


Figure 13-1: Design Proposals - Route 5

13.1.2 Indicative Route Design

The following indicative street layouts were selected for consultation and cost estimation. Various configurations which meet the design objectives were initially tested in the route corridor. These indicative layouts represent those which are considered most deliverable at this early stage.

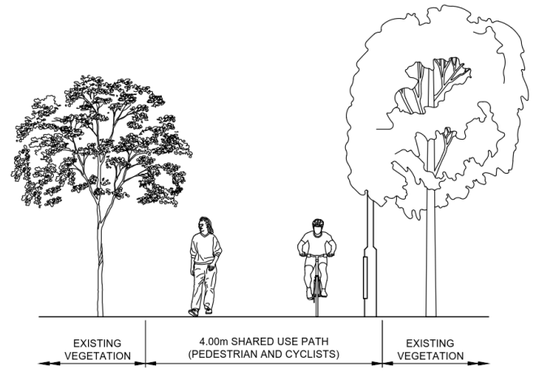


Figure 13-2: Cross Section Route 5 – Old Craighall Road to Whitehill Farm Road

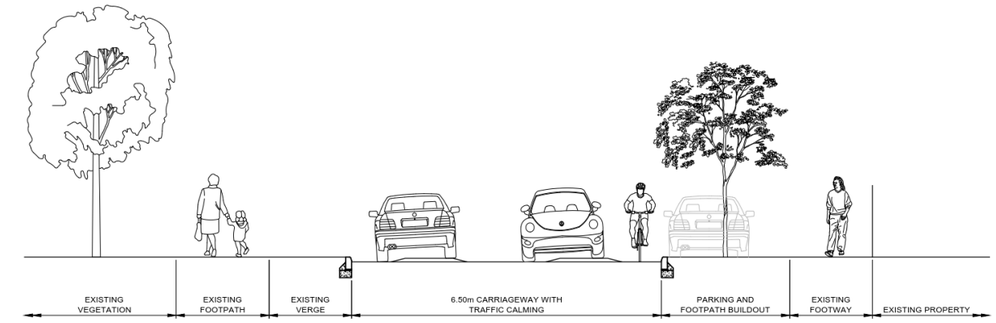


Figure 13-3: Cross Section Route 5 – Whitehill Farm Road, Stoneybank Terrace

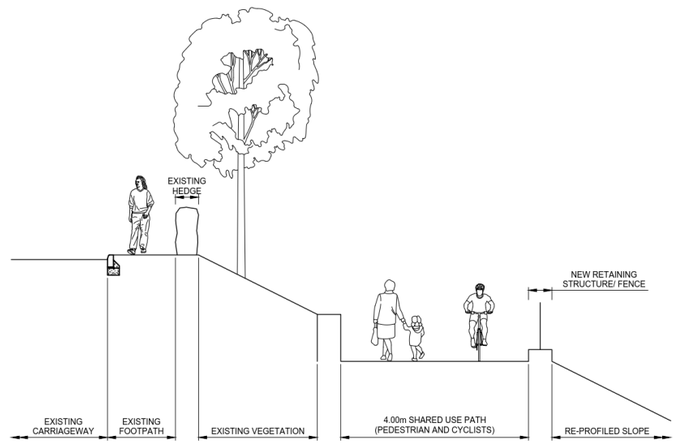


Figure 13-4: Cross Section Route 5 – Route through Haugh Park

13.1.3 Cost Estimate Summary

A cost estimate is provided in Table 10-1 below. A 'low', 'medium' and 'high' cost has been provided, based on the standard of intervention. Further detail regarding the costings is provided in section 13.5.3.

Table 13-1: Cost Estimate Summary – Route 5

Route	Low Cost	Medium Cost	High Cost
5	£1,054,627.78	£2,392,028.58	£3,271,189.38

As shown in Table 13-2, the benefit cost ratio for Route 5 is less than 1 for the Core Demand Scenario, suggesting that this route provides poor value for money, and is between 1 and 1.5 for the Sensitivity Demand Scenario, suggesting this route provides low value for money in line with WebTAG guidance.

However, a conservative approach to calculating benefits was taken, which excluded any benefits from journeys made to reach the new routes. Due to the numerous connections from the proposed network to other local and national active travel routes, the resulting benefits may be justifiably higher than has been assumed.

Additionally, an increased cyclist collision rate has been assumed, accounting for the fact that increased levels of cycling leads to increased probability of cycle related collisions. This equates to an economic disbenefit. However, the improved cycle infrastructure may actually lead to a decrease in the number of cycle collisions.

Table 13-2: Business Case Summary – Route 5

	Core Demand Scenario (and Medium Costs)						Sensitivity Demand Scenario (and Medium Costs)					
	Without GCP			With GCP			Without GCP			With GCP		
	PVB	PVC	BCR	PVB	PVC	BCR	PVB	PVC	BCR	PVB	PVC	BCR
Route 5	1,582	2,076	0.76	1,791	2,076	0.86	2,670	2,076	1.29	2,984	2,076	1.44

13.1.4 Recommendations

The key recommendations for the next stage of the route development include:

1. Early engagement with local residents and businesses to inform future designs;
2. Early engagement with bus companies to ensure proposed traffic calming measures are appropriate;
3. Early engagement with Scotrail to inform links with Musselburgh railway station;
4. Planning permission to be obtained;
5. Consider parking surveys and wider parking strategy, which could present opportunities along route;
6. Further engagement with private land owners; and
7. Determination as to whether new bridge is required and engage with Flood Protection project.

13.2 Route Context

Figure 13-5 shows Strategic Route 5 in relation to other existing and proposed walking and cycling routes.

Route 5 links Old Craighall to Musselburgh town centre, via Queen Margaret University and Musselburgh railway station.

This route connects to the National Cycle Network at Queen Margaret University and again at Whitehill.

The route also connects to the River Esk Walkway.

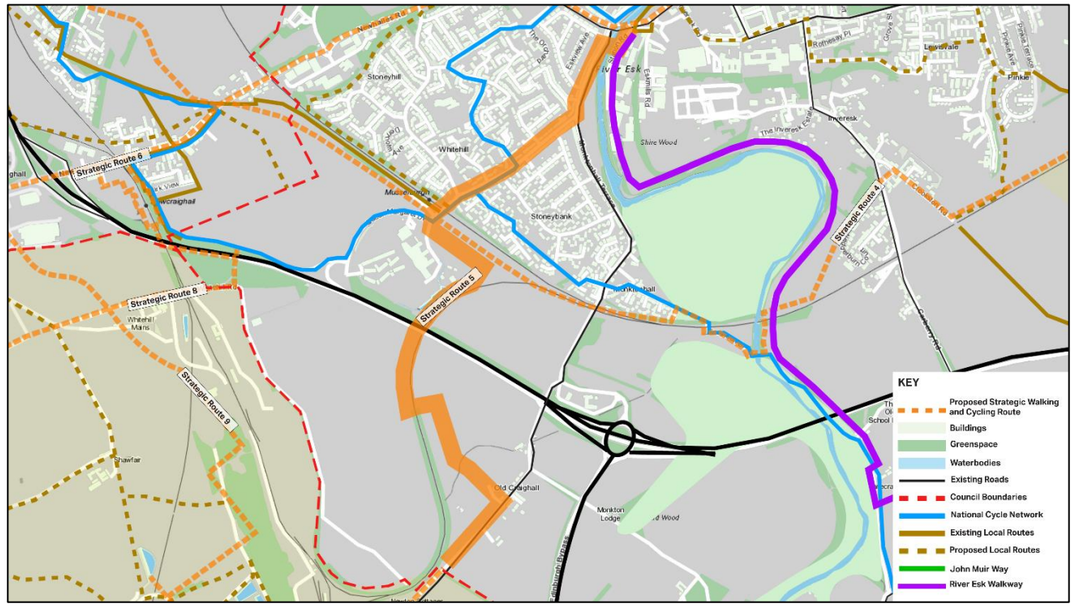


Figure 13-5: Context Plan - Route 5

13.3 Route Option Appraisal

Regarding Route 5, three primary alignments were identified, as shown in Figure 13-6.

The following points were raised by stakeholders regarding Route 5:

- An alignment providing a link to Queen Margaret University and Musselburgh railway station would be desirable, with utilisation of Stoneybank Terrace and Whitehill Farm Road being potential options.
- The possibility of the B6415 being a greenway / bus only route was raised.
- It was stated that the provision of all 3 routes could be useful for cyclists (Routes 5A, 5B and 5C). The study area could be broken down into two areas:
  1. Musselburgh railway station and QMU to town centre; and
  2. Old Craighall to town centre.
- It was noted that utilisation of one-way streets, priority systems, etc. could help surmount the constrained section along the B6415, Monktonhall Terrace and Eskview Terrace, although it was accepted that this may have to be supported by traffic modelling and that it would likely be contentious.
- There was generally a consensus that a route down Monktonhall Terrace and Eskview Terrace would be very challenging to implement due to the residents parking, topography and available road width. The route that proposed a new alignment over the River Esk was seen as being more attractive.

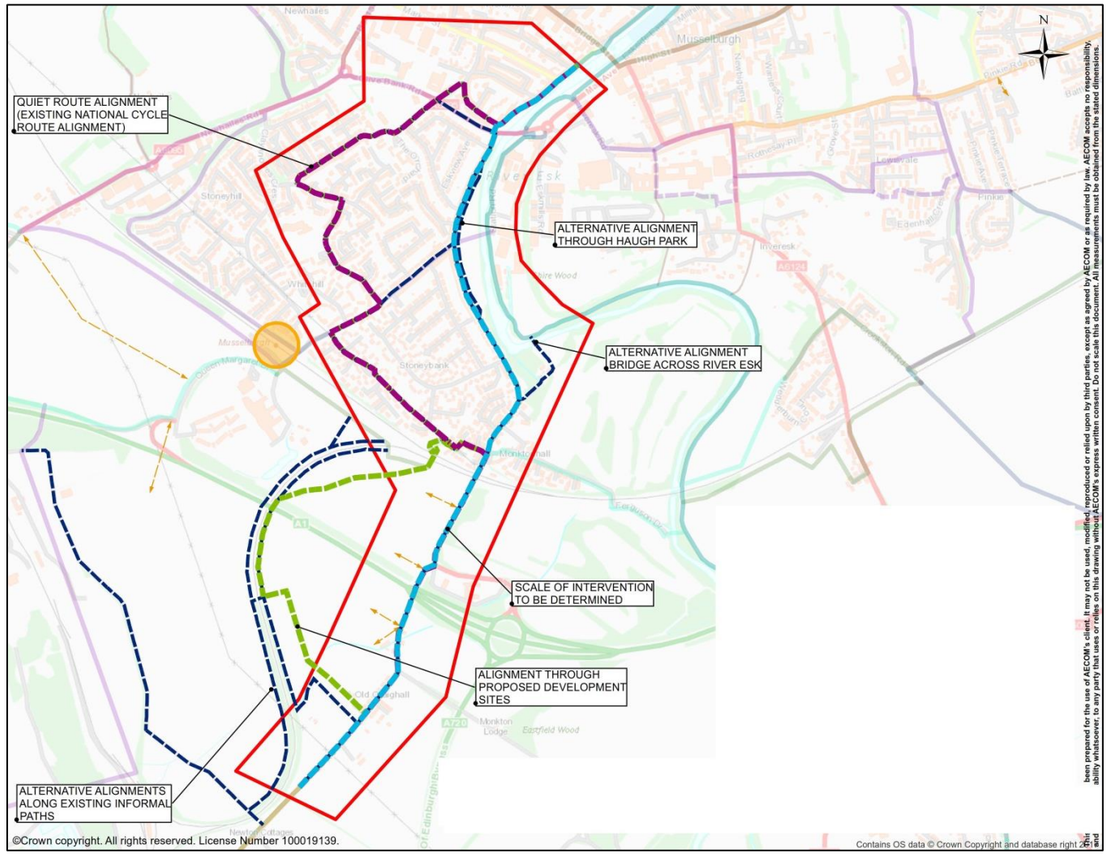


Figure 13-6: Route Alignments Identified Prior to Stakeholder Workshop 2

13.4 Public Consultation

The route, shown in Figure 13-1, was presented to the public via the online survey and at the Public Exhibition. The key themes that emerged from each of these consultation events are discussed in sections 13.4.1 and 13.4.2 respectively.

13.4.1 Online Survey

The online survey revealed that the majority of respondents supported the route, as shown in Figure 13-7.

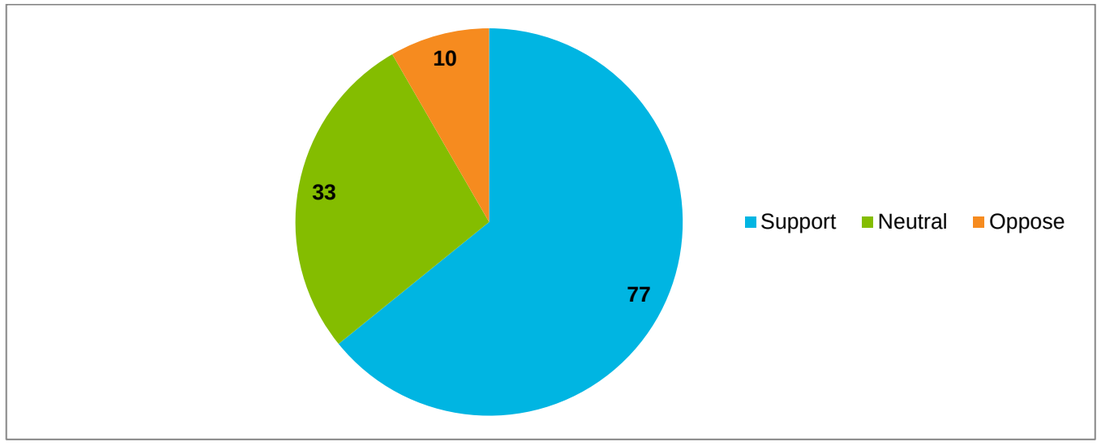


Figure 13-7: Route 5 – Level of Support

Of the 120 respondents, 77 (64.2%) supported the proposals for Route 5.

The key themes from the online survey regarding Route 5 were as follows:

Table 13-3: Key Themes from Online Survey - Route 5

Key Themes	Number
Segregate paths from motor vehicles	16
Shared use paths are not a good solution	5

13.4.2 Public Exhibition

The key themes that emerged from the public exhibition regarding Route 5 were as follows:

Table 13-4: Key Themes from Public Consultation – Route 5

Key Themes	Number
Alternative route through field below Queen Margaret University	2
Link to Dalkeith	2

13.5 Route Design and Costings

13.5.1 Design Testing

Following the identification of the alignment of the strategic route, the feasibility of different levels of intervention was evaluated by sketching options using AutoCAD and identifying the likely impacts and constraints of each option.

In Table 13-5, the options that were tested for Route 5 are outlined, along with an appraisal of its deliverability (on a scale of 0-5, with 0 meaning the route has issues that are considered to be insurmountable and 5 indicating that there are no significant barriers to the implementation of the option).

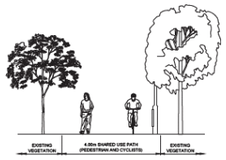
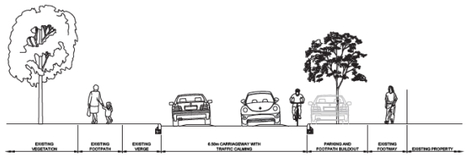
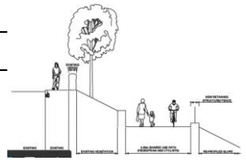
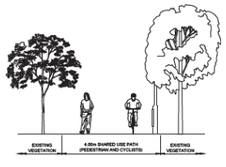
Table 13-5: Design Testing – Route 5

Design Option	Deliverability (Score 0-5)	Impacts and Constraints (Footways, Parking, Traffic lane widths/capacity, other?)	Comments
1. Traffic-free 4.0m wide shared use path in greenfield site / Traffic calming on Stoneybank Terrace / 4.0m wide shared use path on retaining wall in Park adjacent to Monktonhall Terrace.	5	High impact on parking on Stoneybank Terrace, road is not wide enough to accommodate cycleways and maintain a 6.5m carriageway width.	Use of traffic calming within existing constraints of Stoneybank Terrace.
2. Traffic-free 4.0m wide shared use path in greenfield site / Shared use path on Stoneybank Terrace (south side) as wide as possible? / 4.0m wide shared use path on retaining wall in Park adjacent to Monktonhall Terrace.	4	High impact on parking on Stoneybank Terrace, road is not wide enough to accommodate cycleways and maintain a 6.5m carriageway width.	Use of shared use path within existing constraints of Stoneybank Terrace.
3. Traffic-free 4.0m wide shared use path in greenfield site / Stoneybank Terrace: Segregated cycleway uphill only (south side) 2.0m wide / 4.0m wide shared use path on retaining wall in Park adjacent to Monktonhall Terrace.	3	High impact on parking on Stoneybank Terrace, road is not wide enough to accommodate cycleways and maintain a 6.5m carriageway width.	Use of 2m wide segregated cycleway uphill only (South side) within existing constraints of Stoneybank Terrace.

13.5.2 Design Specification

The design specification for Route 5 is shown in Table 13-6, below:

Table 13-6: Design Specification - Route 5

Section	Level of Intervention	Detail	Cross-section
Old Craighall Road	Quiet Routes	Additional traffic calming measures	 **Example of Quiet Street with Traffic Calming Measures, London**
Route through proposed development sites to QMU/ Musselburgh Railway Station	New shared use path	4m wide shared use path	
QMU/ Musselburgh Railway Station to Monktonhall Terrace	Quiet Routes	Traffic calming	
Monktonhall Terrace to River Esk Crossing	Shared use path	4m wide shared use path New retaining structure Re-profiled slope	
River Esk Crossing to Eskside E	New shared use path	4m wide shared use path	

13.5.3 Costings

Costings have been produced for the route shown in Table 13-7, below. Low, medium and high costs are presented, which reflect the fact that various levels of intervention could be considered. Regarding the business case for the route, the Median costs are used for calculating the potential scheme benefits.

Note these costs represent a very high level estimate based on the information available at this early stage of the project, assumptions made by the design team and the outline design testing which has been done.

Table 13-7: Cost Estimates - Route 5

Route	Route Extents	Item	Extents (m)	Quantity	Unit	Typical Cost Low	Typical Cost Median	Typical Cost High	Total Cost Low	Total Cost Median	Total Cost High
Route 5	Route 5 - Old Craighall to Musselburgh Town Centre Approx Distance 3.80km	4m wide new Shared use Path - Old Craighall Road - Development land	214	214	m	£ 306.64	£ 306.64	£ 306.64	£ 65,620.96	£ 65,620.96	£ 65,620.96
		4m wide new Shared use Path - Through Development Land	703	703	m	£ 306.64	£ 306.64	£ 306.64	£ 215,567.92	£ 215,567.92	£ 215,567.92
		4m wide new Shared use Path - Development Land / QMU	1085	1085	m	£ 306.64	£ 306.64	£ 306.64	£ 332,704.40	£ 332,704.40	£ 332,704.40
		Whitehill Farm Road/ Stoneybank Terrace: On Road treatments	713	713	m	£ 10.00	£ 55.00	£ 100.00	£ 7,130.00	£ 39,215.00	£ 71,300.00
		Whitehill Farm Road/ Stoneybank Terrace: Raised Tables/Chicanes	-	4	no.	£ -	£ 8,500.00	£ 34,000.00	£ -	£ 34,000.00	£ 136,000.00
		4m wide new Shared use Path on retaining structure / through Haugh Park	358	358	m	£ 306.64	£ 306.64	£ 306.64	£ 109,777.12	£ 109,777.12	£ 109,777.12
		4m wide Shared use Path - alongside River Esk	570	570	m	£ 150.00	£ 228.32	£ 306.64	£ 85,500.00	£ 130,142.40	£ 174,784.80
		Eskside East: On Road treatments	158	158	m	£ 10.00	£ 55.00	£ 100.00	£ 1,580.00	£ 8,690.00	£ 15,800.00

Sub-Total (Without OB)	**£ 732,380.40**	**£ 805,575.40**	**£ 946,770.40**
Optimism Bias 44%	**£ 322,247.38**	**£ 354,453.18**	**£ 416,578.98**
Sheet Pile Retaining Structure (Incl. 66% OB)	**£ -**	**£ 1,232,000.00**	**£ 1,232,000.00**
New Pedestrian / Cycle Bridge Across River Esk (Incl. 66% OB)	**£ -**	**£ -**	**£ 675,840.00**
Total	**£ 1,054,627.78**	**£ 2,392,028.58**	**£ 3,271,189.38**

The rates in the table above have been taken from a number of sources, including:

- Transport for Greater Manchester's 'Greater Manchester Cycling Design Guidance & Standards';
- Recent project experience and benchmark data; and
- Spon's Civil Engineering and Highway Works Price Book 2018.

Optimism Bias provided in line with Transport Scotland, Scottish Transport Appraisal Guidance (STAG) Technical Database guidance based on early concept stage of study and nature of uncertainty and likely variance.

Please see Appendix H: Cost Estimate Summary report with full details on the rates, assumptions and exclusions.

13.6 Planning & Environmental

Figure 13-8 shows the environmental constraints of the proposal. Route 5 passes through a Conservation Area, which includes an area of Gardens and Designed Landscapes, a number of Listed Buildings and areas of Ancient Woodland. The Musselburgh area, including some of this route, is also a Registered Battlefield.

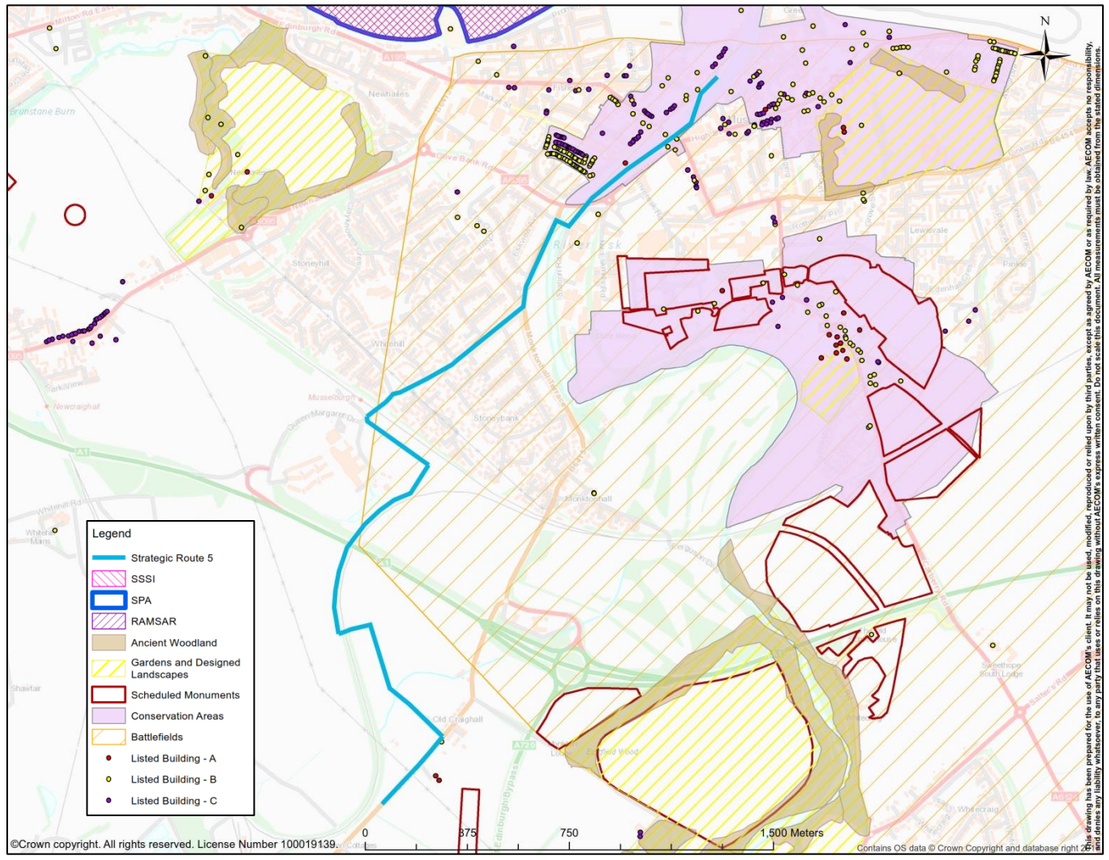


Figure 13-8: Route 5 Environmental Constraints

13.7 Land Ownership

The following areas were identified as potentially being in private ownership:

1) The land to the north-west of the B6415 Old Craighall Road;
2) The development wedge between the north-east side of the B6415 Old Craighall Road and the south side of the A1;
3) The development wedge between the north-east side of the A1 and the south-west side of the railway line (to Musselburgh station);
4) The land between Monktonhall Place and Whitehill Farm Road; and
5) Haugh Park.

These areas are shown graphically in Figure 13-9 and Figure 13-10.

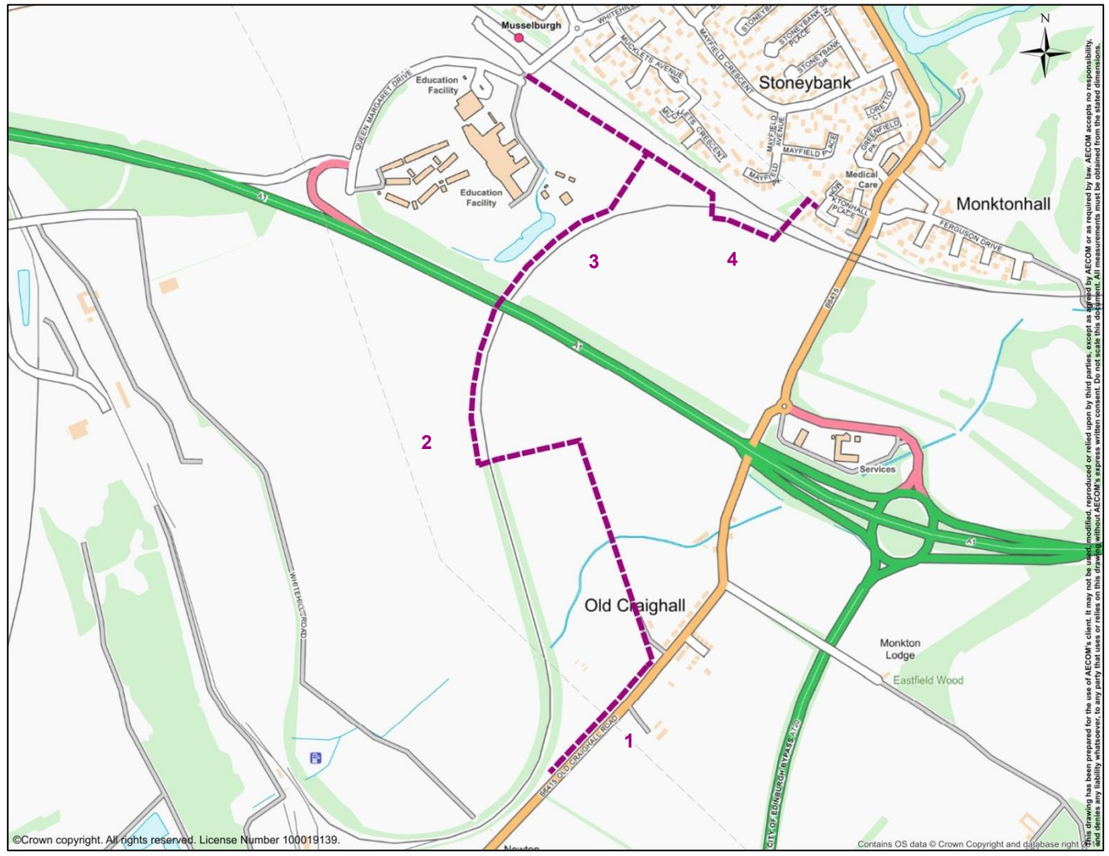


Figure 13-9: Land Ownership Map Route 5 – Old Craighall Area

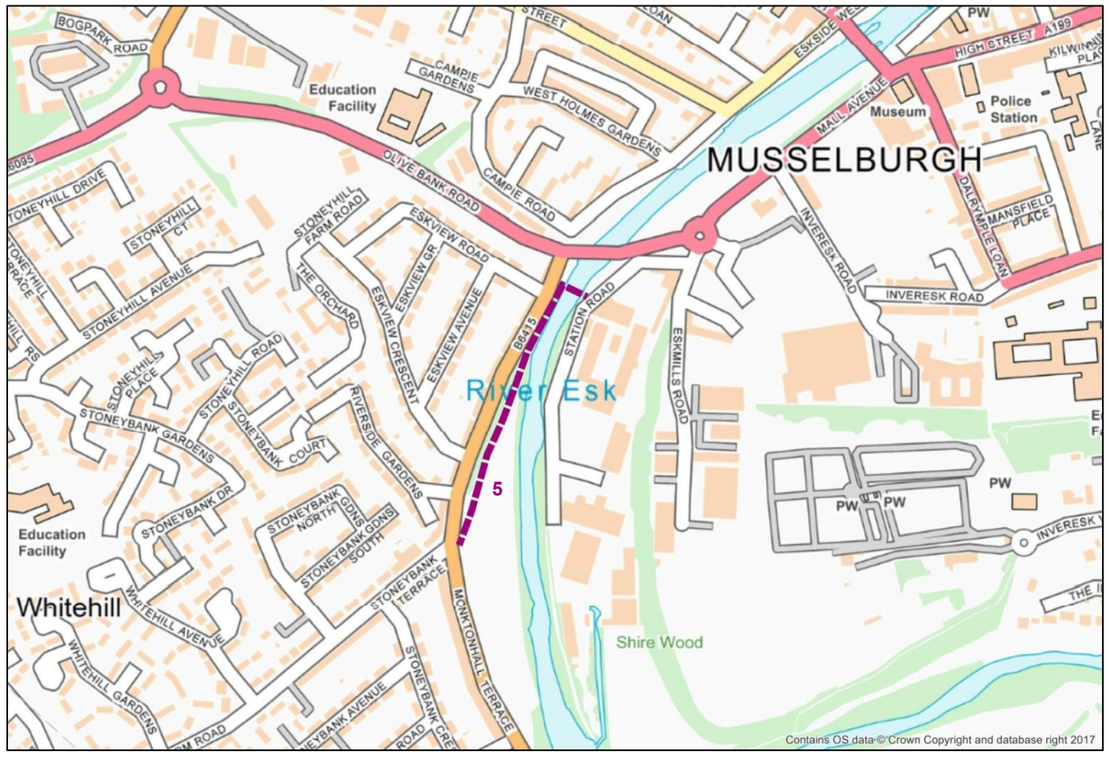


Figure 13-10: Land Ownership Map Route 5 – Musselburgh Area

The land to the north of the A1 (the areas marked 3 and 4 in Figure 13-9) is owned by Persimmon Homes. Regarding the land to the south of the A1 (the areas marked 1 and 2 in Figure 13-9), it is understood that Persimmon Homes have the option on the land.

Haugh Park (the area marked 5 in Figure 13-10) is owned by East Lothian Council.

13.8 Road Safety Commentary

A Road Safety Review was carried out by a senior member of AECOM's Road Safety team in Scotland. This comprised a review of the route corridor and indicative design cross-sections which are presented in the report. Potential issues relating to road safety were identified.

The following issues were raised relating to Route 5:

- On the quiet route section, there is a risk that nearside vehicle doors could be opened which could result in cyclists colliding into them.
- Section 3 shows a new retaining structure / fence; however there is no indication of the height. This must be suitable to prevent cyclists falling down the slope.
- Where the new shared use path is shown with lighting columns and vegetation, there is a risk that tree canopies could obscure lamps resulting in dark spots or shadows which can result in users not being visible during darkness hours.

14. Route 6: Fort Kinnaird to Musselburgh Town Centre

14.1 Route Overview and Recommendations

A strategic route was identified between Fort Kinnaird, Newcraighall and Musselburgh town centre, along the alignment of the A6095. This route would link Fort Kinnaird, Newcraighall (including Newcraighall railway station), Newhailes House and Musselburgh town centre, as well as providing an improved link to Newcraighall railway station from Newcraighall Public Park via an underpass under the railway line.

The route would greatly enhance the connectivity of Fort Kinnaird and Newcraighall railway station by active travel means, as well as improving the connections between Musselburgh and Edinburgh. This could serve to reduce the dependence on the private car and encourage more active travel journeys.

Early design work that has been carried out has indicated that a 4 metre shared use footway would be achievable on Newhailes Road / Newcraighall Road, between the A199 and the railway bridge on Newcraighall Road adjacent to Niddrie Bowling Club. Through Newcraighall the route would be on-road with appropriate traffic calming, while between Newcraighall Drive and Fort Kinnaird, the route would comprise a 4 metre wide shared use footway.

14.1.1 Proposed Route

The proposed route alignment is shown in Figure 14-1.

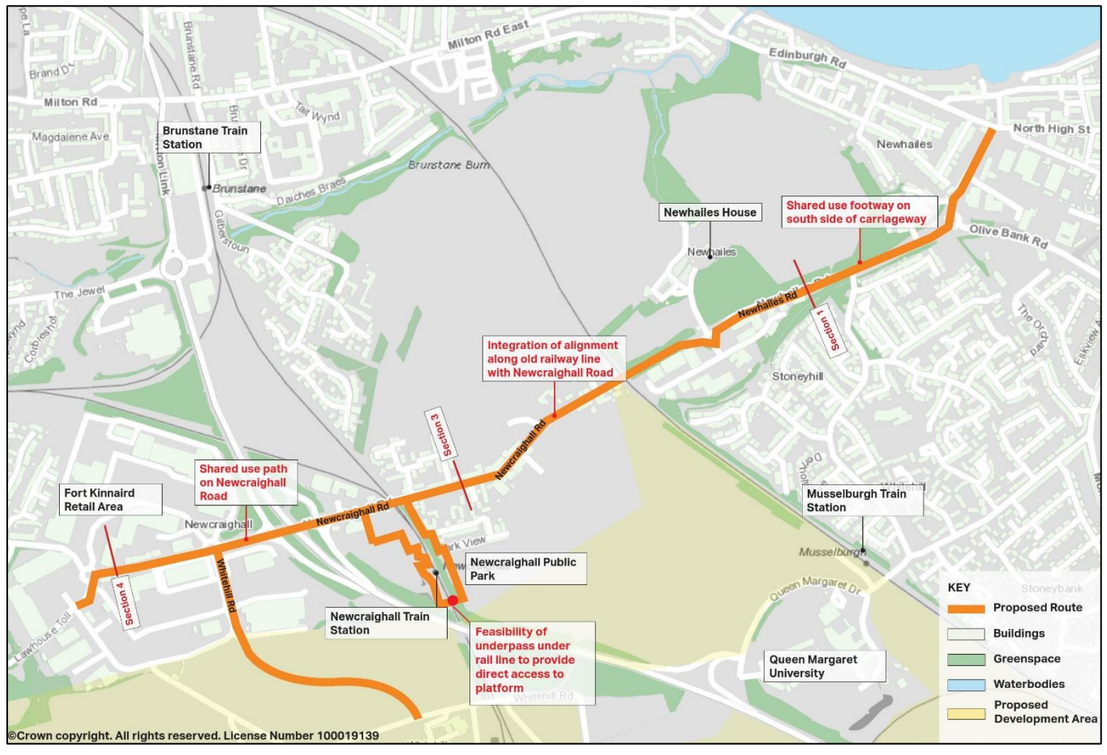


Figure 14-1: Design Proposals - Route 6

14.1.2 Indicative Route Design

The following indicative street layouts were selected for consultation and cost estimation. Various configurations which meet the design objectives were initially tested in the route corridor. These indicative layouts represent those which are considered most deliverable at this early stage.

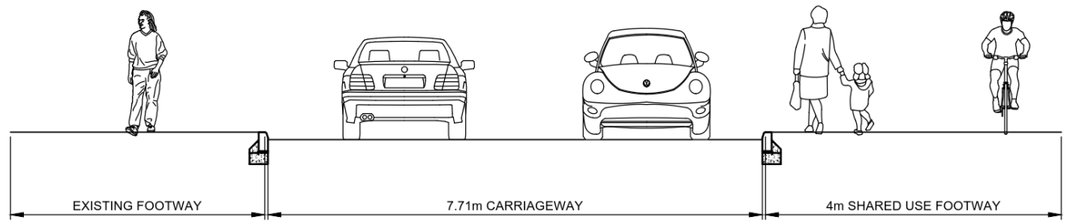


Figure 14-2: Cross Section Route 6 – A199 to Railway Bridge

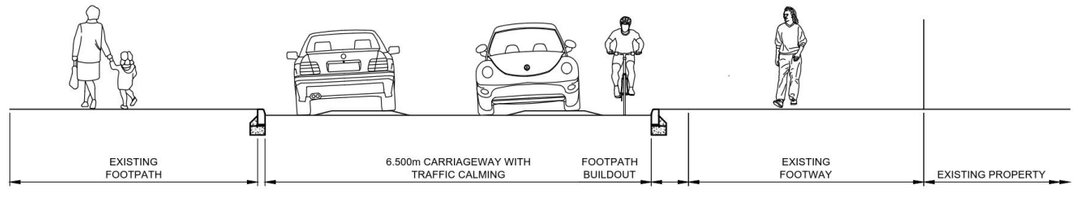


Figure 14-3: Cross Section Route 6 – Railway Bridge to Newcraighall Drive

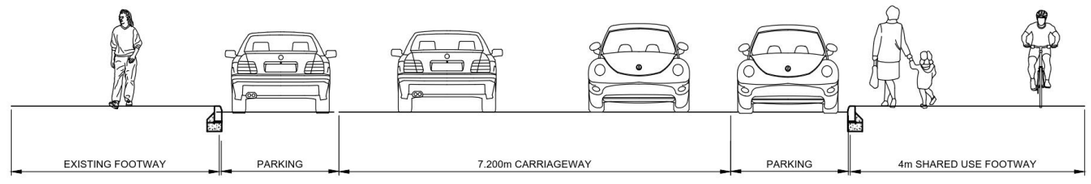


Figure 14-4: Cross Section Route 6 – Newcraighall Drive to Fort Kinnaird

14.1.3 Cost Estimate Summary

A cost estimate is provided in Table 14-1 below. A 'low', 'medium' and 'high' cost has been provided, based on the standard of intervention. Further detail regarding the costings is provided in section 14.5.3.

Table 14-1: Cost Estimate Summary – Route 6

Route	Low Cost	Medium Cost	High Cost
6	£416,268.00	£2,246,958.00	£3,063,888.00

As shown in Table 14-2, the benefit cost ratio for Route 6 is between 1 and 1.5 for the Core Demand Scenario, suggesting that this route provides low value for money, is between 1.5 and 2 for the Sensitivity Demand Scenario without gross cycling product (GCP), suggesting this route provides medium value for money, and is between 2 and 4 for the Sensitivity Demand Scenario with GCP, suggesting this route provides high value for money in line with WebTAG guidance.

Table 14-2: Business Case Summary – Route 6

	Core Demand Scenario (and Medium Costs)						Sensitivity Demand Scenario (and Medium Costs)					
	Without GCP			With GCP			Without GCP			With GCP		
	PVB	PVC	BCR	PVB	PVC	BCR	PVB	PVC	BCR	PVB	PVC	BCR
Route 6	2,281	1,950	1.17	2,572	1,950	1.32	3,668	1,950	1.88	4,104	1,950	2.11

14.1.4 Recommendations

The key recommendations for the next stage of the route development include:

1. Early engagement with local residents and businesses to inform future designs;
2. Early engagement with bus companies to ensure proposed traffic calming measures are appropriate;
3. Further engagement with private land owners; and
4. Determination of the feasibility of providing a bridge over Newcraighall Road, to connect the path to Brunstane and the path to Musselburgh railway station.

14.2 Route Context

Figure 14-5 shows Strategic Route 6 in relation to other existing and proposed walking and cycling routes.

Route 6 links Fort Kinnaird with Newcraighall railway station, Musselburgh railway station and Musselburgh town centre.

This route links in with the National Cycle Network, down to Queen Margaret University and up to Brunstane.

The route also links to The Jewel via proposed and existing local routes.

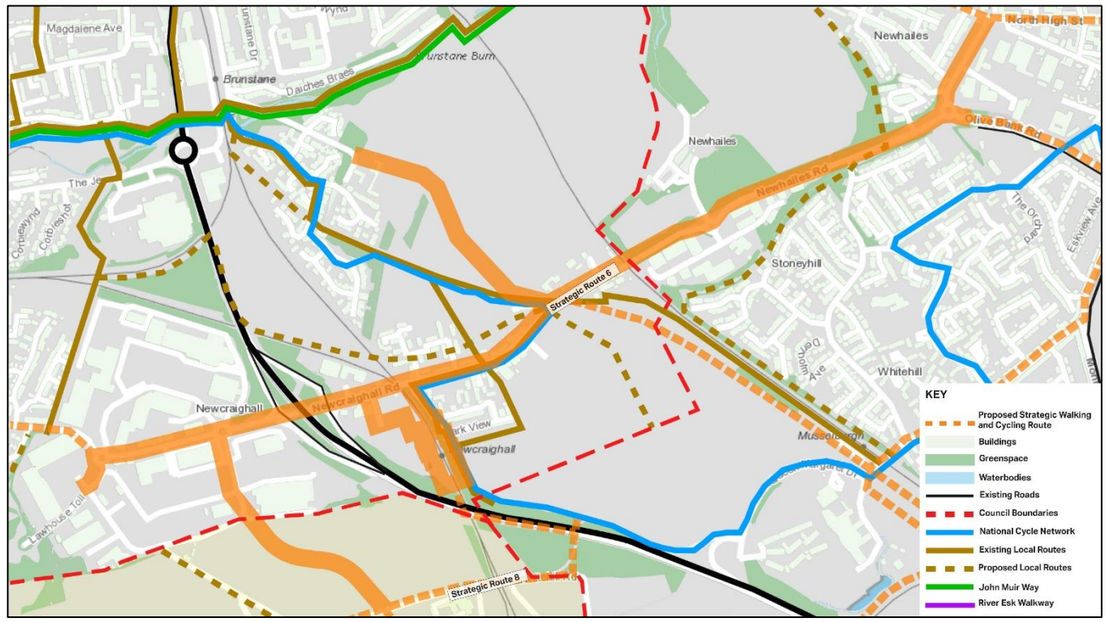


Figure 14-5: Context Plan - Route 6

14.3 Route Option Appraisal

The following general comments were made about the strategic route / area:

- The link to ASDA at The Jewel was identified as being an attractive route / spur;
- It was mentioned that it would be beneficial to have a consistency in provision across the whole of the town, in terms of the level of intervention; and
- The alignment of National Cycle Network routes 1 and 76 between Whitehill Street and Queen Margaret University Drive, in particular the link through Newcraighall Public Park, was identified as being too narrow currently.

Regarding the proposed shared use footway on Newhailes Road and Newcraighall Road, there was consensus that this would be a beneficial link. Additionally, of those who expressed an opinion, attendees preferred shared use footways without white line segregation.

The connection to Newcraighall railway station from NCN 1 and 76 was discussed with each of the groups. There was consensus that a tunnel / underpass would be preferable to an on-road route, and that this should be investigated. It was reported that SEStran investigated a potential link over the railway line at Newcraighall station, involving a ramp up the embankment and utilising space to the side of the A1.

Link to Fort Kinnaird

- There was consensus that a link to Fort Kinnaird would be beneficial and attractive.
- Other potential alignments to connect to Fort Kinnaird that were mentioned included:
  1. Whitehill Road
  2. Alignment following rail line / bridge over A1 into back of Fort Kinnaird

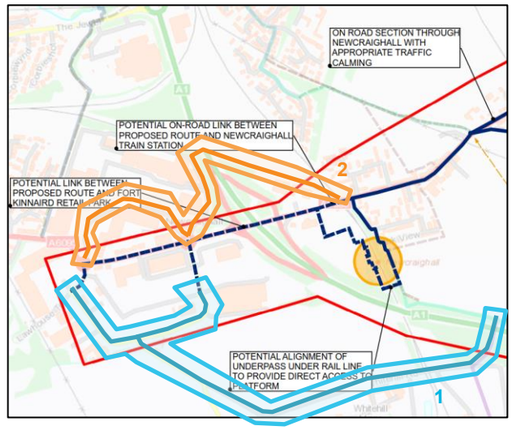


Figure 14-6: Potential Alignments to Fort Kinnaird

14.4 Public Consultation

The route, shown in Figure 14-1, was presented to the public via the online survey and at the Public Exhibition. The key themes that emerged from each of these consultation events are discussed in sections 14.4.1 and 14.4.2 respectively.

14.4.1 Online Survey

The online survey revealed that the majority of respondents supported the route, as shown in Figure 14-7.

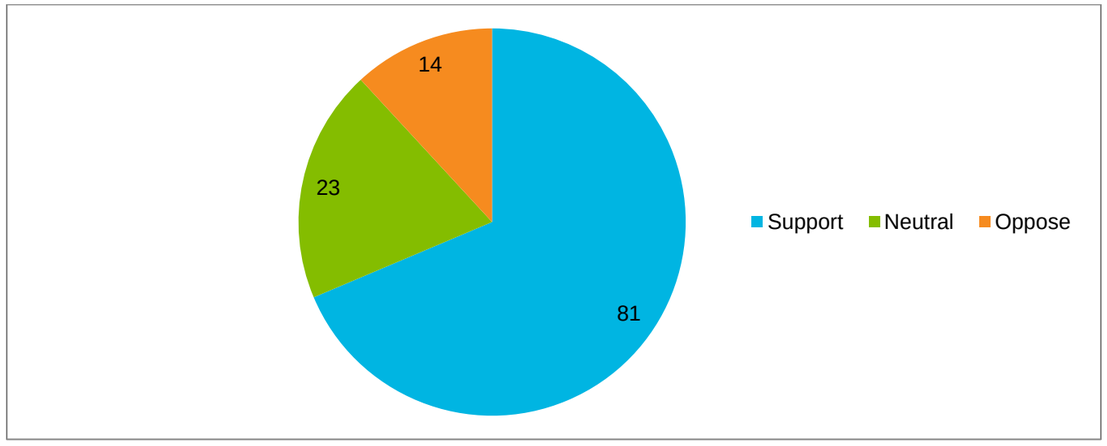


Figure 14-7: Route 6 – Level of Support

Of the 118 respondents, 81 (67.5%) supported the proposals for Route 6.

The key themes from the online survey regarding Route 6 were as follows:

Table 14-3: Key Themes from Online Survey - Route 6

Key Theme	Number
Segregate paths from motor vehicles	16
Shared use paths are not a good solution	12
Road not wide enough	8
Traffic	6

14.4.2 Public Exhibition

The key themes that emerged from the public exhibition regarding Route 6 were as follows:

Table 14-4: Key Themes from Public Consultation – Route 6

Key Themes	Number
Connect Queen Margaret University to Brunstane avoiding Newcraighall Road	2

14.5 Route Design and Costings

14.5.1 Design Testing

Following the identification of the alignment of the strategic route, the feasibility of different levels of intervention was evaluated by sketching options using AutoCAD and identifying the likely impacts and constraints of each option.

In Table 14-5, the options that were tested for Route 6 are outlined, along with an appraisal of its deliverability (on a scale of 0-5, with 0 meaning the route has issues that are considered to be insurmountable and 5 indicating that there are no significant barriers to the implementation of the option).

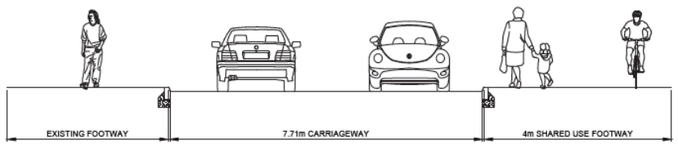
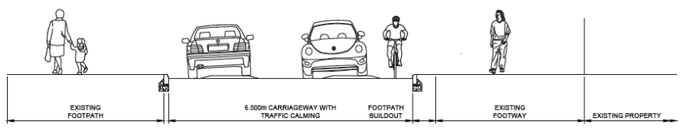
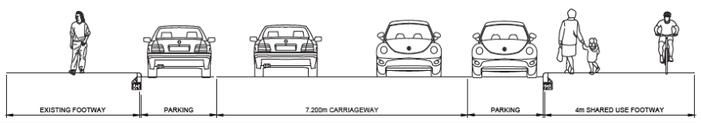
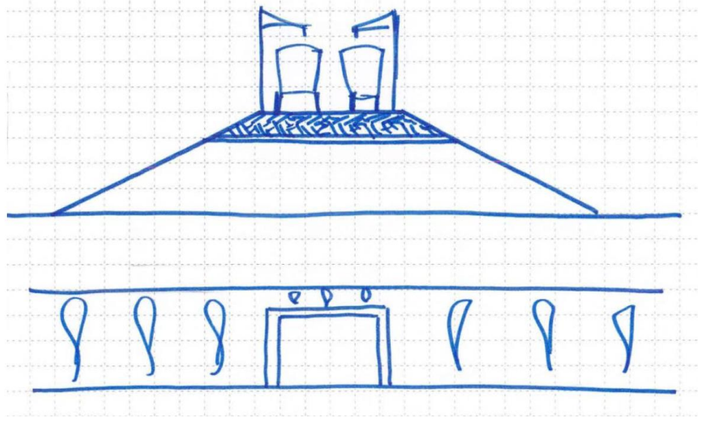
Table 14-5: Design Testing – Route 6

Design Option	Deliverability (Score 0-5)	Impacts and Constraints (Footways, Parking, Traffic lane widths/capacity, other?)	Comments
1. Traffic calming in Newcraighall / 4.0m wide shared footway on Newhailes Road	5	A shared footway with width 4m could be achieved within the existing footpath.	
2. Traffic calming in Newcraighall / 5.0m wide shared footway on Newhailes Road	4	A shared footway with width 5m could be achieved for some, but not all, of the route within the existing footpath.	Some sections of Newhailes Road would need to be reduced to 4m width, or the road alignment would need to be altered, with space taken from the opposite footpath/carriageway.
3. Traffic Calming in Newcraighall / Segregated cycle route on Newhailes Road (3.0m wide 2-way)	2	The segregated cycleway wouldn't be possible unless the footway was removed on one side of the road.	For the segregated cycle path to fit within the space, the road alignment would need to be altered, with space taken from the opposite footpath and/or the carriageway.

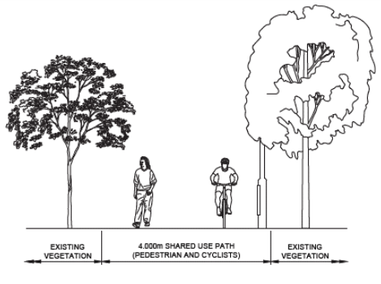
14.5.2 Design Specification

The design specification for Route 6 is shown in Table 14-6, below:

Table 14-6: Design Specification - Route 6

Section	Level of Intervention	Detail	Cross-section
North High Street to Old Railway Bridge	Shared Use Footway	4m wide shared use path on south side of carriageway	
Old Railway Bridge to Newcraighall Station	Quiet Streets	Traffic calming	
Newcraighall Station to Fort Kinnaird	Shared Use Footway	4m wide shared use path on south side of carriageway	
Newcraighall Station Underpass	Underpass	Direct access to platform	

Potential form of underpass under railway line (box culvert)

Musselburgh Railway Station to Brunstane	Shared Use Footway	4m wide shared use path	

14.5.3 Costings

Costings have been produced for the route shown in Table 14-7, below. Low, medium and high costs are presented, which reflect the fact that various levels of intervention could be considered. Regarding the business case for the route, the Median costs are used for calculating the potential scheme benefits.

Note these costs represent a very high level estimate based on the information available at this early stage of the project, assumptions made by the design team and the outline design testing which has been done.

Table 14-7: Cost Estimates - Route 6

Route	Route Extents	Item	Extents (m)	Quantity	Unit	Typical Cost Low	Typical Cost Median	Typical Cost High	Total Cost Low	Total Cost Median	Total Cost High
Route 6	Route 6 - Fort Kinnaird to Musselburgh Town Centre Approx Distance 4.01km	4m wide Shared use Footway - Resurfacing / Widening - Newhailes Road	1248	1248	m	£ 125.00	£ 362.50	£ 600.00	£ 156,000.00	£ 452,400.00	£ 748,800.00
		On Road Facility - New Surfacing - New Craighall Road	695	695	m	£ 10.00	£ 55.00	£ 100.00	£ 6,950.00	£ 38,225.00	£ 69,500.00
		4m wide Shared use Path - Resurfacing / Widening - New Craighall Road	1009	1009	m	£ 125.00	£ 362.50	£ 600.00	£ 126,125.00	£ 365,762.50	£ 605,400.00
		Sub-Total (Without OB)							**£ 289,075.00**	**£ 856,387.50**	**£ 1,423,700.00**
		Optimism Bias 44%							**£ 127,193.00**	**£ 376,810.50**	**£ 626,428.00**
		Underpass Structure (Incl. 66% OB)							**£ -**	**£ 1,013,760.00**	**£ 1,013,760.00**
		Total							**£ 416,268.00**	**£ 2,246,958.00**	**£ 3,063,888.00**

The rates in the table above have been taken from a number of sources, including:

- Transport for Greater Manchester's 'Greater Manchester Cycling Design Guidance & Standards';
- Recent project experience and benchmark data; and
- Spon's Civil Engineering and Highway Works Price Book 2018.

The rate for the underpass structure was estimated by senior staff based in AECOM's Structures team.

Please note that it has been assumed that the cost for the disused railway section between Whitehill Farm Road and Newcraighall Road will be delivered as a component of Route 4, and thus this is not included in the costings.

Optimism Bias provided in line with Transport Scotland, Scottish Transport Appraisal Guidance (STAG) Technical Database guidance based on early concept stage of study and nature of uncertainty and likely variance.

Please see Appendix H: Cost Estimate Summary report with full details on the rates, assumptions and exclusions.

14.6 Planning & Environmental

Figure 14-8 shows the environmental constraints of the proposal. Route 6 passes a number of Listed Buildings, a Scheduled Monument and an area of Gardens and Designed Landscapes containing some Ancient Woodland. The east of the route passes into a Battlefield Area.

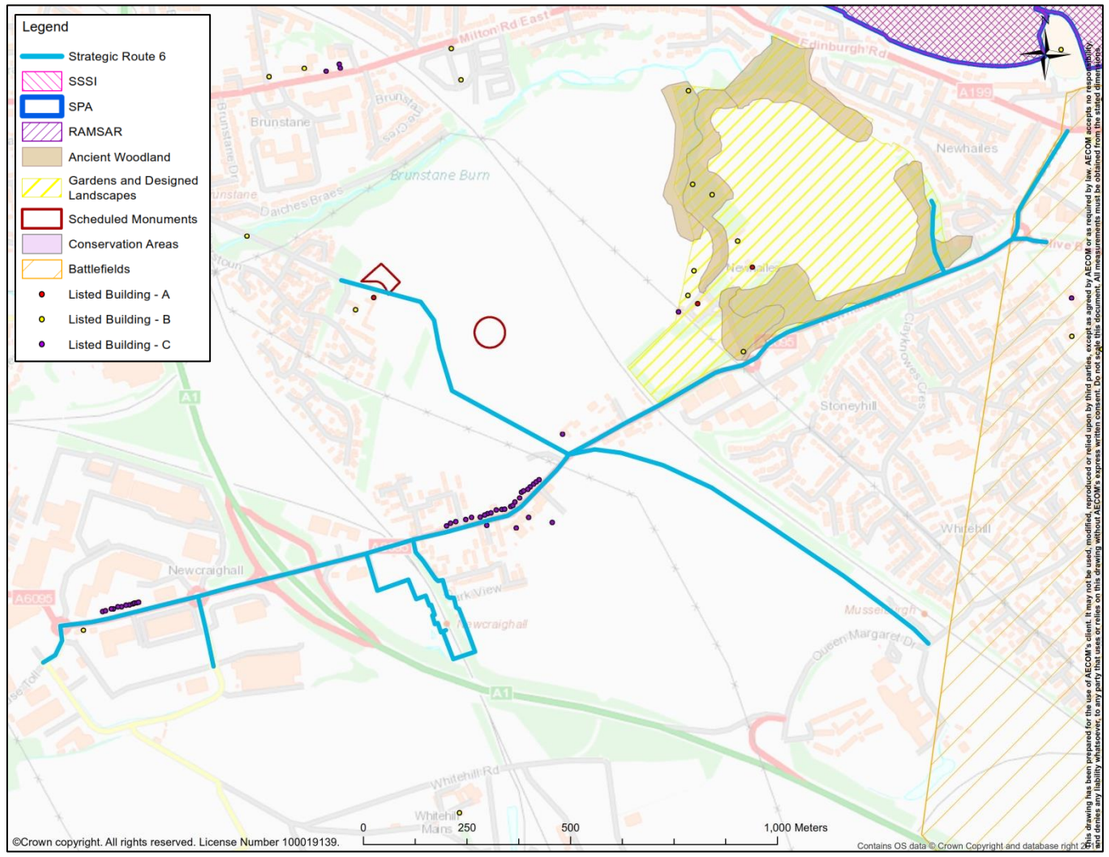


Figure 14-8: Route 6 Environmental Constraints

14.7 Land Ownership

The following areas were identified as potentially being in private ownership:

1) The path along the disused railway line between Whitehill Farm Road and Newcraighall Road; and

2) The area of land between Newcraighall Public Park and Newcraighall Park and Ride.

These areas are shown graphically in Figure 14-9.

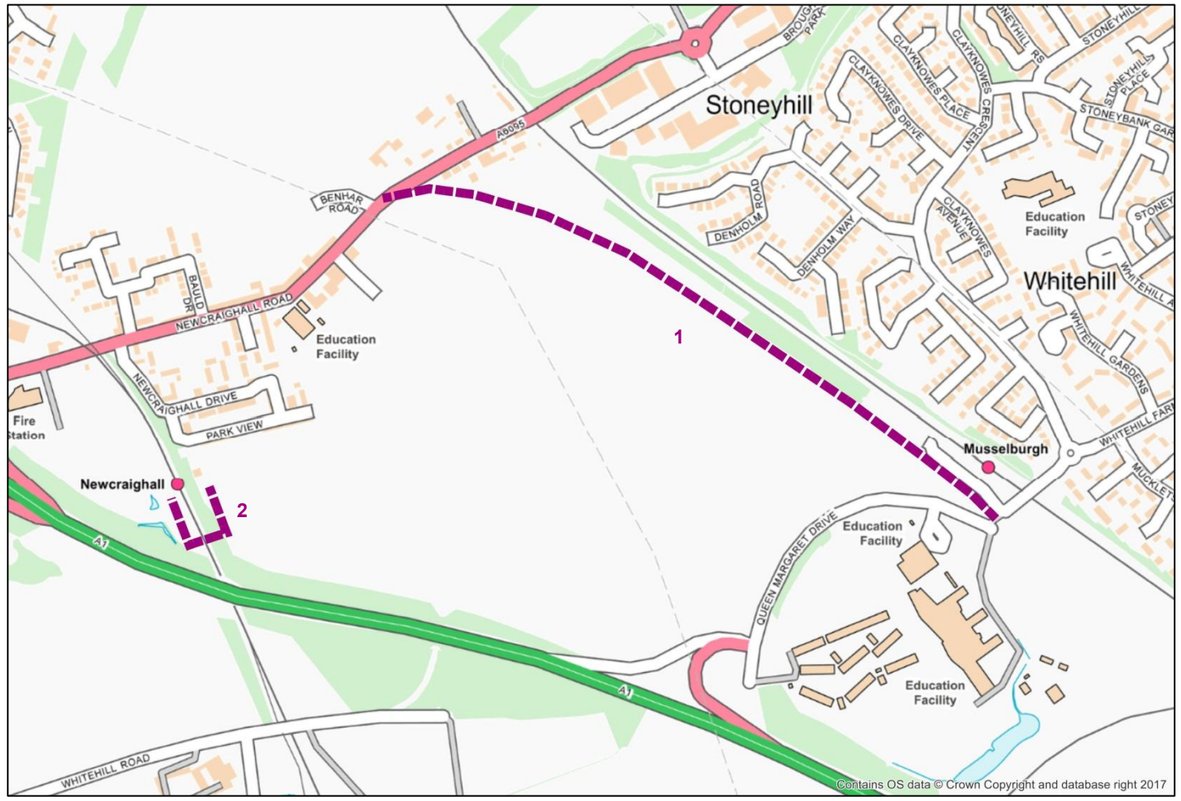


Figure 14-9: Land Ownership Map Route 6

It is recommended that ownership of these areas of land should be identified, if this route is to be taken forward and delivered.

14.8 Road Safety Commentary

A Road Safety Review was carried out by a senior member of AECOM's Road Safety team in Scotland. This comprised a review of the route corridor and indicative design cross-sections which are presented in the report. Potential issues relating to road safety were identified.

The following issues were raised relating to Route 6:

- Due to on street parking, there is a risk that nearside vehicle doors could be opened which could result in cyclists colliding into them.
- Where the shared use path is shown with lighting columns and vegetation, there is a risk that tree canopies could obscure lamps resulting in dark spots or shadows which can result in users not being visible during darkness hours.

15. Route 7: Niddrie Mains Road – Fort Kinnaird to Cameron Toll Roundabout

15.1 Route Overview and Recommendations

Strategic Route 7 links Newcraighall in the east with the Cameron Toll roundabout in the west. This would provide connections to Cameron Toll Shopping Centre, Peffermill Playing Fields, Craigmillar Castle Park, Hunter's Hall Public Park, Fort Kinnaird and Newcraighall railway station, as well as the residential areas of Newcraighall, Niddrie, Craigmillar and Prestonfield.

Combined with Route 5, the route would provide a direct link between the south-east of Edinburgh and Musselburgh town centre. This would likely be a key link for commuters, as well as an important link between residential areas, the Fort Kinnaird and Cameron Toll retail areas and the green spaces of Hunter's Hall Public Park and Craigmillar Castle Park.

Early design work has indicated that a 3 metre wide, two-way cycleway could be implemented along the length of the A6095, with some sections of wide footway having to be narrowed in order to retain on-street parking. This would represent a step-change on the existing provision of cycle infrastructure along the route, which comprises short sections of shared use footway between Kings Haugh and the access to Craigmillar Castle Park.

15.1.1 Proposed Route

The proposed route is shown in Figure 15-1.

Figure 15-1: Design Proposals - Route 7

15.1.2 Indicative Route Design

The following indicative street layouts were selected for consultation and cost estimation. Various configurations which meet the design objectives were initially tested in the route corridor. These indicative layouts represent those which are considered most deliverable at this early stage.

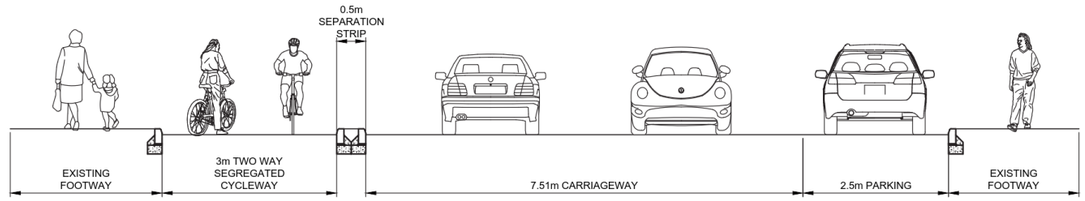


Figure 15-2: Cross Section Route 7: Peffermill Road, adjacent to Kings Haugh

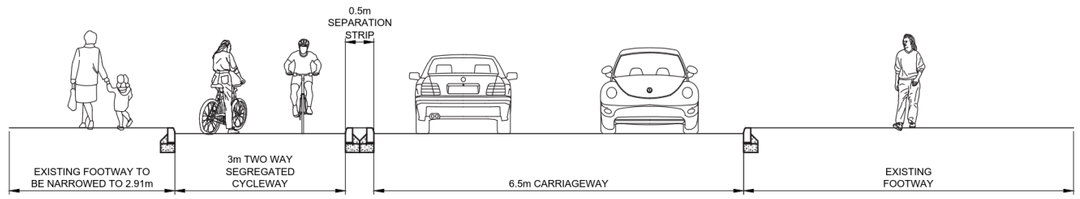


Figure 15-3: Cross Section Route 7: Peffermill Road, adjacent to Craigmillar Castle Road

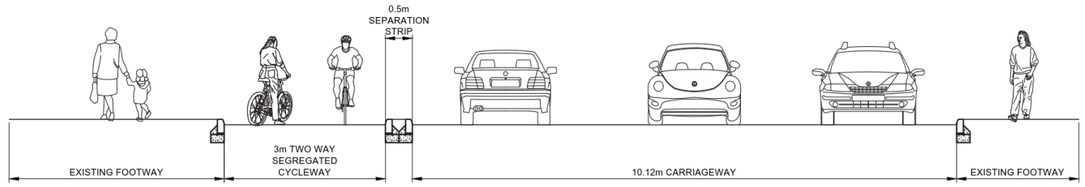


Figure 15-4: Cross Section Route 7: Newcraighall Road, adjacent to Fort Kinnaird

15.1.3 Cost Estimate Summary

A cost estimate is provided in Table 15-1 below. A 'low', 'medium' and 'high' cost has been provided, based on the standard of intervention.

Table 15-1: Cost Estimate Summary – Route 7

Route	Low Cost	Medium Cost	High Cost
7	£1,910,448.00	£4,275,072.00	£6,412,608.00

As shown in Table 15-2, the benefit cost ratio for Route 7 is between 1 and 1.5 for the Core Demand Scenario without gross cycling product (GCP), suggesting that this route provides low value for money, is between 1.5 and 2 for the Core Demand Scenario with GCP, suggesting this route provides medium value for money, and is between 2 and 4 for the Sensitivity Demand Scenario, suggesting this route provides high value for money in line with WebTAG guidance.

Table 15-2: Business Case Summary – Route 7

	Core Demand Scenario (and Medium Costs)						Sensitivity Demand Scenario (and Medium Costs)					
	Without GCP			With GCP			Without GCP			With GCP		
	PVB	PVC	BCR	PVB	PVC	BCR	PVB	PVC	BCR	PVB	PVC	BCR
Route 7	5,471	3,710	1.47	6,611	3,710	1.78	8,572	3,710	2.31	10,281	3,710	2.77

15.1.4 Recommendations

The key recommendations for the next stage of the development of the route include:

1. Early engagement with local residents and businesses to inform future designs;
2. Early engagement with bus companies to ensure integration with public transport; and
3. Consider parking surveys and wider parking strategy which could present opportunities along route.

15.2 Route Context

Figure 15-5 shows Strategic Route 7 in relation to other existing and proposed walking and cycling routes.

Route 7 connects Fort Kinnaird to Cameron Toll, via Newcraighall Road, Niddrie Mains Road and Peffermill Road.

This route connects to proposed and existing local routes, linking to Danderhall, The Jewel, Brunstane, Craigmillar, The Royal Infirmary Edinburgh, Liberton and Prestonfield.

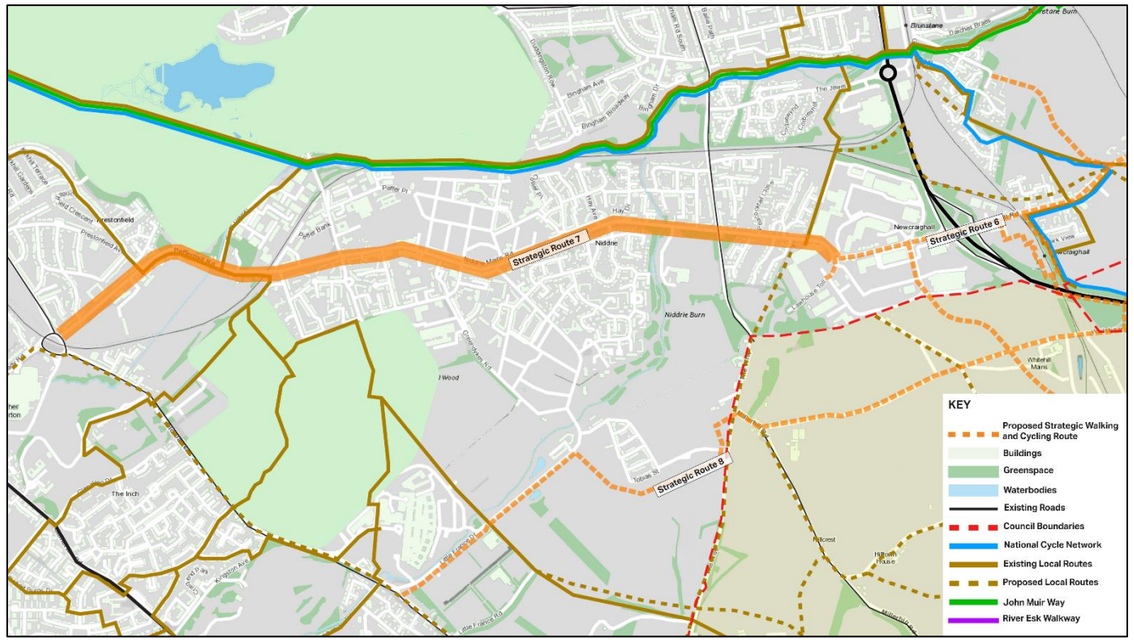


Figure 15-5: Context Plan - Route 7

15.3 Route Option Appraisal

At Stakeholder Workshop 2, stakeholders were asked to assist in the identification of key strategic routes, constraints and opportunities within the South East Edinburgh Strategic Development Area ("Shawfair"). There are major constraints around the connections with Old Craighall including several railway lines and the A1 trunk road.

As shown in Figure 15-6 below, a segregated route along the A6095 (Peffermill Road / Niddrie Mains Road / Newcraighall Road) was a route that had already been identified by AECOM's project team.

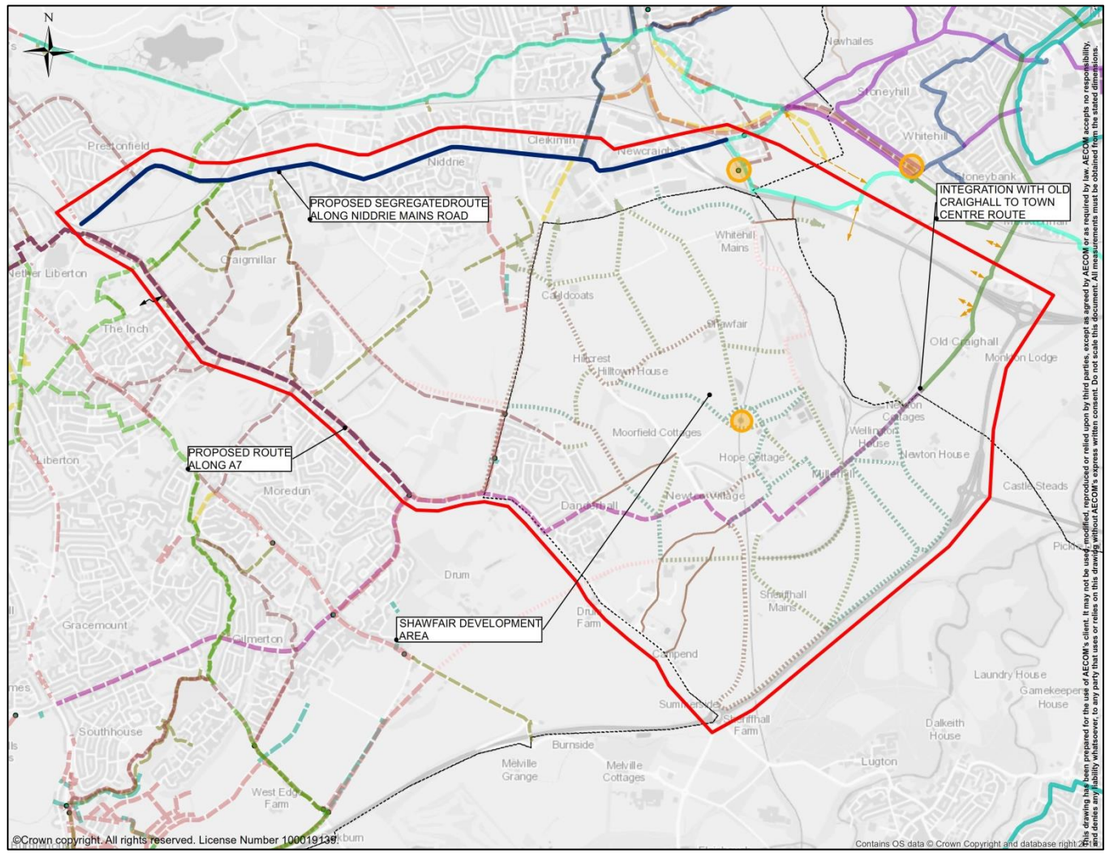


Figure 15-6: South East Edinburgh Strategic Development Area ("Shawfair") Map

There was consensus from attendees of the Stakeholder Workshop that Niddrie Mains Road corridor is important, providing links to the National Cycle Network route into Edinburgh city centre. It was also noted that Niddrie Mains Road is a popular bus corridor that carries heavy traffic, which should be considered as the design is progressed.

15.4 Public Consultation

The route, shown in Figure 15-1, was presented to the public via the online survey and at the Public Exhibition. The key themes that emerged from each of these consultation events are discussed in sections 15.4.1 and 15.4.2 respectively.

15.4.1 Online Survey

The online survey revealed that the majority of respondents supported the route, as shown in Figure 15-7.

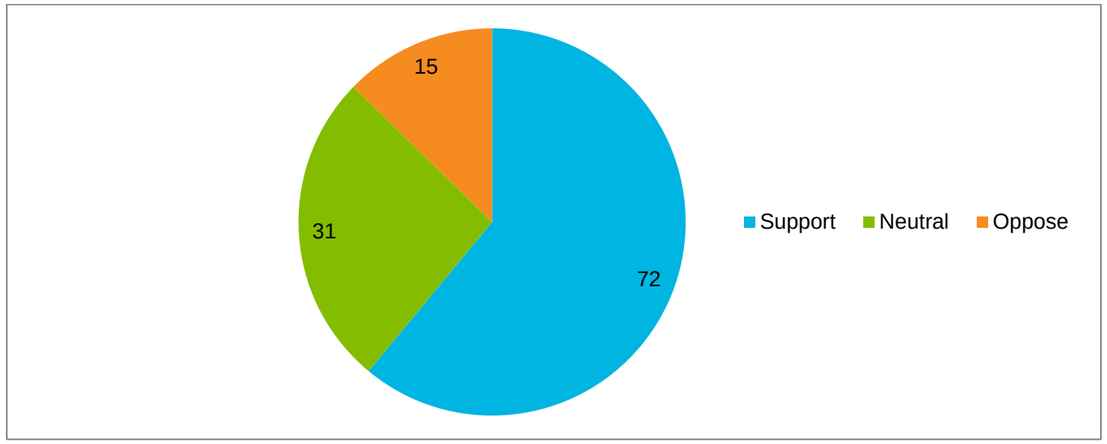


Figure 15-7: Route 7 – Level of Support

Of the 118 respondents, 72 (60%) supported the proposals for Route 7.

The key themes from the online survey regarding Route 7 were as follows:

Table 15-3: Key Themes from Online Survey - Route 7

Key Themes	Number
Traffic	9
Safer	7
Alternative routes are available	5
Segregate paths from motor vehicles	5

15.4.2 Public Exhibition

The key themes that emerged from the public exhibition regarding Route 7 were as follows:

Table 15-4: Key Themes from Public Consultation – Route 7

Key Themes	Number
Alternate route via quiet streets	2

15.5 Planning & Environmental

Figure 15-8 shows the environmental constraints of Routes 7, 8 & 9. Route 7 passes a number of Listed Buildings and Conservation Areas.

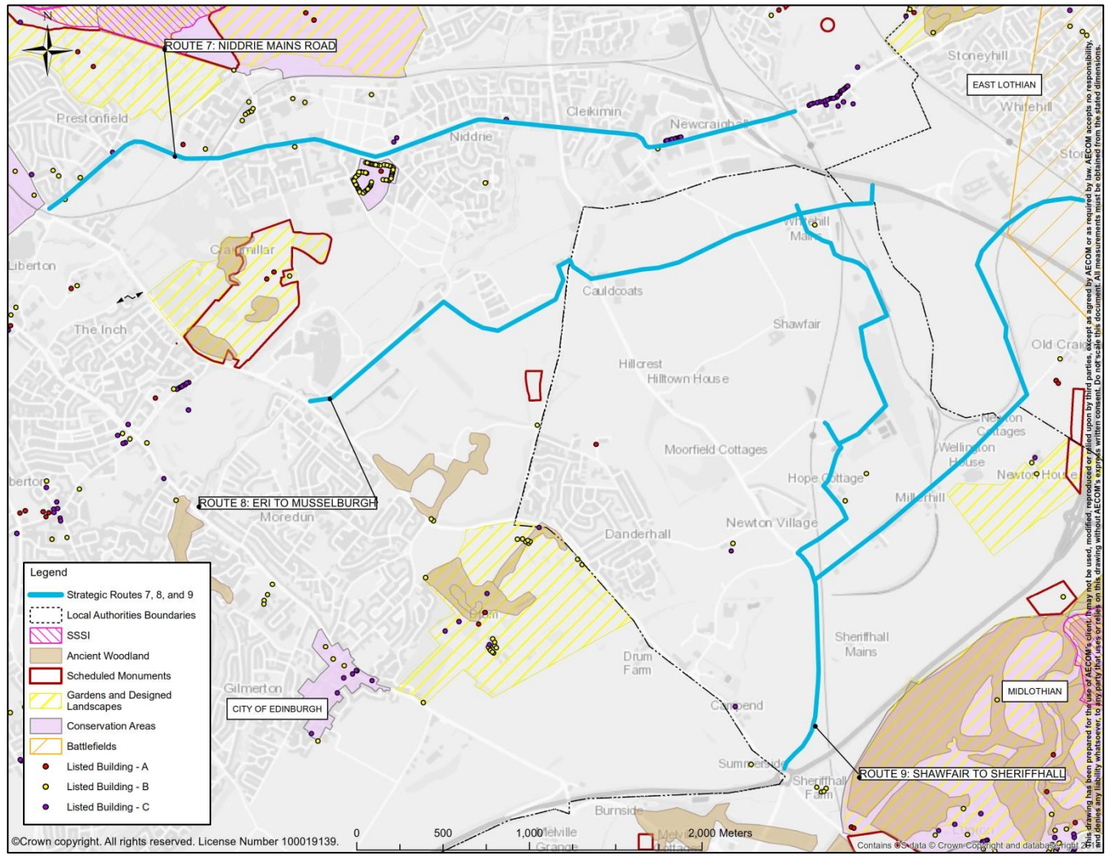


Figure 15-8: Environmental Constraints – Route 7

15.6 Land Ownership

No areas have been identified that are expected to be privately owned within the Route 7 corridor.

15.8 Road Safety Commentary

A Road Safety Review was carried out by a senior member of AECOM's Road Safety team in Scotland. This comprised a review of the route corridor and potential solutions drafted by the project team. Potential issues relating to road safety were identified.

The following issues were raised relating to Route 7:

- Due to on street parking, there is a risk that nearside vehicle doors could be opened which could result in cyclists colliding into them.
- Access to bus stops – pedestrians will require crossing the segregated cycle way to gain access to or from a bus. There is a potential conflict with passing cyclists.
- Where pedestrians cross the carriageway, provision will require to be made to allow gaps in the segregated cycleway for wheelchair or pram access with necessary dropped kerbs.

16. Route 8: Musselburgh to Edinburgh Royal Infirmary

16.1 Route Overview and Recommendations

A strategic route was identified between Musselburgh and Edinburgh Royal Infirmary / Edinburgh BioQuarter. The route would mostly be located in development land, allocated in the local development plans for The City of Edinburgh and Midlothian local authority areas.

Large development allocations are located to the north and south of the route. The proposed route would provide a key connection between these development areas and Edinburgh Royal Infirmary, Edinburgh BioQuarter, the A7, Musselburgh, and onwards to Queen Margaret University and Musselburgh railway station. This would likely be an important route for travelling to / from these developments by active travel means for both leisure and utility purposes.

Early design work that has been carried out indicates that a 4 metre wide shared use path could be implemented along the entire length of the route, connecting to the existing cycle infrastructure on Little France Drive and Pringle Drive.

16.1.1 Proposed Route

The proposed route is shown in Figure 16-1.

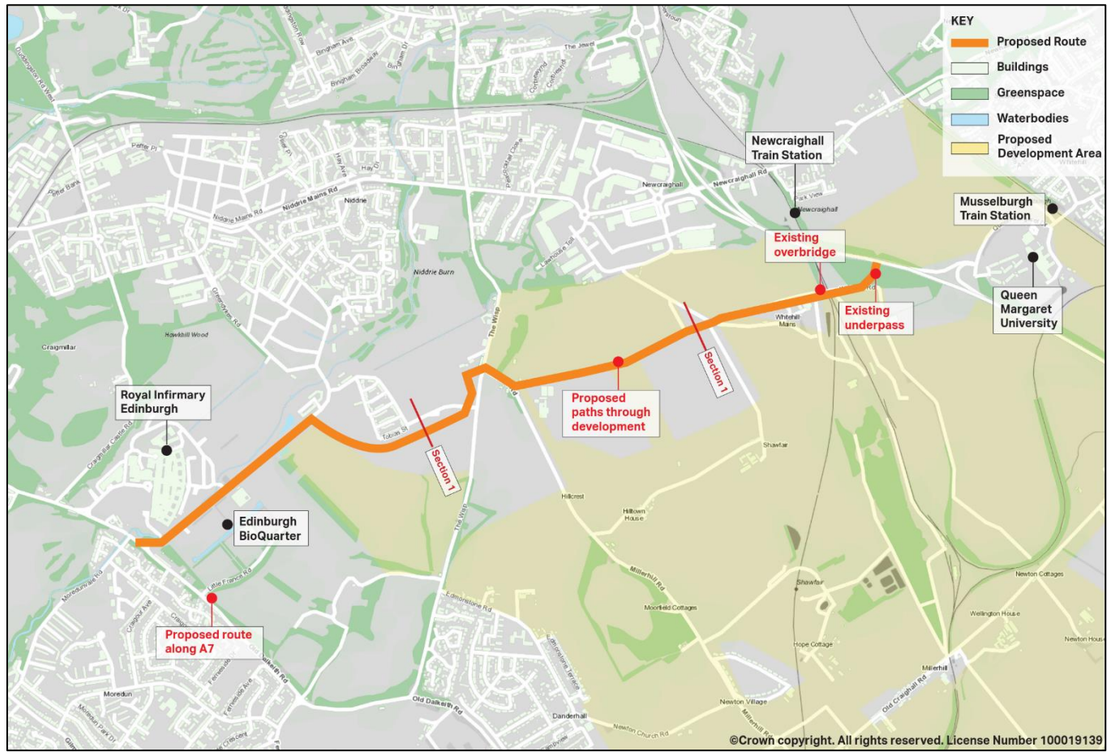


Figure 16-1: Design Proposals - Route 8

16.1.2 Indicative Route Design

The following indicative street layout was selected for consultation and cost estimation. Various configurations which meet the design objectives were initially tested in the route corridor. The indicative layout represents that which was considered most deliverable at this early stage.

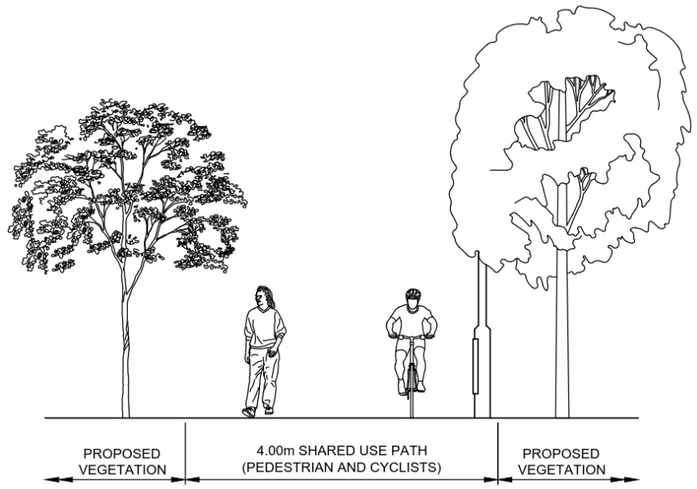


Figure 16-2: Cross Section Route 8 – New Shared Use Paths

16.1.3 Cost Estimate Summary

A cost estimate is provided in Table 16-1 below. A 'low', 'medium' and 'high' cost has been provided, based on the standard of intervention.

Table 16-1: Cost Estimate Summary – Route 8

Route	Low Cost	Medium Cost	High Cost
8	£1,051,002.20	£1,104,656.60	£1,158,311.00

As shown in Table 16-2, the benefit cost ratio for Route 8 is between 2 and 4 for the Core Demand Scenario without gross cycling product (GCP), suggesting that this route provides high value for money, and is greater than 4 for the Core Demand Scenario with GCP and the Sensitivity Demand Scenario, suggesting this route provides very high value for money in line with WebTAG guidance.

Table 16-2: Business Case Summary – Route 8

	Core Demand Scenario (and Medium Costs)						Sensitivity Demand Scenario (and Medium Costs)					
	Without GCP			With GCP			Without GCP			With GCP		
	PVB	PVC	BCR	PVB	PVC	BCR	PVB	PVC	BCR	PVB	PVC	BCR
Route 8	3,640	958	3.80	4,050	958	4.23	5,847	957	6.11	6,463	957	6.75

16.1.4 Recommendations

The key recommendations for the next stage of the development of the route include:

1. Further engagement with private land owners.

16.2 Route Context

Figure 16-3 shows Strategic Route 8 in relation to other existing and proposed walking and cycling routes.

Route 8 links the Royal Infirmary Edinburgh and the Edinburgh BioQuarter into the larger strategic network, at the underpass near to Newcraighall Public Park and Newcraighall rail station.

This route would link into existing and proposed local routes, connecting to Craigmillar, Danderhall and Shawfair.

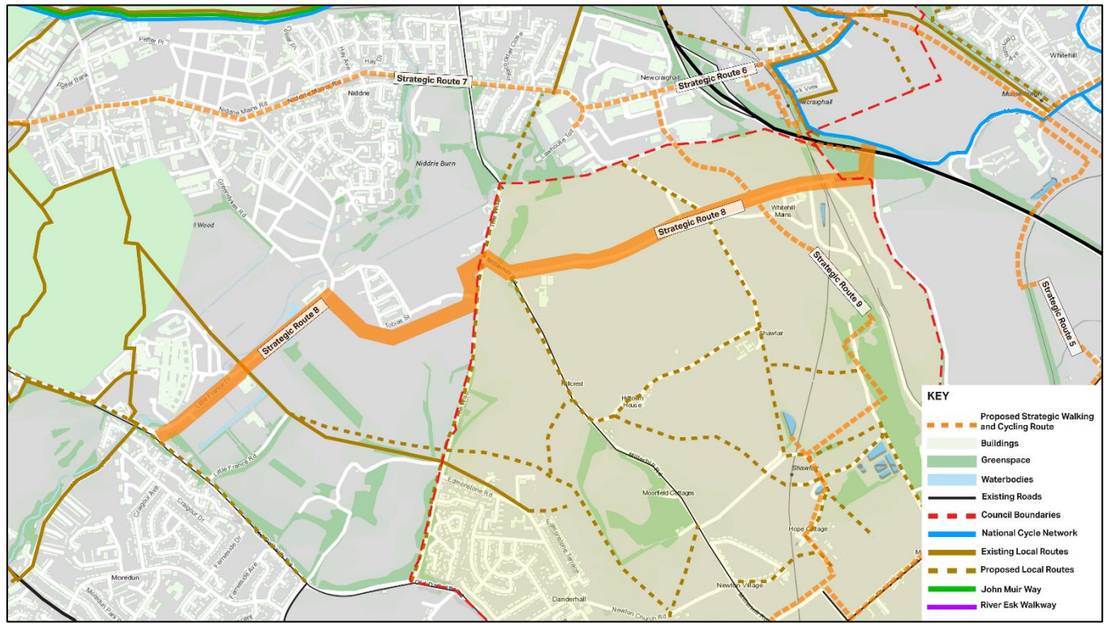


Figure 16-3: Context Plan - Route 8

16.3 Route Option Appraisal

At Stakeholder Workshop 2, stakeholders were asked to assist in the identification of key strategic routes, constraints and opportunities within the South East Edinburgh Strategic Development Area ("Shawfair"). There are major constraints around the connections with Old Craighall including several railway lines and the A1 trunk road.

In Figure 16-5, the map of the area that was presented to stakeholders at the workshop is shown.

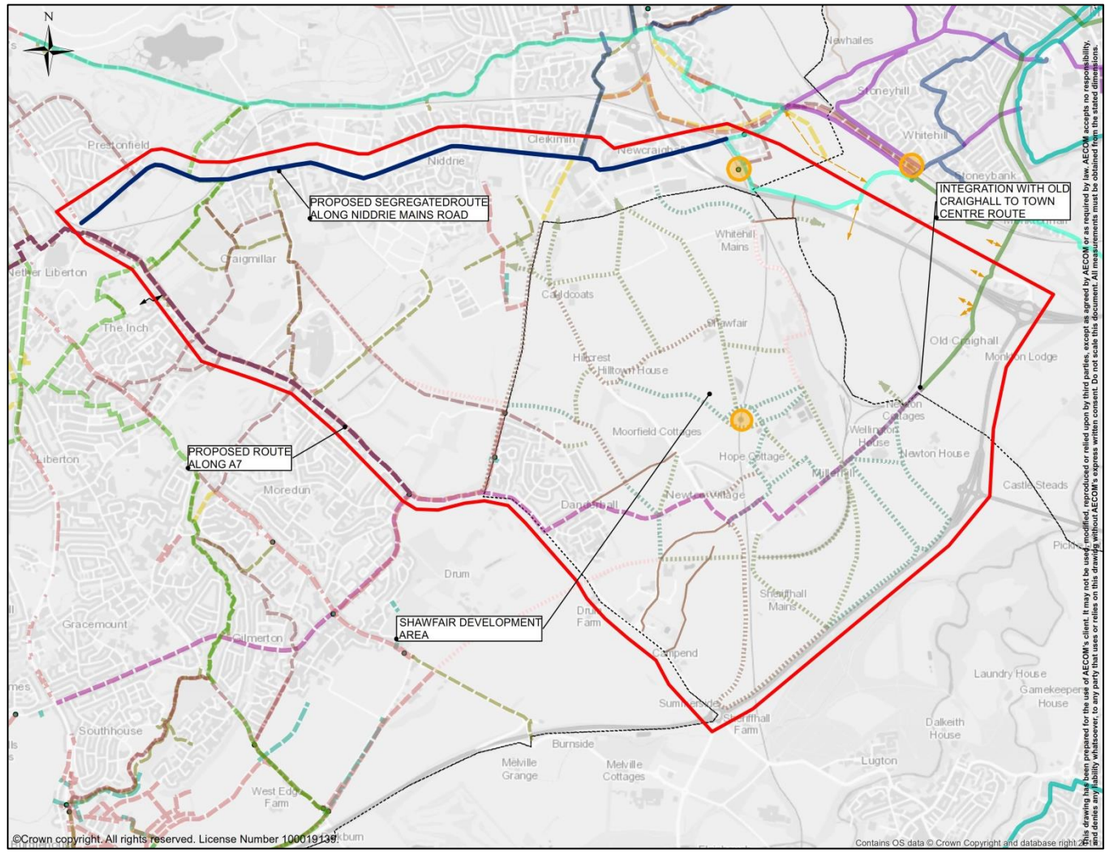


Figure 16-4: South East Edinburgh Strategic Development Area ("Shawfair") Map

During the discussions that took place it emerged that a strategic link is required between Old Craighall, Queen Margaret University, Musselburgh railway station and Edinburgh Royal Infirmary. A suitable crossing (bridge / underpass) was to be investigated further and a route alignment was to be proposed; with consideration given to using existing road bridge at Whitehill Mains (labelled "1A" in Figure 16-5).

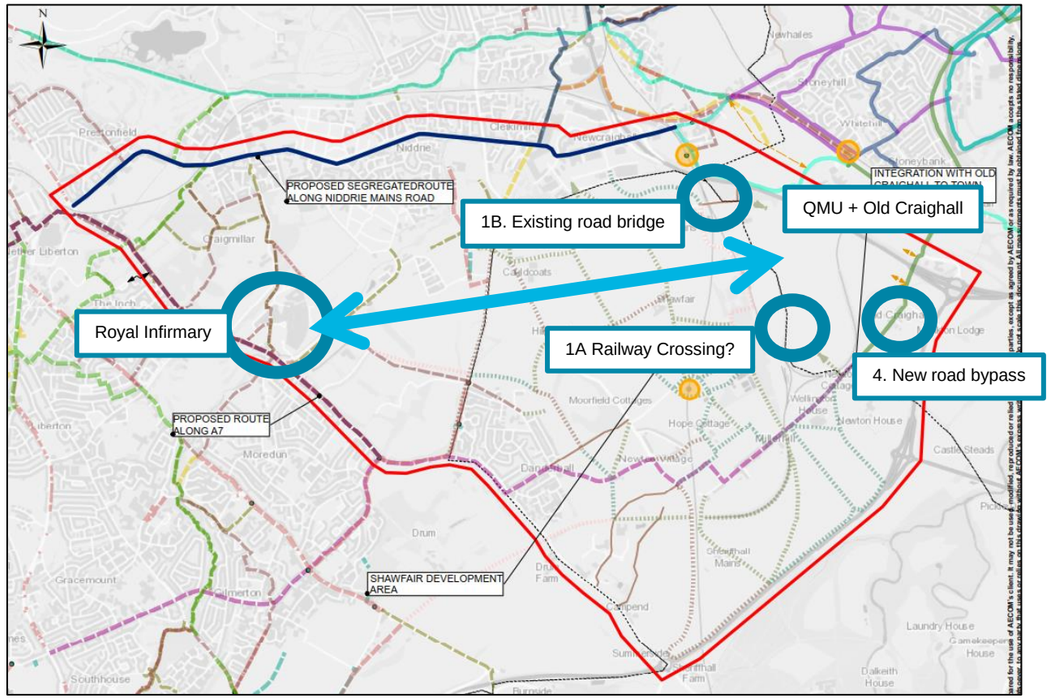


Figure 16-5: Map of Proposed Route, with Annotations from Stakeholder Workshop 2

The following key points were also raised:

1. A new road is being considered to bypass the Old Craighall centre that may create opportunities.
2. A new bus route proposed within the Old Craighall development wedge may create opportunities.

Several general discussion points were also raised that are relevant to Route 8:

- Shared use paths should only be used in areas of low pedestrian volumes;
- Horse-riding routes are generally less of a priority in urban areas;
- The Whitehill / Stoneybank area is a Controlled Parking Zone, which may create opportunities with street space.

16.4 Public Consultation

The route, shown in Figure 16-1, was presented to the public via the online survey and at the Public Exhibition. The key themes that emerged from each of these consultation events are discussed in sections 16.4.1 and 16.4.2 respectively.

16.4.1 Online Survey

The online survey revealed that the majority of respondents supported the route, as shown in Figure 16-6.

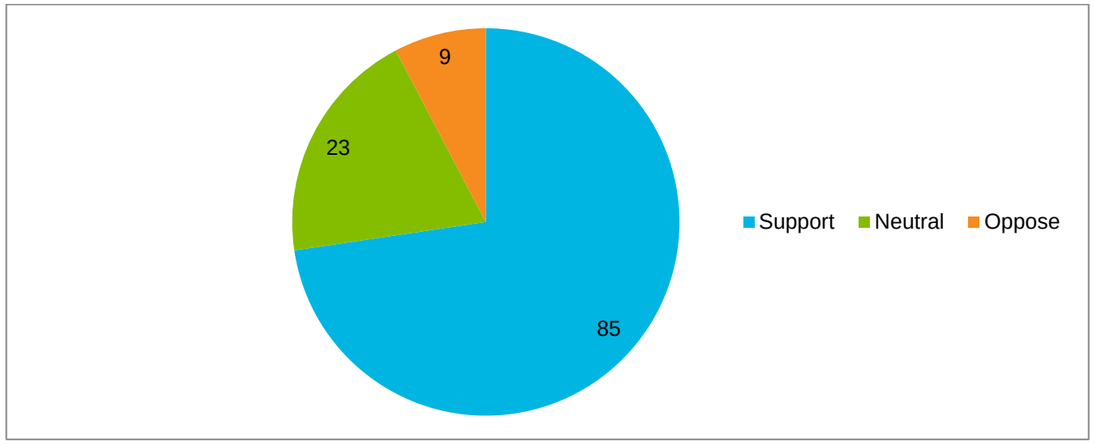


Figure 16-6: Route 8 – Level of Support

Of the 117 respondents, 85 (70.8%) supported the proposals for Route 8.

The key themes from the online survey regarding Route 8 were as follows:

Table 16-3: Key Themes from Online Survey - Route 8

Theme	Number
Shared use paths are not a good solution	12
Link to hospital is good	11

16.4.2 Public Exhibition

The key themes that emerged from the public exhibition regarding Route 8 were as follows:

Table 16-4: Key Themes from Public Consultation – Route 8

Key Themes	Number
Connect to route 7 at Fort Kinnaird	2

16.5 Planning & Environmental

Figure 16-7 shows the environmental constraints of Routes 7, 8 & 9. Route 8 passes a listed building.

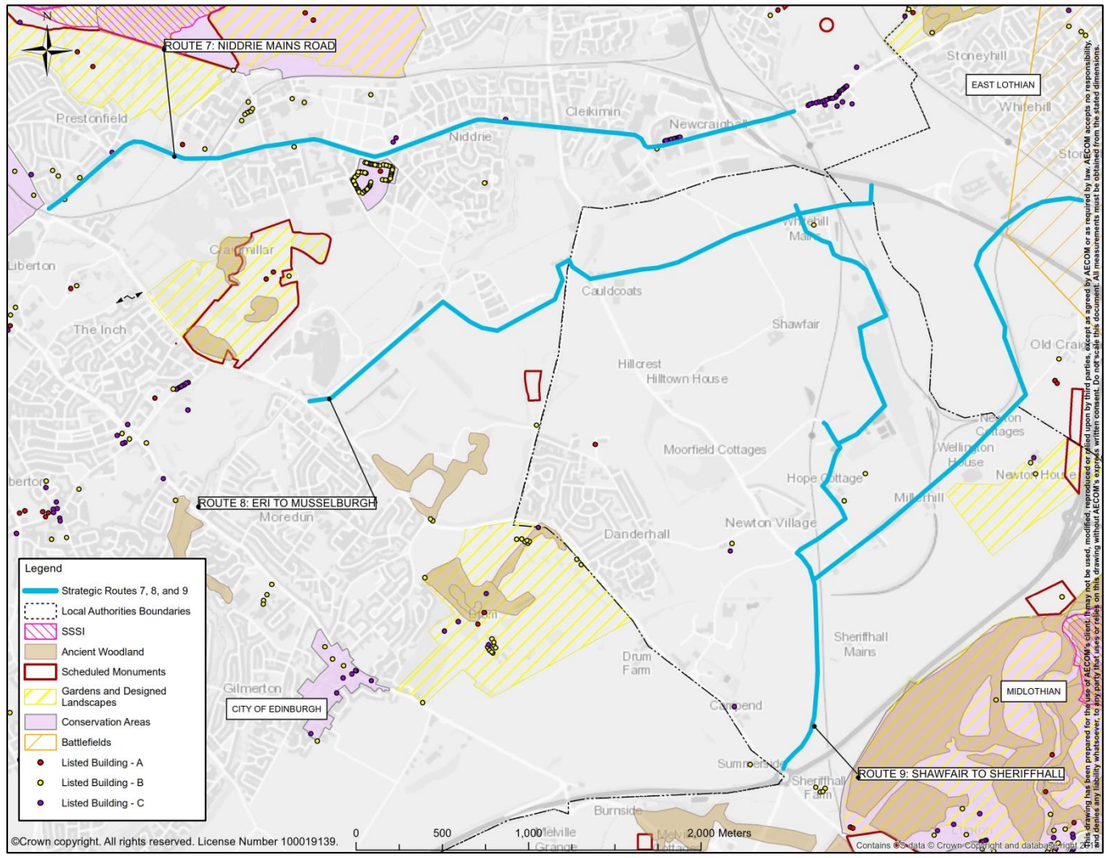


Figure 16-7: Environmental Constraints – Route 8

16.6 Land Ownership

The following areas were identified as potentially being in private ownership:

1) Land between Pringle Drive and The Wisp;
2) Land between A6106 and Whitehill Road; and
3) Land on either side of Whitehill Road.

These areas are shown graphically in Figure 16-8.

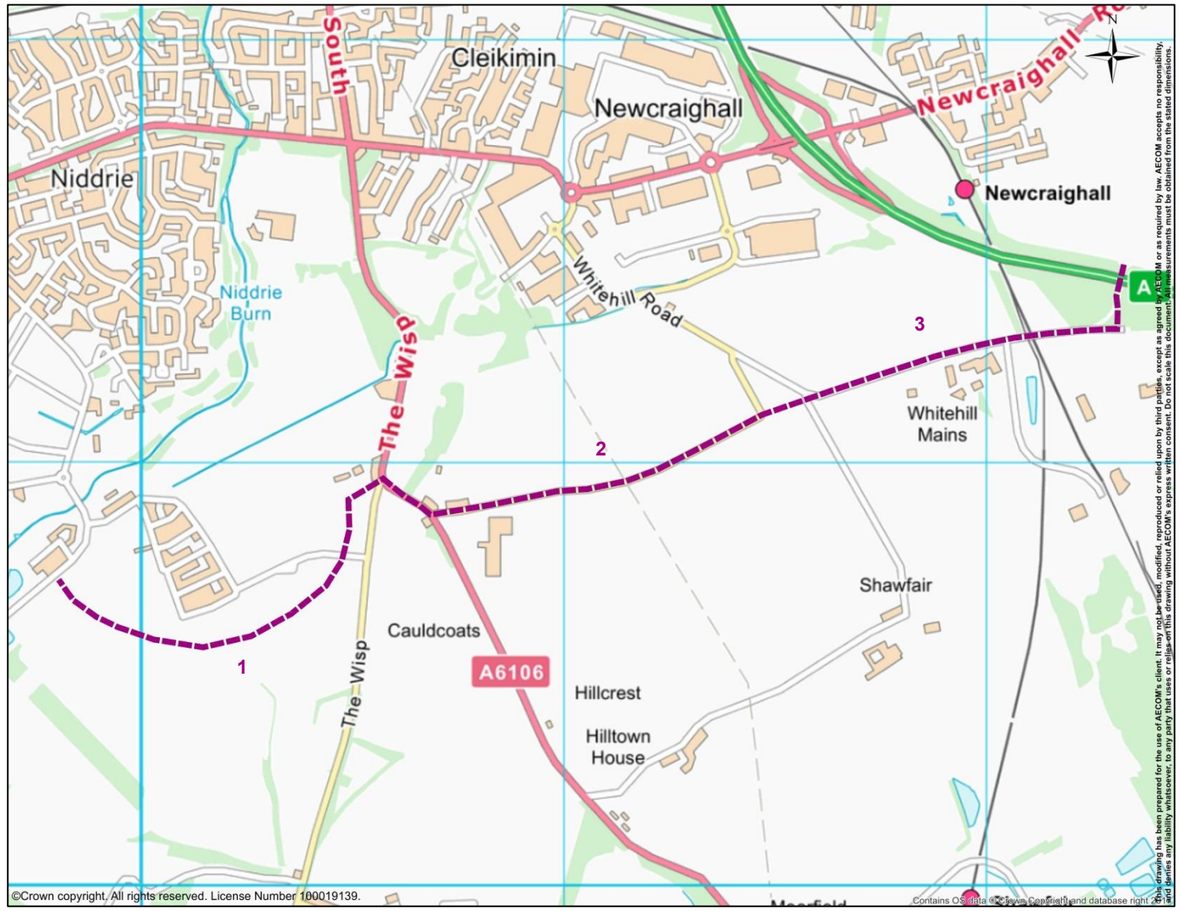


Figure 16-8: Land Ownership Map Route 8

It is recommended that ownership of these areas of land should be identified, if this route is to be taken forward and delivered.

16.7 Road Safety Commentary

A Road Safety Review was carried out by a senior member of AECOM's Road Safety team in Scotland. This comprised a review of the route corridor and potential solutions drafted by the project team. Potential issues relating to road safety were identified.

The following issues were raised relating to Route 8:

- Where the proposed route crosses over the existing overbridge at the railway line near Newcraighall Railway station, the bridge parapet should be raised to a minimum of 1.8 metres to prevent pedestrian access to the railway.
- Where new shared use paths are proposed in areas where there is existing vegetation, there is a risk that tree canopies could obscure lamps resulting in dark spots or shadows which can result in users not being visible during darkness hours.

17. Route 9: Shawfair to Sheriffhall

17.1 Route Overview and Recommendations

Strategic Route 9, linking Sheriffhall, Shawfair, Fort Kinnaird and Musselburgh, is largely located within proposed development areas. The area is undergoing a high level of growth, and it is anticipated that the proposed route would provide an attractive route for those living, working and studying in the area. The route would provide key connections between Sheriffhall Park and Ride, Shawfair railway station and Park and Ride, and Fort Kinnaird, as well as onwards to Queen Margaret University and Musselburgh railway station.

With the area growingly quickly, it is vital that alternatives to travelling via private car are provided. Enhancing the connectivity of the development area with the surrounding area, transport hubs and places of work and study will provide those living, working and studying in the area with a greater choice regarding how to travel.

Early design work that has been carried out indicates that a 3 metre wide shared use footway could be implemented alongside the A6106, while shared use paths could be constructed through Old Craighall and Shawfair.

17.1.1 Proposed Route

The proposed route is shown in Figure 17-1.

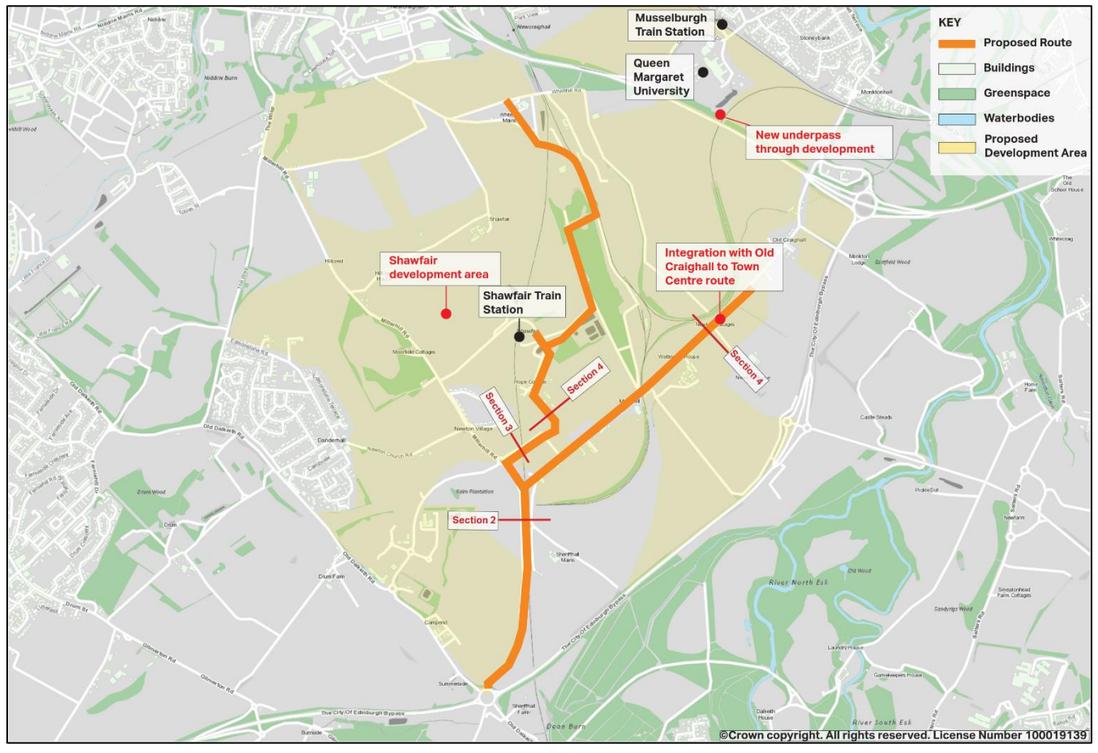


Figure 17-1: Design Proposals - Route 9

17.1.2 Indicative Route Design

The following indicative street layouts were selected for consultation and cost estimation. Various configurations which meet the design objectives were initially tested in the route corridor. These indicative layouts represent those which are considered most deliverable at this early stage.

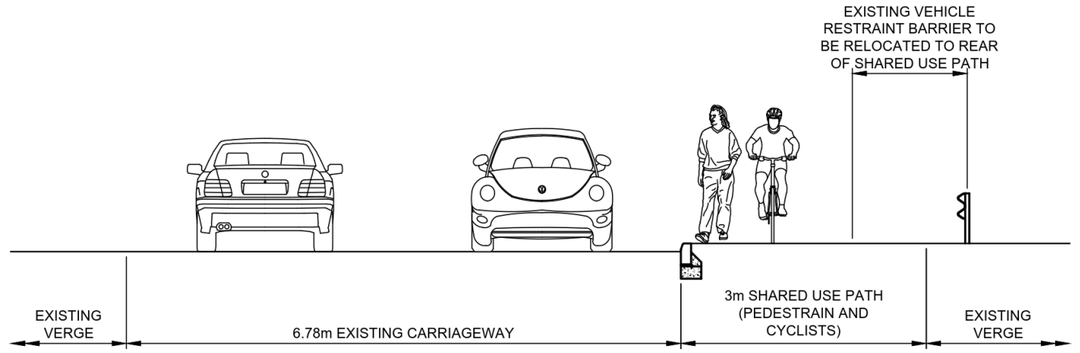


Figure 17-2: Cross Section Route 9 – Sheriffhall to A6106 Roundabout

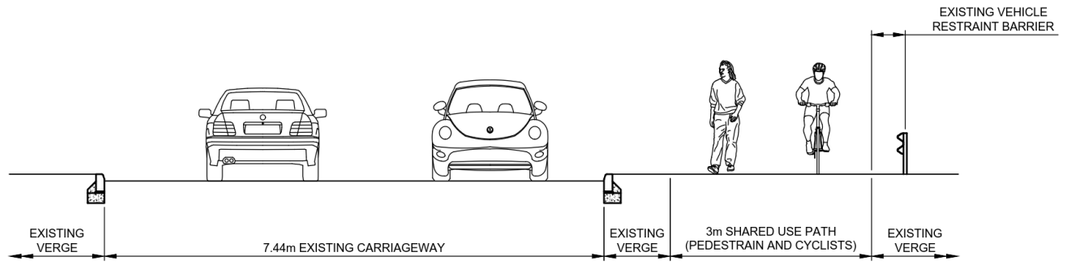


Figure 17-3: Cross Section Route 9 – At Bridge over Railway Line

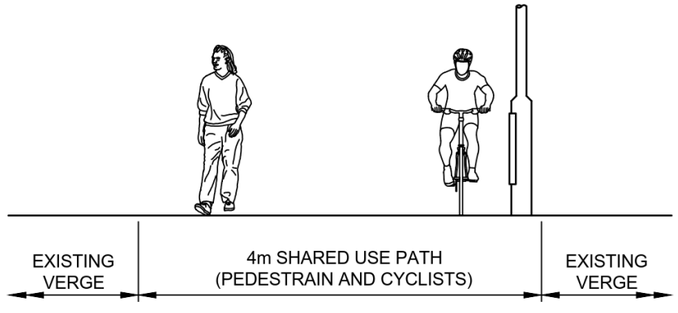


Figure 17-4: Cross Section Route 9 – Shared Use Paths through Old Craighall, Shawfair

17.1.3 Cost Estimate Summary

A cost estimate is provided in Table 10-1 below. A 'low', 'medium' and 'high' cost has been provided, based on the standard of intervention.

Table 17-1: Cost Estimate Summary – Route 9

Route	Low Cost	Medium Cost	High Cost
9	£2,469,099.72	£3,099,920.52	£3,730,741.32

As shown in Table 17-2, the benefit cost ratio for Route 9 is between 2 and 4 for the Core Demand Scenario and for the Sensitivity Demand Scenario without gross cycling product (GCP), suggesting that this route provides high value for money, and is greater than 4 for the Sensitivity Demand Scenario with GCP, suggesting this route provides very high value for money in line with WebTAG guidance.

Table 17-2: Business Case Summary – Route 9

	Core Demand Scenario (and Medium Costs)						Sensitivity Demand Scenario (and Medium Costs)					
	Without GCP			With GCP			Without GCP			With GCP		
	PVB	PVC	BCR	PVB	PVC	BCR	PVB	PVC	BCR	PVB	PVC	BCR
Route 9	6,546	2,688	2.44	7,119	2,688	2.65	10,317	2,686	3.84	11,177	2,686	4.16

17.1.4 Recommendations

The key recommendation for the next stage of the development of the route if further engagement with private land owners.

17.2 Route Context

Figure 17-5 shows Strategic Route 9 in relation to other existing and proposed walking and cycling routes.

Route 9 connects Sheriffhall Roundabout to Millerhill, where the route splits to link into the rest of the strategic network, linking with Route 5 at Old Craighall, and with Route 8 at Whitehill Mains.

Proposed and existing local routes link Route 9 into the trading estate on Gilmerton Road, as well as Shawfair and Danderhall.

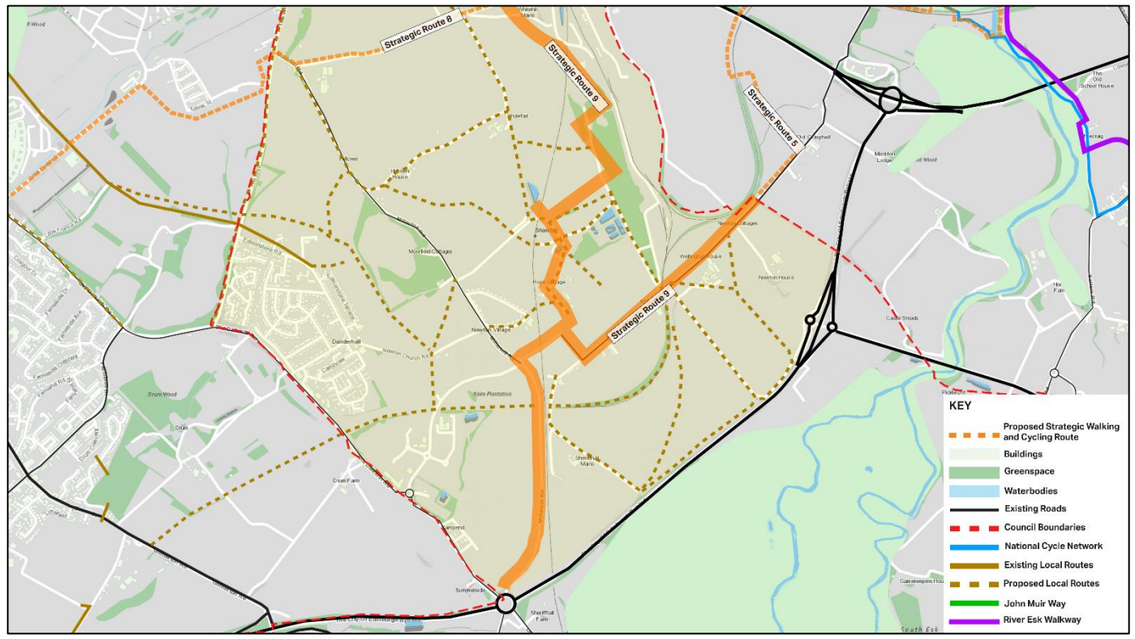


Figure 17-5: Context Plan - Route 9

17.3 Route Option Appraisal

At Stakeholder Workshop 2, stakeholders were asked to assist in the identification of key strategic routes, constraints and opportunities within the South East Edinburgh Strategic Development Area ("Shawfair"). There are major constraints around the connections with Old Craighall including several railway lines and the A1 trunk road.

The map of the area that was presented to stakeholders at the workshop is shown in Figure 17-6.

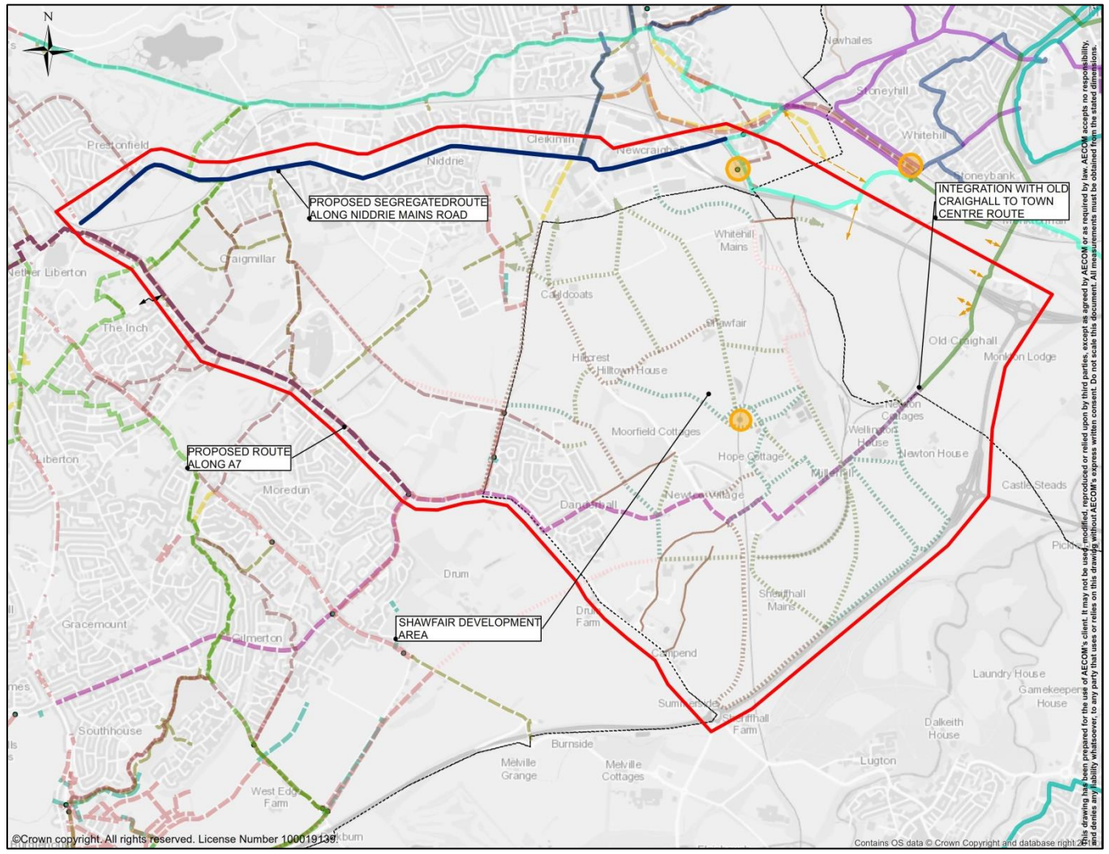


Figure 17-6: South East Edinburgh Strategic Development Area ("Shawfair") Map

There was consensus during the stakeholder workshop that provision of links to Sheriffhall is important for links to Midlothian and Dalkeith. Wider links via Dalkeith Country Park were also mentioned, but these are outwith the scope of this study.

It was stated that more information should be gathered and assessed on the land-use proposed for Shawfair. It was agreed that whether this town has a town centre, and what the key trip attractors are within the town should be considered in recommending the strategic route in the area.

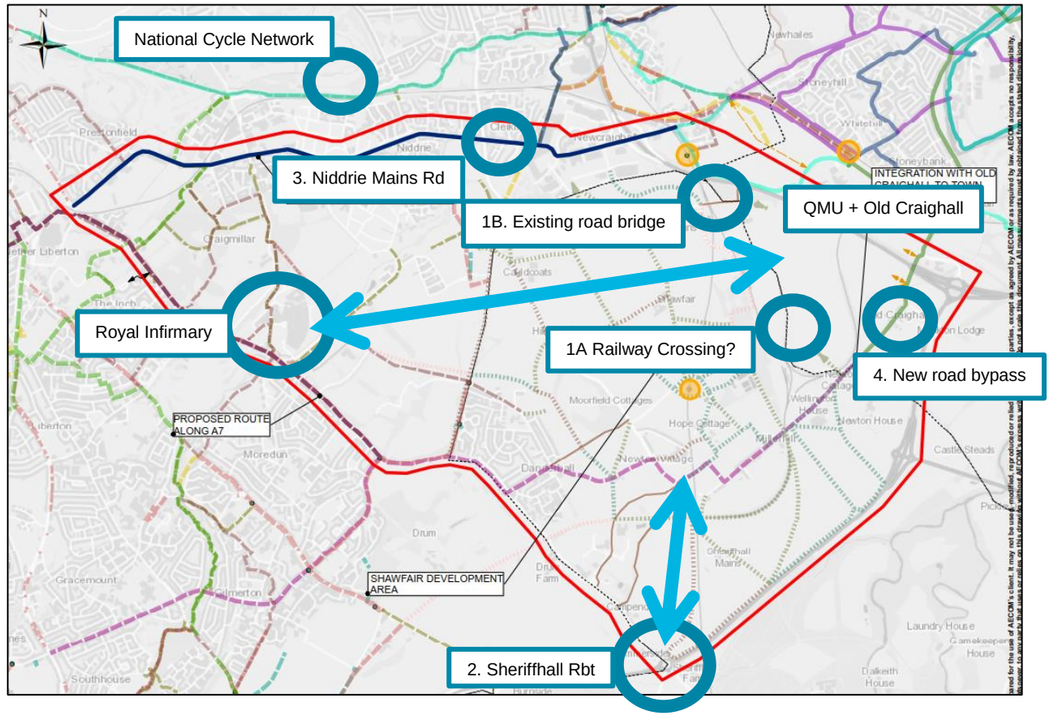


Figure 17-7: Map of Proposed Route

The following key points were also raised:

1. A new road is being considered to bypass the Old Craighall centre that may create opportunities.
2. A new bus route proposed within the Old Craighall development wedge may create opportunities.

Several general discussion points were also raised that are relevant to Route 9:

- Shared use paths should only be used in areas of low pedestrian volumes;
- Horse-riding routes are generally less of a priority in urban areas; and
- The Whitehill / Stoneybank area could become a Controlled Parking Zone, which may create opportunities with street space.

17.4 Public Consultation

The route, shown in Figure 17-1, was presented to the public via the online survey and at the Public Exhibition. The key themes that emerged from each of these consultation events are discussed in sections 17.4.1 and 17.4.2 respectively.

17.4.1 Online Survey

The online survey revealed that the majority of respondents supported the route, as shown in Figure 17-8.

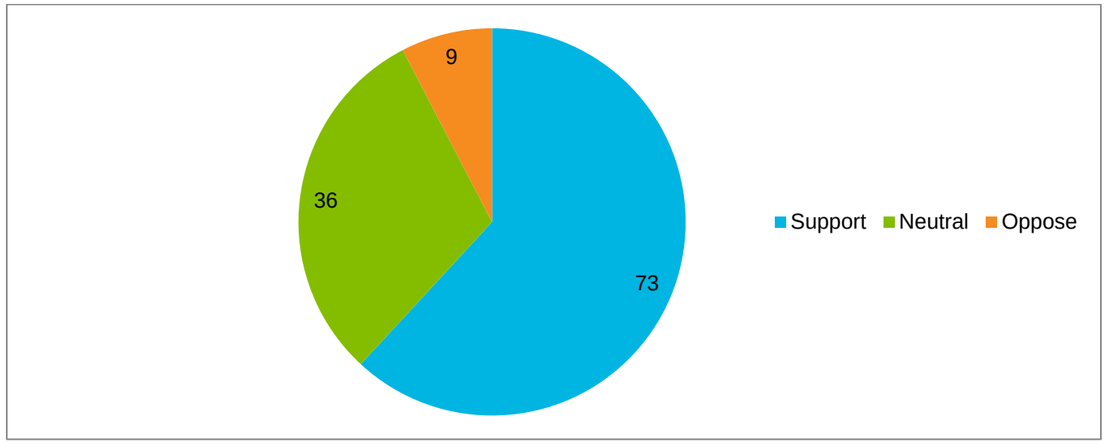


Figure 17-8: Route 3 – Level of Support

Of the 118 respondents, 73 (60.8%) supported the proposals for Route 9.

The key themes from the online survey regarding Route 9 were as follows:

Table 17-3: Key Themes from Online Survey - Route 9

Key Themes	Number
Shared use paths are not a good solution	11

17.4.2 Public Exhibition

The key themes that emerged from the public exhibition regarding Route 9 were as follows:

Table 17-4: Key Themes from Public Consultation – Route 9

Key Themes	Number
Connect to Portobello promenade	4
Public education required on shared use paths	2

17.5 Planning & Environmental

Figure 17-9 shows the environmental constraints of Routes 7, 8 & 9. Route 9 passes some Listed Buildings and the east end of the route passes into a Battlefield Area.

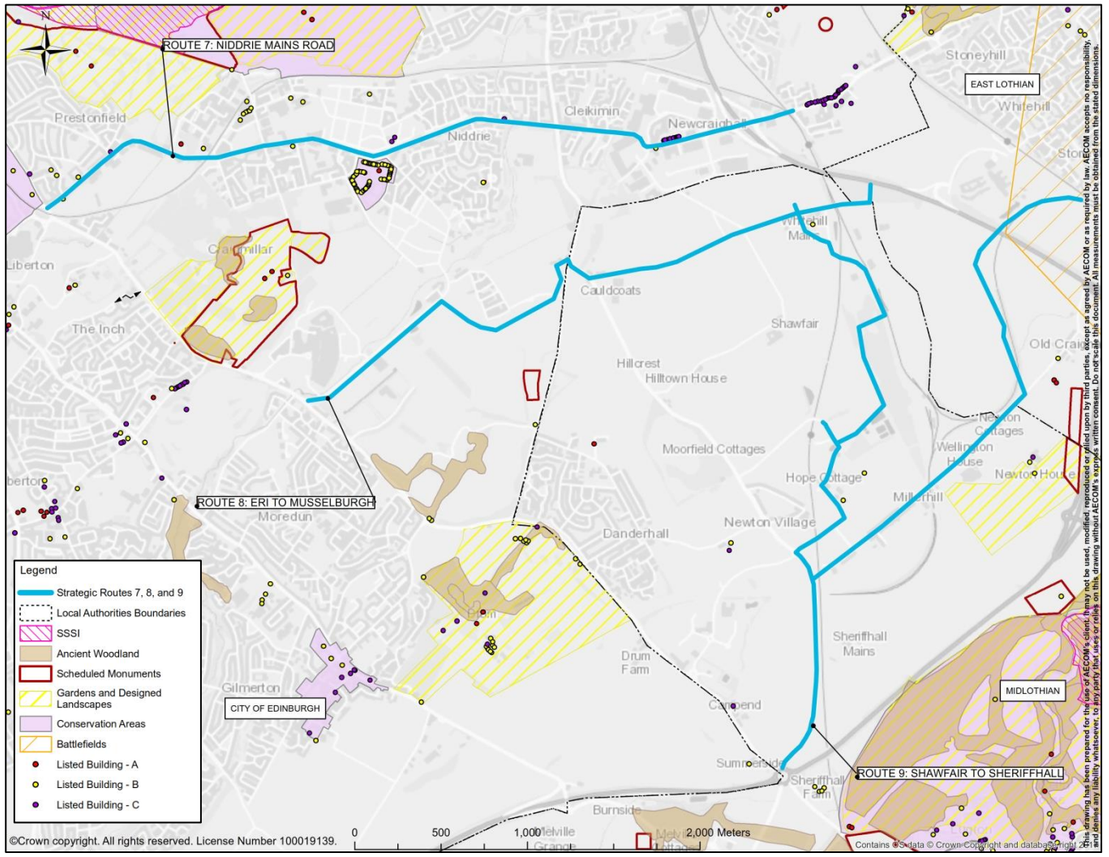


Figure 17-9: Environmental Constraints – Route 9

17.6 Land Ownership

The following areas were identified as potentially being in private ownership:

1) Land on either side of Old Craighall Road; and

2) Land between Shawfair and Whitehill Road.

These areas are shown graphically in Figure 17-10.

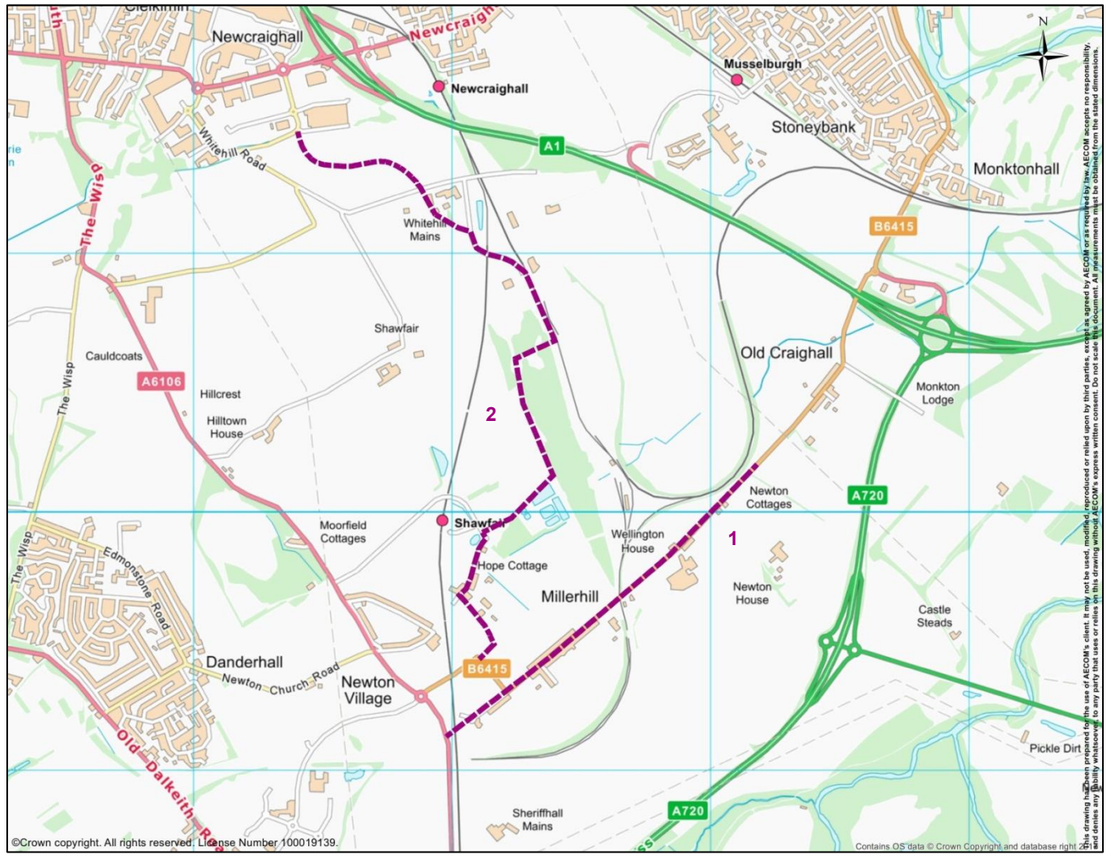


Figure 17-10: Land Ownership Map Route 9

It is recommended that ownership of these areas of land should be identified, if this route is to be taken forward and delivered.

17.7 Road Safety Commentary

A Road Safety Review was carried out by a senior member of AECOM's Road Safety team in Scotland. This comprised a review of the route corridor and potential solutions drafted by the project team. Potential issues relating to road safety were identified.

The following issues were raised relating to Route 9:

- The route appears to cross the railway line at a number of locations near to Shawfair railway station. It is unclear if the shared use path crosses over or below the railway line. The design should consider the provision of suitable boundary fences / walls to prevent access to the railway line.

18. Recommendations and Funding

18.1 Recommended Next Steps

In order to deliver the project, it is recommended that the following stages are undertaken to realise the scheme:

- Funding

  It is recommended that relevant funding opportunities and delivery partners are explored to develop each of the routes as soon as possible. Funding opportunities and partners are aligned with the identified projects in Section 18.2.

- Stakeholder engagement and Preliminary Design

  Each of the identified routes and projects are at an early inception stage and should be further developed with local communities and stakeholders. Given the high-profile nature of the routes and aspirations, a collaborative design approach and behaviour change programmes should be developed alongside the preliminary design.

  – Develop project briefs for each route and appoint a design team;
  – Engage local communities and stakeholders in setting the vision and objectives for each project;
  – Undertake necessary surveys, design optioneering and appraisals;
  – Involve communities and stakeholders in key design decisions for the project;
  – Develop preliminary designs and undertake stakeholder engagement to establish views and support; and
  – A Road Safety Audit to be carried out following completion of the preliminary designs.

- Detailed Design

  Following the identification and sourcing of funding, it is recommended that the route is progressed to the detailed design stage. This will likely require:

  – Land ownership to be determined, with permission obtained, as required;
  – Public utility information to be obtained;
  – Topographical survey information to be obtained;
  – Appropriate modelling to be undertaken, with traffic surveys obtained, as required;
  – Detailed design drawings and specifications to be prepared;
  – A bill of quantities and cost estimates to be prepared;
  – A Road Safety Audit to be carried out following completion of the detailed designs;
  – Consultation with stakeholders and the public; and
  – Traffic Regulation Orders and Re-determination Orders to be prepared.

- Construction Design

  Following consultation on the detailed design, the construction design should be prepared. This will likely require:

  – Preparation of construction drawings;
  – Review of traffic management drawings and proposals; and
  – Preparation of tender documents.

- Procurement and construction

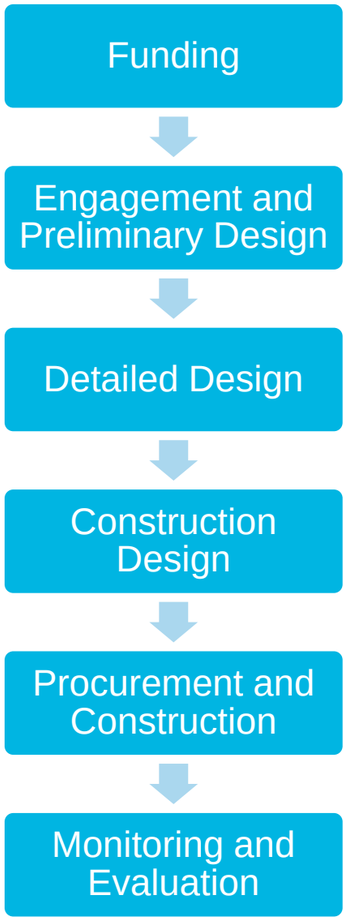
  Once the construction design is completed, it is recommended that the project is procured and progressed to construction. This will likely require:

  – Issue of pre-qualification questionnaires;
  – Appointment of the preferred tenderer;
  – Mobilisation and implementation of traffic management; and
  – A Road Safety Audit to be carried out following completion of construction.

- Monitoring and Evaluation

  Following the completion of construction, it is recommended that the scheme is monitored and that its effectiveness is evaluated. This could comprise:

  – Consultation with East Lothian Citizens Panel;
  – Household surveys;
  – Analysis of ‘big data’ (mobile phone / Bluetooth data);
  – Installation of bike counters and analysis of outputs;
  – Analysis of carbon emissions pre and post scheme opening;
  – Analysis of town centre footfall data;
  – Commission of video surveys and analysis of outputs;
  – Commission of traffic surveys and analysis of outputs; and
  – Undertake behaviour change programme with local schools, groups and workplaces.



18.2 Delivery Plan & Funding

Please note that the strategic routes that are located primarily or wholly within the City of Edinburgh or Midlothian local authority areas are excluded from the table below.

Route	Cost (median)	BCR*	Timescale**	Delivery Partners	Funding Sources	Quick Wins
Route 1	£4.3m	0.41	Long-Term	Sustrans SEStran Historic Environment Scotland Scotland's Towns Partnership Business Improvement District (or equivalent)	Sustrans Community Links PLUS Sustrans Community Links: Ambitious Projects SEStran Heritage Lottery Fund Historic Environment Scotland	• Pilot projects on High Street – including community events and temporary lane closures. • Shorthope Street: restrict traffic and access; or create contraflow cycling.
Route 2	£2.2m	0.89	Medium-term	Sustrans	Sustrans Community Links PLUS Sustrans Community Links: Ambitious Projects Sustrans Dangerous Junctions	• Opening of Electric Bridge for walking and cycling. • Both roundabouts have clusters of cycle collisions and are suitable for Dangerous Junction's funding. These areas are less sensitive and could potentially be developed and delivered quicker.
Route 3	£1.2m	0.74	Short Term	Sustrans Central Scotland Green Network Ash Lagoon Developers Visit Scotland Scottish Wildlife Trust Scottish Woodland Trust Scottish Natural Heritage	Sustrans Community Links Sustrans National Cycle Network Development CSGN Development Fund Private Developers	• Path improvements could be made to this route and delivered within 12 months if funding were secured. Note this excludes the delivery of the new bridge over the River Esk. • Local interpretation and artwork could be installed in collaboration with local groups. • Promotional campaigns could be delivered with partners to promote the tourism of the route.
Route 4	£2.2m	5.84	Medium Term	Sustrans ScotRail Central Scotland Green Network Scottish Wildlife Trust Scottish Woodland Trust Scottish Natural Heritage City of Edinburgh Council	Sustrans Community Links Sustrans Community Links: Ambitious Projects Sustrans National Cycle Network Development CSGN Development Fund SEStran ScotRail Cycle Fund Private Developer Contributions	• Local interpretation and artwork could be installed in collaboration with local groups.
Route 5	£2.4m	1.44	Medium – Long Term	Sustrans SEStran ScotRail QMU City of Edinburgh Council Midlothian Council	Sustrans Community Links: Ambitious Projects Sustrans National Cycle Network Development SEStran ScotRail Cycle Fund Private Developer Contributions	• Behaviour Change and promotional programmes with Queen Margaret University and ScotRail. • Traffic calming and streetscape works could be installed on Whitehill Farm Road / Stoneybank Terrace to improve conditions for people cycling. • Wayfinding could be improved between Queen Margaret University, Musselburgh rail station and the town centre.
Route 6	£2.2m	2.11	Short-Medium Term	Sustrans SEStran City of Edinburgh Council ScotRail National Trust for Scotland	Sustrans Community Links Sustrans Community Links: Ambitious Projects SESTRAN ScotRail Cycle Fund	• Widening of the footway alongside Newhailes Road, and the traffic calming proposed through Newcraighall, could be developed and delivered in advance of the rest of the scheme. This would create an improved route between Musselburgh town centre and Newcraighall.

* BCR based on Sensitivity Demand Scenario with GCP.

** Short Term = 1 year; Medium Term = 1-2 years; Long Term = 3 years (+)

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