Avoch to Munlochy: Feasibility and Design Study

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1 Introduction

1.1 Introduction

Transition Black Isle (TBI), working in partnership with the Highland Council, has commissioned AECOM to undertake a feasibility assessment of a shared use pedestrian and cycle route between Munlochy and Avoch. The study area location, both in a regional and local context, is shown in Figures 1.1 below and 1.2 overleaf:

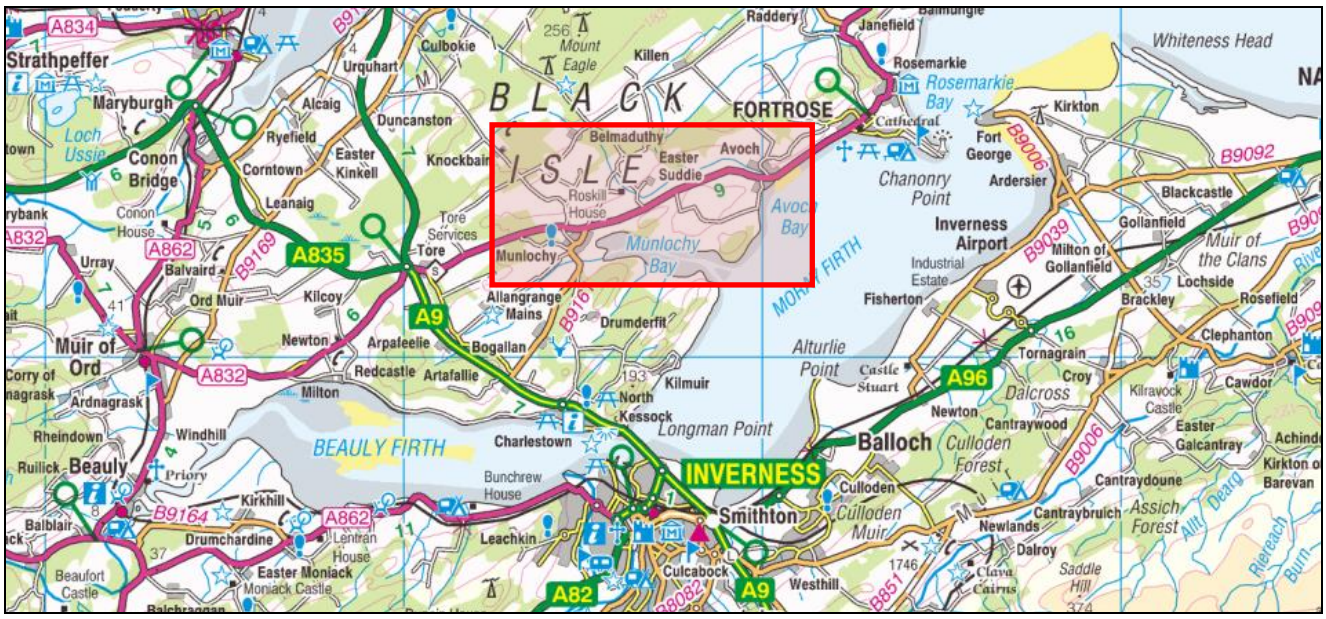

Figure 1.1: Study Area in Regional Context

1.2 Summary

The study concludes that a shared use cycling and walking route between Munlochy and Avoch would bring a range of benefits and would be deliverable using standard construction techniques. A route closely following the A832 would maximise the potential benefits.

However a number of barriers to implementation have identified, specifically relating to land ownership, and the route is therefore unlikely to be feasible for delivery in the short term.

Through continued engagement with the local community, Transition Black Isle and Highland Council may be able to identify changing circumstances which would support the implementation of the route in future.

A path south of Munlochy to Drumsmittal junction/Drumderfit Hill would also have considerable benefits and may be more deliverable in the short term.

Two separate sections of proposed route are considered within this report:

- Section 1: Munlochy to Avoch; and
- Section 2: South of Munlochy (to Drumsmittal junction).

For Section 1, two route options have been considered following discussions with the client group:

- Option 1A: Via Rosehaugh Estate and the A832; and
- Option 1B: via A832 only.

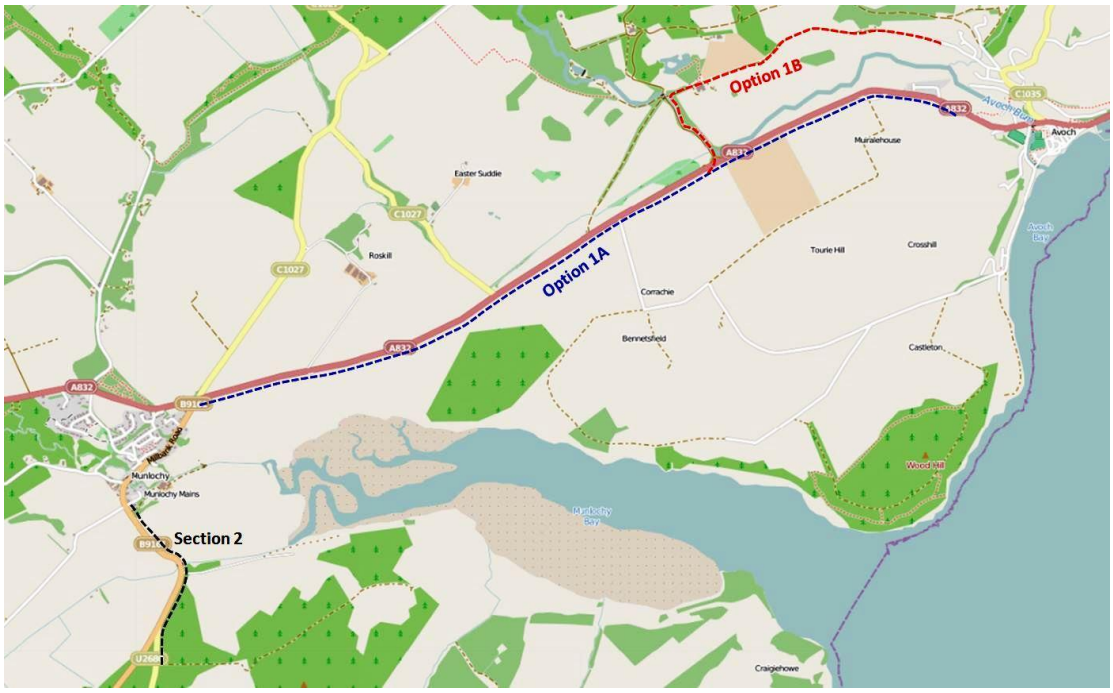

Figure 1.2: Options Considered

1.3 Overview

The towns of Munlochy and Avoch are located around 5.5km (3.4 miles) apart; for many people this distance can be cycled in 20 minutes or less, which makes cycling between towns a realistic and potentially attractive travel option. The route would also be attractive for some people to walk, whether along the full extent or along a shorter section.

The route under consideration to the south of Munlochy (section 2) is approximately 0.9km (0.6 miles) in length, and would provide a traffic free link between Munlochy and Drumderfit woodland, also linking with quiet roads towards the south – enabling and encouraging onward journeys to North Kessock and Inverness.

It is desirable for many reasons to enable safe and enjoyable cycling and walking trips in the local area, including for the following reasons:

- At present there is no formal path linking Munlochy and Avoch, thus any walking or cycling journeys must be made on the road carriageway or using less direct routes on minor roads, informal paths, and tracks in the Rosehaugh Estate;
- The road layout immediately south of Munlochy (at Littlemill Bridge) discourages walking and cycling; and
- For short journeys, cycling and walking can be attractive options for many people and may replace trips by other modes with extensive benefits, described further in section 1.4. This includes both utility journeys and those for leisure and tourism.

Work undertaken by Transition Black Isle has identified a strong level of local community support for the development of this type of route.

1.4 Policy Context

The development of cycling infrastructure is strongly supported in national, regional and local transport policy, supporting a range of wider objectives including health improvement, sustainability and economic development.

Cycling infrastructure enables a **safe, healthy, low cost** way of accessing services including shopping, health services, **education** and employment **opportunities** which might otherwise be out of reach.

High quality infrastructure can also encourage **leisure** cycling for local residents and visitors to the area, thus supporting the **tourism** industry as well as providing h**ealth and quality of life** benefits. Many types of cycling infrastructure also support and enable walking trips and exercise (running/jogging) with associated benefits.

Cycling and walking can be an important part of an **active and healthy** lifestyle, with benefits for individuals and social benefits through reduced demands on health services.

Cycling or walking instead of travelling by car has an **environmental benefit** through **reduced emissions** and resource usage.

1.4.1 National Transport Policy

The Scottish Government's Cycling Action Plan for Scotland (CAPS, 2010), is the flagship policy for the promotion of cycling in Scotland, and clearly states many of the reasons for the promotion of cycling, along with a vision as follows:

> *"Cycling is a fun, healthy and a virtually free activity for those who have access to a bike. Learning to cycle safely can help young people become confident, independent teenagers and adults. Designing our communities to make walking and cycling safe and easy, leads to increased visibility of cyclists and pedestrians and helps create attractive places to live. Choosing to commute to work and to school by bike helps reduce congestion in our towns and cities, is one of the cheapest forms of travel and can help maintain a healthy mind and body.*
>
> ***That is why we would like to see, by 2020, 10% of all journeys in Scotland made by bike".***[1]

This vision, for 10% of all journeys in Scotland to be made by bike by 2020, was reinforced in the follow-up to this document, CAPS 2013, published in June 2013.

National support for the promotion of walking and cycling has further been indicated by announcements of increased funding for investment in cycling infrastructure, including for 2014-15, in particular the highest ever funding allocation towards Community Links projects. Community Links funding has been allocated towards the Avoch to Munlochy cycle route, subject to landownership agreements being achieved.

1.4.2 Regional Transport Policy

At a regional level, the relevant transport authority is HITRANS (The Highlands and Islands Transport Partnership). The HITRANS Regional Transport Strategy (RTS):

> *"...has as its vision enhancing the area's viability - enhancing its place competitiveness and thereby attracting and retaining people in the area and making it a more attractive place in which to live, to work, to conduct business and to visit"*.[1]

It is also stated areas of focus within the Strategy include "*Active Travel*" and "*Environmental impacts*".[2] The development of cycling infrastructure strongly supports these aspects of the RTS.

1.4.3 Local Transport Policy

The relevant local policy is detailed in the Highland Council's Local Transport Strategy 2010/11-2013/14, with two of the strategic objectives detailed in the document being directly related to sustainable transport modes such as cycling:

- *Environment: "Manage/reduce the impacts of transport on the natural and built environment"*;
- *Health: "Increase levels of cycling and walking to promote health improvement and modal shift".*[3]

The sustainability section of the same document outlines the importance of cycling in relation to the aims and strategy of The Highland Council:

> *"One of the keys to sustainability in transport is active travel and public transport. Active travel through walking and cycling is energy efficient, cost effective, and health promoting. Central to the Council's strategy for sustainability is the removal of barriers to cycling and walking".*[4]

1.5 Local Demand

Transition Black Isle (TBI) is "*an independent, community-focussed and owned organisation*" and a registered charity, affiliated to the Transition movement, and with the aim of "*tackling the issues of climate change and peak oil*".[5] The organisation actively encourages sustainable transport in the Black Isle area.[6]

As part of their 'Million Miles' project, events such as the Black Isle Bike Fest and Cycling in Rural Scotland conference have taken place, alongside social rides and cycle training. The Munlochy to Avoch cycle route proposal initially arose from community demand identified by TBI through their work in the local community.

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[1] HITRANS (The Highlands and Islands Transport Partnership). 2011. *Regional Transport Strategy*. [ONLINE] Available at: http://www.hitrans.org.uk/Strategy/Regional_Transport_Strategy. [Accessed 20 May 14].

[2] HITRANS (The Highlands and Islands Transport Partnership). 2011. *Regional Transport Strategy*. [ONLINE] Available at: http://www.hitrans.org.uk/Strategy/Regional_Transport_Strategy. [Accessed 20 May 14].

[3] The Highland Council, (2010). *Local Transport Strategy 2010/11 - 2013/14*.

[4] The Highland Council, (2010). *Local Transport Strategy 2010/11 - 2013/14*.

[5] Transition Black Isle. 2014. *About Transition Black Isle*. [ONLINE] Available at: http://www.transitionblackisle.org/about-transition-black-isle.asp. [Accessed 23 May 2014].

[6] Transition Black Isle. 2014. *Transition Black Isle | Million Miles Project*. [ONLINE] Available at: http://www.transitionblackisle.org/million-miles-project.asp. [Accessed 20 May 2014].

1.5.1 Trip Purposes

Development of a suitable route would enable and encourage a range of journey types, as detailed below:

- Cycling: Utility
  Cycling for utility purposes includes journeys to reach employment, education or services (such as shops), and visiting friends and relatives, amongst others. These journeys may be directly within the study area or as part of a journey to a destination elsewhere.
- Cycling: Leisure
  As well as cycling for utility purposes, cycle routes are often utilised by leisure cyclists, particularly at weekends. This includes local trips made by residents, as well as by visitors to the area either travelling locally or as part of a longer journey. The potential for cycle touring, and the potential benefits that it can bring to both the local and national economy, is discussed further in section 1.5.2.
- Walking: Utility
  Shared pedestrian and cycle routes, such as proposed in this report, allow cyclists and pedestrians to both make use of the new or upgraded route. Cycle routes are generally direct, flat and comprise a firm and level surface, making them attractive to those who choose to travel on foot for a utility purpose.
- Walking: Leisure
  Shared pedestrian and cycle routes also provide leisure walkers with an alternative, or upgraded, route on which to walk along. This could include walking journeys within the local area, or trips as part of a longer distance (tourist) journey. Tourism Intelligence Scotland cite four main types of trip undertaken by tourists, one of which is “A moderate walk is less than 5 miles”.
- Other
  In addition to cycling and walking, cycle routes can also be used for other purposes, including by runners, skateboarders, kick/push scooter users and roller bladers/in-line skaters, amongst others. For example, 2.5% of primary pupils across Scotland travel to school by scooter.[7]

The proposed facility could also be used as part of a safe walking or cycling route to Avoch Primary School or Munlochy Primary School.

1.5.2 Tourism

The routes under consideration could be attractive to tourists visiting or passing through the local area.

Tourism is an essential part of the Highland economy, being described in Highland Tourism (2011) as the “*Highlands’ most important industry*”.[8]

Some of the key figures relating to tourism in the Highlands are outlined in Table 1.1, below, providing a clear indication of the importance of the sector.

[7] Sustrans, 2013. *Hands Up Scotland 2012 - National Results Summa*ry [Online]. Available at: http://www.sustrans.org.uk/sites/default/files/file_content_type/hands_up_scotland_nationd_national_summary_1.pdf [Accessed 28 May 2014]

[8] Simpson, Colin, 2011. *Highland Tourism.* [Online]. Available at: http://www.highland.gov.uk/NR/rdonlyres/7CC37D2D-05FF-4481-A03B-A2732D25E832/0/Item3Ped3111.pdf [Accessed 20 May 2014].

Table 1.1: Tourism Figures - Scottish Highlands[9]

	Value
Direct Expenditure	(At least) £688 million per year
Indirect Expenditure	£161 million per year
Jobs (including self-employed)	18,400 (17% of the total workforce)

Over recent years the role of cycling in tourism in Scotland has increased substantially, with cycle touring (including on the National Cycle Network) and mountain biking popular both as primary holiday purposes, and as activities as one part of a holiday.

Transform Scotland's report 'The Value of Cycle Tourism – Opportunities for the Scottish Economy' (2013) includes a summary of the contributions that cycle tourism makes to the Scottish economy and makes a number of recommendations. In Table 1.2, key figures from the Transport Scotland report are reproduced.

Table 1.2: Contribution of Cycle Tourism to the Scottish Economy[10]

Source	Description	Annual Value (£million)
Health	Scottish share of leisure cycle related health benefits to the UK economy	4.0
Events	Value of (identified) leisure cycle related event activities	5.6
Infrastructure	Scottish leisure cycle share of the annual value from employment in cycle related infrastructure construction in the UK	1.5
Direct Expenditure	Leisure cycle share	106.2 – 228.2
Gross Value Added (GVA)	Scottish leisure cycle tourism market share in the Scotland-wide tourism	58.5

The values in Table 1.2 reveal that the current contribution of cycle tourism to the Scottish economy could be as great as £297.8 million, depending on the method of calculation used. This demonstrates the importance of cycle tourism in Scotland, and also the importance of providing suitable infrastructure for cycle tourists.

Construction of cyclepaths and cycle ways, and connecting these to the existing network of routes, opens up new areas to cycle tourists, with benefits both locally and nationally.

In the Scottish Borders, an area of similar natural beauty to the Highlands, it has been stated that "*94 per cent of tourism businesses in the Borders think cycling is currently vital or important to tourism in the area*".[11]

Additionally, a survey conducted by Transform Scotland revealed that "*the majority of respondents identified cycle tourists as a valuable segment of the customer base and expressed a desire to extend their involvement in this market*", a similar conclusion to that drawn in the Borders.[12]

1.6 Wider Policy Implications

Two brief examples, from the fields of health and carbon reduction, are included to demonstrate the wider policy benefits of developing new cycling infrastructure.

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[9] Simpson, Colin, 2011. *Highland Tourism* [Online]. Available at: http://www.highland.gov.uk/NR/rdonlyres/7CC37D2D-05FF-4481-A03B-A2732D25E832/0/Item3Ped3111.pdf [Accessed 20 May 2014].

[10] Transform Scotland. (2013). *The Value of Cycle Tourism – Opportunities for the Scottish Economy*. Available: http://www.transformscotland.org.uk/value-of-cycle-tourism-report.aspx. Last accessed 20th May 2014.

[11] Tourism Intelligence Scotland. 2013. *Leisure Cycling Development Project.* Available: http://www.tourism-intelligence.co.uk/develop-your-business/research-summaries/leisure-cycling-development-project. Last accessed 9th May 2014.

[12] Transform Scotland. (2013). *The Value of Cycle Tourism – Opportunities for the Scottish Economy*. Available: http://www.transformscotland.org.uk/value-of-cycle-tourism-report.aspx. Last accessed 20th May 2014.

The Scottish Government's 'Preventing Overweight and Obesity in Scotland – A Route Map to Healthy Weight', published in February 2010, emphasises the health benefits associated with increased levels of cycling and walking, as follows:

> *"We need to make walking and cycling accessible, safe and appealing enough to be the default means of travel for short and local journeys"*.[13]

A similar message from another sector is found in the Scottish Government's 'Low Carbon Scotland: Meeting the Emissions Reduction Targets 2010-2022, The Report on Policies and Proposals', published in March 2011, which includes "*improved cycling and walking infrastructure*" as one of the measures which can contribute to carbon reductions.[14]

Considering these two examples, it should be noted that enabling cycling or walking instead of travel by car has particular benefits both to personal health and to local and global air quality.

1.7 Summary

The development of networks of cycling routes is strongly encouraged and supported by a wide range of policies at all levels of Government. This applies throughout the area, but is particularly valid when considering a link between two communities a short distance apart.

The work of Transition Black Isle has highlighted local potential for increased cycling, and the specific demand for an Avoch to Munlochy route.

The importance of tourism to the Highlands, and of cycle tourism to the Scottish economy, also supports the implementation of this type of project.

A new cycle route in the area would serve many different types of journey, including for access to school, work and other services and facilities.

This introductory chapter has described the content of this report, the study area where the new cycle routes are proposed and the comprehensive support for the development of cycling infrastructure across all levels of Government.

The remainder of the report sets out the assessment of the route options and recommendations for further action.

[13] Scottish Government. Preventing Overweight and Obesity in Scotland – A *Route Map to Healthy Weight* [pdf]. 2010

[14] Scottish Government. Low Carbon Scotland: Meeting the Emissions Reduction Targets 2010-2022, The Report on Policies and Proposals [pdf]. 2011

2 Desktop Study

2.1 Introduction

A desktop review has been undertaken to inform the study, including review the following sources of information:

- Mapping, aerial images and spot height data;
- Highland-wide Local Development Plan (2012) and Ross & Cromarty East Local Plan (2007);
- Environmental information including flood risk;
- Highland Council roads construction standards; and
- Cycling by Design (2011).

Initial route options have been identified, alongside potential constraints and issues, related to both existing issues and proposed developments that are required to be investigated and considered during design.

Potential environmental issues have also been researched taken into account.

Guidance outlined in the Highland Council road construction standards and Cycling by Design has been consulted and will be followed during the design of the cycle route.

2.2 Review of Mapping, Aerial Images and Spot-Height Data

Mapping of the study area, and spot-heights provided by Highland Council, have been reviewed to identify route options and constraints in order to assist site visits. Information obtained from the review of the mapping and aerial images are detailed in section 2.2.1.

2.2.1 Mapping and Aerial Images

A review of mapping and aerial images of the Avoch-Munlochy area revealed that the A832 provides a relatively direct route between the two towns. There is a network of narrow roads and farm tracks to the north and south of the A832, providing access to the farms and estates that lie on both sides of the A832. There are four junctions on the north side of the A832 but only two on the south side.

Route Option 1B identified from review of mapping and aerial images would utilise the roads and tracks linking Avoch and the A832 via the Rosehaugh estate, to the north of the road itself. The option is less direct, although much of the route would involve the upgrade of existing paths which are already used by walkers and cyclists, rather than the construction of new paths.

For Route Section 2, from the southern boundary of Munlochy to Drumsmittal junction, the most direct route follows the line of the B9161.

Potential constraints were identified in three areas:

1. Corrachie crossing and the property, east of West lodge and north of the farmland at Corrachie and Bennetsfield;

2. The disused railway and existing bridge; and

3. Littlemill Bridge (Route Section 2).

2.2.1.1 Corrachie Crossing

On the south side of the A832 there are fewer access tracks and roads than on the north side. The most significant is the minor road to the farmland and properties at Corrachie and Bennetsfield. A crossing of the side road would have to be provided at this point, in order to allow cyclists to cross the road in a safe manner, however visibility is good and traffic levels are low at this location

2.2.1.2 Disused Railway and Existing Bridge

The section of disused railway east of Munlochy is designated as a core path. The path is described in the Core Paths Plan as currently being an earth farm track, and being 1.2km long. As outlined in Transport Scotland's guidance document 'Cycling by Design', disused railway lines are often attractive sites for the construction of cycleways.

There is a bridge on the line of the old railway, located around 200m from the eastern end of the core path section, which could be used as part of the route subject to appropriate structural checking.

2.2.1.3 Littlemill Bridge

South of Munlochy, the B9161 crosses a burn and the road operates with priority for southbound traffic. There is no footpath alongside the road. A new bridge would be required for any new path here.

2.3 Highland-wide Local Development Plan

The Highland-wide Local Development Plan, published in 2012, sets out The Highland Council's vision for development of the different areas of the Highlands. The towns of Avoch and Munlochy are set within the Inner Moray Firth area. The vision for the Inner Moray Firth includes seeing a growth in population, jobs and infrastructure, although the towns in Avoch and Munlochy are not located within a growth corridor. The Local Development Plan also mentions seeing an increased number of walkers and cyclists "as a result of the green network", and "through a network of paths".[15]

2.4 Ross & Cromarty East Local Plan

The Local Plan has been reviewed to identify any developments which may affect the route selection, through new or changing land use, or new destinations affecting the demand for travel.

Plans relating to Munlochy and Avoch are included in Appendix A; these have minimal impact on the proposed routes though some areas on the west side of Avoch are designated for housing development.

[15] The Highland Council, (2012). *Highland-wide Local Development Plan*.

2.5 Environmental information

2.5.1 SEPA flood map

Examination of the Scottish Environmental Protection Agency (SEPA) flood map of Scotland shows areas that are at risk of flooding due to rivers, surface water and being close to the coast.[16] The risks are classified as being either low, medium or high, with potentially vulnerable areas also shown on the map.

The area of the cycle route is largely free of flood risk. Option 1B would cross a localised area of surface water flood risk at Rosehaugh. There is an area of localised coastal and surface flood risk at Little Mill; the water level at all likelihoods of flooding would not be expected to exceed 1.0m according to SEPA and the proposed bridge should not be affected.

2.5.2 SNH Designations

On the 12th of May 2014, a search was performed using Scottish Natural Heritage's online map search.[17] In the area east of Munlochy, the bay is a Nature Reserve and is marked as a 'Site of Special Scientific Interest', a 'Special Protection Area' and a 'Ramsar Area'. Beyond the bay, the Moray Firth is marked as a 'Special Area of Conservation'. However none of these sites lie directly on the proposed route alignment.

2.5.3 Local Nature Sites

There are a number of Local Nature Conversation sites and woodlands in the Munlochy and Avoch area, including Munlochy Bay Nature Reserve, Hill o' Hirdle Wood, Pheasant Wood, and Darroch Bog Wood; the proposed routes would not directly impact on these sites but would pass around the north side of Munlochy Bay.

2.5.4 Core Path Network

Munlochy, Avoch and the surrounding area contains many opportunities for walkers and cyclists along the network of core paths that exists. The Old Railway Line, part of the dismantled railway line which runs parallel to the A832 is, as previously mentioned, a part of this network of core paths in the Ross and Cromarty area. The disused railway line is discussed further in section 2.5.5, while the Ross and Cromarty Core Paths Plan is shown in Figure 2.1.

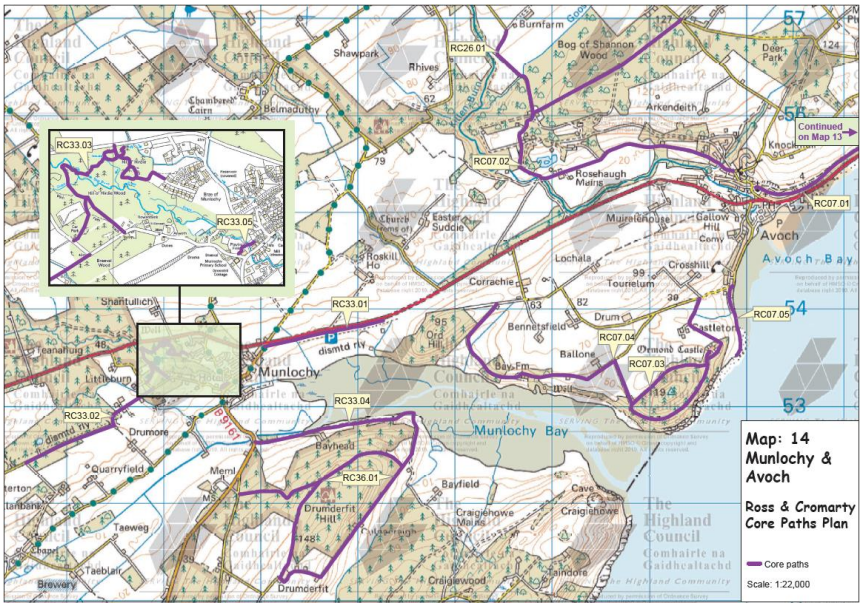

Figure 2.1: Ross and Cromarty Core Paths Plan

16 http://map.sepa.org.uk/floodmap/map.htm
17 http://gateway.snh.gov.uk/sitelink/searchmap.jsp

2.5.5 Disused Railway Line

The disused railway line, was, until its closure to passengers in 1960, a part of the Muir of Ord to Fortrose Highland Railway route, an 8 mile long route connecting to the Inverness and Ross-shire line.[18,19] In the vicinity of Munlochy, the line is now a farm track as previously noted. The railway line runs parallel to the line of the A832, running from the eastern edge of Munlochy, and the extent is shown on Figure 2.4 above. Path developments using disused rail lines often include features such as interpretation boards and artworks, to inform and educate users about past uses of the land.

2.6 Highland Council Roads Construction Standards

Should the project progress to construction, the path would subsequently be adopted by the Highland Council. The construction of the path, and associated features such as drainage, must therefore comply with the Council's standards for roads and new developments. These standards are outlined in the document 'Roads and Transport Guidelines for New Developments' (RTGND).

Relevant extracts are noted below in sections 2.6.1 to 2.6.5,:

2.6.1 Policy

Section 3.3 of RTGND outlines the Highland Council's policy on the adoption of development roads, footways, cycle tracks and footpaths. It is stated that:

> *"...the Council will consider for adoption, i.e. add to its List of Public Roads, any new road the developer makes application for and which the public have the right to use. The new road shall have been designed and constructed to the standard approved by the Council, which shall normally be that set down in the Road Construction Consent. A new road will include associated footways, cycle tracks and verges".*[20]

Further to this, it is also stated that

> "*New roads, footways, cycle tracks or parking areas put forward for adoption must be connected to an existing adopted public road, footway or cycle track, at the developer's expense*".[21]

Thus, for the proposed cycle route to be adopted by the council, the new cycle route will have to be constructed to the appropriate standard, connect into existing infrastructure, and be for public use. All of the routes proposed in this report will meet these criteria.

2.6.2 Footpaths and Shared Footpaths/Cycle Tracks

Cycle tracks are discussed further in section 3.3.4 of the Highland Guidelines.

> *"Remote new footpaths or shared footpaths/cycle tracks will only be considered for adoption where they provide significant pedestrian links connecting houses, schools, shops, public leisure and entertainment facilities or where they form part of the cycle network or link between two public roads. In all other cases, unless agreed otherwise with the Council, future maintenance would be the responsibility of the developer. Footpaths and shared footpaths/cycle tracks should be constructed in accordance with the associated Road Construction Consent".*[22]

These criteria will also be satisfied by the proposed new cycle route, as the route will link public roads in Avoch and Munlochy and will be constructed appropriately according to the relevant Road Construction Consent.

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[18] Railbrit.co.uk, (1998). *Highland Railway - Fortrose Branch*. [online] Available at: http://www.railbrit.co.uk/Fortrose_Branch/index.php [Accessed 21 May. 2014].

[19] Wikipedia. Fortrose Branch. [online] Available at: http://en.wikipedia.org/wiki/Fortrose_Branch [Accessed 27 May. 2014]

[20] The Highland Council, (2013). *Roads and Transport Guidelines for New Developments*.

[21] The Highland Council, (2013). *Roads and Transport Guidelines for New Developments*.

[22] The Highland Council, (2013). *Roads and Transport Guidelines for New Developments*.

2.6.3 Cyclists

The design objectives and requirements for cyclists are detailed in section 5.16 of RTGND. Section 5.16.1.5 details part of the process for upgrading an existing footpath for cycle use, and the requirements of the developer in the process:

> *"Developers should be aware that when an existing footway or footpath is upgraded to accommodate cyclists a TRO has to be processed for this change of use, with the shared facility marked and signed in accordance with current legislation. The developer would be liable for the costs associated with these requirements. A new shared pedestrian/cycle facility does not require a TRO but must be signed and marked appropriately"*.[23]

In section 5.16.1.6 of the document, it is stated that "*Design requirements for cyclists are provided in this Section. Reference should be made to Cycling by Design*". The guidance provided in Cycling by Design, and how it relates to the requirements and route of this project, is discussed in section 2.7. RTGND do provide clear guidance on the Highland Council's order preference for the implementation of cycle measures:

> *"Adopt the following cycle design hierarchy - Preference 1 has cyclists sharing with low speed/flows of vehicles on the carriageway; Preference 2 has cyclists using carriageway cycle lanes and Preference 3 has segregation of cyclists"*.[24]

It is also stated that "*Cyclists should be segregated from high volumes of vehicular traffic, particularly where vehicle speeds are 40mph or higher*" and "*Cyclists sharing with vehicles on a road will generally only be acceptable when vehicle speeds (ideally, 20mph or lower) and traffic volumes are low*".[25] This guidance matches that contained in Cycling by Design.

2.6.4 Drainage

The design requirements for a new development related to drainage are detailed in section 5.25.3 of RTGND. Information regarding sustainable urban drainage systems (SUDS) and gullies is provided, as is a design requirement related to remote footpaths and cycle tracks in particular:

> *"Remote footpaths/cycle tracks shall be constructed with flush edging and adjacent land drainage, so that surface water can drain naturally. Only in exceptional circumstances should direct drainage into gullies be considered, with approval required from the Council. If such footpaths are prospectively adoptable, the adjacent drainage system will also be adopted, if constructed to appropriate standards"*.[26]

2.6.5 Footways, Footpaths and Cycle Tracks

Section 7.4 of RTGND describes the requirements for the construction of pavements, with section 7.4.2 detailing those for footways, footpaths and cycle tracks in particular. It is stated that "*Cycle tracks and shared pedestrian/cycle facilities should only have flexible construction, unless agreed otherwise with the Council*"[27]. Details of construction makeup are discussed further in Chapter 4.

2.7 Cycling by Design

'Cycling by Design (2010)', a guidance document published by Transport Scotland, provides minimum guidance and specifications which should be followed by designers of cycle facilities where at all possible. The routes which have been recommended in this report have all been proposed due to the fact that they can be constructed to the appropriate specifications contained in Cycling by Design. The paragraphs below summarise key sections of Cycling by Design which are relevant to this Feasibility Study. Details of construction makeup are discussed further in Chapter 4.

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[23] The Highland Council, (2013). *Roads and Transport Guidelines for New Developments*.
[24] The Highland Council, (2013). *Roads and Transport Guidelines for New Developments*.
[25] The Highland Council, (2013). *Roads and Transport Guidelines for New Developments*.
[26] The Highland Council, (2013). *Roads and Transport Guidelines for New Developments*.
[27] The Highland Council, (2013). *Roads and Transport Guidelines for New Developments*.

2.7.1 Shared Cycle path

The cycle routes which are the focus of this report are to be shared use cycle paths. Cycling by Design defines a cycle path as:

> "*A route for pedestrians and cyclists not associated with a road carriageway. Pedestrians and cyclists may share the cycle path or may be segregated from each other*".[28]

As the proposed cycle path is to be shared, the route should be signed with Diagram No 956, with Diagram No 1057 used where necessary. This is according to the requirements specified in Cycling by Design.

2.7.2 Minimum Widths and Clearances

The path would be a shared use pedestrian and cycle route, and as such the desirable minimum width of the path is 3 metres, and the absolute minimum width is 2 metres, according to Table 6.2 in Cycling by Design guidance document. The effective width of a path, however, is reduced by 0.5 metres by any objects immediately adjacent to the path.

2.8 Summary

A desktop study has been performed, and although potential constraints and issues have been highlighted and will need to be considered in the design of the route, none of these are considered a barrier to project implementation.

Relevant sections from the guidance document 'Cycling by Design 2010' have been studied, and will be referred to in this feasibility study. Minimum widths and specifications will be met wherever possible, with appropriate measures implemented where these conditions cannot be met. Consideration has also been given to guidance related to cyclists and cycle routes contained in 'Roads and Transport Guidelines for New Developments' by the Highland Council.

[28] Transport Scotland. *Cycling by Design 2010* [pdf]. 2010.

3 Option Assessment

3.1 Introduction

A number of site visits have been undertaken as part of the Feasibility Study, as detailed in the Table 3.1, below:

Table 3.1: Overview of Site Visits

Site Visit	Date, Conditions	Reason for Visit
Initial Site Visit	Sunday 4th May 2014	Initial assessment of site conditions
Site Review	Wednesday 7th May	Detailed review of route options
Site Review	Thursday 29th May	Review of Rosehaugh Estate Core Paths

Photos from the site visits are included in Appendix B.

The aim of the site visits has been to examine the study area, including the constraints and potential route alignments that were identified in Chapter 2. Following the inception meeting, desktop study and site visits, two options have been considered and compared for Section 1, the main route between Avoch and Munlochy:

- Option 1A: Alongside A832 only;
- Option 1B: Alongside A832 and via Rosehaugh Estate; and
- Option 2: South of Munlochy towards Drumderfit Hill and Drumsmittal.

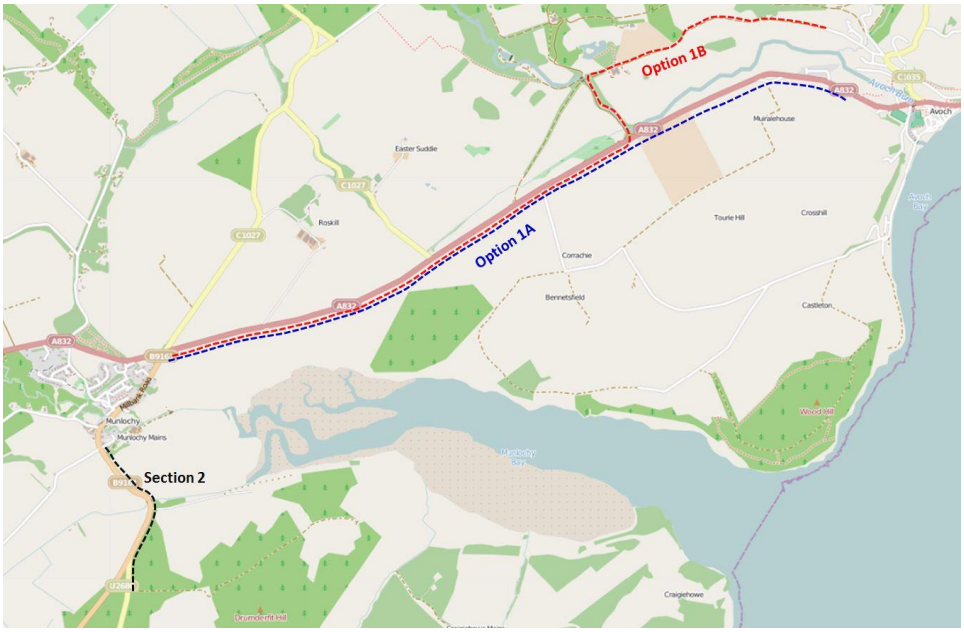


Figure 3.1: Study Area and Route Sections

The route sections have been considered against the following core criteria (these are included in Cycling by Design, and widely used in the appraisal of cycle routes):

- Attractiveness;
- Coherence;
- Comfort;
- Directness; and
- Safety.

Consideration has also been given to 'deliverability', including the likely costs, technical challenges and practical issues such as landownership relating to each section.

3.2 Option 1A

Option 1A would meet the project objectives, and would provide a direct and convenient route between the two towns. The route is likely to provide an attractive and comfortable path for users, and doesn't include any unusual technical challenges.

There are however significant constraints to deliverability which arise from a lack of agreements with landowners; this will prevent implementation of this option.

Table 3.1: Assessment - Option 1A

Route	Alongside A832
Description	A shared use, two-way, cycling and walking path on the south side of the A832, following a section of disused rail line east of Munlochy and then through existing fields. This path would be 3.0m wide with a sealed surface (dense bitumen macadam) separated from adjacent fields using a post-and-wire fence.
Safety	Off carriageway facility which reduces conflict between road users, improving safety and perception of safety. Without street lighting, there may some concerns about personal safety during hours of darkness; street lighting could be included but this would increase the capital and ongoing costs.
Comfort	Can be designed to provide a comfortable facility, minimising changes of direction, gradient and surface type, with a consistent
Attractiveness	Potentially attractive to various user types – for both utility and leisure trips, improved safety compared with cycling/walking on the road will have a big impact.
Directness	Follows the line of the A832, the main road connecting the two towns, providing the most available direct route between the two towns.
Coherence	A consistent standard of route between the towns.
Deliverability	There are a number of problems which will prevent the deliverability of Option 1A. One of the landowners east of Munlochy, who owns a section of disused rail line and a length of field, is opposed to the construction of a path through his land. This is primarily due to the potential loss of productive farming land Another landowner, for fields further east towards Avoch, is also opposed due to their own plans to develop the land in future. Without the agreement of landowners it is not feasible to construct the route on the proposed alignment. Further details regarding landowners have been provided to Transition Black Isle under separate cover.

3.3 Option 1B

The conclusion of the assessment of Option 1B is that the route would meet the project objectives while and would likely be comfortable and attractive. However this would be slightly less direct than Option 1A and may have more safety issues.

In common with Option 1A there are a number of issues related to the deliverability of the proposed route, which would need to be overcome in order to implement the project.

Table 3.2: Assessment - Option 1B

Route	Alongside A832 and via Rosehaugh Estate
Description	Following the same alignment and constructions standards as Option 1A, to the east of Munlochy to the Rosehaugh Estate main access. Then crossing the A832, sharing the Rosehaugh access road heading north. Turning east towards Avoch along the Rosehaugh Lower Drive, which would be upgraded to a sealed surface (dense bitumen macadam) but would require sufficient width (5.0m) and construction depth for access by farm/estate vehicles.
Safety	Compared to Option 1A, this Option would introduce additional conflicts between cyclists/pedestrians and vehicles. This includes at the crossing of the A832, where vehicle speeds may be high, and within the Rosehaugh Estate. The path within the estate would be more remote from passing road traffic which may create some concerns around personal security. The overall effect would be to improve safety and perception of safety for cycling between Munlochy and Avoch, compared to the current situation.
Comfort	Could be designed to provide a comfortable facility, minimising changes of direction and surface type. The route would require some changes in gradient, but these could be minimised.
Attractiveness	Potentially attractive to various user types – for both utility and leisure trips. The route has the advantage of containing a section in a wooded area, varying the outlook for path users. However the road crossing and potential conflict with vehicles may reduce attractiveness.
Directness	The route is not the most direct route between the two towns, but is sufficiently direct to meet the needs of users.
Coherence	The route surfacing could be provided to a consistent standard of sealed surface however Option 1B would be somewhat less coherent that 1A.
Deliverability	There are also a number of constraints on the deliverability of Option 1B. The same constraints exist east of Munlochy as described for Option 1A. Within Rosehaugh Estate there are potential future developments which may affect the volume of traffic and patterns of movement on the estate roads. This may create a conflict between vehicles and cyclists/pedestrians. The future developments are currently unconfirmed; the estate is therefore unable to commit to the cycle route proposal (although they are supportive in principle of the concept). Further details regarding landowners have been provided to Transition Black Isle under separate cover.

3.4 Section 2

The conclusion of the assessment of Section 2 is that the route would meet project objectives and would constitute a comfortable, attractive and direct route.

The route links from Munlochy to Drumderfit Hill, encouraging walking and cycling access to the countryside/forest, and would significantly improve the attractiveness of cycling to other destinations south of Munlochy (bypassing the current Littlemill Bridge). This includes onward journeys to Inverness.

Table 3.2: Assessment - Section 2

Route	
Description	A shared use, two-way, cycling and walking path on either the east or west side of the B9161, south of Munlochy, from the southern edge of the town to the Drumsmittal junction at Drumderfit Hill The path would follow the east side of the road. This path would be 3.0m wide with a sealed surface (bitmac or similar), and a small path bridge crossing at Little Mill; a typical; timber bridge detail is included in Appendix C. Drumderfit Hill is a Forestry Commission area with opportunities for walks on forest tracks and paths. Cyclists and pedestrians may also continue south towards other destinations; however this would be on road.
Safety	Off carriageway facility which reduces conflict between road users. Would provide substantially improved safety for cycling and walking between the Munlochy and the Drumsmittal junction, compared to current conditions. Provision of a cycling/walking path bridge at Littlemill would be a substantial improvement; the existing road bridge is narrow and operates on a priority basis.
Comfort	Could be designed to provide a comfortable facility, minimising changes of direction, gradient and surface type.
Attractiveness	Potentially attractive to various user types – in particular for leisure trips.
Directness	Follows the line of the B9161, the road running south out of Munlochy to the Drumsmittal junction, providing a direct route to Drumderfit Hill forestry area.
Coherence	The path would provide a consistent standard of route, however it would benefit from extending the facility further to the south in future.
Deliverability	The crossing of the burn northeast of the Drumsmittal junction requires the construction of a separate bridge for the cycle path, due to the fact that the existing road bridge is insufficiently wide to accommodate a cycle path. This bridge would represent a slight technical challenge relative to standard path construction. It will be necessary to undertake extensive site clearance in the south of Section 2, due to the thick wooded areas adjacent to the road. The Forestry Commission have indicated they would look positively on the route and would cooperate to find a mutually agreeable route alignment and specification within their land. The adjacent section to the north is privately owned and discussions are still ongoing.

3.5 Assessment Summary

The review in this Chapter identifies that regarding Section 1, the route following the A832 (Option 1A) would provide the highest quality route in compliance with the Core Design Principles of Cycling by Design, and is considered to be attractive however deliverability issues will prevent construction in the short term at least.

The route identified for Section 2 has been deemed to be suitable and worthy of implementation in its own right, complying with the core design principles, but however further negotiations with landowners are required in order to progress the scheme to detailed design.

4 Preferred Option

4.1 Preferred Route Option Summary

The preferred route option between Munlochy and Avoch would be Option 1A along the south side of the A832. (There are issues which will currently prevent the deliverability of this section, in particular relating to landowner agreements).

Section 2 is also considered a worthwhile project for implementation in its own right. Discussions with landowners are ongoing relating to this section.

4.2 Path Construction

Path construction recommendations are proposed in line with Transport Scotland's 'Cycling by Design' guidance, and with reference to the Highland Council's road construction standards

Cycling by Design notes that where practical, local materials should be sourced to reduce transportation costs. Where local suppliers are used this also maximises the benefits of the project to the local community. These aspirations are well aligned with the aims and objectives of Transition Black Isle and Highland Council.

Cycling by Design recommends a desirable minimum width for the shared cycle and pedestrian path of 3.0m. An absolute minimum of 2.0m is also noted in the guidance; however when construction an entirely new path the additional cost of providing 3.0m instead of 2.0m is relatively small, and significantly increases the quality and attractiveness of the path facility.

Table 4.1: Typical path construction

Construction Type	Pavement	Layer Details
Flexible Surfacing	Surface Course	50mm Close Graded Asphalt Concrete (CI 912) (also known as dense bitumen macadam)
	Sub-base	200mm Type 1 granular material (CI 803)

Should a path through Rosehaugh Estate be progressed, the tracks shared with farm/estate vehicles would require to be upgraded to a higher standard with a deeper sub base and surface course. This is required to withstand the additional forces of loading from vehicles in addition to cyclists and pedestrians.

At the detailed design stage, the path specification at Drumderfit should be agreed with the Forestry Commission.

4.3 Fences and Gates

There are a number of arguments for and against the provision of access controls on shared use paths. Access controls are typically intended to prevent illegitimate access (for example by quads or trail bikes) while allowing cyclists and pedestrians to use the path. Access controls can also serve to slow down cyclists on the approach to road crossings.

Sustrans guidance tends towards not using access controls where possible, as they create a less convenient path facility for legitimate users, and in many cases do not restrict illegitimate use as intended.

The outline design drawings and costs estimates for this project include for metal wicket gates at the end of path sections, however TBI and Highland Council may wish to consider not including these in the final design.

Field gates have also been included to allow farm access across the path where required, in some cases this would involve replacing existing gates.

The paths are in general are proposed to be bounded by a post and wire fence on one side (the other side will be bounded by existing hedges or other features).

4.4 Automatic Counter

The detailed design should including an automatic cycle counter or combined cycle and pedestrian counter. This allows route usage to be monitored, and benefits to be quantified, which will help to support future path developments. The data can also contribute to wider regional and national monitoring regimes. The Forestry Commission (FC) are agreeable to a counter being located on their land at Drumderfit, subject to path use data being shared with the FC.

4.5 Route Signage

Signing should to be provided to display appropriate information relating to the route, this should include but not be limited to:

- Directional signs;
- Shared use signage;
- Warning signs advising any of hazards and obstacles; and
- On road signing advising road users of the presence of cyclists.

Signing should be developed in accordance with both Cycling by Design and the Traffic Signs Manual, a suggested signing scheme is included on the drawings in Appendix C. Signs are shown mounted on new poles; there are also options to mount shared use signage on bollards at similar costs.

Within the Drumderfit section, signing should be agreed with the Forestry Commission and will require to be compliant with their style guide.

4.6 Outline Cost Estimates

A cost estimate has been developed based on unit cost rates from ‘Spon’s Civil Engineering and Highway Works Price Book 2014’. Where required, some rates have been taken from recent quotations received from contractors (for example for the cycle monitoring unit).

The cost rates include construction, and allowances for contingencies and preparatory works. The cost rates do not include land purchase and optimism bias.

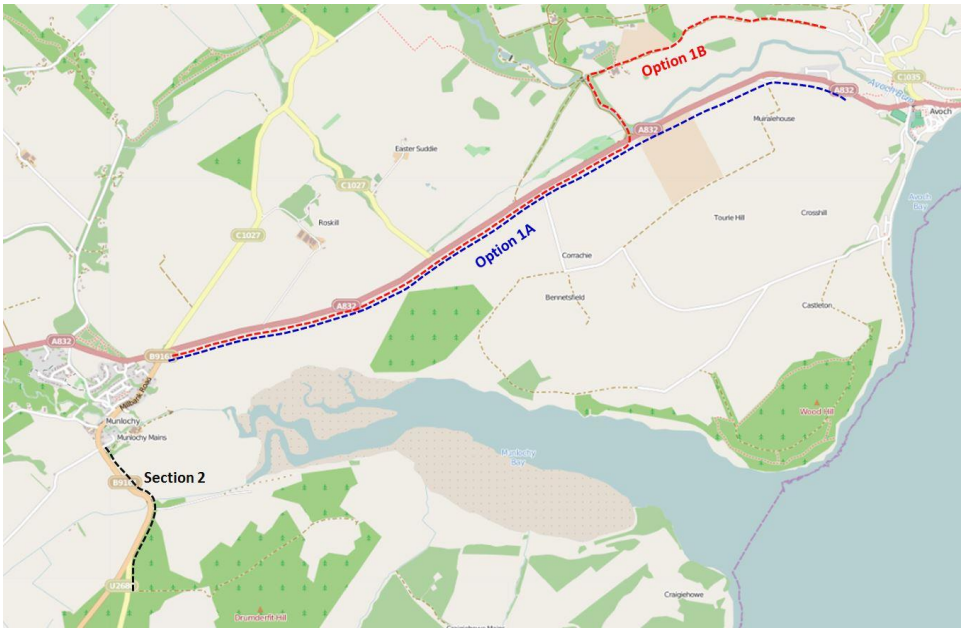


Figure 4.1: Options Considered

Table 4.2: Outline Cost Estimates

Outline Cost Estimates – Option 1A	
Distance of new path construction	4.3 km
Cost of new path construction	£453,000
Cost rate per km	£105,350

Outline Cost Estimates – Option 1B	
Distance of new path construction	5.0 km
Cost of new path construction	£627,000
Cost rate per km	£125,400

Outline Cost Estimates – Section 2	
Distance of new path construction	1.0 km
Cost of new path construction	£123,000
Cost rate per km	£123,000

Further details on the breakdown of cost estimates are provided in Appendix D.

5 Conclusions and Recommendations

5.1 Conclusions

A shared use cycling and pedestrian route between Munlochy and Avoch would have a range of benefits to the local community and would be attractive to visitors as well as local residents.

Unfortunately due to constraints on the availability of land, it is not possible to develop the route at this time, and the topography of the area prevents alternative options being considered.

A route south of Munlochy may also have some benefits, and should be progressed further through land negotiations.

5.2 Recommendations

The content of this report, technical recommendations and cost estimates may also be of use to Transition Black Isle and Highland Council in the consideration of other projects.

Recent months have seen continuing increases in funding allocated to cycle route development in Scotland, most recently in early June 2014.

The project partners may wish to prioritise potential new schemes on the basis of deliverability; based on the experience gained in this project, a key factor will be land ownership.

Schemes which may justify additional consideration in the short term include:

- Disused rail lines
- Path widening and improvement (where already in Council ownership)
- Path construction within road corridor (Council ownership); and
- Road crossing and junction treatment.

Section 1 cannot currently be delivered due to a lack of agreement with at least one landowner.

Section 2 may prove deliverable subject to satisfactory discussions with landowners.

Appendices

- Appendix A: Background Documents
- Appendix B: Study Area Photos
- Appendix C: Drawings
- Appendix D: Cost Estimates

Appendix A – Background Documents

The Highland Council
Comhairle na Gaidhealtachd
SERVING Ross & Cromarty

ROSS & CROMARTY EAST LOCAL PLAN

ADOPTED PLAN - FEBRUARY 2007

INSET 9 : AVOCH
INSET 17 : FORTROSE
INSET 18 : ROSEMARKIE

(As Continued in Force) (April 2012)

PLANNING & DEVELOPMENT SERVICE

SETTLEMENT POLICIES

- Settlement Boundary
- Town/Village Centre
- Housing
- Business
- Industry
- Special Uses
- Expansion
- Amenity
- Site/Area Reference

BACKGROUND POLICIES

- BP1
- BP2
- BP3
- BP4
- Conservation Area (BP2)

OTHER

- Road
- Access
- Cycle Route/Footpath

*Crown Copyright. The Highland Council 100023369.
All OS base maps are the most up-to-date available to The Highland Council at the time of the production of this Local Plan.
In some instances they may not reflect exactly what is on the ground and have not been altered in any way by The Council.
Information provided by other agencies for use in determining some of the mapped Background Policy (BP) features, is also the most up-to-date available to The Highland Council at the time of the production of this Local Plan.

Provisions of Local Plan Map(s) as continued in force

The provisions of the Proposals Map (including any inset contained in or accompanying it and the policies and proposals shown on such inset) and related notations, referencing and explanatory text, only to the extent to which those provisions show, illustrate or explain any provision of the local plan which is continued in force by the Parliamentary Order* and as detailed in the Retention Schedule.

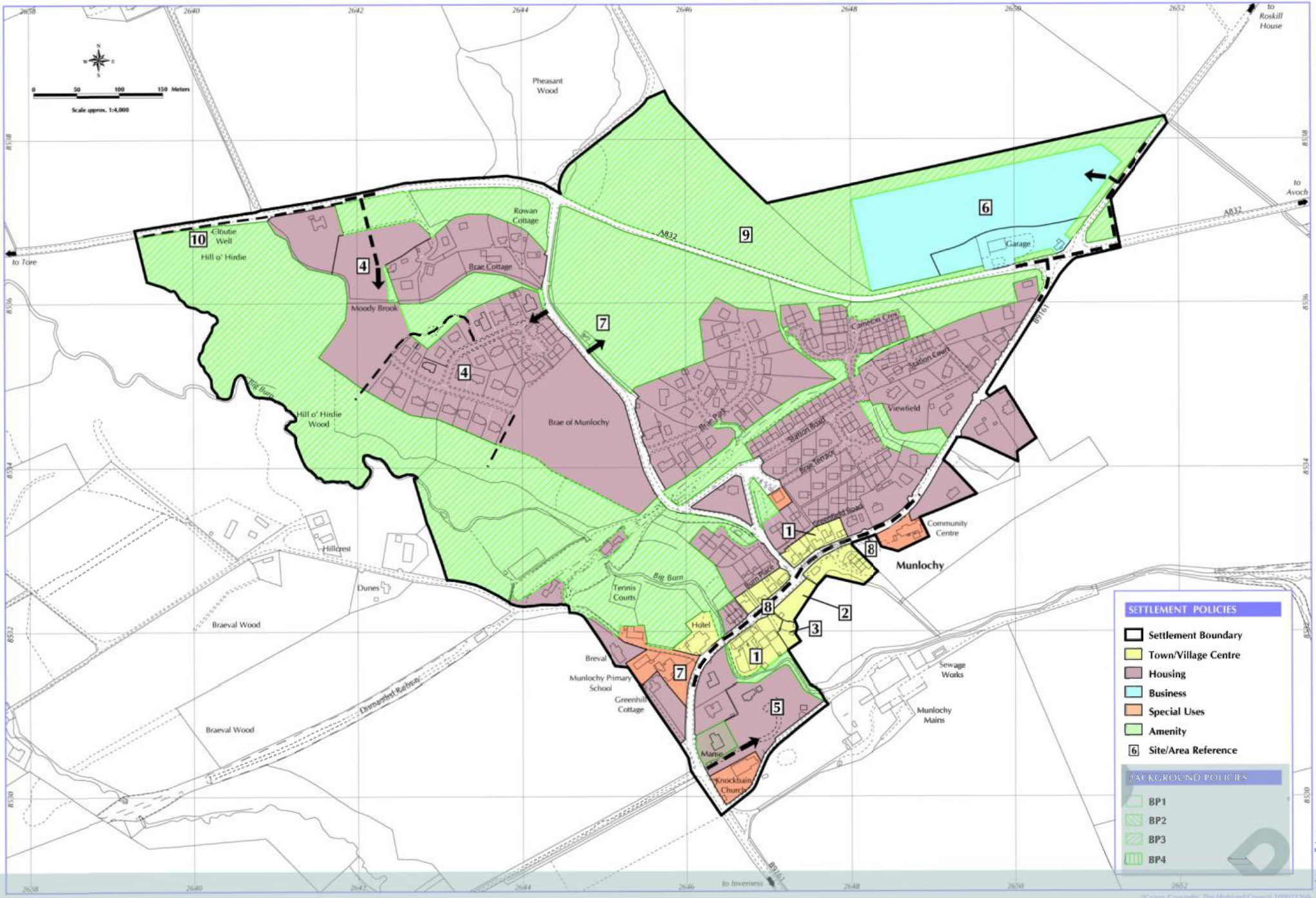
*(The Town and Country Planning (Continuation in force of Local Plans (Highland) (Scotland) Order 2012)

AVOCH

FORTROSE

ROSEMARKIE

0 50 100 150 200 250 Meters
Scale approx : 1:5,000

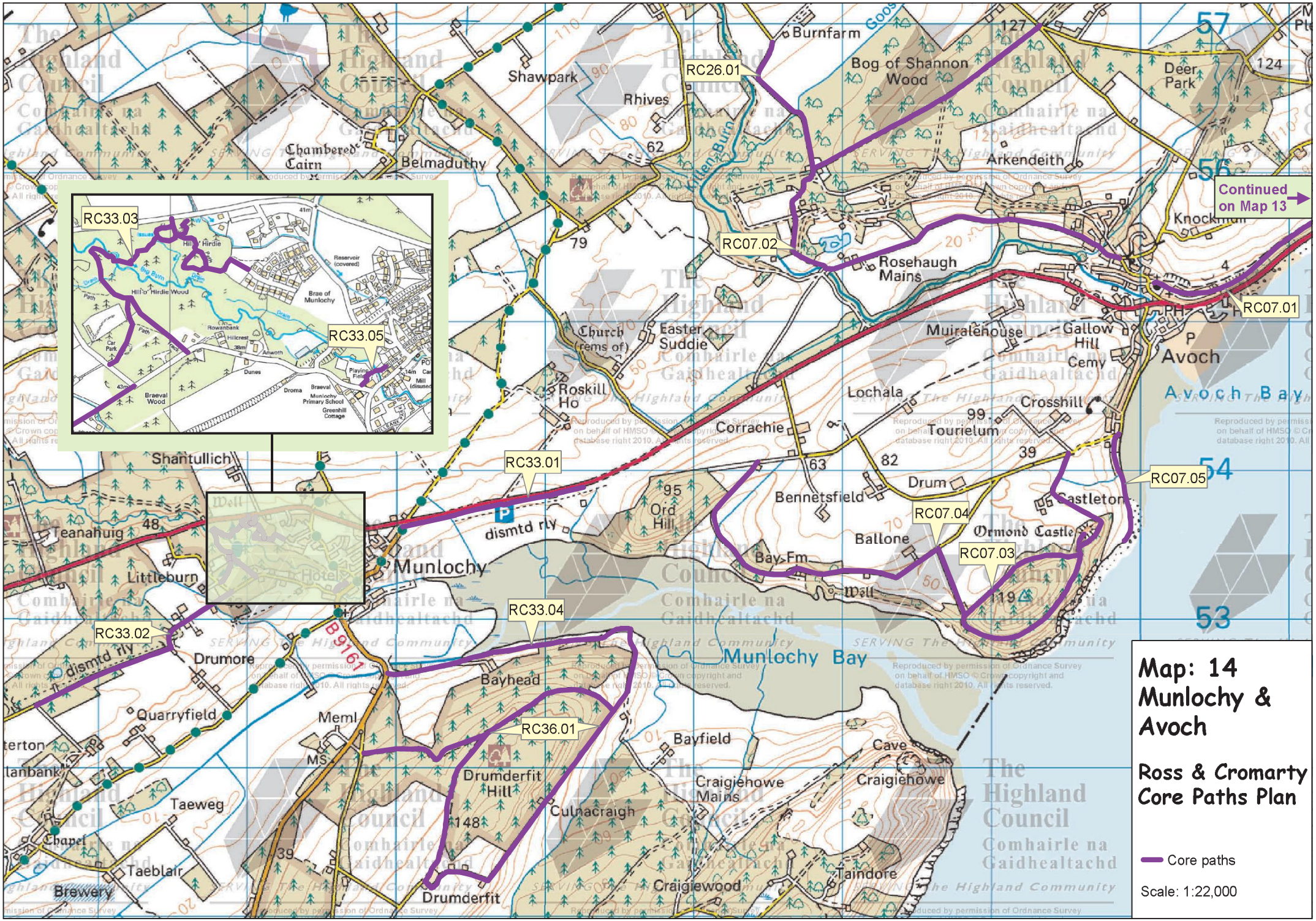


(As Contined in Force) (April 2012)

Map: 14 Munlochy & Avoch

Ross and Cromarty Core Paths Plan

Path No.	Path Name/Route	Path Type	Length (kms)
RC07.01	Fortrose to Avoch - old railway line	constructed path (stone)	2.7
RC07.02	Rosehaugh Estate paths	estate track	4.8
RC07.03	Ormond Hill	grass, forest track	3.2
RC07.04	Bay Wood track	estate track (stone)	2.8
RC07.05	Sewage works track	track (stone)	0.8
RC26.01	Burnfarm- Rosehaugh	farm track	1.0
RC33.01	Old Railway line east	earth, farm track	1.2
RC33.02	Littleburn to Allanbank track	farm track	1.6
RC33.03	Littleburn Wood	constructed path (stone)	1.7
RC33.04	Bayhead track	farm track	2.1
RC33.05	Munlochy School to Burn Place	to be constructed	0.1
RC36.01	Drumderfit Hill	forest track	5.1


RC33.03
RC33.05
RC33.01
RC33.02
RC33.04
RC36.01
RC26.01
RC07.02
RC07.01
RC07.05
RC07.04
RC07.03
Continued on Map 13
Munlochy
Munlochy Bay
Avoch
Avoch Bay
Shawpark
Rhives
Chambered Cairn
Belmaduthy
Burnfarm
Bog of Shannon Wood
Deer Park
Arkendeith
Knockman
Rosehaugh Mains
Church (rems of)
Easter Suddie
Roskill Ho
Muiralehouse
Gallow Hill
Cemy
Lochala
Crosshill
Corrachie
Tourielum
Shantullich
Teanahuig
Littleburn
Drum
Bennetsfield
Castleton
Ballone
Ormond Castle
Bay Fm
Ord Hill
dismtd rly
Drumore
Quarryfield
Meml
Bayhead
Bayfield
Drumderfit Hill
Drumderfit
Culnacraigh
Craigiehowe Mains
Craigiehowe
Cave
Craigiewood
Taindore
Taeweg
Taeblair
Brewery
Chapel
B9161
Hill o' Hirdie
Braeval Wood
Brae of Munlochy
Droma
Braeval
Munlochy Primary School
Greenhill Cottage
Rowanbank
Anworth
Dunes
Hillcrest
Reservoir (covered)
Big Burn
Hill o' Hirdie Wood
Car Park
Playing Field
Mill (disused)
Map: 14
Munlochy & Avoch
Ross & Cromarty Core Paths Plan
Core paths
Scale: 1:22,000
September 2011

Appendix B – Study Area Photos

TBI Avoch to Munlochy: Photos

Minor road at Drumsmittal Monument

B9161 north of monument

B9161 north of monument

Minor road/B9161 junction at monument

Wooded area adjacent to B9161

Minor access adjacent to B9161 south of Little Mill

Minor access at B9161 south of Littlemill

Signing south of Littlemill

View to Munlochy Bay from A832

Littlemill Bridge from south

North from Littlemill Bridge

Littlemill Bridge from north

Littlemill Bridge from north and farmland

Signing at Munlochy north entrance

Core path east from Munlochy

Munlochy gateway feature

Historic railway information

Community Information near Munlochy Bay

Munlochy Bay from car park area

Munlochy Bay from former rail line

Disused rail line and bridge

Disused rail line looking west

Disused rail line looking east

Disused rail line looking east

A 832 Avoch looking west

Avoch coastline

Adjacent to A832 looking west

Adjacent to A832 looking west

Adjacent to A832 looking west

Adjacent to A832 looking west

Farmland near Corrachie

Adjacent to A832 looking east

Disused rail line looking west

Disused rail line, missing bridge

Disused rail line looking east

Rosehaugh Estate lower drive

Rosehaugh Estate lower drive

Rosehaugh Estate lower drive

Rosehaugh Estate lower drive

Rosehaugh Estate lower drive

Appendix D – Cost Estimates

Munlochy to Avoch Cycle Route

Project No. 60320777 Date: 13/06/2014

Client: Transition Black Isle

Description			1A Alongside A832	1B Alongside A832 and via Rosehaugh Estate	2 South of Munlochy
General Site Clearance			4650.45	4515.26	1082.80
Earthworks			24389.60	43532.60	5678.81
Cycle Track Construction			278256.44	445753.14	56672.04
Signs and Furniture			2478.31	2908.84	1197.77
Surface Markings			472.50	472.50	165.00
Monitoring Devices			6244.00	6244.00	0.00
Gates & Fences			45592.58	34493.92	10448.87
Footbridge			0.00	0.00	23500.00
		Subtotal	362083.88	537920.26	98745.28
Preliminaries @	15%	Subtotal	54312.58	80688.04	14811.79
Contingencies @	10%	Subtotal	36208.39	53792.03	9874.53
		TOTAL	£453,000.00	£672,000.00	£123,000.00