





North Tyneside Local Plan Strategic Sites

Pedestrian / Cycling Study
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1. Introduction

1.1 Background

North Tyneside Council (NTC) are progressing the preparation of their Local Plan for the 15 year period between 2017 and 2032. The Local Plan identifies key strategic development sites at Killingworth Moor and Murton Gap, with the potential to develop up to 5,000 new houses.

It was agreed early in the Local Plan process that the Council would seek to adopt the strategy of providing high quality level of service for active travel and public transport, particularly at the strategic sites, where the opportunity to influence travel behaviour is greatest.

It is recognised however that not all travel demand generated at the strategic sites can be managed and or mitigated through active and public transport travel improvements. Our approach is however to maximise the opportunity for more sustainable travel and seek to mitigate residual traffic impacts through more traditional highway capacity improvements.

Therefore, in addition to the pedestrian and cycling study, which is being undertaken to support the Local Plan and associated Infrastructure Delivery Plan (IDP), Capita are also developing complementary strategies for public transport provision and traffic impact and mitigation for the two strategic sites.

Adopting this approach to traffic forecasting and modelling, we need to be mindful that any dilution to active and public transport level of service will increase travel demand by other motorised vehicles and by association increase the likely geographical spread and severity of traffic impacts of the highway network.

1.2 Purpose of the Report

Capita has been commissioned by NTC to undertake a study to assess pedestrian and cycling infrastructure in and surrounding the proposed strategic sites. The study follows on from the Preparation of a Strategic Concept Framework Plan for the sites which was conducted by Pick Everard in 2015.

This report assesses the strategic sites in relation to cycling and walking infrastructure. The cycling and walking distances from the sites are first examined and the existing infrastructure and green corridors within and surrounding the sites established. The key trip attractors surrounding the site are examined to determine infrastructure improvements required to link the proposed sites to destinations by foot and on bike. The internal infrastructure of the sites and the links between them are considered, with a design principles established to guide development.

One of the key transportation objectives is to maximise travel by public transport. Providing excellent pedestrian and cycling links to the key public transport nodes and interchanges within the strategic sites is key for encouraging active travel and public transport use. The report seeks to establish this requirement based upon the outcomes of the complementary public transport study.

1.3 Structure of the Report

The report is structured as follows;

- Chapter 2 of the report provides an overview of the Strategic Sites in terms of their geographical location and setting.
- Chapter 3 of the report, reviews and establishes current best practice on determining cycling and walking distances to access goods and services. It also introduces catchment areas accessible from the strategic sites by cycling and walking.
- Chapter 4 of the report provides a summary of the existing cycling and walking infrastructure provision within cycling and walking accessibility of the sites.
- Chapter 5 provides a summary of the potential demand to travel by cycling and walking at the two strategic sites.
- Chapter 6 of the report establishes the design principles and standards the Council is promoting for internal and external cycling and walking links. This chapter also seeks to establish the infrastructure requirements to link the cycling and walking network to public transport provision.
- Chapter 7 provides the costs for the proposed cycling and walking improvements.

2. Strategic Sites

2.1 Introduction

A location plan for the sites is shown in Figure 1. The two major sites were identified in the 2015 Local Plan Pre-Submission Draft 2015 as Strategic Site Allocations, to be developed predominantly for housing with the potential to accommodate approximately 3,000 homes at Murton Gap and 2,000 homes at Killingworth Moor.

The development capacity of the two sites represents a significant proportion of the overall proposals for growth in housing needs within North Tyneside up to 2032.

The sites are in close proximity, located to the east and west of the A19 corridor. In considering pedestrian and cycle infrastructure at a strategic level, it is important that the sites be considered collectively as well as individually, with the linkage between the sites being a key consideration.

2.2 Killingworth Moor

The Killingworth Moor site is located to the west of the A19 corridor between Killingworth and Holystone Village. The site is bounded to the north east by the A19, Killingworth Village to the west, Palmersville to the south and Holystone Village to the south east. The Metro line extends along the southern boundary with the nearest Metro stations being Palmersville to the west and Northumberland Park to the east.

The site is allocated predominantly for housing to a capacity of 2,000 houses, with the potential for some office/business employment uses, to be accommodated in the south of the site. A new Metro station is proposed to be located on the southern boundary to link with an existing footpath south of the Metro line. Also incorporated within the indicative Concept Plan for the site is a secondary school and a primary school, to be located to the south east of the site, close to the Metro line.

2.3 Murton Gap

The Murton Gap site is located to the east of the A19 corridor surrounding Murton Village. The site is bounded by Shiremoor to the west, Wellfield to the north, Monkseaton to the east and New York to the south. The Metro line extends along the northern boundary of the site, with the nearest Metro stations being at Shiremoor to the west and West Monkseaton to the east.

The site is allocated for housing to a capacity of 3,000 houses. A primary school is proposed to the south of site adjacent to New York. A new Metro station is proposed within the site, to be located on the northern boundary, with a potential new north-south highway crossing the Metro line providing a through route, connecting housing to the south with green belt land to the north.

3. Cycling and Walking Distances

3.1 Introduction

There are limits to the distances generally considered acceptable for utility cycling and walking. LTN 1/04 - Policy, Planning and Design for Walking and Cycling (DfT) states that 'the mean average length for walking journeys is approximately 1 km (0.6 miles) and for cycling, it is 4km (2.4 miles), although journeys of up to three times these distances are not uncommon for regular commuters'.

The distances people are prepared to walk or cycle depend on their fitness and physical ability, journey purpose, settlement size, and walking/cycling conditions. The suggested acceptable maximum walking distance for commuter, school and leisure trips is 2km (Guidelines for providing for journeys on foot (CIHT, 2000)), with 5km suggested as the maximum acceptable cycling distance.

Whilst now superseded by National Planning Policy Framework (NPPF), the formerly adopted Planning Policy Guidance Note 13 (PPG13) provides reference on accessibility criteria regarding acceptable distances for cycling and walking and these are still considered acceptable for use. The guidance recognises that cycling has potential to substitute for short term car trips, particularly those less than five kilometres and to form part of a longer journey by public transport. It therefore has an important role to play in reducing the need to travel by car. PPG 13 recognises that walking is the most important mode of travel at the local level and offers the greatest potential to replace short car trips, particularly under two kilometres.

North Tyneside is conducive to encouraging cycling and walking due to its relatively flat topography with only slight height differential between sea / river level and inland, with no steep hills. The Borough contains a number of small urban areas which provide accessible services within a short walk or cycle.

Figure 2 shows the strategic sites in relation to cycling and walking distances, shown as isochrones depicting catchment areas for cycling and walking trips for both sites. As they are in close proximity with overlapping isochrones, the sites have been incorporated. 2km and 5km straight-line distance isochrones are measured from the boundaries of the development sites and indicate where there is scope for widespread cycling and walking if consistently high-standard and direct routes are provided.

3.2 Walking catchment

The walking isochrone encompasses the residential areas of Killingworth, Burradon and Forest Hall to the west, extending to the edge of Longbenton. To the south of the sites, the isochrone extends to Battle Hill and North Shields, incorporating The Rising Sun Country Park, Cobalt Business Park and Silverlink Retail Park as well as the residential areas of Billy Mill and Marden along the A1058 Coast Road corridor. To the east, the isochrone extends almost to the coast, incorporating Monkseaton and much of Whitley Bay. To the north, the residential areas of Earsdon, Backworth and Seghill fall within the isochrone.

West Allotment, and Shiremoor lie between the development sites, with both sites being within walking distance of each other.

3.3 Cycling catchment

The Cycling isochrone encompasses the whole of the borough of North Tyneside and beyond. To the north, the isochrone extends into Northumberland, with Cramlington, Seaton Delaval, Holywell and Seaton Sluice all within cycling distance. To the west, the isochrone extends to Wideopen and to the fringes of the city of Newcastle, with Gosforth, Jesmond and Heaton all within the isochrone. To the south, the isochrone extends south of the River Tyne incorporating the ferry and tunnel crossings to Jarrow, Hebburn and South Shields. To the east, the whole of the coast between Tynemouth and Seaton Sluice falls within the isochrone.

4. Existing infrastructure

4.1 Introduction

As the majority of journeys begin and end at home, the location of housing developments and how they connect with existing infrastructure is particularly important.

The existing pedestrian and cycling infrastructure within cycling and walking distance of the sites is shown in Figure 3. Figures 3a and 3b provide more detail on the individual sites. The plans show cycling routes as identified within the North Tyneside Cycle Map, together with Public Rights of Way and designated footpaths, as well as proposed infrastructure improvements across the Borough.

Cycle use in North Tyneside has grown by more than 250% over the last decade with the largest growth centred on weekday utility trips. This welcome growth has only been possible by working in partnership with adjacent LA's, Stakeholders, local businesses and developers to create a strategic programme of investment. It is vital that continued investment is made to improve and expand the cycling infrastructure of the Borough as its economic development proceeds, so as to maintain and strengthen the opportunity which it presents for more sustainable travel in the Borough.

4.2 General

4.2.1 *National Cycle Network Routes*

The Borough plays host to 3 National Cycle Network (NCN) Routes directly connecting major habitations, commercial areas and transport hubs:

NCN Route 10 (Reivers Cycle Route) extends through the Borough fringing both sites, providing a predominantly off road shared use path linking North Shields with rural Northumberland and beyond and forming an alternative Coast to Coast Route. The existing route extends along the Killingworth Moor site boundary before diverting onto road over the A19 through Backworth to connect with a waggonway connecting with NCN 72 at Percy Main.

NCN Route 72 (Hadrian's Cycleway) extends through the Borough along the north bank of the River Tyne. Forming part of a 174 mile coast to coast route between Cumbria and North Tyneside, the predominantly off road route connects North Tyneside with Newcastle and Gateshead, the Tyne Ferry crossing and The Tyne Pedestrian and Cycle Tunnel, linking with NCN 1 in North Shields.

NCN Route 1 (Coast and Castles Route) extends for 192 miles between Newcastle and Edinburgh following close to the coastline through the Borough linking with NCN 10 and 72 at The Tyne Ferry Crossing.

4.2.2 *Local Cycle and Walking Network and Strategic Routes*

Figures 3, 3a and 3b show the local cycle and walking infrastructure in relation to the strategic sites. The local cycle network supports direct journeys and comprises both routes adjacent to or on highway and off-road routes which include direct cycling and walking routes created along the lines of disused waggonways. A number of Public Rights of Way (PRoW) consisting of bridleways and footpaths extend across both sites connecting with neighbouring housing.

North Tyneside's Cycling Strategy includes a vision for cycling up to the year 2030: a revised Cycling Strategy for the Borough is being drafted and is to be subject to consultation. A 'tube' style map has been produced in draft (see Appendix B) and will be subject to consultation alongside the draft strategy. The 'tube map' shows key strategic routes; a local network of cycling and walking routes will complement these;

- (A1058) – Tynemouth to Newcastle City Centre: Upgrade of the existing Coast Road Cycle Route along the north of the Coast Road corridor linking Newcastle City to the Coast. (funded as part of Cycling City Ambition Fund (CCAF) as part of Newcastle City Region bid);
- (A191) – Whitley Bay and Cullercoats to South Gosforth: Predominantly off road cycle route along the A191 corridor connecting Whitley Bay and Cullercoats to South Gosforth. The proposed route fringes the southern boundary of the Murton Gap site, with proposals for a shared use path on the north side of A191 (some improvements being brought forward with Local Transport Plan funding and additional funding opportunities being explored);
- (A19) - Pedestrian/Cycle Tunnel to Annitsford: Improved cycle provision along the A19 corridor linking Annitsford to The Tyne Pedestrian and Cycle Tunnel through the Killingworth Moor site (funding opportunities being explored);
- (A188/A189) – Longbenton to Dudley Cycle Route: On and off road route between Dudley and Longbenton linking with the A191 Corridor Cycle Route (funding opportunities being explored); and
- (A187) – North Shields to Quayside: Proposed improvements along the North Bank of the Tyne being considered as part of a major scheme. The pedestrian and cycle proposals would improve the links between The Tyne Pedestrian and Cycle Tunnel with Route 72 and the Quayside (funding opportunities being explored).

4.3 Killingworth Moor

The existing pedestrian and cycling infrastructure within cycling and walking distance of the Killingworth Moor site is shown in Figure 3A. NCN Route 10 runs along a waggonway on the north west boundary of the site diverting on road over the A19 to Backworth. Within the site, there are a number of Public Rights of Way leading across the site parallel to the A19 from north west to south east.

A designated bridleway extends between B1317 West Lane on the edge of Killingworth across the site connecting with a farm road and continuing over a bridge over the Metro line to Holystone Roundabout. A field based footpath extends parallel to the bridleway to the south from B1317 West Lane to Holystone Village with a stepped crossing of the Metro line. A third concrete footpath extends along the route of the disused waggonway.

The A19 presents a barrier to pedestrian and cycle movement to the north east of the site with the only crossing points being the B1317 bridge and a pedestrian underpass. A field based footpath extends from the stepped Metro line crossing in a north easterly direction to Northumberland Park, utilising the existing underpass.

To the west of the site, a surfaced bridleway extends north to south between B1317 West Lane and B1505 Great Lime Road continuing southwards via advisory on road cycle links to connect with the A191 corridor.

The A191 Corridor lies to the south of the site with proposals for an east to west cycle route linking Four Lane Ends with the coast.

4.4 Murton Gap

The existing pedestrian and cycling infrastructure within cycling and walking distance of the Murton Gap site is shown in Figure 3B. The Murton Gap site is bounded by housing on all sides, with the exception of a section of Green Belt to the north of the Metro line. A series of designated Public Rights of Way in the form of footpaths cross the site which are used predominantly for leisure and recreation. However, linkage to neighbouring housing is poor and the area lacks any surveillance, limiting its use.

The Metro line separates the site from green belt land to the north, with a pedestrian only level crossing being the only crossing point linking the site to Wellfield.

Monkseaton High School lies to the south east of the site. There is no direct access for pedestrians or cyclists from the site to the school.

The site is bordered to the south by A191 New York Road / Rake Lane. The proposed A191 Corridor Cycle Route extends along the corridor predominantly off road connecting Four Lane Ends and Newcastle City with existing facilities at North Tyneside General Hospital providing a continuous route to Monkseaton and beyond.

To the north of the site, the recently constructed Shiremoor Bypass provides shared use footway / cycleways on both sides linking Holystone Roundabout with Earsdon and Monkseaton.

NCN Route 10 extends along a waggonway to the south west of the site providing access to Cobalt Business Park, Silverlink Retail Park and linking with NCN Route 72 at Percy Main.

South of the site, the A1058 Coast Road Cycle Route is a major east - west route linking Newcastle City to the Coast. Following proposed improvements, the cycle route is to be allocated a National Cycle Network number. With the exception of NCN Route 10, there is limited formal provision for cyclists between the site and the Coast Road Cycle Route.

5. Identifying Travel Demand

5.1 Introduction

Figure 4 shows the key destinations which users of the strategic sites are likely to travel to within cycling and walking distance.

The plan shows the following trip attractors located within 2km and 5km of the sites;

- Education establishments; primary, middle and high schools and colleges;
- Public Transport Interchanges; Metro stations and bus stations;
- Retail centres including town centres and supermarkets;
- Business / Employment sites;
- Hospitals;
- Parks, local wildlife sites and other recreational space;
- Leisure Centres, swimming pools and other leisure attractions;
- Tyne pedestrian and cycling crossings;
- Residential areas; and
- Local Plan allocated sites.

Middle schools and high schools within the 2km straight-line distance of the sites are shown, with primary schools in the immediate surrounding area of the sites. Backworth Park Primary is to be relocated to the south of Backworth and east of the A19. A primary school is proposed within the Murton Gap site close to New York. A primary and high school are proposed within the Killingworth Moor site to be located to the south of the site. Co-locating the primary and secondary schools enables safe links for vulnerable users between the schools and offers the potential for shared community space and facilities. There will be excellent links created to ensure connectivity to the schools from both within the site and externally to the site. Locating schools within the sites with excellent cycling and walking links linking to Metro stations will reduce the number of car trips on the network in and surrounding the site.

Holystone Primary School is the closest existing school to the Killingworth Moor site, located to the south of the site within Holystone Village. George Stephenson High School is the closest high school located to the west of the site in Killingworth. St Marys Roman Catholic School in Killingworth Moor is the closest catholic primary school to the site, with St. Thomas Moor Roman Catholic Academy at Billy Mill being the closest catholic high school.

Murton Gap site is located close to a number of existing schools. Langley First School, Star of the Sea Roman Catholic Primary School, Valley Gardens Middle School and Monkseaton High School are located in Monkseaton to the east of the site. Preston Grange Primary School, New York Primary School and St Thomas Moor Roman Catholic Academy are located to the south of the site. South Wellfield First School and Wellfield Middle School are located in Wellfield to the north.

The development of a Metro station within each of the strategic sites together with two primary and a secondary school are a requirement of North Tyneside Councils Local Plan. The proposed Metro stations within the sites form major trip attractors for both sites as well as attracting trips from outside site boundaries. Prior to the new Metro stations being implemented, the closest

existing Metro stations to Murton Gap are at Shiremoor and West Monkseaton, with Palmersville and Northumberland Park being the closest to Killingworth Moor. The Metro stations are key trip attractors for pedestrians and cyclists as part of linked journeys to and from the sites.

The nearest local retail centres within cycling distance are Monkseaton, Whitley Bay, North Shields, Killingworth, Northumberland Park and Wallsend. Boundary Mills Retail Park is located on the western boundary the Murton Gap site, with Silverlink Retail Park, located to the east of A19 south of the site and Royal Quays Retail Park on the north bank of the river adjacent to the International Ferry Port. The closest supermarkets to Killingworth Moor are located at Northumberland Park, Forest Hall, Killingworth and on A191 corridor south of Palmersville. Supermarkets at Northumberland Park, Monkseaton and on the A1058 Coast Road corridor are the closest to Murton Gap site. There will be local retail centres created within both of the development sites.

An Industrial Estate is located to the south of the Killingworth Moor site between the Metro line and Holystone Village. Cobalt Business Park is a major employment attractor in close proximity to the sites to the south, alongside Algernon and New York Industrial Estates and Tyne Tunnel Trading Estate located east of the A19 corridor. Industrial and employment land uses are also located along the north bank of the river. Quorum and Balliol Business Parks are located on the edge of the borough boundary within cycling distance to the west. Other Industrial Estates are located at Killingworth and along the A191 corridor to the west of Holystone.

North Tyneside General Hospital lies to the south of the Murton Gap site on A191 Rake Lane. Whilst the hospital no longer operates an Accident and Emergency department, the site is a major trip attractor for employment and visits from across the borough.

The Rising Sun Country Park lies to the south of the A191 corridor, south of the Killingworth Moor site and within walking distance. Weetslade Country Park is located to the north west of the borough, with NCN Route 10 leading from the Killingworth site to the Country Park. Other parks are located at Silverlink Park, Monkseaton, Killingworth, Wallsend, Tynemouth and North Shields. The beaches at Whitley Bay, Cullercoats and Tynemouth also present leisure attractors within cycling distance of the sites.

The nearest leisure centres and playing fields are located at Foxhunters, Marden Bridge, Killingworth, and Wallsend, with Tynemouth Golf Course and playing fields located in Preston and Whitley Bay Golf Course to the north of Murton Gap site. The Lakeside Pool in Killingworth and Tynemouth Pool are the closest swimming pools to both sites. Murton Village Horse Riding School lies within the Murton Gap site, to the south of Murton Village.

The Tyne Pedestrian and Cycle Tunnel and Tyne Pedestrian and Cycle Ferry are important trip attractors for cyclists providing access to locations south of the river, with the International Ferry Terminal also located on the north bank. The proposed North Bank of the Tyne and A19 Corridor cycle schemes will improve links to the Tunnel and ferry terminals.

Existing residential settlements in proximity to the sites also present trip attractors. A key aim is to provide links from within the sites, but also to connect existing settlements that are currently cut off by the fields.

Connectivity with existing and proposed pedestrian and cycling infrastructure surrounding the sites is key to providing a linked network from the sites to destinations. The proximity of NCN Route 10 provides opportunity for diverting the route and improved linkage. Whilst there are proposals for a major cycle route along the A191 along the southern boundary of the Murton Gap site, and improvements to the Coast Road Cycle Route, there are limited existing links between the routes.

6. Proposed Infrastructure

6.1 Introduction

It is the Council's ambition to bring about a cultural shift aimed at making cycling and walking mainstream, every day, desirable forms of transport for all, regardless of age, ability or background by providing a high quality fit for purpose cycling and walking network.

Capita is currently developing a Cycle Infrastructure Design Guide and Specification on behalf of North Tyneside Council. The Guide, which is due to be completed in 2016 will establish key design principles for cycling in the Borough and form the basis of design and specification for the strategic sites and external improvements.

The design standards for the strategic sites will adhere to the Borough wide design guide and the following national guidance; Design for Inclusive Mobility – A Guide to Best Practice on Access to Pedestrian and Transport Infrastructure (DfT, 2002a). LTN 2/08 Cycle Infrastructure Design (DfT, 2008b), LTN 01/12 Shared Use Routes for Pedestrians and Cyclists, LTN 1/04 - Policy, Planning and Design for Walking and Cycling (DfT).

Effective design will ensure that the sites are designed to encourage the use of sustainable transport modes and provide real choices to replace the use of the car for everyday short trips with design balanced in favour of sustainable travel modes and support the continuity of the wider cycling and walking network through the sites. Design for pedestrians and cyclists should offer positive provision that reduces delay, diversion and danger. Appendix C demonstrates some best practice examples which could be incorporated within the infrastructure of the sites.

Figure 5 shows the proposed cycling and walking infrastructure improvements within and surrounding the strategic sites.

6.2 Internal design principles

Through the provision of a network of pedestrian and cycle routes with good connectivity to the surrounding area and linking to public transport nodes, facilities and schools, the strategic design of the sites will promote modal shift.

The key objectives are:

- Permeable routes through the sites enabling direct access for residents to existing and community attractors;
- A network of routes radiating from the sites to key destinations, connecting the sites to existing settlements and providing links between the sites.
- Excellent routes to schools from within the site and externally to the site;
- Excellent routes to new and existing public transport nodes;
- Attractive routes on site and linking to external routes to provide leisure for residents; and
- Direct routes for pedestrians and cyclists where journeys are shorter on foot and by bike than by car.

The Cycle Infrastructure Design Guide and Specification for North Tyneside Council will provide the design principles to be applied within the sites, which will also be in line with national best practice. Without pre-empting the Design Guide, it is proposed that the pedestrian and cycling infrastructure in the sites will form a connected network of direct cycling and walking routes, structured around a three-tier system as follows:

- 1st tier - Principle Highway - Strategic pedestrian / cycle route adjacent to main highway
- 2nd tier - Secondary distributor - Secondary pedestrian / cycle routes adjacent to distributor link roads
- 3rd tier – Residential streets - Shared space treatment with all modes at the same grade connected via direct cycling and walking routes permeating through the site with natural surveillance from residential frontages

Provision of a network of permeable routes through the sites will enable direct access for residents to existing and new community attractors, within cycling and walking distance of their homes. Connectivity with existing settlements from the initial phases of development will provide services and facilities for new residents and also reinforce the viability and commercial success of existing centres and facilities.

Connectivity between pedestrian and cycle routes with existing and proposed public transport nodes is vital to achieving sustainable development, stimulating greater use of sustainable modes.

A new bus link is proposed running through the sites, utilising new non-car routes including the use of the existing A19 underpass to connect the sites with major centres of employment and the residential areas of Killingworth and Northumberland Park. The proposed pedestrian and cycle infrastructure will link with the bus route throughout both sites with direct links to bus stops throughout design.

Excellent connectivity will be provided to Metro stations from within the development sites linking with existing external infrastructure. Safe pedestrian and cycle access is to be implemented at proposed new Metro stations at both sites with secure cycle parking and ramp accesses to platforms for disabled users. Direct links to Metro stations will help to reduce walking distances and encourage use of the Metro.

6.3 Internal infrastructure

The sites are criss-crossed by a number of formal and informal Public Rights of Way which provide a structure to the sites and provide connectivity with the sites surroundings. These are particularly valuable for leisure use and are an option for utility travel, in addition to new routes to be provided.

However, the proposed developments will require routes to provide connectivity that reflects today's destinations and new site based services and hubs. Consequently, improvement and in some cases formal re-alignment of routes may be required as part of the development proposals.

North Tyneside Council and the Capita North Tyneside Partnership will seek to work in partnership with developers to create a connected network of modern, direct and coherent cycling and walking routes along, across and through the principal, secondary and residential distributors.

The following key routes are identified as required to provide appropriate pedestrian and cycle connectivity for the proposed Strategic Allocations based on existing claimable routes and key primary and secondary links, as shown in Figure 5;

6.3.1 Killingworth Moor

- Principle highway (K1) – north / south main highway from Killingworth Way through to Great Lime Road;
- Secondary distributor highways (K4,5,6,8) – linking principle highway to Killingworth Centre and Killingworth South / Forest Hall;
- A19 underpass (K10) – pedestrian / cycle route with bus provision under the A19 through the new housing development at Backworth West to Northumberland Park ;
- Existing farm road to Holystone Roundabout / A191 corridor (K11/3);
- Pedestrian and cycle route along existing Public Right of Way linking A19 underpass, proposed new schools and proposed Metro station to south east boundary of the site (K13);
- Pedestrian and cycle route linking proposed Metro station with principle highway (K12);
- Pedestrian and cycle route connecting principle and secondary highways through south west of the site (K7);
- Pedestrian and cycle route to Killingworth Centre / George Stephenson High School (K3); and
- Diversion of National Cycle Network Route 10 (Reivers Route) following existing waggonway through the site to A19 underpass (K9).

6.3.2 Murton Gap

- Principle highway (M1) – north / south main highway between A186 and the A191;
- Secondary distributor highways (M8/17) – inner loop road extending from the principle highway around the site, with external links to the A191 corridor to the south;
- Pedestrian and cycle routes across parkland north of the Metro line linking the principle highway with the existing settlements of Wellfield / Shiremoor and Shiremoor North (M2/M5);
- Pedestrian and cycle route connecting Wellfield / Wellfield Middle School with proposed new Metro station and existing Metro line footbridge (M6);
- Pedestrian and cycle route linking secondary distributor road to West Monkseaton Metro (M9);
- Pedestrian and cycle route (M9) and connecting route linking secondary distributor with Monkseaton Town Centre / Monkseaton Middle School (M10);
- Pedestrian and cycle route linking secondary distributor with Monkseaton High School / Foxhunters playing fields (M11);
- Pedestrian and cycle north / south through route to the east of Murton Village from the proposed Metro station in the north to A191 corridor and North Tyneside General Hospital to the south (M12);
- Pedestrian and cycle route utilising existing route of Murton Lane between Murton Village and New York Village with additional spur to New York Village local shops (M15);
- Pedestrian and cycle route linking principle highway with Shiremoor South / Boundary Mills Retail Centre and beyond to Killingworth Moor site. (M16); and

- Pedestrian and cycle route linking principle highway with Shiremoor Centre / Shiremoor Metro station (M3).

6.4 Improvements to external infrastructure

North Tyneside's Cycling Strategy includes a vision for cycling up to the year 2030: a revised Cycling Strategy for the Borough is being drafted and is to be subject to consultation. A 'tube' style map has been produced in draft (see Appendix B) and will be subject to consultation alongside the draft strategy: the 'tube map' shows key strategic routes; a local network of cycling and walking routes will complement these.

The two strategic sites will play a vital role in the sustainable 'reconnection' on both sides of the Borough, dissected by the A19 corridor, enabling linkage with existing NCN and Strategic Routes across the Borough.

It is proposed to divert the Reivers Cycle Route (NCN10) through the developments and to connect directly into the strategic corridors along the A19 and A191.

The external infrastructure has been split into essential and desirable. The essential infrastructure connects the infrastructure on site to the nearest main road off site while the desirable infrastructure connects to the strategic cycling and walking network in North Tyneside (see Draft Tube Map in Appendix B).

The following improvements to the external network are identified to link the internal routes to key strategic destinations within North Tyneside (shown in Figure 5);

6.4.1 Killingworth Moor

- EX10 – Part essential and part desirable - Existing bridleway improvements with signage to provide a link between the proposed new Metro station at the Killingworth Moor site with Industrial Estate and Holystone Village. The proposals connect with existing infrastructure in Holystone Village providing a link to the A191 corridor cycle route, new housing development at Scaffold Hill and Rising Sun Country Park with a link to a potential new pedestrian and cycle crossing of the A19 to Cobalt Business Park;
- EX12 - Essential - Existing bridleway improvements to provide signage for improved north – south link for pedestrians and cyclists between Killingworth Village and Great Lime Road to the west of the Killingworth Moor site;
- EX13 - Part essential and part desirable - Proposed traffic free path with toucan crossing of B1317 Killingworth Road to provide a pedestrian and cycle leisure route connecting Killingworth Moor site with George Stephenson High School and Lakeside Leisure Centre and pool in Killingworth;
- EX14 - Essential - Existing bridleway improvements to the NCN Route 10 which runs along the north west boundary of the Killingworth Moor site to improve access from the north of the site to the A1056 and the Killingworth centre;
- EX15 - Essential - Proposed traffic free path adjacent to A1056 Killingworth Way to provide link to the northern boundary of Killingworth Moor between the principal highway access junction and NCN Route 10 / green corridor to Killingworth Centre; and

- EX16 - Part essential and part desirable - Proposed traffic free path adjacent to B1317 Killingworth Lane to provide link for pedestrians and cyclists from Killingworth over the A19 to Backworth Village connecting with existing infrastructure to Seghill and Northumberland to the north.

6.4.2 *Murton Gap*

- EX1 – Desirable - Link between proposed A191 corridor cycle route and proposed improvements to Coast Road cycle route - Provision of shared use footway / cycleway adjacent to A192 Preston North Road with associated crossings to connect the two major pedestrian and cycle improvement schemes and Murton Gap site;
- EX2 – Essential – Link along the southern perimeter of the Murton Gap site along A191 connecting the new infrastructure installed with the Murton Gap development;
- EX3 – Desirable – Link through village connecting A191 New York Road with A191 Rake Lane. Potential minor amendments to traffic and parking restrictions to provide more of a village feel making it safer for cycling and walking;
- EX4 - Desirable - Link between proposed A191 corridor cycle route and proposed improvements to Coast Road cycle route – Provision of shared use footway / cycleway adjacent to Norham Road North to provide a second connection between the two major pedestrian and cycle improvement schemes and Murton Gap site;
- EX5 - Part essential and part desirable - Existing bridleway improvements and shared use provision adjacent to Park Lane in South Shiremoor to provide direct link between Murton Gap site and Northumberland Park Metro station linking with NCN Route 10 to Cobalt Business Park and beyond;
- EX6 - Desirable - Existing bridleway improvements, traffic free path and crossing to provide connectivity between the two strategic sites at Northumberland Park Metro station;
- EX7 - Part essential and part desirable - Proposed signage and traffic free path with crossing on Park Lane to provide a link between the Murton Gap site, Shiremoor Centre and Shiremoor Metro station;
- EX8 - Essential - Proposed signage and traffic free path connecting the Murton Gap site with A192 Earsdon Road at Monkseaton Drive improving connectivity to the existing network to Wellfield, Wellfield Middle School, Beaumont Park housing estate and providing access to the Coast via NCN Route 1; and
- EX9 - Part essential and part desirable - Proposed signage on Cauldwell Avenue, Cauldwell Lane and Drumoyne Gardens to provide improved cycle provision between the Murton Gap site, Monkseaton Town Centre, Monkseaton Middle School and beyond.

7. Cost Estimate

7.1 Introduction

The pedestrian and cycle infrastructure described above has been costed to provide indicative total costings for the strategic sites and external improvements. The cost estimates are broken up to give indicative total costs for proposed works within the two individual strategic sites, with external strategic improvements to the surrounding network considered collectively.

Costs for specific facilities for pedestrians and cyclists have only been considered beyond general expected infrastructure provision. Provision of shared space within residential streets, pedestrian and cycle links between residential streets and highway footpaths have not been included as this is considered to be general infrastructure provision (assumed 2m footpath and kerblines on one side of the carriageway and 3m shared path and kerblines on the other side of carriageway) which would be expected by the developer. The estimated costs below are the over and above costs only. These costs do not include for the provision of the footpath, shared space, drainage and lighting as these costs are assumed to be within the general infrastructure expected to be provided by the developer.

All cycling and walking infrastructure associated with the development sites should be constructed by the end of the first five years; unless the phasing of the development dictates otherwise which is to be agreed between the Developer and North Tyneside Council.

7.2 Killingworth Moor proposals

Table 7.1 below shows the estimated costing for works within the Killingworth Moor site. The total estimate for the site is £2,815,572.

Table 7.1 – Killingworth Moor initial cost estimate

Killingworth Moor initial cost estimate	
Internal Principle Highway	£970,848
Internal Secondary Highway	£1,118,208
Internal Traffic Free Path*	£726,516
Total	£2,815,572

* Does not include for traffic free links between residential streets

7.3 Murton Gap site proposals

Table 7.2 below shows the estimated costing for works within the Murton Gap site. The total estimate for the site is £2,454,240.

Table 7.2 – Murton Gap initial cost estimate

Murton Gap initial cost estimate	
Internal Principle Highway	£788,256
Internal Secondary Highway	£1,579,584
Internal Traffic Free Path*	£86,400
Total	£2,454,240

* Does not include for traffic free links between residential streets

7.4 Essential external infrastructure improvements

Table 7.3 below shows the estimated costing for proposed infrastructure works that are required outside the strategic sites to create higher quality strategic links. This infrastructure is considered essential to the developments as they connect the cycling and walking infrastructure within the development sites to the nearest main road. The total estimate for essential external works is £1,370,244.

Table 7.3 – Essential external links initial cost estimates

Essential external initial cost estimate	
External links from Killingworth Moor	£740,496
External links from Murton Gap	£629,748
Total	£1,370,244

7.5 Desirable external infrastructure improvements

Table 7.4 below shows the estimated costing for proposed infrastructure works that are required outside the strategic sites to create higher quality strategic links. This infrastructure is considered desirable to the developments as they connect the cycling and walking infrastructure for the development sites to the wider strategic cycling and walking network for North Tyneside; linking the sites to key destinations within the borough. The total estimate for external works is £1,239,336.

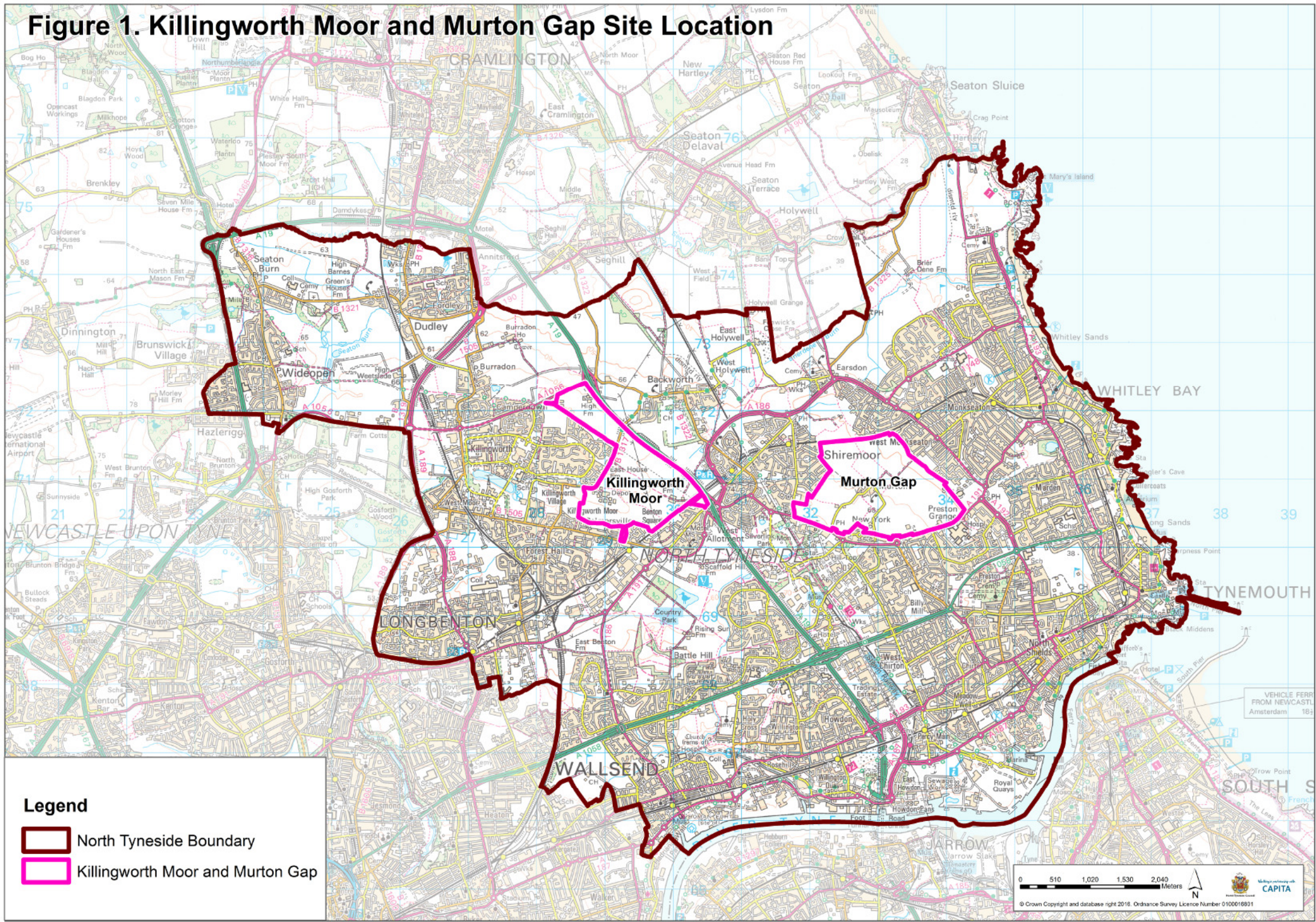
Table 7.4 – Desirable external links initial cost estimates

Desirable external initial cost estimate	
External links from Killingworth Moor	£298,464
External links from Murton Gap	£940,872
Total	£1,239,336

Appendix A

Figure 1	Location Plan
Figure 2	Walking and Cycling Isochrones
Figure 3/3A/3B	Existing Infrastructure
Figure 4	Trip Attractors
Figure 5	Proposed Infrastructure

Figure 1. Killingworth Moor and Murton Gap Site Location





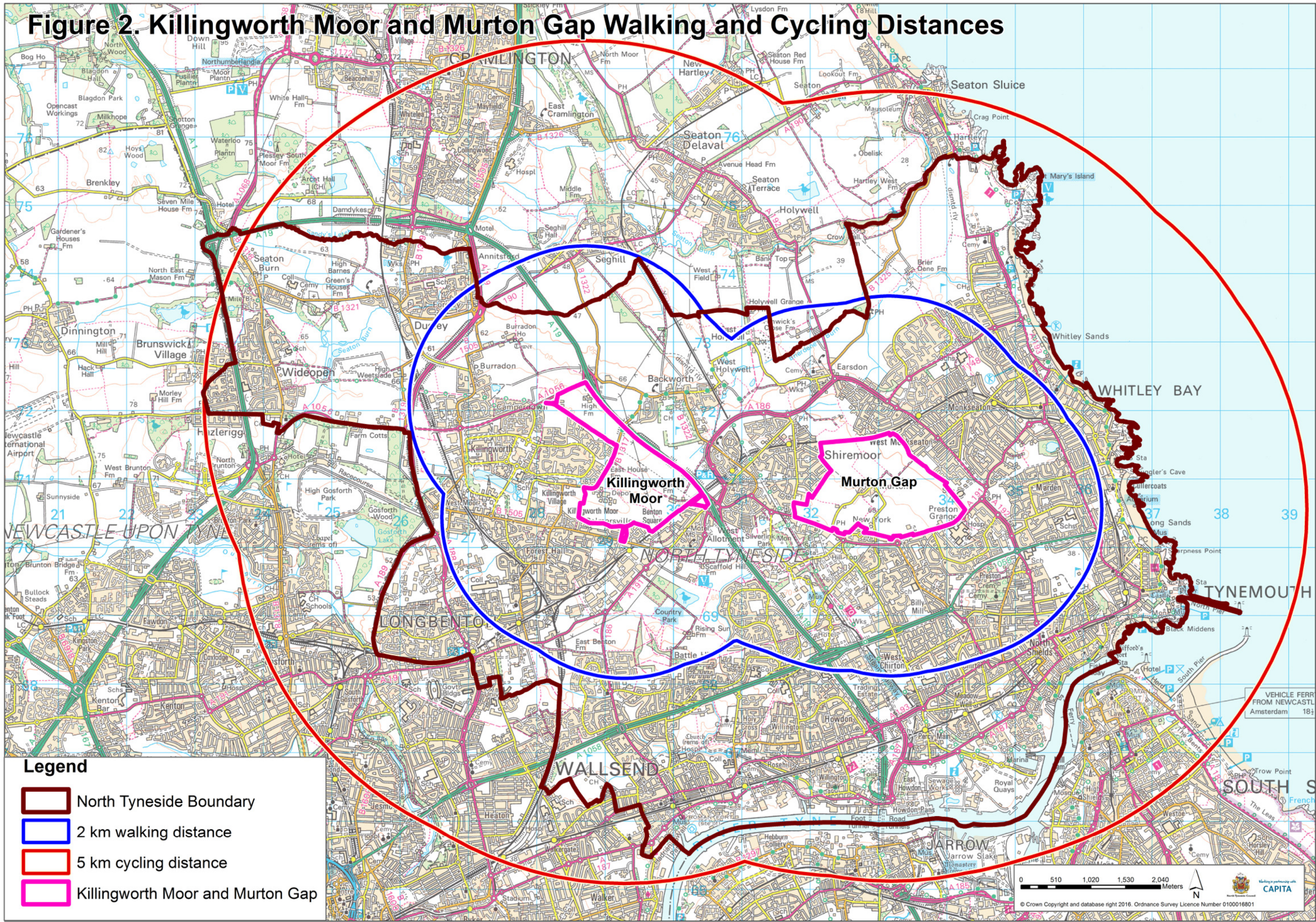
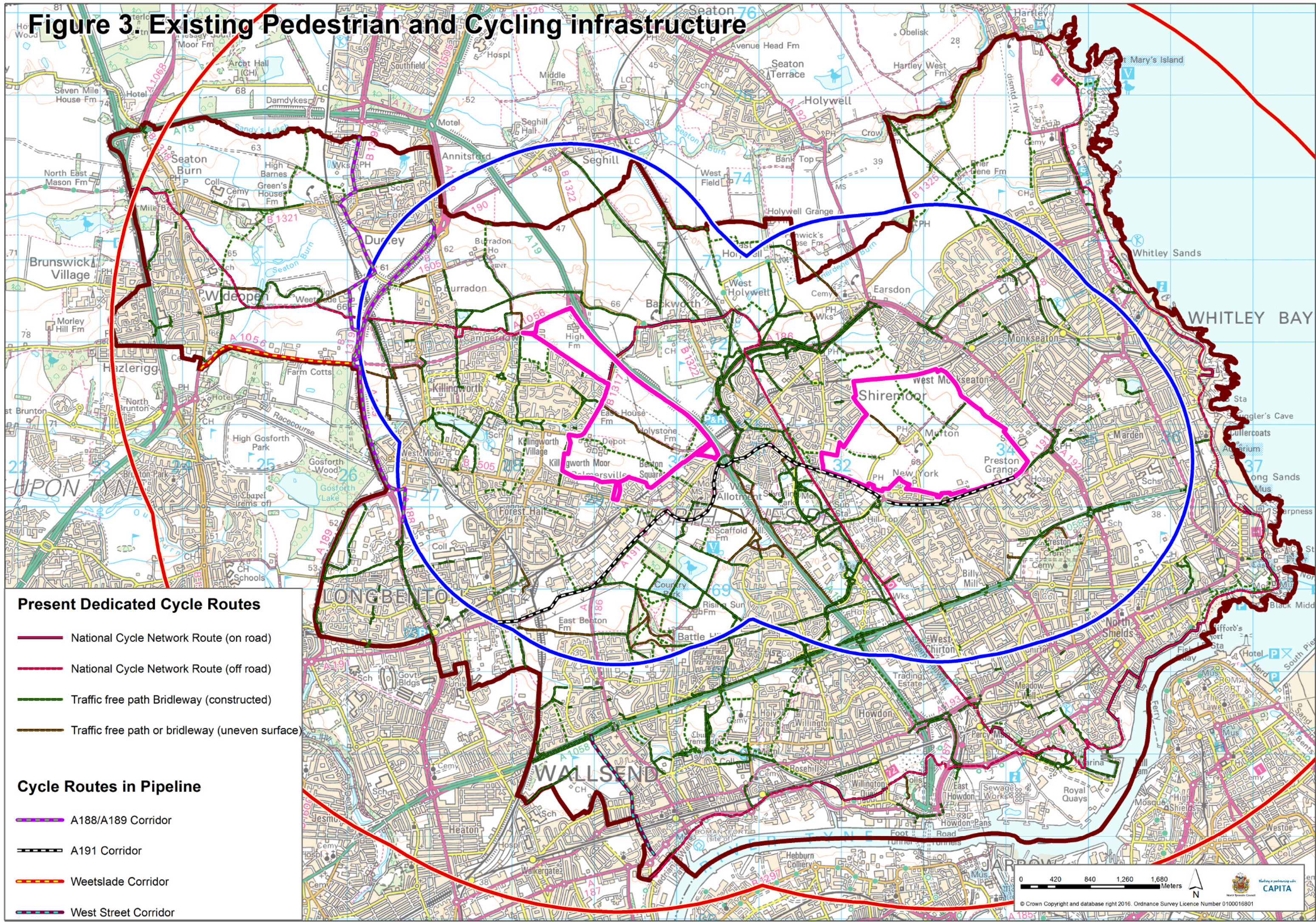
- Legend**
-  North Tyneside Boundary
 -  Killingworth Moor and Murton Gap

Figure 2. Killingworth Moor and Murton Gap Walking and Cycling Distances

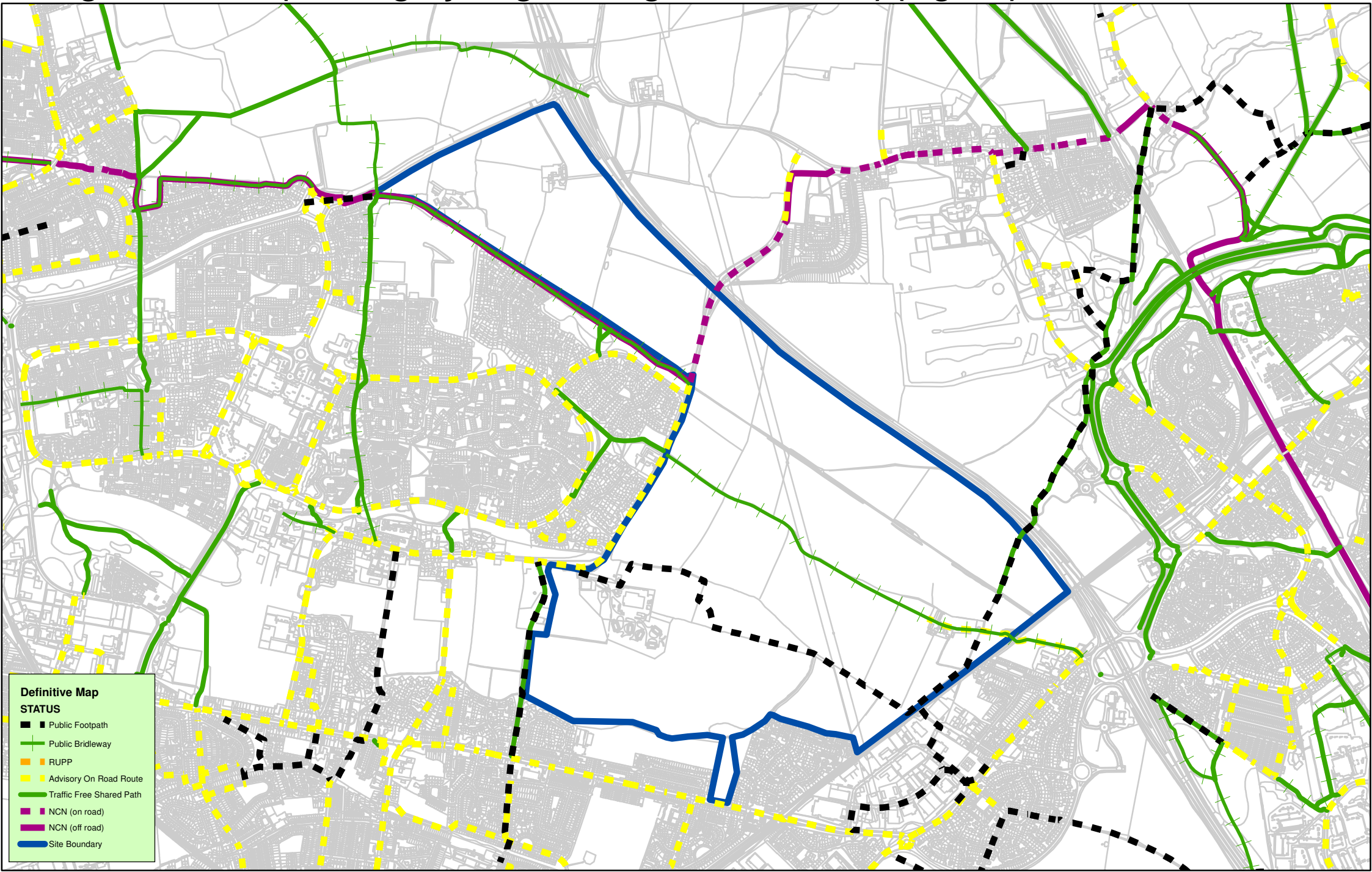


- Legend**
- North Tyneside Boundary
 - 2 km walking distance
 - 5 km cycling distance
 - Killingworth Moor and Murton Gap

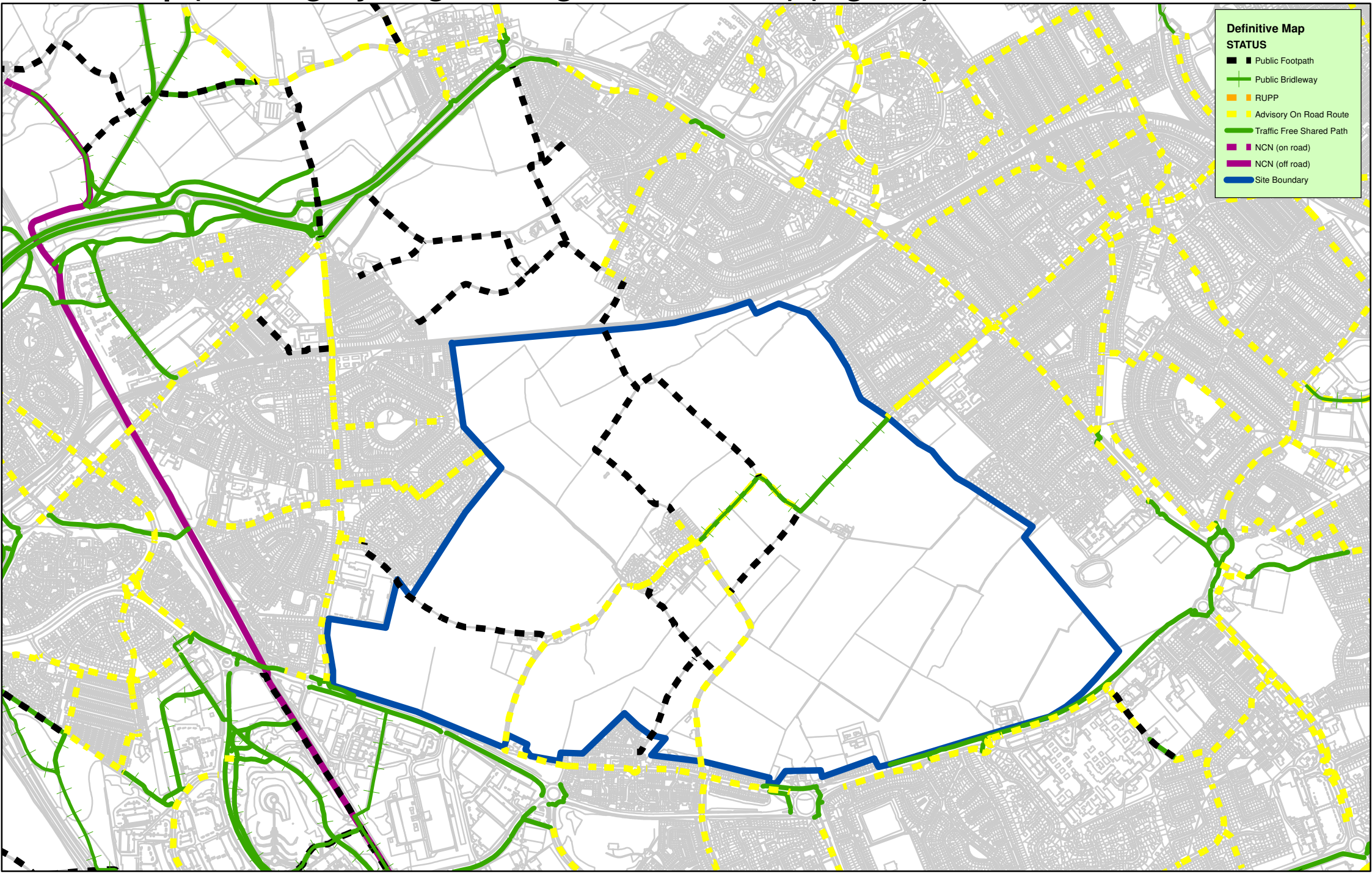
Figure 3. Existing Pedestrian and Cycling infrastructure



Killingworth Moor (Existing Cycling/Walking Infrastructure) (Fig. 3A)



Murton Gap (Existing Cycling/Walking Infrastructure) (Fig. 3B)



Definitive Map STATUS

- Public Footpath
- Public Bridleway
- RUPP
- Advisory On Road Route
- Traffic Free Shared Path
- NCN (on road)
- NCN (off road)
- Site Boundary



Figure 4 - Trip Attractors

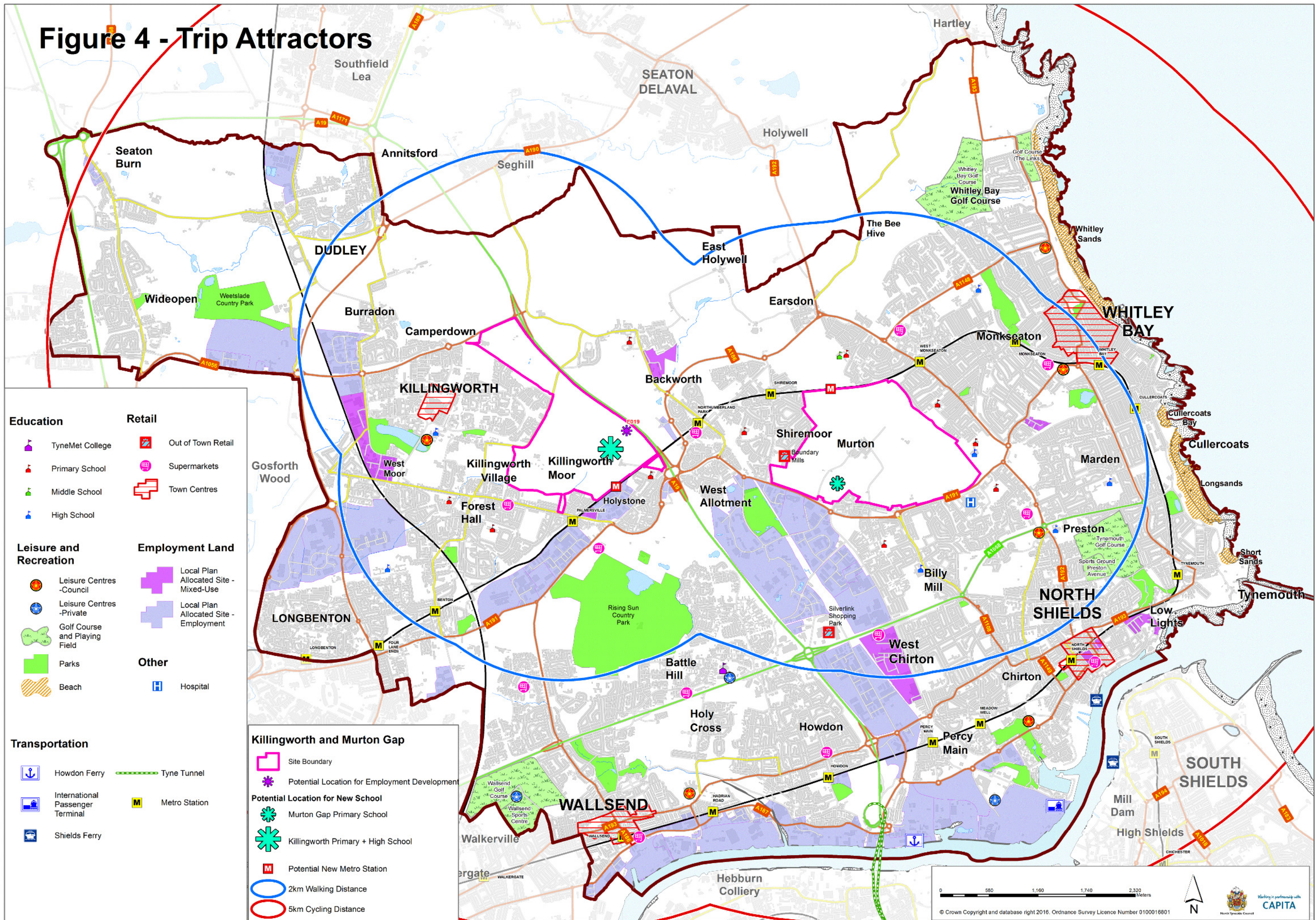
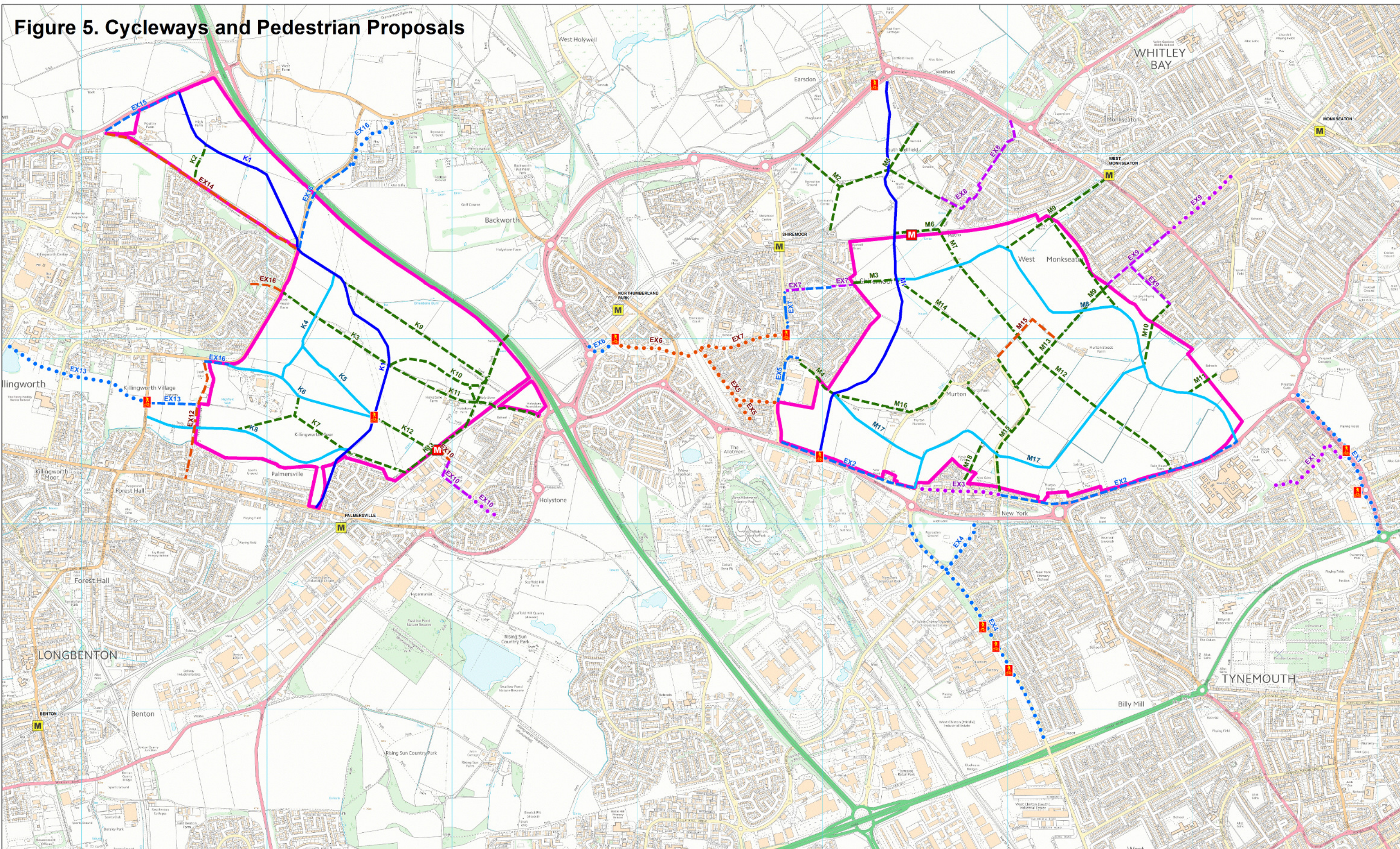






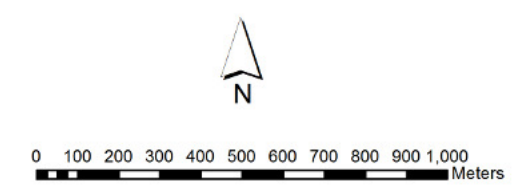
Figure 5. Cycleways and Pedestrian Proposals



-  Killingworth Moor and Murton Gap
-  Crossing Improvements
-  Potential New Metro Station
-  Metro Station

- Essential Work**
-  Principal Highway
 -  Secondary Highway
 -  Residential Street & Ped Cycle through route
 -  Traffic Calming (Off Site)
 -  Traffic Free Path (Off Site)
 -  Existing Bridleway Improvements

- Desirable Work**
-  Traffic Calming (Off Site)
 -  Traffic Free Path (Off Site)
 -  Bridleway Improvements

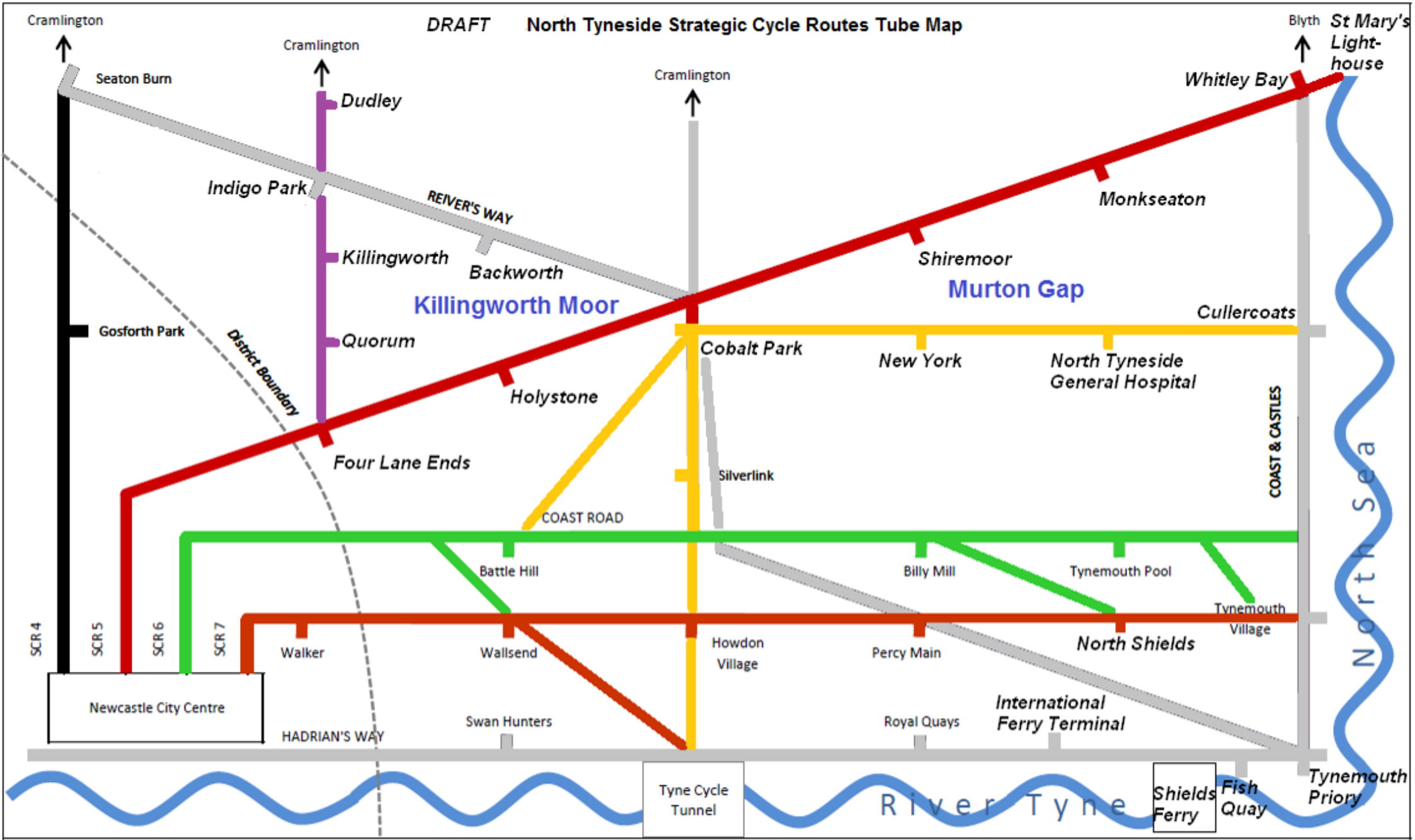


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Appendix B

North Tyneside Draft Cycle Tube Map

DRAFT North Tyneside Strategic Cycle Routes Tube Map



Appendix C:

Best practice design examples

Figure C.1 – Example of pedestrian / cycle route adjacent to main highway with dedicated footway and cycleway with stepped kerb segregation to minimise conflict between users



Figure C.2 – Example of continuous at grade side road treatment with vehicle giveways. Continuous at grade side road treatments encourage drivers to slow and take extra care at junctions giving way to pedestrians and cyclists providing continuous routes without a change in gradient;



Figure C.3 – Examples of Dutch style roundabout treatment. Typical Dutch style roundabouts have a tighter geometry which reduces vehicle speeds and improves visibility. Some also have an orbital cycle lane which allows cyclists to travel around the roundabout separately to other traffic. The roundabout layout used for trials in the UK is based upon one of several types of roundabouts that can be found in the Netherlands. It draws upon the CROW (Netherlands) cycling infrastructure design guidance, and uses 'continental geometry' (short turning radii to reduce speeds and a single circulating vehicle lane). It has a kerb segregated cycleway at carriageway level, orbiting the roundabout, with priority for cyclists across the entry and exit lanes.



Figure C.4 - Parallel zebra crossings separate conflicting cycle and pedestrian movements allowing both pedestrians and mounted cyclists to cross the carriageway at the same time.



Figure C.5 – Examples of shared space treatment with all modes at the same grade. Shared space aims to minimise the segregation of pedestrians, cyclists and vehicles with a desire to reduce the dominance of vehicles, vehicle speeds, and road casualty rates. This is done by removing features such as curbs, road surface markings, traffic signs, and traffic lights. By creating a greater sense of uncertainty and making it unclear who has priority, drivers will reduce their speed resulting in a safer environment for pedestrians, cyclists and vehicles.

○



Figure C.6 – Examples of car free routes permeating through residential areas with housing frontages providing natural surveillance.



