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For Office Use Only:	
Library Reference	31/17
Date Received	21/03/17
Bulletin	Mar17

Proposed East Lothian Local Development Plan
Schedule 4 Representation Responses

Please refer to Appendix 3 of the report to Council on 28 March 2017: Proposed Local Development Plan: Schedule 4 Representation Responses

http://www.eastlothian.gov.uk/meetings/meeting/5908/east_lothian_council

Each Schedule 4 document lists at the beginning who made representations on that subject. Each individual representation has a reference number which corresponds to the file numbers of the original representations.

For further information or advice, please contact:

Planning Policy and Strategy, via Environment Reception at East Lothian Council, tel: 01620 827216

Representation to East Lothian Council Local Development Plan - Proposed Plan

CALA Management Ltd - In respect of land at Pinkiehill, Inveresk

Section 2a: The Musselburgh Cluster Strategy Map/Introduction to Musselburgh Cluster/Musselburgh Cluster Main Development Proposals

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Introduction

This representation is made on behalf of CALA Management Ltd (CALA) and relates to the site known as Pinkiehill, Inveresk. CALA proposes a residential allocation for this site which is currently unallocated and lies within the Edinburgh Green Belt and Inveresk Village Conservation Area.

CALA has previously make a representation to the Main Issues Report (MIR) of the Local Development Plan (LDP) which comprised:

- A Supporting Statement prepared by Ryden;
- A Development Strategy Document (DSD), prepared by OPEN, and
- A Transport Statement prepared by Transport Planning Ltd.

All of these submissions are presented again to ensure CALA's aspirations are comprehensively addressed through all stages of the LDP review process.

The Site

Pinkiehill is currently in agricultural use, extending to 4.4 ha. It is located at the south eastern edge of Inveresk Village bounded by the former Edenhall Hospital to the north east, the East Coast Main Line (in cutting) to the south east and by Crookston Road to the south west. The extent of the site can be seen at page 2 of the DSD.

Background to the Proposal

A significantly larger proposal (including this site) was previously submitted to East Lothian Council (ELC) by Wallace Land Investments (WLI) and Barratt David Wilson Homes (BDWH) at the Call for Sites stage of the emerging LDP (PM/MH/HSG031). That proposal comprised some 14 ha and identified a development capacity of 300 homes. Those developers are no longer involved with the landowner and their previous proposal no longer relevant.

The site promoted since the MIR stage by CALA (with the full backing of the landowner) is considerably smaller at 4.4 ha. Following initial appraisals, the proposal has an indicative development capacity of 45 units over 2.6 ha as depicted in the supporting DSD.

CALA Representation

Delivery and Effectiveness

The Council is obliged to provide a 5 year effective housing land supply at all times. There should be no fundamental impediments to development for sites included in the LDP, particularly if the ambitious completion rates identified in the LDP are to be sustained.

The Proposed Plan allocates sufficient land to meet the overall housing land requirement set by SESplan to 2024. The programming for new allocations and the established land supply (Appendix 2 of Technical Note 1) is very ambitious. Therefore, the key challenge is delivery.

The Examination may find that additional, smaller scale sites that are complementary to existing allocations and utilise existing infrastructure, can assist delivery of the requirement to 2019, and maintaining a 5 year effective housing land supply.

Pinkiehill is effective and meets the criteria set out in Planning Advice Note 2/2010. It is in the ownership of a party which is contracted to sell to CALA, free of physical or infrastructure constraints and in a marketable location. Importantly, it is capable of being delivered pre-2019 and during the period of greatest pressure for the LDP to bring forward effective, new sites.

A Sustainable Location

At paragraph 3.47 the Proposed Plan confirms ELC's aim of ensuring housing development is directed to the right location. CALA supports this objective.

Inveresk benefits from excellent road and rail transport links to Edinburgh and is also within easy reach of Musselburgh town centre and other local destinations by foot, cycle, bus, and car. The village is well served by public transport and its proximity to Musselburgh offers a range of facilities, services and community resources to support new development. The proposal is served by Pinkie St Peter's Primary School and Musselburgh Grammar. There is limited capacity at both primary and secondary levels, although both are subject to options for increasing capacity in the Musselburgh Cluster.

CALA is committed to working with ELC through the planning process to ensure that adequate future capacity is made available to enable this site to come forward.

Promoting the Placemaking Agenda

Pinkiehill has been comprehensively assessed and demonstrated to comply with the principles of good placemaking as set out in CALA's previous submission to the MIR. Whilst it is not intended to resubmit that assessment in full again here, we would reaffirm the following:

Location and Scale of the Proposed Development

CALA's proposal supports the national agenda of promoting development in sustainable locations. The principles behind this approach are set out in Scottish Government Planning Policy and reflected in SESplan.

The LDP sets out the development strategy for the region's growth over the next 10 years and beyond, which advocates compact growth focused on the west of East Lothian (Proposed Plan, paragraph 2.3). The rationale for this strategy is as follows:

"*This is where the best opportunities are to locate new housing and economic development in the most accessible part of the area. Appropriate development sites that are or can be integrated with sustainable transport options are allocated. This is so new development will have good access via sustainable transport modes to existing or new employment locations or community facilities that are or will become available locally and regionally"* (Proposed Plan, paragraph 2.3).

As a location capable of accommodating planned new growth in line with the Government's desire for sustainable placemaking, Inveresk can accommodate new residential development.

Housing Quality and Mix

Scottish Planning Policy emphasises that a range of attractive and efficient housing should be provided to meet market needs and includes sites at the upper end of the market.

The challenge and requirement for the ELC is to provide a range and choice of housing allocations that are marketable and deliverable over the plan period. Thus, the Council must give due consideration to smaller sites (which in this case also lies within a SESplan Strategic Development Area), which are capable of early development, benefit from existing infrastructure and are within close proximity of local transport facilities.

The Proposed Plan acknowledges the need to offer sites of different type and size to ensure an effective land supply but there is no explicit discussion within the document about housing mix and quality. It is essential for the LDP to consider this issue and particularly the need to provide housing in the upper market range.

Policy research demonstrates a need to set housing objectives to meet local economic development objectives. Therefore, East Lothian's future housing supply must also address the aspirations of skilled and executive workers and entrepreneurs.

Pinkiehill offers the right choice in the right location, supporting a key message of the LDP housing strategy.

Environmental Assessment

The Council has only previously considered the larger site promoted by WLI and BDWH in the Site Assessments of the LDP Environmental Report. The assessment for Pinkiehill should be updated to take account of CALA's proposal which is materially different to the original submission.

The previous WLI/BDWH proposal was awarded a neutral or positive score against 16 of the 20 assessment criteria. CALA's smaller proposal for Pinkiehill scores positively against all of those criteria and consequently, there are many valid planning reasons to consider this site in the context of the emerging LDP.

In updating that Assessment we would specifically comment as follows;

Cultural Heritage: CALA was advised by the landowners that HES made an amended entry in the Schedule of Monuments to include the subject site within the existing entry referred to as Catherine Lodge, Roman settlement and field system. The landowner has appealed this proposed scheduling, with specialist guidance from AOC Archaeology Group. The appeal is ongoing with determination scheduled for early December 2016.

There are significant concerns with the scheduling process adopted by HES. The inclusion of Pinkiehill within the amended Scheduled Area is based primarily on cropmark evidence. HES's themselves have stated that information produced through transcription of cropmarks should be *''calibrated by the results of geophysical surveys on the ground and, where appropriate, archaeological excavations''*. This process has not been followed in this case (confirmed by HES's response to an FOI request), and the inclusion of Pinkiehill in the amended Scheduling is based only on dated aerial photographic evidence.

Whilst it is acknowledged that the cropmark evidence at Pinkiehill can indicate the potential for remains related to a Roman field system it does not unequivocally demonstrate the existence of remains. There is a significant body of evidence which confirms that aerial photographs can serve only as a very general guide to the nature of activity on any site. Therefore, the proposal by HES that Pinkiehill holds remains of national importance is unproven and should not prevent the site's allocation.

Pinkiehill lies within the boundary of the Battle of Pinkie as referenced from HES's Inventory of Historic Battlefields. The battlefield is extensive and includes most of Musselburgh. Indeed, all housing allocations within the Musselburgh Cluster fall within this boundary therefore, a location within the battlefield does not exclude a site from accommodating development.

It should also be acknowledged that the historic setting of the battlefield has seen significant intrusions over time and now contains the East Coast Mainline, the A1, former Edenhall Hopsital and the expansion of Inveresk, Musselburgh and Wallyford.

Landscape: CALA's proposal is contained to the northwest by existing housing and to the north east by the former Edenhall Hospital. The proposal includes a landscape buffer along its southern edge mitigating concerns in the Council's Site Assessment about an intrusion into views from the south and the A1. The reduced scale of this proposal does not raise any issues of coalescence with Musselburgh and Wallyford, addressing the concern about the larger original proposal.

CALA's proposal is specifically designed to respect the site's location within an historic environment. Whilst these designations do not exclude the site from accepting new development, the Pinkiehill proposal takes due cognisance of the historic nature and setting of the location. As clarified above, the historic landscape has evolved significantly and now contains a number of new features.

CALA will work with ELC and HES to ensure that any key features of the battlefield and Conservation Area are identified and respected through the development process.

Public Engagement

Pinkiehill was considered through the MIR consultation process. Thus, all statutory consultees have had opportunity to consider the current proposals.

A Bespoke Development

CALA's plans have been prepared with careful consideration of the present day Inveresk as well as the future of the village. There is a recognised need for new family housing to support local facilities and services, but also to sustain the demographic balance of the village.

Development is proposed against the background of sustainable placemaking principles, the focus of which is the creation of high quality places for people to live. It will create strong, identifiable and clearly defensible boundaries.

As explained in the DSD, CALA will ensure the retention of Inveresk's sense of character and identity. It will offer a safe and pleasant environment, which is easy to move around and welcoming to all, creating a new neighbourhood which complements the existing community by enhancing the urban character and landscape context of the southern edge of Inveresk.

The site concept is an extension of the existing urban grain and landscape, extending and completing the linear finger of development and woodland to create an attractive, residential environment that is well connected to, and integrated with, its surroundings. The proposal is in keeping with the character of the settlement of Inveresk and that of the local area and also accords with SESplan Policy 7, criterion a.

Summary

The site has been comprehensively assessed by the Council against SEA criteria. Moreover, it is has been subject to public consultation through the LDP process. As such, the site can be considered as a suitable candidate for allocation through the Examination process if the Reporter determines that additional allocations are required. Pinkiehill is within the East Lothian SDA as identified in SESplan and immediately adjacent to a main settlement. It is therefore aligned with strategic policy objectives of steering new development towards the most sustainable locations in the city region, and accords with the preferred compact growth strategy for the LDP.

Representation to East Lothian Council Local Development Plan, Main Issues Report

CALA Management Ltd - In respect of land at Pinkie Mains Farm, Inveresk

Question 11: Musselburgh Cluster

The Site

The site is known as Pinkie Mains Farm and is currently open agricultural farmland. It extends to some 4.4 ha and is located at the southern edge of Inveresk Village, bounded by Edenhall Hospital to the north, the East Coast Main Line (in cutting) to the south and east and by Crookston Road to the west. The extent of the site and an illustrative proposal is identified in the supporting Development Strategy Document, prepared by OPEN. This submission is also made against the background of a Transport Statement prepared by Transport Planning Ltd. Both documents are attached.

Background

This site was previously submitted to East Lothian Council as part of a significantly larger proposal, by Wallace Land at the call for sites stage of this emerging Local Development Plan (LDP). That proposal comprised some 14 hectares and identified a development capacity of 300 homes. That developer is not involved with the landowner at Pinkie Mains and the previous proposal is no longer relevant.

The current site is promoted by CALA with the full backing of the landowner. It is considerably smaller at just 4.4 ha and with an indicative development capacity of 45 units over 2.6 ha.

CALA Representation

This representation proposes the inclusion of the subject site within the East Lothian Council LDP as a residential allocation. CALA proposes an indicative development capacity of 45 units, including the requirement to provide an allocation of affordable housing.

There are a number of important, supporting issues to highlight from the outset, namely;

- The site is adjacent to a main settlement within the East Lothian SDA as identified in SESplan. As such, the proposal is aligned with strategic policy objectives of steering new development towards the most sustainable locations in the city region.
- Musselburgh's accessibility to the wider city region is excellent. Inveresk and indeed the site, is easily accessible to Musselburgh by a choice of transportation options.
- The site occupies a Green Belt location, as do many of the allocations within the MIR. The proposal is defined by strong, new and defensible boundaries which ensures the continuation of a robust Green Belt.
- The proposal respects the historical pattern of development associated with Inveresk and follows the 'fingers of development' growth concept seen historically in this part of East Lothian.

- This is a unique and bespoke development which is not replicated elsewhere in the Musselburgh Cluster, or indeed East Lothian.
- Views along the East Coast Main Line towards Edinburgh in particular, will not be interrupted.
- The site is not protected as a Scheduled Ancient Monument.
- The site lies within the boundary of the Battle of Pinkie, as referenced from Historic Scotland's Inventory of Historic Battlefields. The boundary of this battlefield is extensive and includes all MIR housing allocations within the Musselburgh Cluster. A location within the battlefield boundary does not therefore immediately exclude a site from accommodating development. It is also acknowledged that Inveresk is one of a number of key features within the battlefield. As such, CALA is aware of the need to enable archaeological investigations prior to any future development taking place.
- Development does not represent encroachment towards Edenhall Hospital.

This proposal is another example of CALA's continued investment in the east of Scotland. CALA believes that this site will allow the village to take a modest number of new family houses for the first time in many years, whilst ensuring it is designed to a high standard and complementary to the existing setting.

Supporting Arguments

CALA's proposal has been considered against the Council's own site assessment criteria as used at the Call for Sites stage of the LDP. These are laid out under two distinct headings; 'Suitability and Deliverability' and 'Potential Impacts of Development: SEA Criteria'. Our conclusions are set out below.

Suitability and Deliverability of the Site

Location: Inveresk forms part of the wider Musselburgh settlement. The site is well related to Musselburgh lying between the settlement boundary and East Coast Main Line.

Accessibility: Musselburgh's accessibility to the wider city region is excellent and ranks highly (as presented by ELC) among other settlements in East Lothian. Inveresk and indeed the site, is easily accessible to Musselburgh by a variety of means of transport, particularly by foot and bicycle.

Exposure: The site is relatively flat but existing and proposed new woodland planting will shelter the site from northerly winds.

Aspect: The site generally faces north east although development will be restricted to the flattest parts of the site so that the layout can be organised to ensure shelter and maximum benefit from solar gain.

Suitability for Proposed Use: The use proposed is suitable for this location. There may be potential for noise impacts associated with proximity to the East Coast Main Line and although this is in cutting as it passes by the site, mitigation measures may be required. Other surrounding land uses include housing, the former hospital and agricultural land.

Fit with local/strategic policy objectives and direction: The site is adjacent to a main settlement within the East Lothian SDA as identified in SESplan. The proposed development is therefore well aligned with the strategic policy objectives of steering new development towards the most sustainable locations in the city region.

Physical infrastructure capacity: Access can be achieved from Crookston Road, which provides links into and around Musselburgh town centre and beyond to neighbouring towns, villages and the A1 trunk road. At this stage it is proposed (as set out in the supporting transport statement) that a new priority T-junction will be created on Crookston Road to access the development site. An improvement at Crookston Road /Carberry Road to provide a 'double D' traffic island is also identified.

The site is served by Roseberry Water Treatment Works and Seafield Waste Water Treatment Works, both of which have available capacity.

Service infrastructure capacity: The site lies within the catchment of Pinkie St Peter's Primary School and Musselburgh Grammar. As advised by the MIR, there is limited capacity at both primary and secondary level and both are subject to potential options for increasing education capacity in the Musselburgh Cluster.

Deliverability/effectiveness: Development is promoted on behalf of CALA on a site owned by a party contracted to sell to CALA. It is free of physical or infrastructure constraints and in a marketable location.

Potential Impacts of Development: SEA Assessment Criteria

Cultural Heritage: The site is not identified as a Scheduled Ancient Monument. That said, CALA acknowledges that it lies within the boundary of the Battle of Pinkie, as referenced from Historic Scotland's Inventory of Historic Battlefields.

The Battle of Pinkie boundary is extensive and includes most of Musselburgh, as far east as the western edge of Prestonpans, south to Crossgatehall and west to Old Craighall. All MIR housing allocations in the Musselburgh Cluster fall within this boundary. Therefore, a location within the battlefield boundary does not immediately exclude a site from accommodating development.

It is also acknowledged that Inveresk is one of a number of key features within the battlefield. As such, CALA is aware of the need to allow archaeological investigations at this site prior to any future development taking place.

The site also lies within the Inveresk Conservation Area. This designation does not exclude the site from accepting new development. Indeed, CALA has successfully promoted sensitively designed development in Inveresk and other conservation areas across Scotland.

Landscape: The landscape character of East Inveresk and the Farms is defined by smaller buildings with trees in their grounds filtering views of buildings and giving way to open countryside, forming fingers of agricultural land.

CALA's proposal will expand Inveresk to the south but in keeping with the existing, southern expansion along the line of Carberry Road. It will also retain the characteristic finger of Pinkie Hill farmland as highlighted in the Inveresk Conservation Area Character Appraisal and open space will be retained between the site and Edenhall, reinforcing the distinctive landscape characteristic of the area.

Visibility of the site will be limited to 'glimpse' views from the A1 and local area but the provision of new open space and landscaping will ensure it integrates into the landscape setting.

Biodiversity, Flora & Fauna: The site does not fall within any areas designated for their international, national of local nature conservation interest. There is a TPO in the adjacent, former Edenhall Hospital and lowland meadow priority habitat (neutral, grassland, unimproved) in the railway verge to the south. Development will not impact on these designations.

Population: The proposed development would provide housing for a specific market which is not currently catered for by the proposed allocations of the MIR. It will also provide an element of affordable housing. The site has good access to existing facilities, services and employment opportunities by active travel or public transport.

Human Health: There is no known contamination at the site and it has good access to the existing core path network. The level of predicted traffic generation is unlikely to have any adverse impact on the surrounding road network or exacerbate local air quality issues in Musselburgh town centre. The East Coast Main Line is in cutting as it passes by the site and is unlikely to create a significant noise issue. Indeed, proposed development would be set back and screened by new woodland planting.

Soil: The site does not contain any rare or carbon rich soils. Whilst it is Class 1 prime agricultural land the proportion of that land proposed for development is not significant. Moreover, all of the preferred (and larger) allocations in the Musselburgh Cluster occupy locations on either Class 1 & 2 prime agricultural land.

Water: An analysis of SEPA's flood risk maps identifies an area of medium, river and surface water flood risk which runs south from the former Edenhall Hospital and adjacent to the site. As such, there may be a requirement at the appropriate technical stage for a Flood Risk Assessment, which is normal practice.

Air: The site occupies a location with good access to local facilities, active travel and public transport accessibility and the need to travel by car is minimised accordingly. Given the extent of travel choices available the proposed development is unlikely to exacerbate air quality issues in Musselburgh town centre.

Climatic Factors: Musselburgh occupies a highly accessibly location in regional terms and is closer to major centres of employment than other East Lothian settlements. The site is an accessible and sustainable location, well positioned to access public transport, active travel routes, as well as local facilities and services.

Material Assets: The loss of circa 4 ha. prime agricultural and greenfield land is not considered to be significant. The proposal is designed with robust, defensible boundaries thus ensuring the continuation of a strong Green Belt.

CALA's proposal at Pinkie Mains Farm scores very positively against all of the site assessment criteria used by East Lothian Council. As such, there are many valid planning reasons to consider this site in the context of the emerging LDP.

Promoting the Placemaking Agenda: Location and Scale of the Proposed Development

Scottish Government Planning Policy, also reflected in SESplan, places significant emphasis in developing in 'sustainable' locations particularly with regard to public transport. Inveresk has both good road and rail transport links to Edinburgh and is within easy reach of Musselburgh town centre and other local destinations by foot, cycle, bus, and car.

There is an existing footpath at the site's frontage with Crookston Road, which runs along the northern side of that road and links the site to the village centre and other existing footpaths and local bus services on Carberry Road (A6124). A number of East Lothian's Core Paths are located close to the site allowing access to various points in Musselburgh as well as Lewisvale Public Park.

Cyclists are required to share the carriageway with other traffic in the immediate vicinity of the site and for access to Musselburgh, although there are Core Paths close by which enable access to Wallyford Railway Station.

There is a regular Lothian bus service (hail and ride) from Carberry Road (A6124) and only a short walk from the site, offering transportation into Musselburgh town centre and other local destinations. This service runs every 30 minutes weekdays and Saturdays and every hour on a Sunday. A host of bus services are available from Pinkie Road (B6454) and within Musselburgh town centre, which can be utilised by cyclists, pedestrians or by connecting via the service identified above. These additional services offer connections to wider destinations including, Edinburgh, Falkirk, Broxburn, Bathgate and Queensferry.

The site is located within cycling or driving distance of the park and ride facilities at Wallyford Railway Station, located on the Edinburgh – North Berwick line. Wallyford Park & Choose includes the railway station and offers a range of facilities including, 89 car parking spaces, bus connections and cycle storage facilities. Additional parking is located at the adjoining bus based park and ride facility.

Scotrail currently operates an hourly service on this line (between Edinburgh & North Berwick) on a typical weekday and Sunday, as well as a service every 30 minutes on a Saturday. This same service also stops at Musselburgh Station.

The MIR acknowledges the need to identify different site types and sizes for new houses (page 55). It confirms that smaller sites may be more deliverable to meet short term requirements to 2019, whereas larger sites will have longer lead-in periods and more likely to contribute to requirements post-2019.

The preferred new housing land opportunities in the MIR – Musselburgh Cluster are generally larger, volume sites promoting hundreds of units per site. Only Old Craighall East (50 units) is of a similar scale to Pinkie Mains Farm. CALA is promoting another site at Levenhall (75 units) although Pinkie Mains Farm is not a replication of that site. The latter is a unique and bespoke development designed for this particular location. None of the preferred allocations within the MIR offer an equivalent development.

The reasons for concentrating on releasing smaller sites, with a focus on quality are therefore even greater and more immediate.

There are significant benefits to delivering housing on this basis, such as;

- A generally less complex delivery process.
- Unlikely to require significant new infrastructure.
- Development can be added to an existing settlement with good services and connectivity as a means of meeting key sustainability targets.

Inveresk has not experienced any growth for some time and it is appropriate that East Lothian Council now seeks to identify development land in the village through the new LDP. The latter represents the blueprint for the region's growth over the next 10 years and beyond, as a location capable of accommodating planned new growth in line with the Government's desire for sustainable placemaking, Inveresk should accommodate new residential development.

The village is well served by public transport and its proximity to Musselburgh offers a range of facilities, services and community resources to support new development. The proposal is served by Pinkie St Peter's Primary School and Musselburgh Grammar. There is limited capacity at both primary and secondary levels, although both are subject to potential options for increasing capacity in the Musselburgh Cluster.

In any event, CALA is committed to working with ELC through the planning process to ensure that adequate future capacity is made available to enable this site to come forward.

CALA's plans have been prepared with careful consideration of the present day Inveresk as well as the future of the village. There is a recognised need for new family housing to support local facilities and services, but also to sustain the demographic balance of the village. It is noted from an analysis of Census data[1] for Inveresk postcode sectors from 2001 and 2011 that;

- The population of Inveresk has declined by over 11%. The population of East Lothian has increased by some 10% over the same period.
- There is a declining young (0-29 years) age group in Inveresk and an increasing population of pensionable age (60+).
- There has been a decline in traditional families, i.e. married couples with dependent children.
- The proposal will offer a proportion of affordable housing. Council rented at 2011 amounted to only 6% of total rental stock.

CALA believes that new housing as proposed will sustain and support existing local facilities and services.

The development is proposed by CALA against the background of sustainable placemaking principles, the focus of which is the creation of high quality places for people to live. It will create strong, identifiable and clearly defensible boundaries. These boundaries will be Crookston Road to the west, a new woodland belt to the east and also the south, with the existing railway line beyond and the village itself to the north.

[1] Data sourced from SCROL 2001 and Scotland's Census 2011: Area Profiles

Inveresk is a distinctive historic village shaped by an attractive landscape setting. Placemaking requires that places such as this remain unique, their landscape setting is respected and sustainable communities created. Indeed, the development proposed by CALA will ensure that Inveresk retains a strong sense of character and identity. It will offer a safe and pleasant environment, which is easy to move around and welcoming to all.

CALA seeks to create a new neighbourhood which complements the existing community by enhancing the urban character and landscape context of the southern edge of Inveresk. Thus, the site seeks to;

- Provide something unique and distinctive, respecting the urban grain and the historical pattern of growth, following the 'fingers of development' concept adopted in the locality.
- Respect existing views to and from Inveresk across the open farmland by adopting the historical pattern of growth. Setting back development from the railway line will also ensure important views along that line are not interrupted.
- Provide security through design, encouraging activity by addressing place before vehicle movement.
- Maintain and enhance existing pedestrian and cycle routes and also provide new, clear and safe routes through and around the development.
- Create a sustainable new neighbourhood by taking advantage of the location adjacent to existing transport infrastructure.
- Utilise the existing landscape setting and complement that with a strong landscape and open space framework, containing the proposed new development in its landscape setting.

In essence, the site concept is an extension of the existing urban grain and landscape, extending and completing the linear finger of development and woodland to create an attractive, leafy residential environment that is well connected to, and integrated with, its surroundings

Against this background, CALA believes that planned, sustainable growth in Inveresk is necessary and appropriate.

Housing Quality and Mix

Revised Scottish Planning Policy was issued by the Scottish Government on 23 June 2014. The document emphasises that a range of attractive and efficient housing should be provided to meet market needs. This implies that range and choice of housing, including sites at the upper end of the market are a priority consideration when examining the housing land supply. The challenge and requirement for the Council is to provide a range and choice of housing allocations that are marketable and deliverable over the plan period. The Council should also give due focus and consideration to smaller sites (which in this case also lies within a SESplan Strategic Development Area), which are capable of early development, benefit from existing infrastructure and be within close proximity of local transport facilities.

The MIR acknowledges the need to offer sites of different type and size to ensure an effective land supply but there is no explicit discussion within the document about housing mix and quality. It is essential for the emerging LDP to consider this issue and particularly the need to provide housing in the upper market range.

Policy research demonstrates a need to set housing objectives to meet local economic development objectives, not just numbers-driven targets (although quantity of housing supplied is an important component of growth too). East Lothian's future housing supply must include meeting the aspirations of skilled and executive workers and entrepreneurs.

Inveresk is a desirable residential location in East Lothian, yet there are no other proposed allocations in the Musselburgh Cluster that offer the same high quality, bespoke development that CALA proposes for Inveresk. The majority of proposed allocations in the MIR Musselburgh Cluster are larger, volume sites of over 100 units. CALA's proposal therefore offers the right choice in the right location.

Development Delivery and Effectiveness

A key consideration in the assessment of any site for inclusion in the East Lothian Council LDP is whether it is capable of being effective, i.e. can it deliver housing as part of the forthcoming plan. The Council is obliged to provide a generous supply of effective housing land on a five year rolling basis to meet the requirements set out by Scottish Government. It is important there are no fundamental impediments to development for sites chosen for inclusion in the LDP.

The site at Pinkie Mains Farm is capable of being effective and meeting the criteria set out in Planning Advice Note 2/2010, and also laid out at Appendix 1 of the MIR. It is in the ownership of a party which is contracted to sell to CALA, free of physical or infrastructure constraints and in a marketable location.

Importantly, the site is capable of being delivered pre-2019 and during the period of greatest pressure for the East Lothian Local Development Plan to bring forward effective, new sites.

Summary

In view of the benefits associated with identifying a small, deliverable site within a Strategic Development Area and the positive critique of the proposal against ELC's site assessment criteria, there is no valid planning reason to exclude CALA's proposal at Inveresk.

The proposal respects the historical pattern of development associated with Inveresk and follows the 'fingers of development' growth concept seen historically in this part of East Lothian. There is no encroachment into the setting of Edenhall Hospital.

Development will create strong, identifiable and clearly defensible boundaries and will ensure that a robust Green Belt boundary is maintained. This site is a logical and natural way to extend Inveresk without detriment to its character or landscape setting. Important, existing views will be maintained and particularly those along the East Coast Main Line towards Edinburgh.

The site is not protected as a Scheduled Ancient Monument. It does lie within the boundary of the Battle of Pinkie, which is extensive and includes all MIR housing allocations within the Musselburgh Cluster. On this basis, a location within the battlefield boundary does not exclude a site from accommodating development. It is also acknowledged that Inveresk is one of a number of key features within the battlefield. As such, CALA is aware of the need to enable archaeological investigations prior to any future development taking place.

Inveresk is an appropriate location to accept further limited growth and CALA's proposal represents sustainable development. It has excellent communications and transport links and is served by Wallyford Railway Station on the Edinburgh – North Berwick line. The supporting Transport Statement confirms that access can be achieved from Crookston Road, which provides links into and around Musselburgh town centre and beyond to neighbouring towns, villages and the A1 trunk road.

There is a recognised need for new family housing to support existing services and facilities, but also to sustain the demographic balance of the village. CALA will work with ELC through the planning process to ensure that future education capacity is available to enable this development to come forward.

Further residential development in Inveresk will extend range and choice for private housing within a village that has not been the subject of new housing development for some time. This is a bespoke proposal, unique to Inveresk and not replicated elsewhere in East Lothian. Providing a range and choice in the private housing market is a key requirement of Scottish Government planning policy.

The site is capable of being effective and meets the relevant tests as laid out in PAN 2/2010.

CALA MANAGEMENT

Pinkie Mains Farm, Inveresk

Development strategy - Response to MIR
February 2015

open

Executive summary

Pinkie Mains Farm

CALA believes that development at Pinkie Mains Farm can make a positive contribution to housing choice within East Lothian and is committed to delivering a unique and distinctive residential development in this location.

The site at Pinkie Mains Farm presents the opportunity for CALA to provide a high quality residential development of up to 45 homes in a manner that reflects the high quality of the Inveresk area, both in the quality of architecture and also in the quality of environment to be provided. Development in this location would form a natural extension to the existing urban area of Inveresk in a form sensitive to the urban edge location, creating strong, identifiable and clearly defensible landscape boundaries. This site is a logical and natural way to extend Inveresk without detriment to its character or landscape setting.

Further residential development in Inveresk will increase the range and choice of private housing within a village that has not been the subject of new housing development for some time. CALA envisages that this is a bespoke design proposal for a site that justifies a direct response to the location and will not be replicated elsewhere in East Lothian. New development at Pinkie Mains Farm, through its design and contribution to place making, should enhance not detract from the existing rich character and quality of environment. CALA would like to see the aspects that make the site unique and attractive brought to the fore. The distinct features and characteristics of the site are articulated through the design to create a distinctive extension to Inveresk with a clear identity and sense of place.

In addition to the environmental qualities of the proposed site, Pinkie Mains Farm has excellent communication and transport links and is served (via easy access by cycle or car) by Wallyford Railway Station on the Edinburgh North Berwick line. Musselburgh is easily accessible be all modes of transport providing a range of facilities, employment opportunities and community resources to support additional development.

As a small, deliverable site, located within a Strategic Development Area, Pinkie Mains Farm is an appropriate location to promote further limited growth and on this basis CALA's proposal represents sustainable development.

fig. 1: Pinkie Mains Farm - Illustrative Masterplan.

CALA Management

This proposal is another example of CALA's continued investment in East Lothian, following successfull recent and on going developments in North Berwick and Haddington. CALA believes that this site will allow the village to take a modest number of new family houses for the first time in many years, whilst ensuring it is designed to a high standard and complementary to the existing setting.

CALA began building homes around forty years ago, and today applis the same guiding principles of exceptional design and build, insisting on meeting stringent standards and offering value for money in a wide range of sought after locations across the UK. The company has a reputation for delivering high quality developments and a strong track record in East Lothian.

For CALA, the design of a home doesn't stop at the individual building; CALA's core aim is about achieving successful placemaking creating vibrant and sustainable communities whether in a countryside development or in the heart of a city. All CALA homes are designed to respect and reflect their individual setting and mature well over time aspiring to be the conservation areas of the future.

Visualisation of CALA development Gilsland, North Berwick.

CALA development at Briery Meadow, Haddington.

CALA development at Briery Meadow, Haddington.

CALA development at Briery Meadow, Haddington.

fig. 2: Pinkie Mains Farm - Site location.

1. Introduction

1.1 Purpose of this document

The purpose of this document is to demonstrate the effectiveness of land at Pinkie Mains Farm, Inveresk, as an appropriate site for residential development.

This response to the Local Development Plan Main Issues Report (MIR) has been prepared by Optimised Environments Limited, 'OPEN' on behalf of CALA Management Ltd (CALA). The document forms a supporting statement to accompany CALA's response to the East Lothian Local Development Plan MIR and provides justification for the allocation of land at Pinkie Mains Farm for approximately 45 homes.

The site highlighted on Figure 2 opposite is known as Pinkie Mains Farm and is currently open agricultural farmland. It extends to some 4.4ha and is located at the southern edge of Inveresk Village, bounded by Edenhall Hospital to the north, the East Coast Main Line (in cutting) to the south and east and by Crookston Road to the west.

This document supports CALA's representation which proposes the inclusion of the subject site within the East Lothian Council LDP as a residential allocation. CALA proposes an indicative development capacity of 45 units, including the requirement to provide an allocation of affordable housing, significant areas of public open space and improved path connections.

1.2 Main Issues Report

This site was previously submitted to East Lothian Council as part of a significantly larger proposal by Wallace Land at the previous call for sites stage of this emerging LDP. That proposal comprised some 14 hectares and identified a development capacity of 300 homes. That developer is no longer involved with the landowner at Pinkie Mains and that proposal is no longer in prospect.

The current site is promoted by CALA with the full backing of the landowner. The site is considerably smaller at just 4.4ha and with an indicative development capacity of up to 45 units in a developable area of 2.6ha.

The development strategy for Pinkie Mains Farm presented within this document has been considered against East Lothian Council's own site assessment criteria, contained in the Environmental Report, as used at the Call for Sites stage of the LDP. These are set out under two distinct headings; 'Suitability and Deliverability' and 'Potential Impacts of Development: SEA Criteria'. The proposals have been developed following a masterplannning approach which considers the criteria set out in the assessment as part of the design process. This document therefore provides the rationale for the inclusion of this site as a residential allocation and supports the response to the MIR.

A full response to the Environmental Report criteria, including conclusions are set out in the Representation to East Lothian Council, Local Development Plan, Main Issues Report prepared by Ryden.

1.3 A masterplan approach

This document describes the proposed site location and its surrounding context, and includes a visual and physical appraisal of the site and its environs in line with the criteria set out in the Council's Study. Through this appraisal, the study then identifies the development capacity of the site to accommodate change and concludes with a concept, development strategy and a summary of the opportunities for development at Pinkie Mains Farm.

The document demonstrates that the overall character and quality of the surrounding area will not be unacceptably compromised through careful development and indeed that an opportunity exists to enhance aspects of the site including the contribution that it can make towards improved accessibility to open space. Following a master planning approach, this approach emphasises landscape capacity, site appraisal, design quality, innovation and sustainability as the key factors which can achieve this objective.

CALA has appointed a multi disciplinary team to demonstrate that development at Pinkie Mains Farm is both deliverable and can meet the aspirations for good place making enshrined within National and Local Policy

The team appointed consists of the following:

- Planning: Ryden
- Masterplanners / Landscape Architects: Optimised Environments (OPEN)
- Transport and Engineering Consultants: Transport Planning Ltd
- Architecture/Developer: CALA Homes (East) Ltd

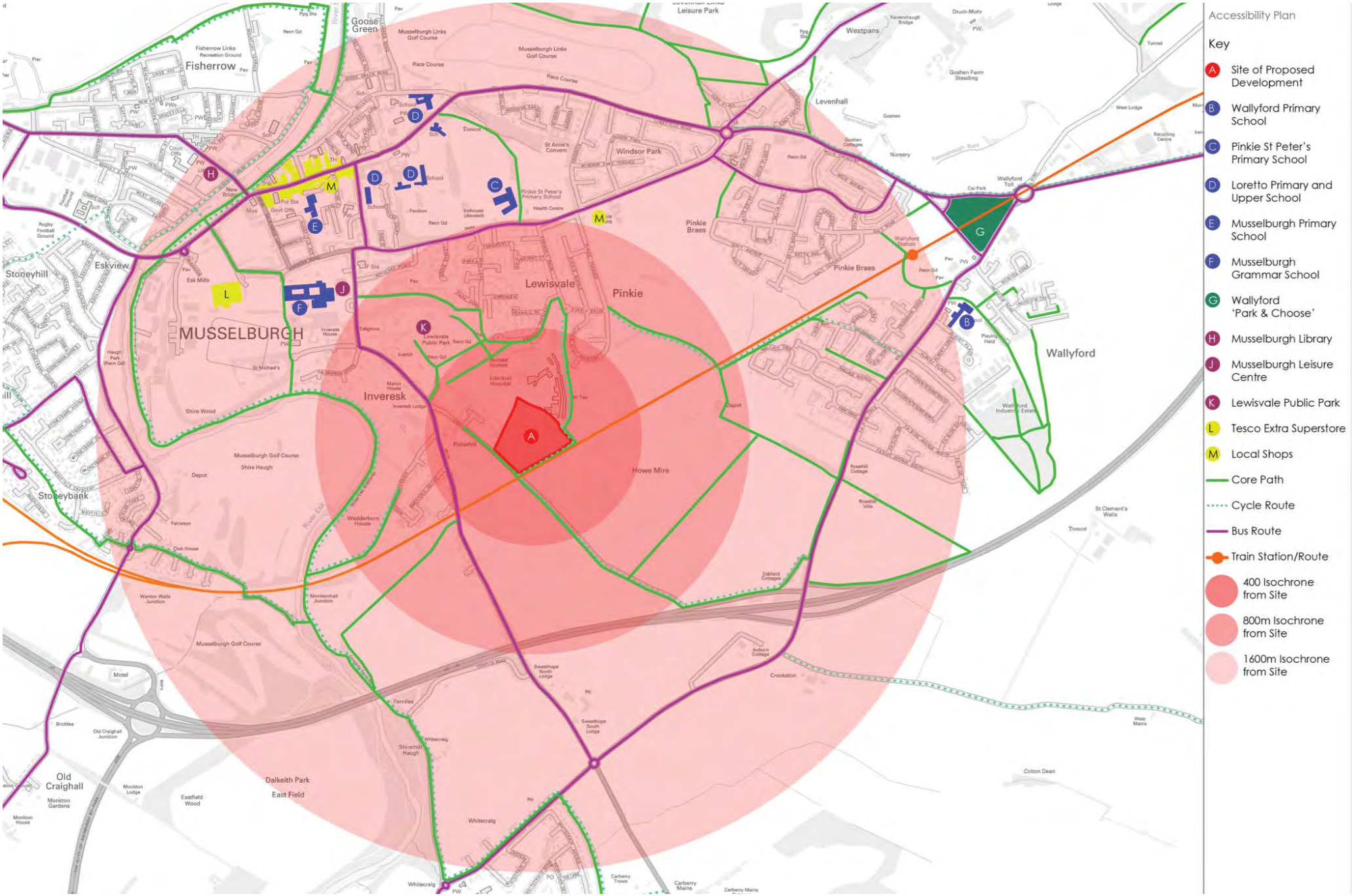

fig. 3: Pinkie Mains Farm, Accessibility Plan (extract from Transport Planning Transport Statement).

2. The Site

2.1 Introduction

This section sets out the key findings and initial analysis of the site, its landscape setting, visual context and explores the constraints and opportunities which have informed the development capacity and established key design principles.

2.2 Location

The site is known as Pinkie Mains Farm and is currently open agricultural farmland. It extends to some 4.4ha and is located at the southern edge of Inveresk Village, bounded by Edenhall Hospital to the north, the East Coast Main Line (in cutting) to the south and east and by Crookston Road to the west. The extent of the site is illustrated opposite.

The development site is located around 1.5km from Musselburgh town centre, which contains a range of local retail and employment opportunities. In addition, Musselburgh Sports Centre can be accessed within a 1.0km walk from the site. Access to these facilities can be reached via the existing footways on Crookston Road and the A6124.

The school catchment area for the development site is Pinkie St Peter's Primary School and Musselburgh Grammar School. East Lothian Council provides school transport for secondary pupils if their walk to school is outside a 2 mile catchment. Pinkie St Peter's Primary School is located approximately 1.5km (0.93miles) away and can be accessed on foot through Lewisvale Public Park to Park Lane and Pinkie Road. Musselburgh Grammar School is situated around 1.0km (0.6 miles) north of the site, accessed directly from the A6124.

The site is adjacent to a main settlement within the East Lothian SDA as identified within SESplan and the MIR. Its development would therefore align well with strategic policy objectives of steering new development towards the most sustainable locations within the city region. For assessment against other more detailed policy objectives see 'Potential Impacts of Development: SEA'.

2.3 Access

A Transport Statement has been prepared by Transport Planning Ltd to support CALA's representation to the ELC MIR and which has also informed the proposals contained within this document. The report concludes on the existing and potential accessibility of the development site by all modes of transport. A summary of the key access issues are noted below.

At present agricultural vehicles can gain access to the development site via a 5.0m opening in the stone dyke wall, which is assisted by dropped kerbs on Crookston Road. The existing access arrangement will require to be improved to serve the future proposed development.

A footway ranging in width from 1.4m to 2.2m at the development site frontage is present on the northern side of Crookston Road, which links the development site to the village centre and existing footways and local bus services on the A6124 Carberry Road.

East Lothian Core Path 172 routes along the western boundary of the development site, which connects Salters Road, south of Wallyford, to Edenhall Road and Pinkie Road within Musselburgh. In addition, Wedderburn Terrace to the west of the development site leads to Core Path 295 and ultimately Core Path 173, which follows the eastern bank of the River Esk. Furthermore, a network of footpaths link from the village to Lewisvale Public Park and onward to Park Lane and Pinkie Road within Musselburgh.

There is a regular Lothian bus service (hail and ride) from Carberry Road (A6124) and only a short walk from the site, offering transportation into Musselburgh town centre and other local destinations. This service runs every 30 minutes weekdays and Saturdays and every hour on a Sunday. A host of bus services are available from Pinkie Road (B6454) and within Musselburgh town centre, which can be utilised by cyclists, pedestrians or by connecting via the service identified above. These additional services offer connections to wider destinations including, Edinburgh, Falkirk, Broxburn, Bathgate and Queensferry.

The site is located within cycle or driving distance of the park and choose facilities at Wallyford Railway Station, located on the Edinburgh North Berwick line.Scotrail currently operates an hourly service on this line (between Edinburgh & North Berwick) on a typical weekday and Sunday, as well as a service every 30 minutes on a Saturday.

The Transport Statement notes that the development site is located in an area with an adequate level of pedestrian, cycling and public transport provision, with road access via Crookston Road and the A6124. A local bus route serves the area with the opportunity to travel by rail accessible by cycling or driving.

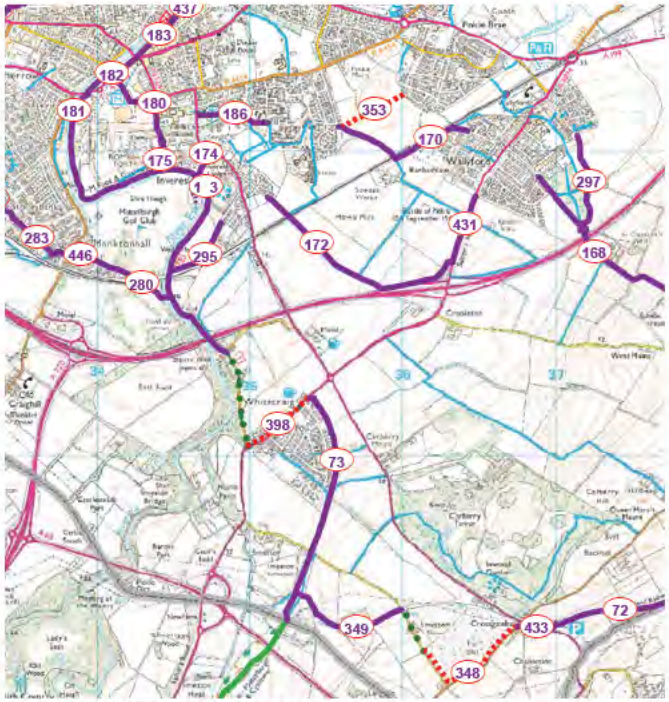

fig. 4: Extract from East Lothian Council Core Path Plan.

Map L

Key

- Core Paths
- Core paths that don't currently exist on the ground, but which will be built in the near future
- Other paths (part of the wider path network)
- Suggested links on quiet roads*
- Longer-term aspirational routes
- Neighbouring Authorities' Core Paths

* Note: Roads may not have pavements. Safety risks should be assessed prior to non-motorised usage.

2.4 Site photos

fig. 5: Pinkie Mains Farm, View point location plan.

The following pages of photos record the character of the site from its boundary edges and also of the immediate urban context. A couple of long distance shots demonstrate the visibility of the site from the A1 to the south and also from Wallyford to the east.

Carberry Road

Crookston Road

Landmark Pinkiehill Farm

Viewpoint 1

Viewpoint 2

Viewpoint 3

Viewpoint 4

Viewpoint 5

Viewpoint 6

Viewpoint 7

Viewpoint 8

Viewpoint 9

Viewpoint 10

Viewpoint 11

Viewpoint 12

Viewpoint 13

Viewpoint 14

Viewpoint 15

2.5 Site history and evolution

It is relevant to consider the physical suitability, or capacity of the site, to accommodate change and, to achieve this, the site's history and current physical condition has been reviewed.

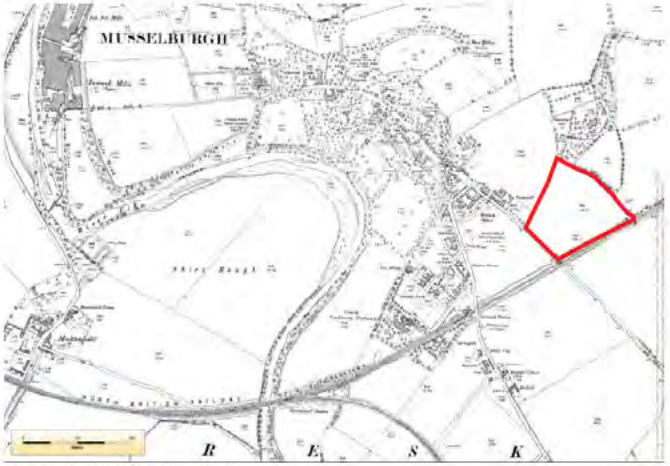

fig. 6: Pinkie Mains Farm - 1894.

fig. 7: Pinkie Mains Farm - 1914.

fig. 8: Pinkie Mains Farm - 1960.

Notes

Development should respect the historical pattern of development associated with Inveresk and follows the 'fingers of development' growth concept seen historically in this part of East Lothian. Development has historically extended along the roads, maintaining strategic areas of open space and ensuring the setting of Inveresk retains a 'staggered' edge and does not infill up to the railway.

fig. 9: Pinkie Mains Farm - 2013.

2.6 Heritage

The site is not identified as a Scheduled Ancient Monument. It is acknowledged that the site lies within the boundary of the Battle of Pinkie, as referenced from Historic Scotland's Inventory of Historic Battlefields.

The Battle of Pinkie boundary is extensive and includes most of Musselburgh, as far east as the western edge of Prestonpans, south to Crossgatehall and west to Old Craighall. All MIR housing allocations within the Musselburgh Cluster fall within this boundary. Therefore, a location within the battlefield boundary does not immediately exclude a site from accommodating development.

It is also acknowledged that Inveresk is one of a number of key features within the battlefield. As such, CALA is aware of the need to allow archaeological investigations at this site prior to any future development taking place.

The site also lies within the Inveresk Conservation Area. This designation does not exclude the site from accepting new development and CALA has successfully promoted sensitively designed development in other Conservation Areas across Scotland.

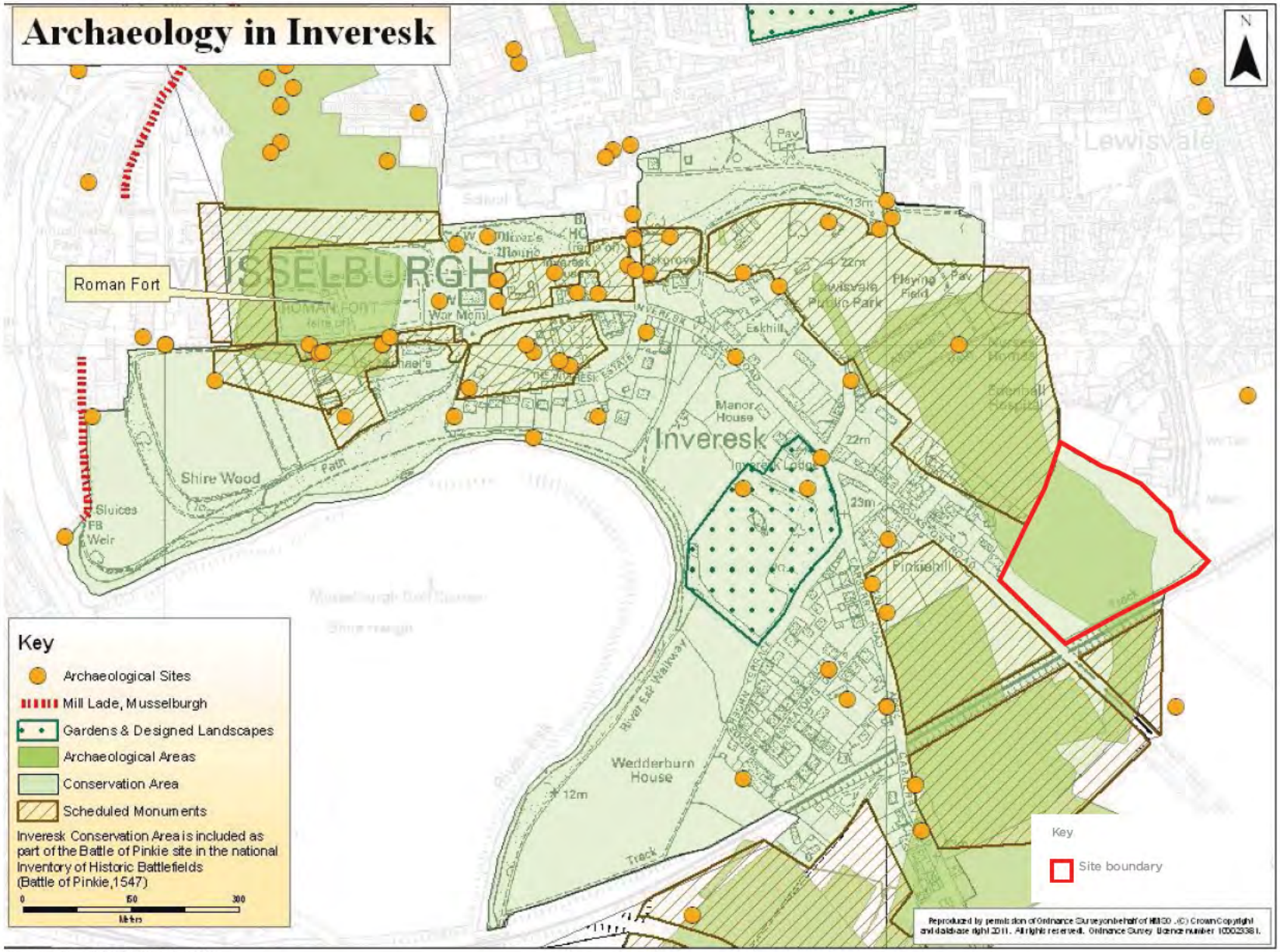

fig. 10: Pinkie Mains Farm, Archaeology.

2.7 Topography

The site falls to the east from 22m on Crookston Road to approximately 15m on the boundary to Edenhall Hospital. The land falls gradually at first, with a relatively flat area immediately adjacent to Crookston Road before falling away more steeply further east. The land to the east where the slopes are steeper should be avoided in part due to the constraint provided by the topography.

2.8 Aspect

The site generally faces north east although where development should be constrained to the flatter parts of the site to the west the site falls very gradually to the south. Development here would benefit from a southerly aspect and the form of individual buildings and site arrangement should maximise opportunities for passive solar energy gain.

2.9 Noise

Potential noise and ground vibration are possible from the railway line. A noise impact assessment would be required, however for the purpose of this initial capacity exercise, an offset of 26m from the edge of the railway line to building edge has been assumed, based on recent experience from a similar project.

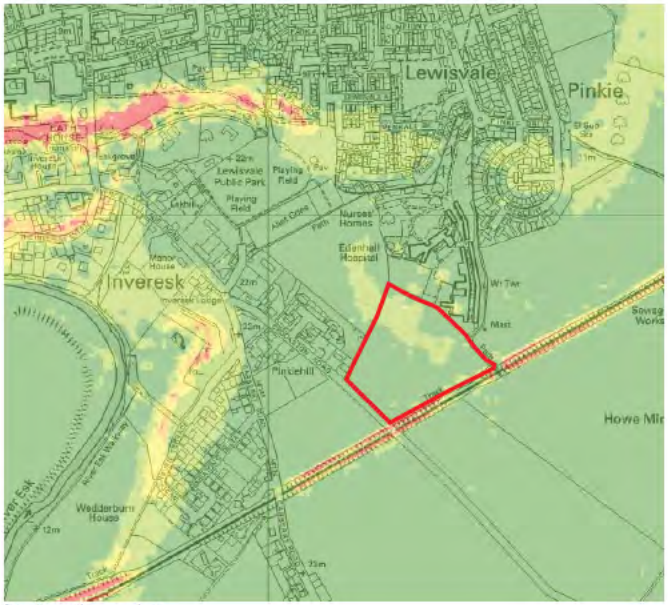

fig. 11: Slope analysis.

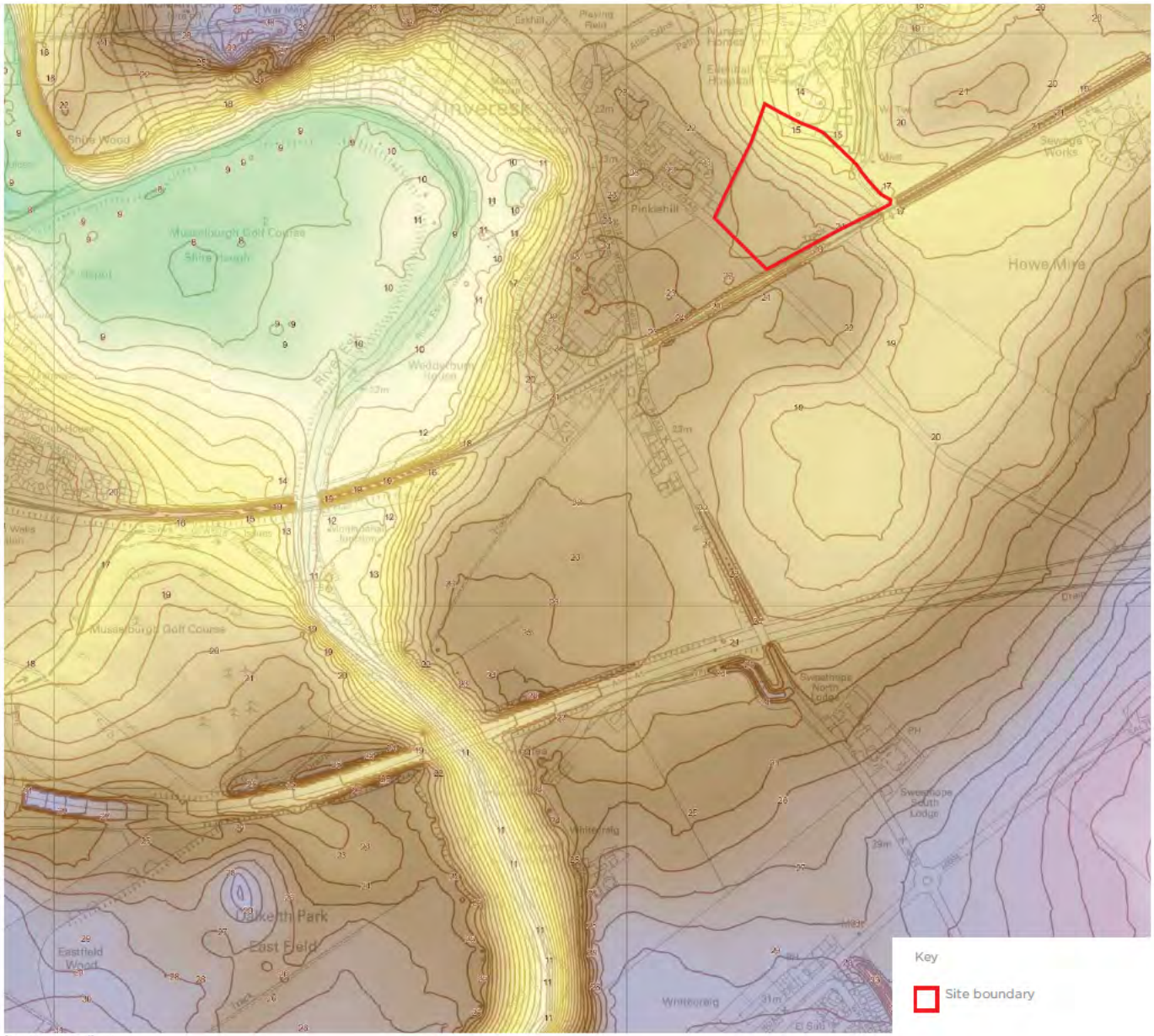

fig. 12: Landform.

2.10 Views

Views to the site

The landscape character of East Inveresk and the farms is one where smaller buildings with trees in their grounds, filtering views of buildings, give way to open countryside, comprising fingers of agricultural land on either side of Crookston Road that link with the allotments and Lewisvale Park to the north.

The development form should ensure views to the site from the south retain this disinctive landscape character. Fingers of open space must be retained to ensure a 'staggered' urban edge and not a hard continuous edge to the railway.

Views from the site

The development form must also respect views from the adjacent residential area, surrounding streets and paths.

A landscape area should be retained within the site adjacent to the Edenhall Hospital site, maintaining a filtered view from the allotments at the north and glimpses into the area from those passing on the train.

The views from east and west from the path adjacent to the railway should be retained within any development proposals as these are important in the wider landscape setting of the site.

fig. 13: View south from path next to allotments. This view illustrates the importance of the woodland edge to Edenhall and the landform on the landscape character.

fig. 14: View south west from path next to allotments. This view illustrates the significance of the existing woodland to the rear of the properties on Crookston Road.

fig. 15: View east along the existing path next to the railway.

fig. 16: Pinkie Mains Farm, site location.

2.11 Site boundaries

The site is physically suitable for the proposed use with no known constraints located within the site area (archaeological investigation will take place at the appropriate time). There may be potential for noise impacts associated with proximity to the East Coast Main Line and although this is in cutting as it passes by the site, mitigation measures may be required. For the purpose of this site assessment a standard 26m offset from railway track to development edge has been allowed for.

Crookston Road forms the western boundary of the site. The boundary is defined by a stone wall which should be retained, broken only to allow access where required. The character of any development adjacent to Crookston Road should be in keeping with that further north.

The northern boundary is defined by existing housing to the west and open agricultural fields to the east. Where the site abuts existing housing it must respect the character, setting and privacy of the existing properties. The woodland areas to the rear of the properties should be retained and utilised to inform the landscape structure.

Where the site is open to agricultural fields to the north, this boundary should be enhanced as part of the landscape framework, respecting the historical landscape structure. A robust and defensible boundary should be formed to contain the development and protect the distinct landscape setting.

The eastern boundary is well defined by the mature woodland planting within Edenhall Hospital grounds and the existing path. The setting of the woodland should be respected with no development located immediately adjacent. This boundary should be enhanced as part of the landscape framework.

The southern boundary of the site is defined by the East Coast Main Line (in cutting). An existing path runs parallel to the railway connecting Edenhall to the Core Path and must be retained. The development area must be set back from the railway line to ensure noise impacts are limited and to mitigate against any visual impact of views along the railway corridor.

2.12 Green belt boundary

The site area is located within the Edinburgh Green Belt boundary. The Strategic Development Plan acknowledges that the Green Belt is an important policy for protecting and enhancing landscape character and settlement identity and for providing access to open spaces.

The key test for all proposals in the Green Belt and Countryside areas will be to ensure that the development does not detract from the landscape quality and/or rural character of the area. The Council's guidance "Development in the Countryside and Green Belt" provides more detailed advice.

Importantly development at Pinkie Mains Farm will establish a new, robust landscape edge providing a clear and defensible site boundary that will ensure the Green Belt remains intact. On this basis development would comply with the aims of this policy as development would not detract from the landscape quality and character of the area.

Further, the proposals as described in the following section of this document would be of a type and scale such that it would allow the surrounding landscape to fulfil its role in terms of landscape setting whilst improving access to the countryside for recreational purposes.

2.13 Landscape appraisal

The landscape character of east Inveresk and the farms is best described as fingers of development extending along existing roads, separated by landscape area of both fields and woodland. Any development should respond appropriately in scale and layout to maintain this distinctive landscape character.

Development is proposed to the east of Crookston Road thereby maintaining the characteristic finger of Pinkiehill farmland between Carberry and Crookston Roads highlighted in the Inveresk Conservation Character Appraisal. Further east an area of open space should be retained between the development area and Edenhall Hospital grounds to reinforce this distinctive landscape characteristic of the area. Development will be seen to expand to the south, however, this will be contained by the railway and will therefore be in keeping with the extents of surrounding development, such as that on Carberry Road. Housing on this side would help define the retained central open space between Crookston Road and Carberry Road.

Visibility of the site is limited to glimpse views from the A1 and to those closer views from within a localised area. While any additional development will have a notable effect on close range receptors, especially, the provision of tree planting and strategic areas of open space to the east and south of the site will reduce the prominence of the development and helps to integrate it within the landscape setting.

The developable area has been defined by the landscape analysis with further mitigation of landscape impacts considered throughout the design process. While it is not desirable nor possible to conceal the development, the layout, in particular the incorporation of structure planting and open space on the southern and eastern edges, should be designed so as to minimise or avoid negative impact upon the landscape character where possible.

fig. 17: Southern boundary along the railway.

fig. 18: Eastern boundary looking north to Edenhall.

fig. 19: Western boundary looking north along Crookston Road.

2.14 Site analysis

Any development proposals at Pinkie Mains should carefully consider the landscape quality and pattern that makes the site distinctive and which landscape elements should be considered as features within any site layout.

Natural features can give a place its essential character, making it an interesting and attractive place in which to live. It is important that the local heritage of the area is identified and contributes towards the unique character of the site. Every effort should be made to incorporate the existing features of the landscape into the development, working around and protecting significant assets and areas of greatest landscape and environmental sensitivity. Reviving and respecting historic and cultural features, such as the field boundaries, the agricultural morphology, woodland stands and the views from the site provide opportunity to enrich the development and its spaces, linking it with its context.

The plan opposite highlights the key features and landscape qualities that should inform any development at Pinkie Mains Farm.

2.14.1 Constraints and opportunites

The site is physically suitable for the proposed use, notwithstanding, there are a number of important issues to highlight from the outset, namely;

- Development will be restricted to the west of the site area avoiding the steeper slopes and avoiding encroachment towards Edenhall Hospital.
- Development will respect the historical pattern of development associated with Inveresk and follows the 'fingers of development' growth concept seen historically in this part of East Lothian.
- Development must establish a robust landscape edge providing a clear and defensible site boundary to ensure the Green Belt remains intact.
- Development should respect the setting and layout of the existing properties adjacent to Crookston Road.
- Views from the path next to the allotments and along the East Coast Main Line towards Edinburgh will not be interrupted by this proposal.
- The site is not protected as a Scheduled Ancient Monument.
- A location within the Battle of Pinkie battlefield boundary does not immediately exclude a site from accommodating development. Archaeological investigations will be conducted prior to any future development taking place.
- Existing paths to the south and east will be retained and improved.
- The development will be set back from the railway line to ensure noise impacts are limited and to mitigate against any visual impact of views along the railway corridor.

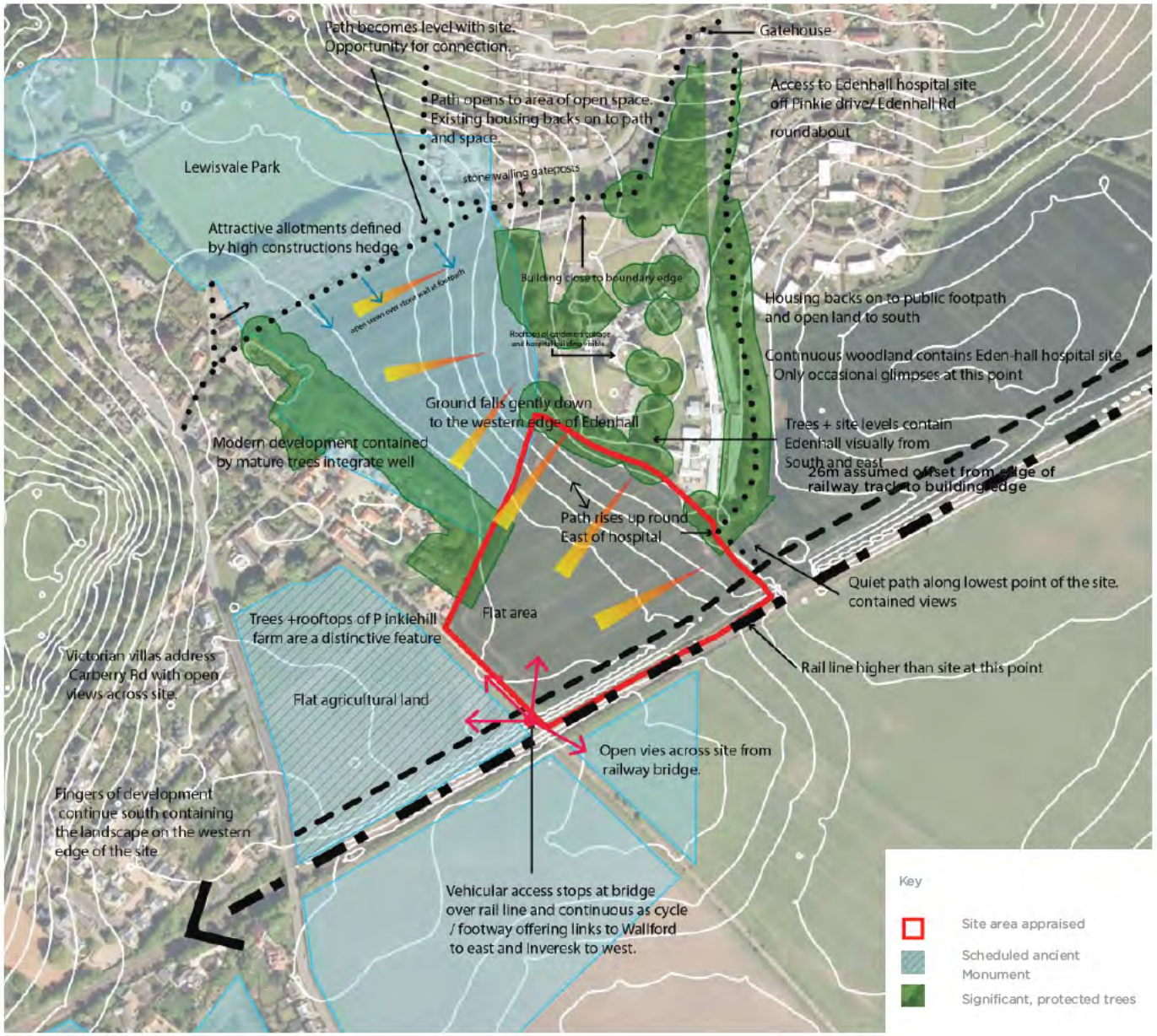

fig. 20: Site appraisal.

3. Development strategy

3.1 Identifying development areas

Through the process of review and analysis this study has identified the parts of the site area that have inherent capacity to accommodate development, shown on figure 21. Any development must be accommodated within the area identified to ensure it does not negatively impact upon the landscape setting or character of the area.

- Development is proposed to the east of Crookston Road thereby maintaining the characteristic finger of Pinkiehill farmland between Carberry and Crookston Roads highlighted in the Inveresk Conservation Character Appraisal.
- Development should extend along Crookston Road following the existing urban grain as a 'finger' of development running towards the countryside on the southern edge. Finishing the road with housing on this side would help define the retained central open space between Crookston Road and Carberry Road.
- Development pushes out slightly beyond the line of woodland that runs along the back of housing off Crookston Road. This has been done to follow the existing contours of the site and the existing tree belt could be enhanced and extended to wrap around the development towards the south, thus ensuring a woodland edge is still visible from the north.
- Important open views over the site from the public path along the northern boundary are maintained by limiting the extent of development at this point and ensuring a sufficient space is maintained for visibility .
- The development area is set back from the railway line to ensure noise impacts are limited and to mitigate against any visual impact of views along the railway corridor.

The site itself has few constraints and further investigation through the design development process would clarify this further but no constraints are anticipated.

3.2 Development capacity

The total site area measures 4.4ha with the potential development area measuring approximately 2.6ha. In keeping with the surrounding character and urban form it is considered that this area presents a development capacity of up to 45 new homes.

fig. 21: Site capacity.

3.3 Concept diagram

The concept for the site is simple and logical to continue the line of existing development to the east of Crookston Road along with the existing woodland belt that wraps it to the east, southwards towards the railway line. In doing so the agricultural land south of Pinkiehill Farm would be enclosed and defined both west, by existing development along Carberry Road, and to the east, in keeping with the landscape character of East Inveresk and the Farms. The prominent view to Pinkiehill Farm from the south would be remain unaltered.

The proposed development and associated tree belt projects slightly beyond the line of existing housing in order to work with the landform at this point. Again a finger of landscape is retained between the site and the Edenhall Hospital site, maintaining a filtered view from the allotments at the north and glimpses into the area from those passing on the train.

Pedestrian connection from the existing path to the east of the former Edenhall Hospital will be enhanced for those passing along the south and east of the site who will be safely overlooked and able to walk a continuous loop along Crookston Road through to the allotments and Lewisvale Park.

Development must continue a robust woodland boundary to the east and provide a new woodland edge to the south to contain development, protect the setting of the village and act as a buffer to the railway line. The landscape edge should provide an attractive amenity along the path network.

In essence the site concept is an extension of the existing urban grain and landscape; stretching and finishing off the linear finger of development and woodland to create an attractive low density residential environment that is well connected to and integrated with its surroundings.

The key aspects of the concept are illustrated in the diagram opposite and identify the main principles that underly the initial development proposals.

- Site boundary
- Edenhall site
- Existing woodland
- Proposed woodland
- Proposed open space
- Pedestrian access
- Vehicle access
- key view to be retained

fig. 22: Development concept.

3.4 Development strategy

The framework plan opposite has evolved from the analysis and appreciation of the site and its strategic and local context. The plan is intended to illustrate the key principles and establishes a flexible structure for development while allowing more detailed proposals to come forward in due course. The Development Framework sets out a spatial framework for the way in which the site should be developed. It is described in the following section through its component layers.

- Land use strategy
- Landscape strategy
- Access strategy

3.4.1 Land use strategy

It is considered that up to 45 houses could be sensitively located within the developable area identified in Figure 21. This would provide an average residential density of around 17units/ha, however, it is not anticipated that the site would provide a uniform development form across the site. This density allows sufficient scope for a creative and sensitive response to the location with the final mix and type of housing determined through the detailed design process.

Development should be of a scale and design that sits comfortably within the prevailing character and pattern of the surrounding residential area. The site is particularly appropriate for a range of family housing types, this could include areas of higher density courtyard development and terraced rows adjacent to larger detached and semi detached properties. Importantly, development here should provide a mix of residential typologies in keeping with the existing character and so that a choice of housing is made available.

Development here will extend the range and choice for private housing within a village that has not been the subject of new housing development for some time. It is anticipated that this will be a bespoke proposal, unique to Inveresk and not replicated elsewhere in East Lothian. Significantly the development will provide 25% affordable housing units as part of the final mix.

3.4.2 Landscape strategy

The landscape strategy is based around the principle that the proposals should continue the robust woodland boundary to the east and provide a new woodland edge to the south to contain development, protect the setting of the village and act as a buffer to the railway line. The landscape edge should provide an attractive amenity along the path network.

1 - Park edge to Edenhall

The area of open space to the east should be designed to maintain that characteristic development form allowing clear views tp the south east whilst providing an attractive and accessible landscape amenity for the community. The space should be easily accessible from paths within the development and allow for future path links to Edenhall. The space should include areas for equipped children's play and required SUDs facilities to support the development. The SUDs facilities must be designed as an integral feature of the space.

2 - Buffer to railway

An area of open space incorporating the existing path link must be retained parallel to the railway. This should include path links to the development and be partially overlooked where possible. It should be designed to retain long distance views to the east and west.

fig. 23: Development Framework.

3.4.3 Access strategy

A street and path network should provide safe and efficient access to the residential area, the areas of open space and maintain good connections to the existing path network.

Pedestrian access

The internal street layout of the proposed development is expected to comprise shared surface routes and links, which will support pedestrian movements and allow residents to move freely within the site. In addition, it is proposed to improve the existing footway along the development site frontage on Crookston Road, connecting to the Core Path.

Clear links should be provided from the development area to the Core Path to provide opportunities for active travel, including access to Wallyford railway station and numerous recreational opportunities.

The layout will be designed to incorporate the existing footpath adjacent to the railway within the landscape structure, with links to the internal street structure where appropriate to ensure a permeable layout. Further path links should be provided from the internal street network to the area of open space and path network to the east including paths links to Edenhall.

The existing and future pedestrian provision in the vicinity of the site is considered sufficient to support the expected future demand for local journeys on foot from the development.

Public transport

A regular bus service is accessible from the development site, which provides travel opportunities to the Musselburgh area. As detailed, the development will be able to use a combination of improved and existing footways to make connections on foot to the A6124, which will help promote use of these existing services.

Although Wallyford railway station is located outwith walking distance as defined within PAN75, the regular services available at this station (e.g. to Edinburgh City Centre) will be appealing to commuters. In addition, the cycle storage, bus interchange and park & choose facilities on offer at the station will be an attractive multi modal travel opportunity for commuters residing at the development site. The station is accessible from the site via the existing path network .

It is expected that the level of public transport and associated facilities available to the development site will be sufficient to accommodate the expected uplift in bus or rail travel demand by future residents.

Vehicle access

The proposed vehicular access for the development site will comprise the introduction of a simple priority controlled T junction on Crookston Road. An alternative arrangement could see Crookston Road extended into the site with the remaining spur leading to the railway bridge becoming the minor arm of a T junction.

In designing the site layout, reference would be made to the principles of Designing Streets. Vehicle access should look to reflect the arrangements of adjacent existing properties utilising shared surface areas, courtyards, private drives and minor street to provide access to properties. Shared use surfacing should be introduced wherever possible and appropriate to ensure that suitable safe and direct pedestrian / cycle routes are available and help in providing a permeable layout where possible.

All parking should be designed to be accommodated within the development area so not to impact upon Crookston Road. A limited number of private driveways should be allowed to gain direct access from Crookston Road, however, parking must be located within the development area.

The Transport Statement concludes that an appropriate access layout can be provided to serve the site and the uplift in traffic from the development can be accommodated on the surrounding road network with no junction operational concerns.

fig. 24: Indicative access framework.

3.4.4 Development form and character

This is a response to the Main Issues Report and, as such, main aspects of design are part of future partnership working between the Council, the community and CALA. Nevertheless as the site is within such an attractive and distinctive area, and designated Conservation Area, some general design principles regarding development form and character should be noted in order to appreciate CALA's aspiration for the site.

The plan opposite illustrates how residential development could be accommodated within the study area in line with the principles set out on the previous pages and described below.

The overarching vision is to create new development that will fit well with the particular Inveresk identity. The development must be designed to look and feel like part of Inveresk and not as a distinct new housing estate. Architectural form and character should respond to the surrounding existing context. Within the Inveresk Conservation Area Character Appraisal, the site falls within East Inveresk and the Farms character area.

The unique qualities of this particular character area which should be used will include:

- Use of walling;
- Buildings closely grouped together with frontage development on to Crookston Road, to retain the feel of a quiet country lane;
- Development should peter out towards the fringes rather than a solid urban edge;
- Use of trees , on street and in gardens, to soften the appearance of buildings and help to integrate the built up area into the surrounding countryside; and
- Medium density development generally, with small private gardens.

In addition, particular characteristics of the surroundings and generally in Inveresk to be adopted include:

- Clear definition of public and private realm;
- Diversity of architecture variation of building heights (1.5 2 storeys to reflect Crookston Road), styles and typologies can provide interest within the urban form, creating distinctive streets and attractive roofscapes;
- Properties generally toward the front of the plots creating an intimate built environment but one which will be designed appropriately to allow for the car;
- An appropriate mix of quality materials such as render colours and detail, and roof colours red pantile or slate grey; and
- Introduction of limited special architectural features such as gateway or corner buildings or gable ends creating a focal point.

Form of individual buildings and site arrangement should also maximise opportunities for passive solar energy gain.

fig. 25: Illustrative masterplan.

4. Summary

4.1 A design led approach

Inveresk is a distinctive historic village shaped by an attractive landscape setting. The development proposed by CALA has been developed with consideraion of the context of the existing village and background of sustainable place making principles, the focus of which is the creation of high quality places for people to live.

The proposals have been developed following a design led masterplanning approach, this approach emphasises landscape capacity, site appraisal, design quality, innovation and sustainability. This follows the core principle set out in The Scottish Planning Policy (SPP) that planning should take every opportunity to create high quality places by taking a design led approach. The proposals demonstrates how the following six qualities of successful places can be achieved on the land at Pinkie Mains Farm:

- Distinctive This is development that as a result of the relatively small scale can provide something unique and distinctive. Development will respect the urban grain and the historical pattern, following the 'fingers of development' growth concept seen historically in this part of East Lothian.
- Safe and Pleasant This is development that will be attractive because it provides a sense of security through design, encouraging activity and considering place before vehicle movement.
- Welcoming This is a development which will maintain existing routes whilst providing new clear and safe routes through the area.
- Adaptable This is a development that can accommodate future changes because a mix of building densities, tenures and typologies have been considered.
- Resource efficient This is a development that re uses or shares existing resources within Inveresk and should seek to maximise efficiency of the use of resources through natural or technological means at the next stages.
- Easy to move around and beyond This is development that considers place and the needs of people before the movement of motor vehicles. It includes paths and routes which connect places directly and which are well connected with the wider environment beyond the site boundary.

Development at Pinkie Mains Farm would offer CALA the opportunity to provide another high quality place in which to live within East Lothian. And which would be a credit to the existing urban environment of the village.

4.2 Summary

The response to the ELC MIR set out in this document underpins CALA's view that appropriate development at Pinkie Mains Farm can be accommodated within the sensitive landscape setting of south Inveresk. Further, the study illustrates how development at Pinkie Mains could make a unique and positive contribution to housing choice within East Lothian.

In such a culturally sensitive area it is worth noting the Pinkie Mains site, like the adjacent Edenhall site, is not protected as a Scheduled Ancient Monument and the location within the Battle of Pinkie battlefield boundary does not immediately exclude a site from accommodating development.

In summary CALA believes that the site at Pinkie Mains Farm has the capacity to accommodate up to 45 new homes of mixed types and which will include 25% affordable provision which will help to address the acknowledged shortfall in housing provision which has been identified within SESplan for the city and surrounding regions. A development capacity of around 45 units will allow flexibility for the creation of an attractive and distinct urban form, providing an extension of the existing urban grain and landscape; stretching and finishing off the linear finger of development and woodland to create an attractive low density residential environment that is well connected to and integrated with its surroundings. It will incorporate a variety of house types; therefore providing the opportunity for the sustainable growth of Inveresk. CALA believes that this site will allow Inveresk to take a modest number of new family houses for the first time in many years, whilst ensuring it is designed to a high standard and complementary to the existing setting.

The proposals demonstrate how sensitive development on the site can complement Green Belt objectives whilst securing significant wider benefit in terms of providing sustainable development areas and providing improved open space and green linkages.

CALA believes that development at Pinkie Mains Farm can make a positive contribution to housing choice within Inveresk and East Lothian and is committed to delivering a distinctive new residential development of the highest quality.

fig. 26: Illustrative masterplan in village context.

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East Lothian Council Local Development Plan: Main Issues Report

Land adjacent to Edenhall Hospital, Crookston Road, Inveresk Site Ref PM/MH/HSG031 (western part)

Proposed Residential Development Transport Statement

January 2015

Prepared for:

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Prepared by:

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1. INTRODUCTION

1.1 Transport Planning Ltd has been appointed by CALA Homes Ltd to advise on transport related issues associated with a proposed residential development sited on land at the village of Inveresk, south of Musselburgh. The proposed development will comprise a mix of residential dwellings with access provided from Crookston Road.

1.2 The site at Inveresk is identified in the East Lothian Council Local Development Plan (LDP) interim environmental report Appendix 4 as Land adjacent to Edenhall Hospital, Inveresk, Site Ref PM/MH/HSG031. The full MIR site is illustrated below, but this Transport Statement deals only with the westmost part of the site.

Extract from MIR environmental report

1.3 Inveresk lies within the Musselburgh cluster as identified in the Main Issues Report (MIR).

1.4 The MIR states that *"Musselburgh and Wallyford are East Lothian's most accessible settlements in regional terms in relation to access by public transport to employment, health services, and retail."*

1.5 In relation to overall site accessibility, the following is stated within the MIR environmental report "*Musselburgh's overall accessibility via public transport to the wider city region and key employment locations as well as health and retail facilities ranks highest among other settlements in East Lothian and second in the whole SESplan area. The site is around 750m from the nearest bus stops on Pinkie Road. There are no rail stations within 800m. Musselburgh town centre, with a wide range of facilities, services and employment opportunities, is within 1600m."*

1.6 In line with local and national policy, this report explores the potential future sustainable travel demand against the existing transport provision in the area, detailing, if necessary, measures to enhance the accessibility of the development site. In addition, development traffic generation is considered and reviewed in line with the existing road network conditions.

1.7 Also in line with national guidance for developments of fewer than 100 dwellings, a Transport Statement is suitable for the scale of development proposed. However, this Statement also contains comment on traffic and traffic generation matters more usually found in a full Transport Assessment.

1.8 The subsequent chapters of this report conclude on the existing and potential accessibility of the development site by all modes of transport, under the following headings:-

- Existing Site & Surrounding Transport Network;
- Development Proposals & Future Travel Demand; and
- Existing & Future Traffic Conditions.

2. EXISTING SITE & SURROUNDING TRANSPORT NETWORK

Introduction

2.1 This chapter examines the existing site and available sustainable travel opportunities to understand if the current level of provision will offer a genuine choice of transport mode and help facilitate a reduction in car use. The following provides an overview of the existing walking, cycling and public transport opportunities, ahead of private car access, in line with the hierarchy of travel modes set out in the Scottish Government document Scottish Planning Policy (SPP).

Existing Site

2.2 The development site is currently open agricultural farmland bounded by Edenhall Hospital to the north, by the East Coast Main Line to the south and east, and by Crookston Road to the west. Figure 1 in Appendix A illustrates the location of the development site.

Development site from Crookston Road looking southeast

2.3 At present agricultural vehicles can gain access to the development site via a 5.0m opening in the stone dyke wall, which is assisted by dropped kerbs on Crookston Road. The existing access arrangement will require to be improved to serve the future proposed development.

Existing access to the development from Crookston Road

Walking / Pedestrian Access

2.4 A footway ranging in width from 1.4m to 2.2m at the development site frontage is present on the northern side of Crookston Road, which links the development site to the village centre and existing footways and local bus services on the A6124 Carberry Road.

Existing footway provision on Crookston Road at development site

2.5 In the vicinity of the A6124 Carberry Road / Crookston Road priority T-junction a 1.4m to 1.7m wide footway is provided on the western side of Carberry Road. A footway also extends northwards of the A6124 Carberry Road / Crookston Road junction on the eastern side which connects directly with the footway on Crookston Road. These footways benefit from street lighting and provide pedestrian access towards Musselburgh town centre, Musselburgh Grammar School and Musselburgh Sports Centre to the north.

Existing footway provision at the A6124 Carberry Road / Crookston Road junction (*left*) and on Carberry Road (*Right*)

2.6 East Lothian Core Path 172 routes along the northern and eastern boundary of the development site, which connects Salters Road, south of Wallyford, to Edenhall Road and Pinkie Road within Musselburgh. In addition, Wedderburn Terrace to the west of the development site leads to Core Path 295 and ultimately Core Path 173, which follows the eastern bank of the River Esk. Furthermore, a network of footpaths link from the village to Lewisvale Public Park and onward to Park Lane and Pinkie Road within Musselburgh. A copy of the core paths plan is included in Appendix A.

Footway connection to Core Path 172 from Crookston Road

Existing footway provision in the vicinity of Lewisvale Public Park

Cycle Access

2.7 In the vicinity of the development site, cyclists are required to share the carriageway with other traffic, although, as mentioned above, several core paths are located adjacent to the site which can be used by cyclists, particularly for recreational uses.

2.8 Cycle access to Musselburgh town centre from the site can be achieved via Crookston Road and the A6124 (Carberry Road / Inveresk Village Road / Newbigging) by sharing the carriageway. The presence of surrounding core paths also provides the opportunity to connect the site with Wallyford Railway Station offering multi-modal travel opportunities.

Public Transport Access

Bus Provision

2.9 Lothian Buses operates a 'hail and ride' local bus service on the A6124 Carberry Road which provides connections to Musselburgh town centre and several surrounding towns and villages. The frequency of this bus service at the time of writing is summarised in Table 2.1, indicating that 2 buses per hour are available during weekdays and Saturdays, with an hourly service on a Sunday.

Table 2.1 – Existing Bus Service / Route Information

Service	Route Description	Approx. Frequency (Daytime)		
		Mon-Fri	Sat	Sun
40	Portobello – Musselburgh (Inveresk) – Penicuk	30mins	30mins	60mins

2.10 A host of bus services are also available on the B6454 Pinkie Road and within Musselburgh town centre, which could also be utilised by pedestrians, cyclists, or by connecting via the above service. Lothian Buses (26, 44/44A), First Bus (38/X38 & 42) and Eves Coaches (129) operate these additional services, which provide links to wider destinations including Bathgate, Broxburn, Queensferry, Falkirk, and Edinburgh.

Existing bus services on the A6124 Carberry Road in the vicinity of Crookston Road

Rail Provision

2.11 The development site is located within cycle or driving distance of the park and ride facilities at Wallyford railway station, which is located on the Edinburgh to North Berwick line. Wallyford 'Park & Choose' includes Wallyford Railway Station, which provides a range of facilities including an 89 space car park, bus connections, and cycle storage facilities. Although the station car park is regularly used by commuters, 300 additional free parking spaces are also provided at the neighbouring bus based park & ride.

2.12 At present, First ScotRail operates an hourly service during a typical weekday and Sunday, and 2 services per hour on a Saturday. From the station regular services are available providing connections to local towns and villages, in addition to key employment, retail and recreational destinations in Edinburgh. The frequency of rail services at the time of writing is summarised in Table 2.2.

Table 2.2 - Existing Rail Service / Route Information

Operator	Route Description	Approx. Frequency (Daytime)		
		Mon-Fri	Sat	Sun
First ScotRail	North Berwick – Wallyford – Musselburgh – Edinburgh (Waverly)	60mins (plus additional peak services)	30mins	60mins

Vehicle / Road Access

2.13 The main routes that will be used by development traffic are Crookston Road and the A6124 (Carberry Road / Inveresk Village Road / Newbigging). Crookston Road links the A6124 (Carberry Road / Inveresk Village Road) to the development site and is a single carriageway route providing frontage access to 15 dwellings, with a further 16 dwellings located within Crookston Court. On-street parking was also observed on Crookston Road associated with these dwellings.

2.14 At the development frontage, Crookston Road changes to a rural nature, ranging in width from approximately 3.0m to 4.2m. The road terminates at the railway bridge to the southeast of the site. North of the site, Crookston Road widens to circa.4.8m.

Crookston Road at the development frontage looking north

Crookston Road north of the development frontage looking south

2.15 Crookston Road forms a priority controlled T-junction with the A6124 (Carberry Road / Inveresk Village Road). At the junction, visibility from Crookston Road to the north is good; however, it is restricted to the south by a property boundary wall. On the A6124, visibility on the north and southbound approaches to the junction is satisfactory.

Existing Crookston Road / A6124 priority T-junction

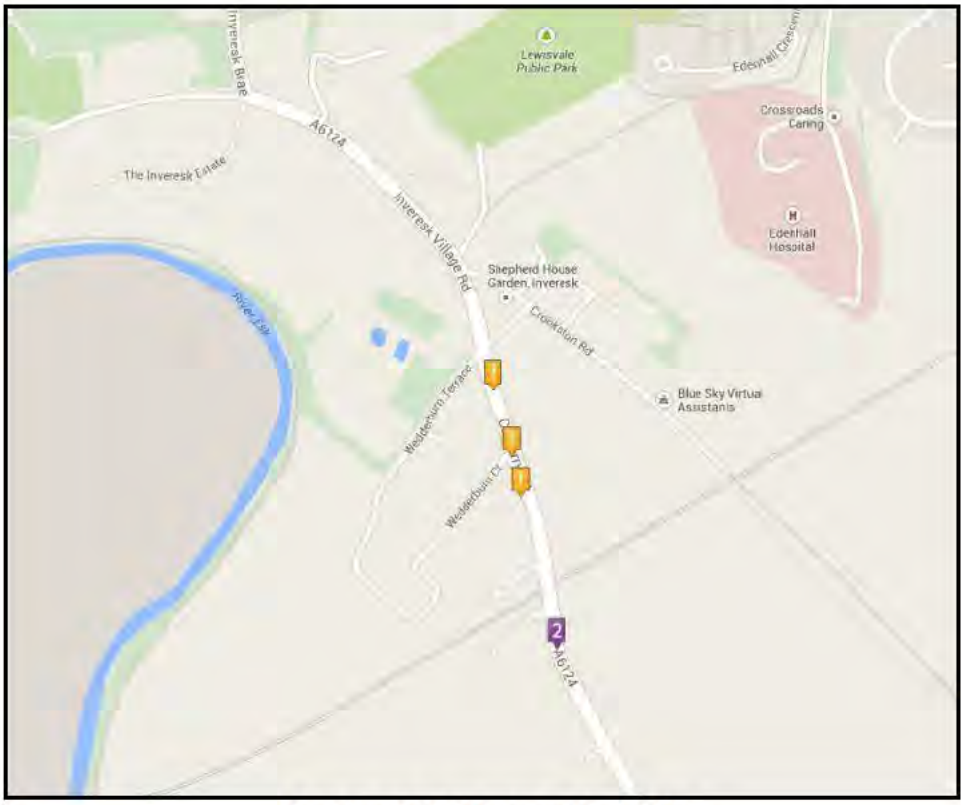
Visibility along the A6124 Carberry Road from Crookston Road

2.16 The A6124 is a single carriageway route, which runs in a north / south axis connecting the A68 and A1 in the south to Musselburgh town centre in the north. On entering the village from the south, the speed limit on the A6124 changes from a de-restricted zone to 30mph. As the A6124 Carberry Road approaches Crookston Road, signage is present for northbound traffic warning motorists to 'reduce speed now', accompanied by a vehicle activated speed sign.

A6124 Carberry Road northbound on approach to Crookston Road

2.17 Vehicle speeds were recorded on the A6124 between Wednesday 5th and Tuesday 11th March 2014 (inclusive), which indicated average speeds of 28.2mph (northbound) and 30.3mph (southbound), and 85th percentile speeds of 33.4mph (northbound) and 33.4mph (southbound). In addition, the surveys indicated a two-way average daily traffic flow of 4,474 vehicles and the average weekday traffic flow of 4,846 vehicles.

2.18 From these surveys, traffic speeds on this section of the A6124 are broadly reflective of the existing speed limit and based on accident data recorded over the past five years, five incidents have been recorded in the area, all classified as slight (detailed below in yellow, the purple marker indicates 2 x slight accidents at same location - source www.crashmap.co.uk). It should be noted that no incidents have occurred at the A6124 Carberry Road / Crookston Road junction.



Location of Accidents on the A6124

3. PROPOSED DEVELOPMENT & FUTURE TRAVEL DEMAND

Introduction

3.1 The previous chapter demonstrates that the development site is located in an area with an adequate level of pedestrian, cycling and public transport provision, with road access via Crookston Road and the A6124. A local bus route serves the area with the opportunity to travel by rail accessible by cycling or driving.

3.2 It is recommended within 'Transport Assessment Guidance' (for full Transport Assessments) that *"Accessibility analysis and location considerations will lead the process of assessment. Person trips will form the platform for all numerical and computational work with numbers associated with car and non-car modes being appropriately addressed in accordance with current policy."*

3.3 The following presents a person trip assessment of the proposed development, based on current local travel information. In addition, the future traffic generation of the proposed development is reviewed in line with the current road network conditions.

Development Overview

3.4 The development is expected to comprise 45 residential dwellings, with vehicular access taken from Crookston Road. At present, the Scottish Assessors Association (www.saa.gov.uk) indicates that Crookston Road provides access to 31 dwellings, including 16 dwellings on Crookston Court.

Development Related Travel (Person Trips)

3.5 In accordance with 'Transport Assessment Guidance', a person trip assessment has been undertaken to determine the likely multi-modal characteristics of the development site. To appreciate the likely future travel characteristics of the development site, reference has been made to the Scottish Census 2011 website (www.scotlandscensus.gov.uk), which defines 'Method of Travel to Work or Study' for the "2011 Output Data" that applies to the development site, Ref: S00101738 – Inveresk (Part of) and Monktonhall (Part of).

3.6 A summary of the corresponding mode share statistics is shown in Table 3.1 overleaf, with the full 2011 National Census outputs detailed within Appendix B.

Table 3.1 – 2011 National Census 'Method of Travel to Work or Study' Statistics

Mode	People	Mode Share
Walk	8	12.9%
Cycle	1	1.6%
Bus	6	9.7%
Train	0	0.0%
Car Driver	35	56.5%
Car Passenger	11	17.7%
Other*	1	1.6%
Total	62	100.0%

** 'Other' also consists of underground, motorcycle / scooter and taxi criteria.*

3.7 To assess the level of person trips, the AM peak development traffic generation, derived as indicated in Table 4.2 from a traffic survey of the A6124 / Crookston Road junction, was applied to the percentage modal split for 'car drivers'. The remaining mode related trips were established by proportioning against the traffic generation, with the results indicated in Table 3.2 below.

Table 3.2 – Proposed Development Mode Share / Person Trip (Two-way)

Mode	Mode Share	Person Trips
Walk	12.9%	8
Cycle	1.6%	1
Bus	9.7%	6
Train	0.0%	0
Car Driver	**56.5%**	**37**
Car Passenger	17.7%	12
Other	1.6%	1
Total	100.0%	**65**

Development Access & Measures to Influence Travel Behaviour

Pedestrian (Walking) Access

3.8 The proposed development will involve pedestrians making trips e.g. to or from work, the town centre and local shops, educational facilities and public transport services. Figure 2 within Appendix A presents the amenities and facilities in relation to the development site taking cognisance of the 1600m walking distance to local facilities noted within PAN75.

3.9 The development site is located around 1.5km from Musselburgh town centre, which contains a range of local retail and employment opportunities. In addition, Musselburgh Sports Centre can be accessed within a 1.0km walk from the site. Access to these facilities can be reached via the existing footways on Crookston Road and the A6124.

3.10 The school catchment area for the development site is Pinkie St Peter's Primary School and Musselburgh Grammar School. East Lothian Council provides school transport for secondary pupils if their walk to school is outside a 2 mile catchment. Pinkie St Peter's Primary School is located approximately 1.5km (0.93miles) away and can be accessed on foot through Lewisvale Public Park to Park Lane and Pinkie Road. Musselburgh Grammar School is situated around 1.0km (0.6 miles) north of the site, accessed directly from the A6124.

3.11 The internal street layout of the proposed development is expected to comprise shared surface routes and links, which will support pedestrian movements and allow residents to move freely within the site. In addition, it is proposed to improve the existing footway along the development site frontage on Crookston Road.

3.12 Based on the above, the existing and future pedestrian provision in the vicinity of the site is considered sufficient to support the expected future demand for local journeys on foot from the development.

Cycle Access

3.13 An appropriate journey time for cycling is considered to be between 30 and 40 minutes and taking into account factors such as the time required for crossing roads and / or negotiating topography, an average speed of 10 to 20kph is considered possible equating to a cycle distance of 5km to 13km from the development site, which would encompass the whole of Musselburgh.

3.14 The access links created by the proposed development and surrounding road network can also be used for cycling to and from the development site. In addition, the presence of the neighbouring core path provides alternative cycling routes within a short on-road cycle of the development site. These enable usable connections on route to Wallyford railway station, and Musselburgh, as well as encouraging recreational activity.

3.15 East Lothian Council's 'Parking Standards' are used to determine the appropriate level of cycle parking for new developments, with the minimum provision being 1 cycle space per dwelling. It is expected that the appropriate level of cycle parking will be provided at the development in line with the required standards.

3.16 On this basis, the proximity of local cycle facilities and the nature of the surrounding road network will provide the opportunity for cycle based trips from the development site, and, given the level of provision on offer and cycle parking provided as part of the proposals, will be adequate to accommodate the expected future demand for cycling.

Public Transport Accessibility

3.17 A regular bus services is accessible from the development site, which provides travel opportunities to the Musselburgh area. As detailed, the development will be able to use a combination of improved and existing footways to make connections on foot to the A6124, which will help promote use of these existing services.

3.18 Although Wallyford railway station is located outwith walking distance as defined within PAN75, the regular services available at this station (e.g. to Edinburgh City Centre) will be appealing to commuters. In addition, the cycle storage, bus interchange, and park & choose facilities on offer at the station will be an attractive multi-modal travel opportunity for commuters residing at the development site.

3.19 It is expected that the level of public transport and associated facilities available to the development site will be sufficient to accommodate the expected uplift in bus or rail travel demand by future residents.

Vehicular Access & Parking

3.20 The proposed vehicular access for the development site will comprise the introduction of a simple priority controlled T-junction on Crookston Road. An alternative arrangement could see Crookston Road extended into the site with the remaining spur leading to the railway bridge becoming the minor arm of a T-junction.

3.21 Vehicle parking which will include a mix of private and visitor / communal provision will also be provided within the development site. The appropriate car parking standards will be provided in accordance with East Lothian Council's – 'Transportation Standards for Development Roads Part V - Parking Standards for General Housing' (Table 20), as highlighted in Table 3.1 below.

Table 3.1 - East Lothian Council's Residential Parking Standards

Area	Number of Rooms per Dwelling	
	Up to 5	6 or more
Council Wide	1 private space plus 0.5 communal space	2 private spaces plus 0.25 communal space
Cycle Parking	1 space per dwelling.	

3.22 Typically private spaces will be provided within the plot curtilage or private parking courts, with visitor / communal parking located within a suitable walking distance of surrounding dwellings on the adopted street network.

3.23 In relation to the junction of Crookston Road with Carberry Road, it was identified in paragraph 2.15 that the visibility to the left on exit is substandard. An indicative layout of a proposed improvement at this location is presented in Wardell Armstrong's drawing 11303-002 Revision A, Appendix C. This illustrates some additional footway surfacing on the east side of Carberry Road and provision of an associated double D island. The presence of the island would prevent overtaking (or the crossing of the

centre line) and in line with Designing Streets page 34 the presence of the central island recasts the visibility parameters meaning that leftward visibility can be taken to the centre line / oncoming traffic.

Residential Travel Plan

3.24 The promotion of a Residential Travel Plan will be considered for issue to residents upon occupation to provide upfront information on the available sustainable travel opportunities in the area, with the aim of further reducing reliance on private car use from the site. This Travel Plan will be provided within a Welcome Pack for residents and include details of local walking and cycling routes, and public transport timetable information.

Main Issues Report (MIR)

3.25 The wider site at Inveresk is designated PM/MH/HSG031 in the MIR environmental report. In discussing physical infrastructure capacity in the accompanying environmental report, the following is said "*There are opportunities to connect to the local road network at Pinkie Hill Crescent and Crookston Rd. However, there are traffic capacity constraints within the Musselburgh area and further consideration is required to establish how these might be mitigated."*

3.26 This report deals only with the western part of the site that could be accessed via Crookston Road.

3.27 It should be noted that the comment regarding traffic capacity constraints arises often in relation to sites across the Musselburgh area.

Summary

3.28 The demand for travel by sustainable modes of transport generated from the proposed development has been investigated and, in line with local and national transport planning policy, a person trip assessment has been undertaken taking into account current local travel characteristics.

3.29 The development site is accessible to various amenities and facilities within the Musselburgh area in line with policy requirements, with the existing level of walking, cycling and public transport infrastructure and provision considered appropriate for the expected future travel demand created by the proposals.

3.30 A new priority T-junction will be created on Crookston Road to access the development site.

3.31 Additionally an improvement has been identified for the junction of Crookston Road with Carberry Road through provision of a double D island.

3.32 The promotion of a Residential Travel Plan will also be considered for issue to residents upon occupation to provide upfront information and raise awareness of the available sustainable travel opportunities, helping to reduce reliance on local car based journeys.

4. EXISTING & FUTURE TRAFFIC CONDITIONS

Introduction

4.1 The following section presents the existing traffic conditions on the surrounding road network and the projected level of private car use generated by the proposed development. In addition, key junctions in the area have been assessed with and without the proposed development in place.

Existing Traffic Conditions

4.2 Classified traffic surveys were undertaken on Thursday 13th March 2014 at the A6124 / Crookston Road priority T-junction. The weekday AM & PM peak period hours extracted from these surveys were found to occur between 08:00-09:00, and 16:15-17:15 respectively. The corresponding peak hour movements for this junction have been converted into standard Passenger Car Units (PCU's) for the purposes of this assessment and are shown in Diagrams 1a&b respectively, Appendix D.

Year of Assessment & Traffic Growth

4.3 In accordance with 'Transport Assessment Guidance', *"The assessment years will be year of opening or completion for developments with short construction periods (say up to 2 years), and year of opening (or first full year) plus year of completion for developments which are phased over 3 or more years*".

4.4 The expected timescale for completion for the proposed development is 2016, which will form the year of assessment. NRTF 'Low' growth has been used to predict future background traffic levels on the local road network for the future design year. Applying 'Low' growth between the years of 2014 and 2016 results in an overall factor of approximately 1.026%. The corresponding background traffic flows at the future design year (2016) are indicated within Diagrams 2a&b, Appendix D.

Development Trip Generation

4.5 To establish the likely trip rates and subsequent traffic generation of the proposed development, peak hour arrival and departure vehicle profiles on Crookston Road were extracted from the A6124 / Crookston Road survey. It is considered that Crookston Road is comparable to the proposed development given its nature and proximity to the development site. The peak hour surveyed traffic generation and resulting trip rates for the 31 dwellings served from Crookston Road are indicated in Table 4.1, with the resulting peak hour proposed development traffic generation presented in Table 4.2 overleaf.

Table 4.1 – Existing Crookston Road Trip Rates & Generation (Peak Hour)

	Weekday AM Peak (08:00-09:00)			Weekday PM Peak (16:15-17:15)		
	Arrive	Depart	Total	Arrive	Depart	Total
No. of Trips	10	16	26	9	4	13
Trip Rates	0.306	0.500	0.806	0.290	0.129	0.419

Table 4.2 – Proposed Development Trip Rates & Generation (Peak Hour)

	Weekday AM Peak Hour			Weekday PM Peak Hour		
	Arrive	Depart	Total	Arrive	Depart	Total
Trip Rates	0.306	0.500	0.806	0.290	0.129	0.419
No. of Trips	14	23	37	13	6	19

4.6 The introduction of the proposed development is likely to generate in the region of 37 (two-way) traffic movements during the weekday AM peak period on the surrounding road network, with the occasional HGV for refuse and / or delivery purposes. At most, this will result in a marginal uplift in traffic movements on Crookston Road and the A6124 by approximately 1 vehicle every 2 minutes.

4.7 Diagrams 3a&b contained within Appendix D highlight the distribution of resulting traffic generation associated with the proposed development. It is expected that development traffic would distribute according to existing turning patterns at the A6124 / Crookston Road junction. The projected opening year (2016), 'with development' traffic flows are shown on Diagrams 4a&b, Appendix D.

Area of Influence

4.8 The Scottish Government's guidelines 'Transport Assessment Guidance' do not contain any firm definitions of a traffic impact; therefore, the guidance offered in the Institution of Highways and Transportation (IHT) guidelines have been adopted. The IHT guidelines advise that capacity assessments should be conducted at junctions where traffic to or from the development proposal exceeds 10.0% of the existing two-way traffic flow on the adjoining highway or where congestion exists or will exist in the assessment years, this 10.0% figure should be lowered to 5.0%.

4.9 From on-site observations, traffic congestion does not generally exist on the surrounding road network during peak periods, as such the 10.0% threshold was considered appropriate for determining the extent of any detailed junction analysis. The resulting threshold assessment indicates that the A6124 / Crookston Road priority T-junctions exceeds the applied threshold criteria and requires further assessment.

4.10 In a wider context, the maximum (two-way) percentage impact south to the A1 is predicted to be 3.8%, which suggests that no additional junctions along the A6124 are required to form part of the surrounding road network assessment. Furthermore, detailed analysis of the proposed site access junction is also unnecessary as the location of the access will not delay any through movements on Crookston Road.

Junction Analysis

4.11 Transport Research Laboratory's (TRL) PICADY 8 computer programme is used to assess the capacity of priority controlled junctions. The performance of these junctions is measured using three standard outputs - Ratio of Flow to Capacity (RFC), End Queue, and Delay. Priority controlled junctions are considered to be operating satisfactorily, when the maximum RFC is less than or equal to the practical capacity threshold of 0.850.

4.12 The scenarios that have been tested are as follows:

- 2014 weekday AM & PM Peak Surveyed Base;
- 2016 weekday AM & PM Peak Projected Base; and
- 2016 weekday AM & PM Peak Projected + Development

4.13 The PICADY assessment of the A6124 / Crookston Road priority T-junction in the weekday AM and PM peak hours is indicated in Table 4.3 below with a full copy of the analysis outputs files contained within Appendix E.

Table 4.3 - A6124 / Crookston Road Priority T-Junction Analysis Results

	Weekday AM Peak			Weekday PM Peak		
	RFC	Queue	Delay (s)	RFC	Queue	Delay (s)
2014 Surveyed Base						
A6124 (N)	-	-	-	-	-	-
Crookston Road	0.037	0.04	7.8	0.000	0.00	0.0
A6124 (S)	0.016	0.02	4.5	0.015	0.02	5.0
2016 Projected Base Traffic						
A6124 (N)	-	-	-	-	-	-
Crookston Road	0.037	0.04	7.8	0.000	0.00	0.0
A6124 (S)	0.016	0.02	4.5	0.015	0.02	5.0
2016 Projected Base + Development Traffic						
A6124 (N)	-	-	-	-	-	-
Crookston Road	0.091	0.10	8.4	0.023	0.02	7.8
A6124 (S)	0.036	0.05	4.6	0.038	0.05	5.1

4.14 The 2014 surveyed baseline analysis indicates that the A6124 / Crookston Road priority T-junction experiences a maximum RFC of 0.037 and queue of 1 PCU on the Crookston Road approach during the weekday AM peak period. The assessment of background traffic at the future design year of 2016 indicates that this junction will continue to operate within practical capacity, with a maximum RFC of 0.037 and queue of 1 PCU on the Crookston Road approach during the weekday AM peak period.

4.15 The inclusion of development traffic at the junction will result in a maximum RFC of 0.091 and corresponding queue of 1 PCU on the Crookston Road approach during the AM peak period. It is also evident that traffic will only experience a minor increase in delay and queuing at the junction from the projected baseline conditions with the development in place. On this basis, it has been demonstrated that the uplift of traffic associated with the development can be accommodated at this junction with reserve capacity and a negligible increase in delay and queuing at the proposed future design year.

Impact in Musselburgh

4.16 From the Department of Transport, a traffic count (Count Point 80113) on the A199 (Linkfield Road), adjacent to Musselburgh town centre and High Street, indicates a 2013 Average Annual Daily Traffic (AADT) flow of 11,697 (two-way) vehicles.

4.17 As detailed in Table 4.2, the proposed development is expected to generate up to 37 (two-way) car trips during the weekday AM commuting peak period. In terms of an average weekday total approximately 225 (two-way) car trips could be generated from the proposed development (based on TRICS weekday total two-way vehicle trip rate of 4.991 per dwelling).

4.18 From the existing turning movements at the A6124 / Crookston Road junction around 40% of development traffic is likely to travel north on the A6124 (Inveresk Village Road), on route to and from the town centre. If all this traffic was to travel along the A199 (High Street), this would equate to a circa. 0.9% increase in daily traffic movements, which is a negligible uplift and well within normal limits of daily traffic fluctuations which can reach circa 10%.

Trunk roads

4.19 The main areas related to access to the trunk road are likely to be the on/off ramps at the Wallyford or Dolphingstone interchanges and the impact of a much wider geographic area on the operation of Oldcraighall junction.

4.20 It is understood that a wide ranging contributions approach will be adopted towards any upgrades at these locations and the promoters of the site at Crookston Road are content with that approach.

Local roads

4.21 In relation to local road impacts, the key issues in the area have been examined in this chapter.

4.22 In discussing the site the MIR notes that "*There are opportunities to connect to the local road network at Pinkie Hill Crescent and Crookston Rd. However, there are traffic capacity constraints within the Musselburgh area and further consideration is required to establish how these might be mitigated."*

4.23 Seventeen sites are appraised by the Council in the Musselburgh area and each site contains the comment "*there are traffic capacity constraints within the Musselburgh area and further consideration is required to establish how these might be mitigated."*

4.24 Clearly therefore, in the appraisals the site at Crookston Road is in no different a position to any other site in relation to traffic impact matters and it is also likely that any interventions that might be identified through ELCs ongoing traffic modelling process will be handled on a contributions basis.

5. SUMMARY & CONCLUSIONS

Summary

5.1 Transport Planning Ltd has been appointed by CALA Homes Ltd to advise on transport related issues associated with a proposed residential development sited on land within the village of Inveresk, south of Musselburgh.

5.2 In line with local and national transport planning policy, the existing sustainable travel opportunities in the vicinity of the development site have been investigated to understand if the current level of provision will offer a genuine choice of transport modes. In addition, a person trip assessment has been undertaken taking into account current local travel characteristics.

5.3 The development site is accessible to various amenities and facilities within the Musselburgh area in line with policy requirements, with the existing level of walking, cycling and public transport provision considered appropriate for the expected future travel demand created by the proposals. As part of the development, the creation of new walking and cycle links in the area will further encourage and promote travel by such modes and improve accessibility to local bus services.

5.4 The promotion of a Residential Travel Plan will also be considered for issue to residents upon occupation to provide upfront information and raise awareness of the available sustainable travel opportunities, helping to reduce reliance on local car based journeys.

5.5 The development site is accessible to the A6124 via Crookston Road. This provides links into and around Musselburgh town centre and beyond to neighbouring towns, villages and the A1 trunk road. A new priority T-junction will be created on Crookston Road to access the development site. An improvement at Crookston Road / Carberry Road to provide a ‘double D’ traffic island is also identified.

5.6 The level of traffic generated by the proposed development has been established from existing traffic characteristics, with the expected uplift in movements unlikely to have any adverse impact on the surrounding road network. In addition, the development site access is unlikely to incur or experience any delay due to the function of Crookston Road.

5.7 Finally, the impact of the development within Musselburgh is minor and well within the limits of daily traffic variation.

Conclusions

5.8 This Transport Statement demonstrates that the development is accessible by alternative transport modes and is located such that future residents can integrate with the existing transport network; reducing reliance on private car use in line with local and national planning policy.

5.9 An appropriate access layout can be provided to serve the site and the uplift in traffic from the development can be accommodated on the surrounding road network with no junction operational concerns.

APPENDIX A

FIGURES

Crookston Road, Inveresk

Site Location Plan

Key

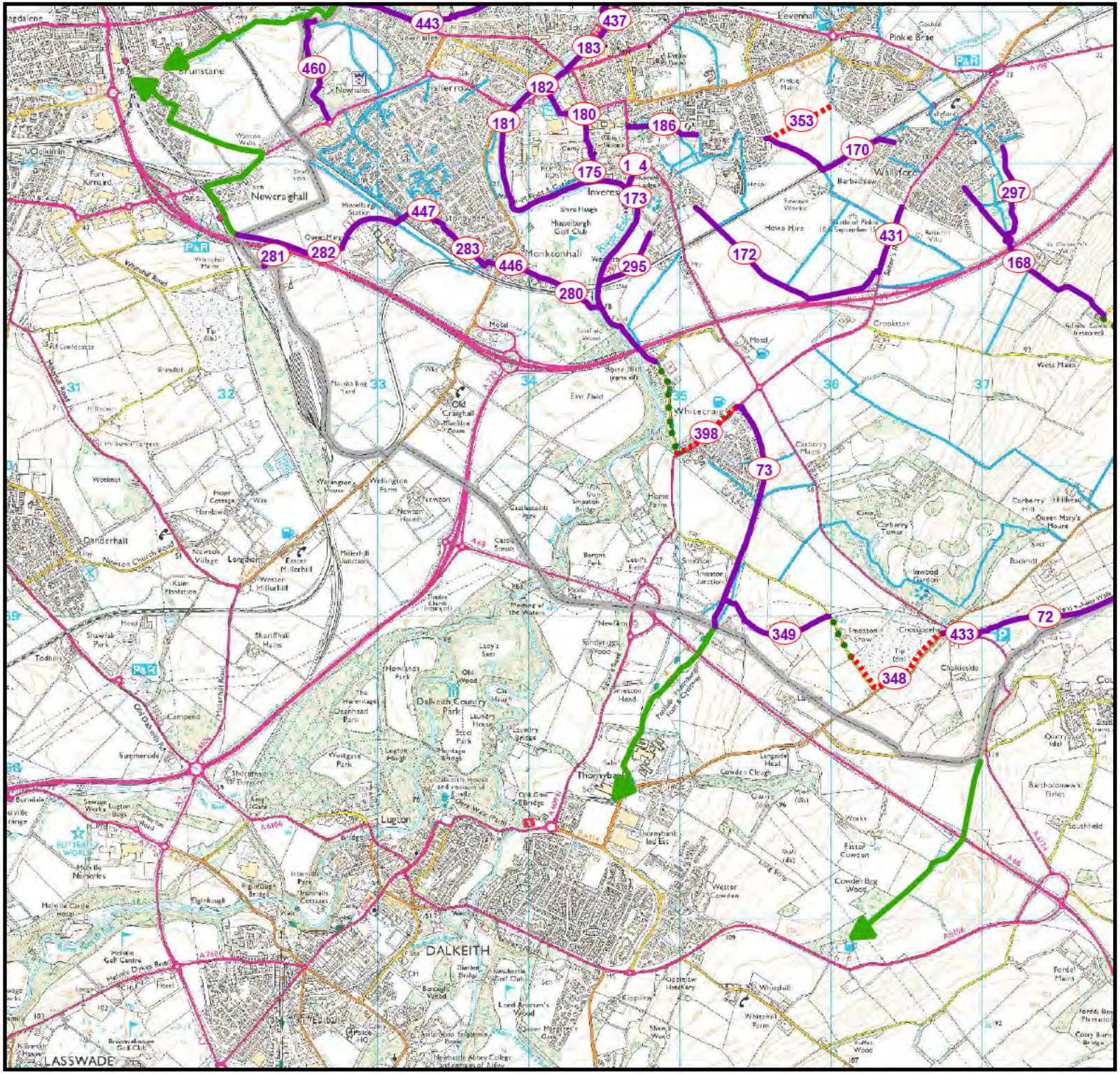
A Site of Proposed Development

N

Crookston Road, Inveresk	CALA Homes Ltd		
Site Location Plan	Drawing Number: TP186 Figure 1		Scale: NTS @ A3
	Drawn by: NW	Date: Aug 2014	Checked by: AS

TRANSPORT PLANNING

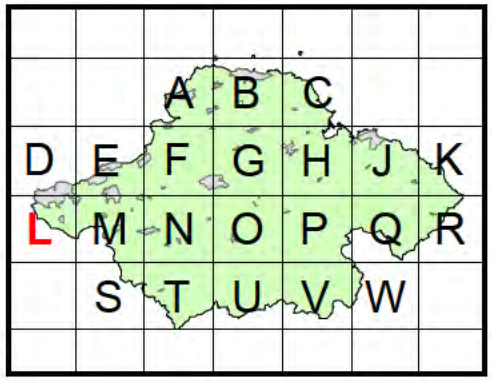
Map L



Key

- Core Paths
- Core paths that don't currently exist on the ground, but which will be built in the near future
- Other paths (part of the wider path network)
- Suggested links on quiet roads*
- Longer-term aspirational routes
- Neighbouring Authorities' Core Paths

* Note: Roads may not have pavements. Safety risks should be assessed prior to non-motorised usage.



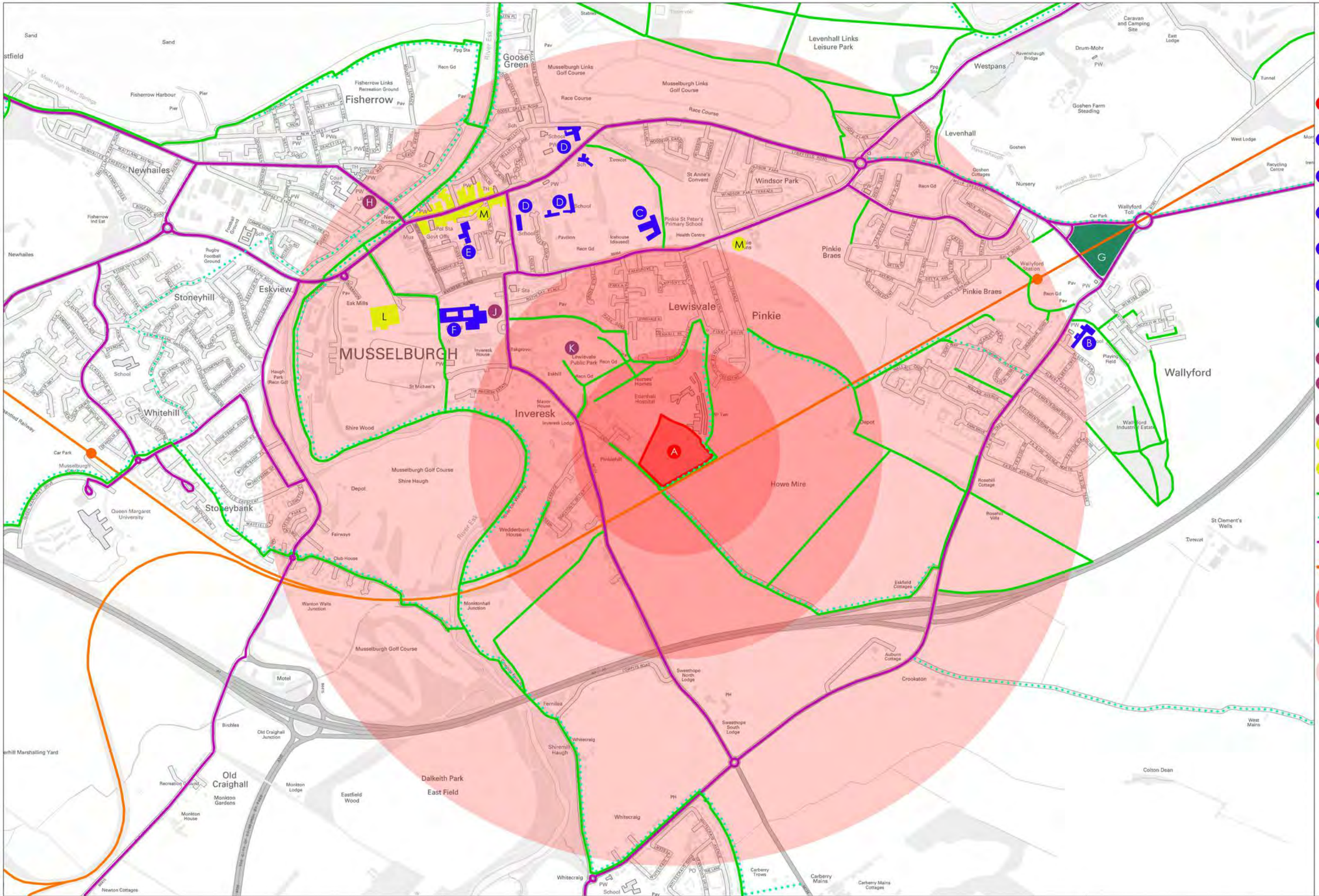
East Lothian

Scale 1:35,000

0 250 500 1,000 Meters

N

11/11



Crookston Road, Inveresk

Accessibility Plan

Key

- A Site of Proposed Development
- B Wallyford Primary School
- C Pinkie St Peter's Primary School
- D Loretto Primary and Upper School
- E Musselburgh Primary School
- F Musselburgh Grammar School
- G Wallyford 'Park & Choose'
- H Musselburgh Library
- J Musselburgh Leisure Centre
- K Lewisvale Public Park
- L Tesco Extra Superstore
- M Local Shops
- Core Path
- Cycle Route
- Bus Route
- Train Station/Route
- 400 Isochrone from Site
- 800m Isochrone from Site
- 1600m Isochrone from Site

N

Crookston Road, Inveresk	CALA Homes Ltd		
Accessibility Plan	Drawing Number: TP186 Figure 2		Scale: NTS @ A3
	Drawn by: NW	Date: Aug 2014	Checked by: AS

TRANSPORT PLANNING

APPENDIX B

NATIONAL CENSUS DATA

National Records of Scotland

Scotland's Census 2011 - National Records of Scotland
Table QS702SC - Method of travel to work or study (1)
All people aged 4 and over who are studying or aged 16 to 74 in employment in the week before the census

Transport to place of work or study 2011OutputArea	All people	Work or study mainly at or from home	Underground, metro, light rail or tram	Train	Bus, minibus or coach	Taxi or minicab	Driving a car or van	Passenger in a car or van	Motorcycle, scooter or moped	Bicycle	On foot	Other
S00101738	77	15	0	0	6	0	35	11	0	1	8	1

(1) Excludes some 4 and 5 year olds (a total of 11,867 in Scotland) who were reported as being in full-time education but for whom no information on their place of study or method of travel to study was provided.

For further information on variables, see www.scotlandscensus.gov.uk/variables
In order to protect against disclosure of personal information, some records have been swapped between different geographic areas. Some cell values will be affected, particularly small values at the most detailed geographies.

APPENDIX C

WARDELL ARMSTRONG CROOKSTON ROAD / CARBERRY ROAD IMPROVEMENTS

Proposed Layout
Scale 1:500

Existing Junction Layout
Scale 1:500

Legend

- Denotes proposed road
- Denotes proposed footway
- Denotes proposed verge
- Denotes block paving

Notes

This drawing to be read in conjunction with the relevant specification and all other relevant drawings.

All dimensions and levels to be checked on site and any discrepancies identified prior to commencement of work.

All levels in metres unless otherwise noted.

REVISION	DETAILS	DATE	DRAWN	CHK'D	APP'D
A	Indicative Traffic Calming Added	04.14	PY	ST	ST

CLIENT
CALA HOMES EAST (LTD)

PROJECT
INVERESK MUSSELBURGH

DRAWING TITLE
PRELIMINARY OFF SITE IMPROVEMENTS

DRG No	SCALE	DATE
11303-002	1:250	19.02.14
DRAWN BY: PY	CHECKED BY: ST	APPROVED BY: ST

☐ STOKE-ON-TRENT (HEAD OFFICE) TEL 0178 227 6706 ☐ CARDIFF TEL 029 2072 9191
■ NEWCASTLE UPON TYNE TEL 0191 232 0943 ☐ LONDON TEL 020 7287 2872
☐ WEST BROMWICH TEL 0121 580 0909 ☐ SHEFFIELD TEL 0114 245 6244
☐ GREATER MANCHESTER TEL 01942 260101 ☐ EDINBURGH TEL 0131 555 3311

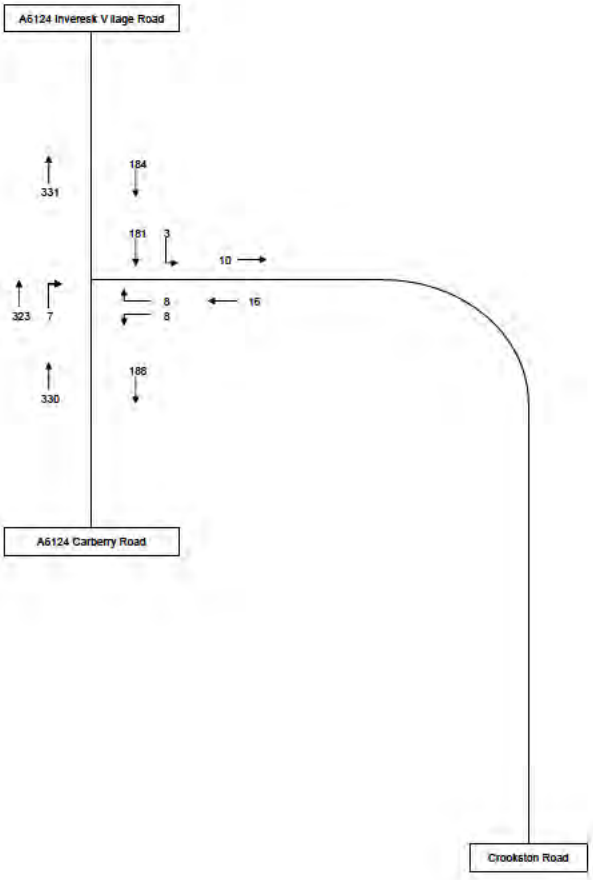
wardell armstrong
your earth our world

C:\FILES\PROJECTS\ED\ED11303\DESIGN\AUTOCAD\ED11303-002A.DWG

PYOUNG

APPENDIX D

TRAFFIC FLOW DIAGRAMS



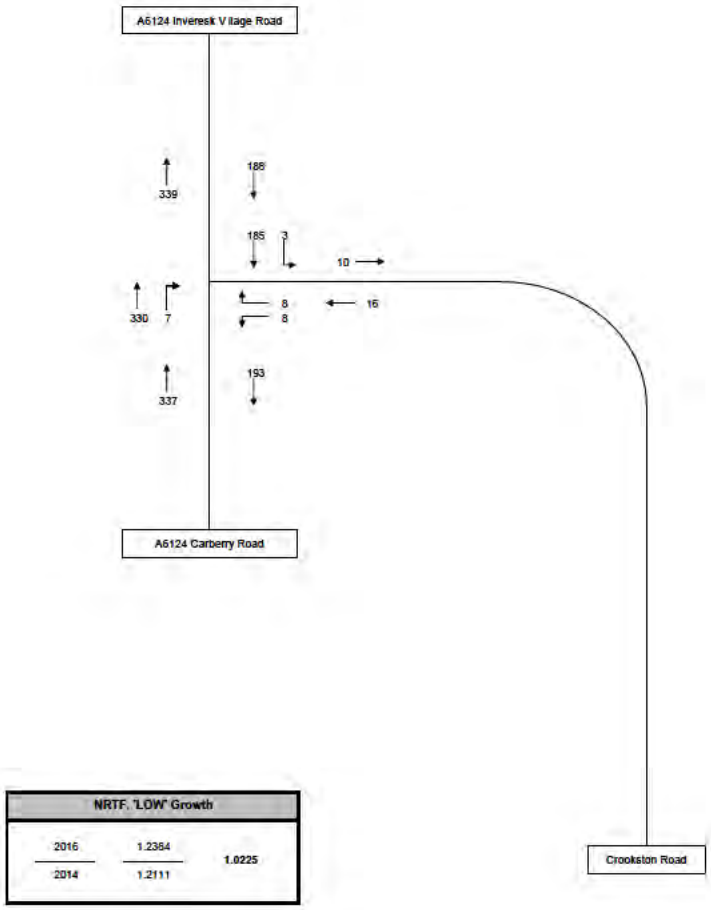
TRANSPORT PLANNING

TITLE

Crookston Road, Inveresk
Proposed Residential Development

2014 Surveyed Traffic Flows (PCUs)
Weekday AM Peak Hour 08:00-09:00

1a



NRTF 'LOW' Growth		
2016 / 2014	1.2364 / 1.2111	1.0225

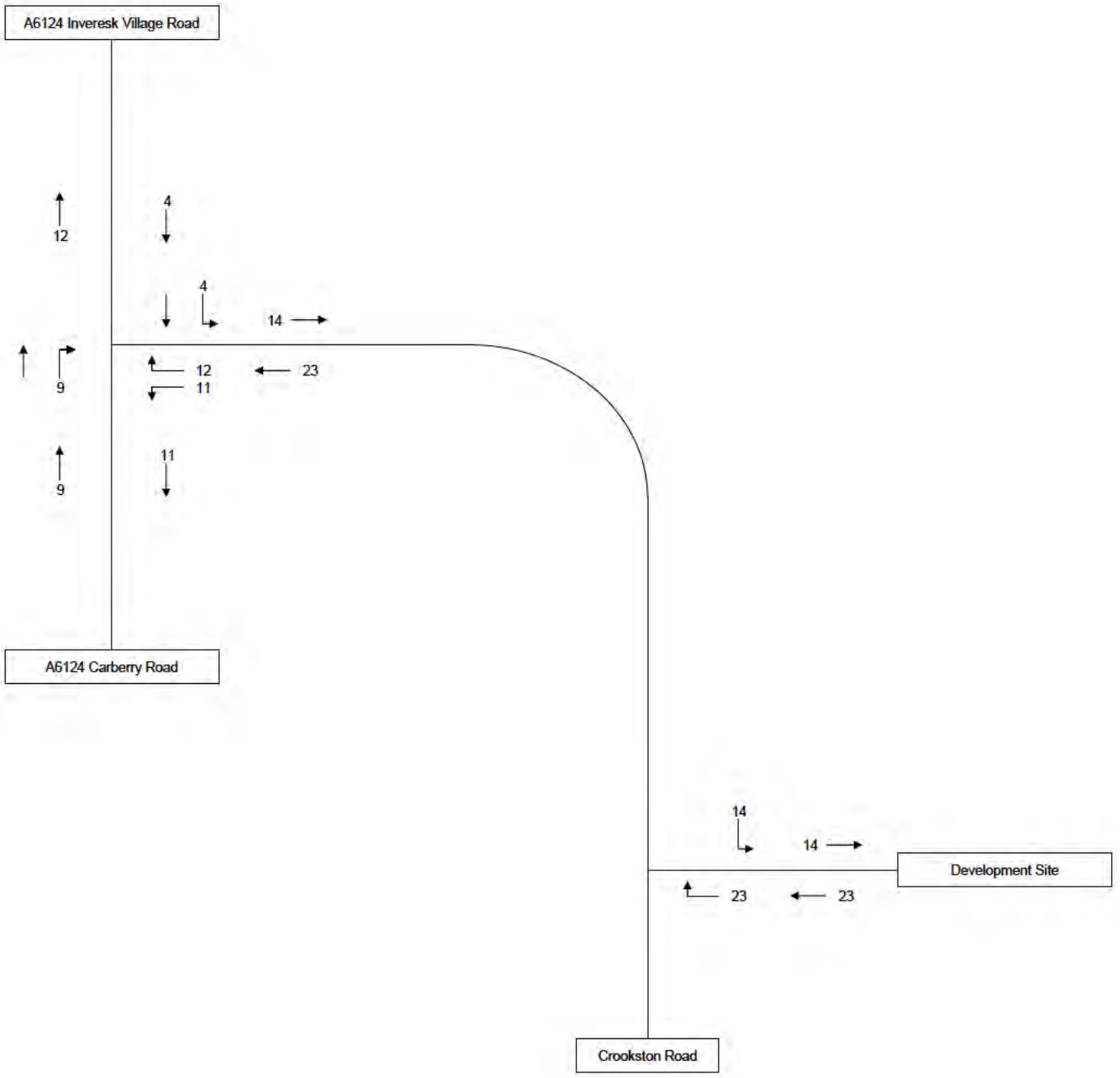
TRANSPORT PLANNING

TITLE

Crookston Road, Inveresk
Proposed Residential Development

2016 Projected Base Traffic Flows (PCUs)
Weekday AM Peak Hour 08:00-09:00

2a



Development Peak Hour Trip Generation

Proposed No.of Dwellings = 45

	In	Out	Total
Existing Trip Rates	0 306	0 500	0.806
Proposed No of Trips	14	23	36

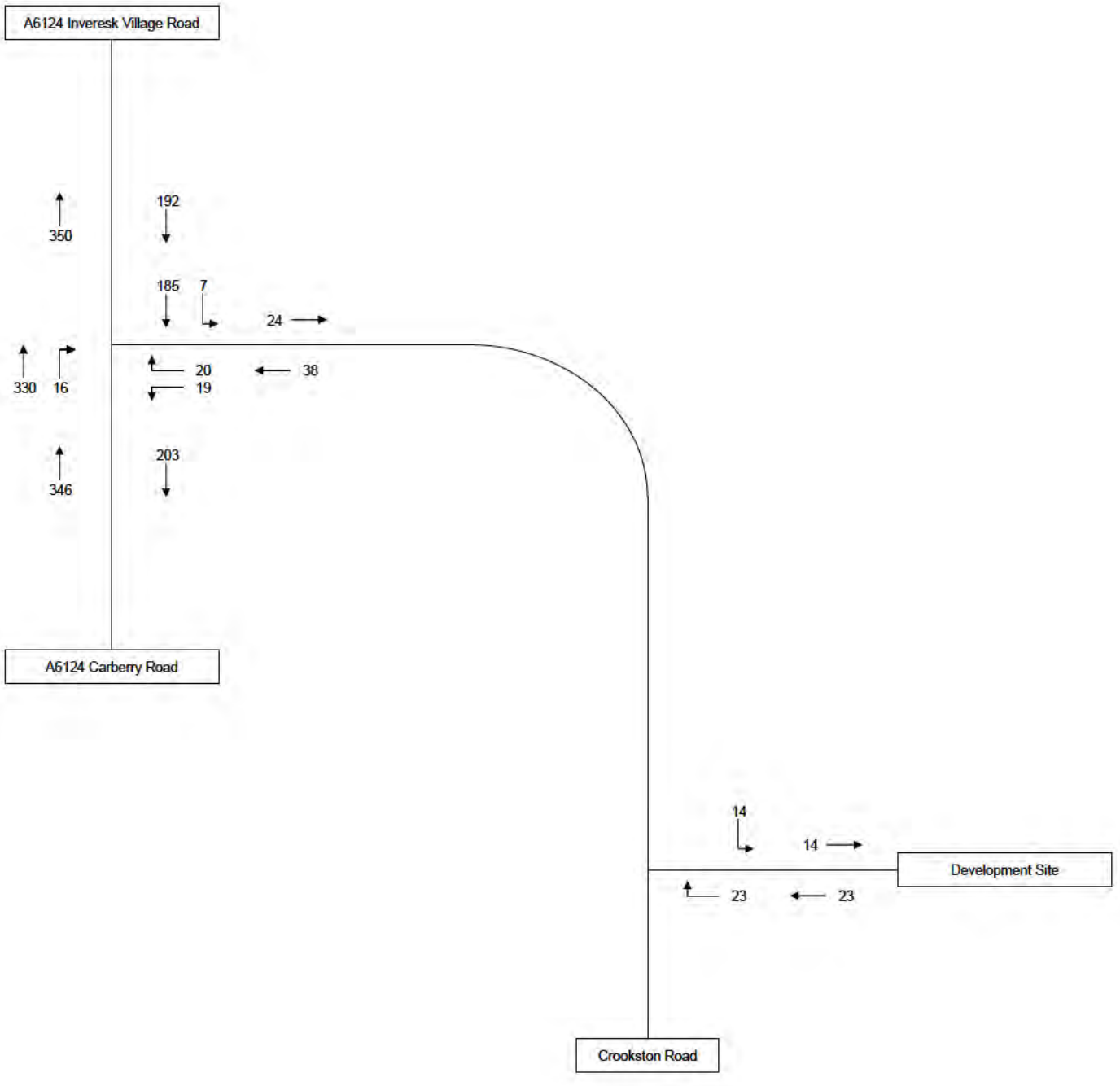
TRANSPORT PLANNING

TITLE

Crookston Road, Inveresk
Proposed Residential Development

Proposed Development Traffic Flows (PCUs)
Weekday AM Peak Hour 08:00-09:00

3a



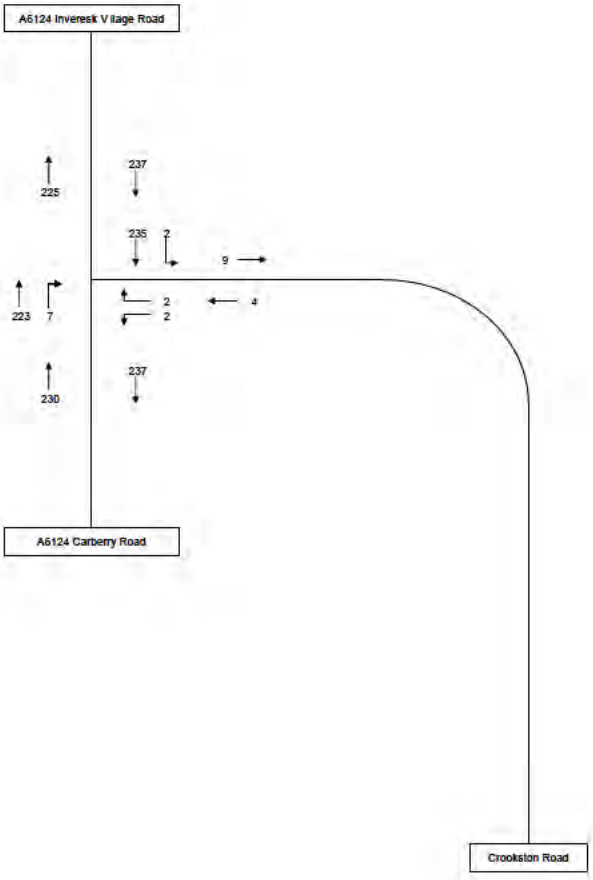
TRANSPORT PLANNING

TITLE

Crookston Road, Inveresk
Proposed Residential Development

2016 Projected + Development Traffic Flows (PCUs)
Weekday AM Peak Hour 08:00-09:00

4a



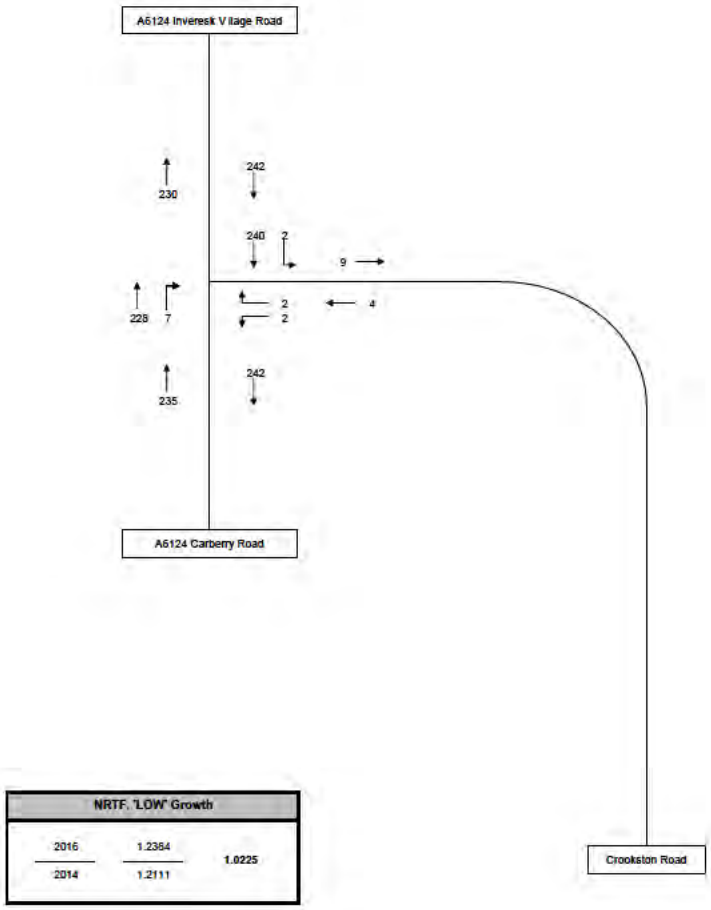
TRANSPORT PLANNING

TITLE

Crookston Road, Inveresk
Proposed Residential Development

2014 Surveyed Traffic Flows (PCUs)
Weekday PM Peak Hour 16:15-17:15

1b



NRTF 'LOW' Growth		
2016 / 2014	1.2364 / 1.2111	1.0225

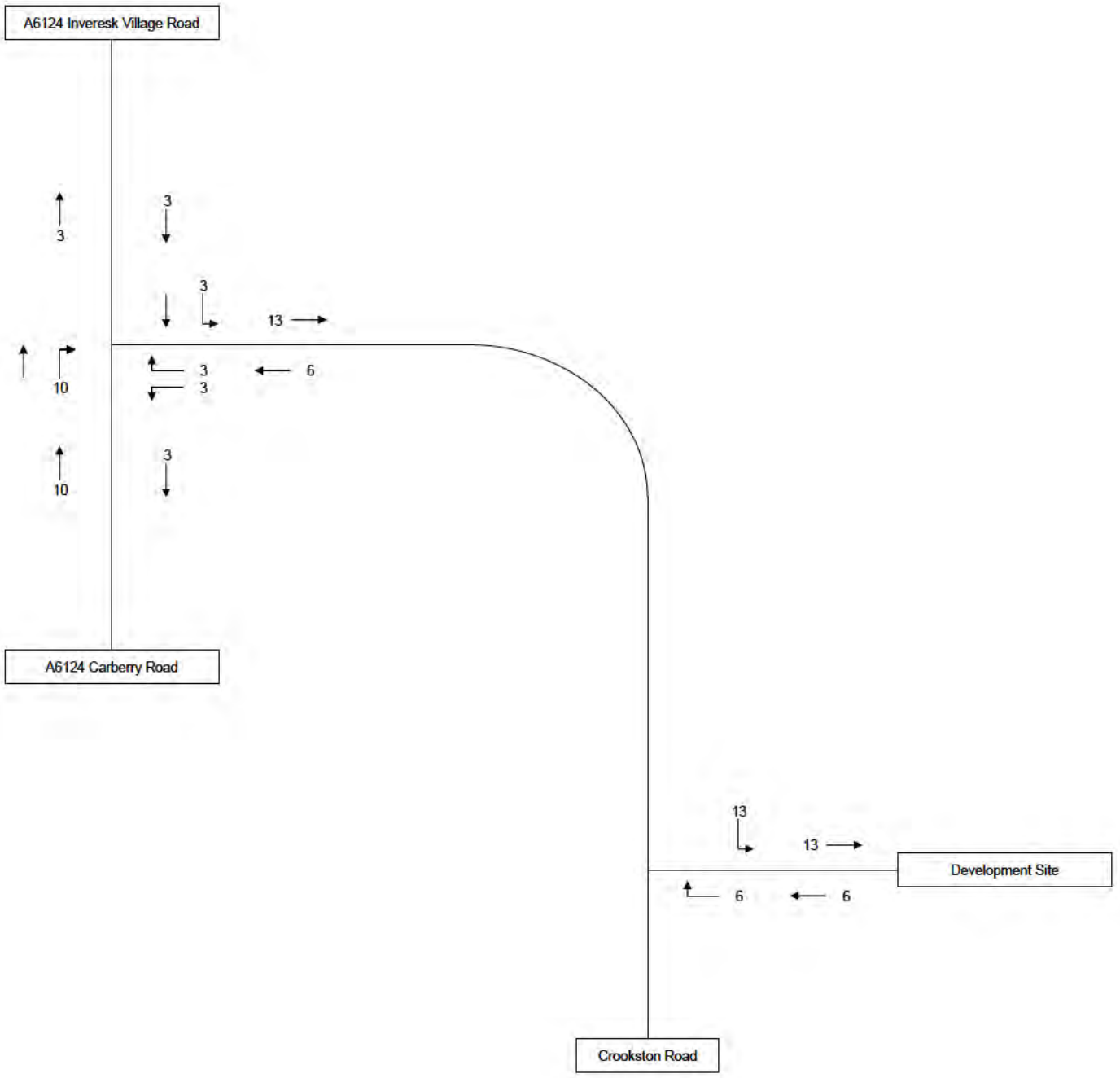
TRANSPORT PLANNING

TITLE

Crookston Road, Inveresk
Proposed Residential Development

2016 Projected Base Traffic Flows (PCUs)
Weekday PM Peak Hour 16:15-17:15

2b



Development Peak Hour Trip Generation

Proposed No.of Dwellings = 45

	In	Out	Total
Existing Trip Rates	0 290	0.129	0.419
Proposed No of Trips	13	6	19

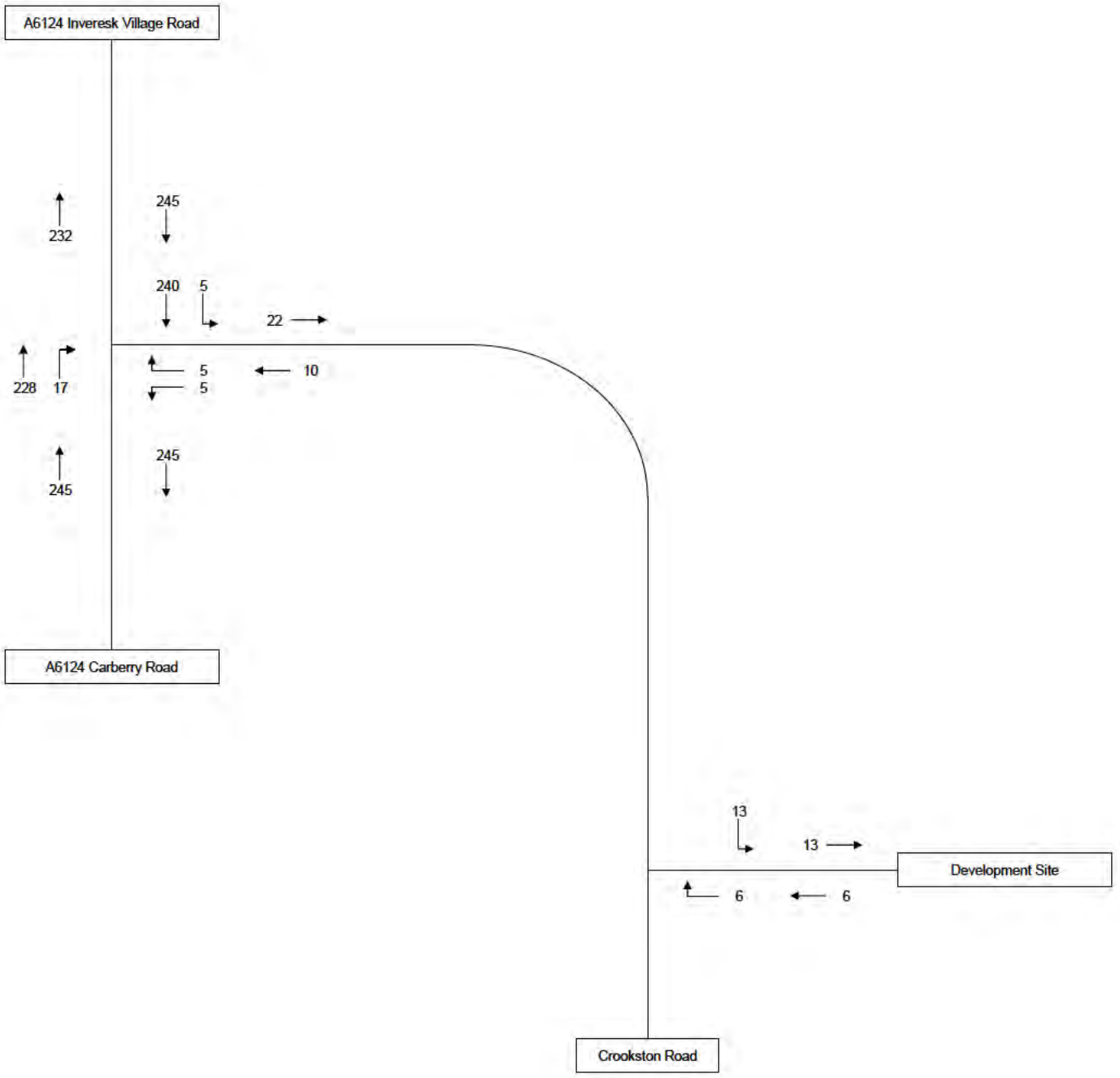
TRANSPORT PLANNING

TITLE

Crookston Road, Inveresk
Proposed Residential Development

Proposed Development Traffic Flows (PCUs)
Weekday PM Peak Hour 16:15-17:15

3b



TRANSPORT PLANNING

TITLE

Crookston Road, Inveresk
Proposed Residential Development

2016 Projected + Development Traffic Flows (PCUs)
Weekday AM Peak Hour 16:15-17:15

4b

APPENDIX E

JUNCTION ANALYSIS

Junctions 8

PICADY 8 - Priority Intersection Module

Version: 8.0.4.487 [15039,24/03/2014]

For sales and distribution information, program advice and maintenance, contact TRL:
Tel: +44 (0)1344 770758 email: software@trl.co.uk Web: http://www.trlsoftware.co.uk

Filename: A6124-Crookston Road.arc8
Path: L:\Transport Planning\Projects\TP186 Inveresk Cala\Work\Junction Analysis
Report generation date: 01/09/2014 14:55:56

» Existing Layout - 2014 Surveyed Base, AM
» Existing Layout - 2016 Projected Base, AM
» Existing Layout - 2016 + Development Base, AM
» Existing Layout - 2014 Surveyed Base, PM
» Existing Layout - 2016 Projected Base, PM
» Existing Layout - 2016 + Development Base, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	Existing Layout - 2014 Surveyed Base							
Stream B-AC	0.04	7.77	0.04	A	0.00	0.00	0.00	A
Stream C-AB	0.02	4.79	0.02	A	0.02	5.18	0.02	A
Stream C-A	-	-	-	-	-	-	-	-
Stream A-B	-	-	-	-	-	-	-	-
Stream A-C	-	-	-	-	-	-	-	-
	Existing Layout - 2016 + Development Base							
Stream B-AC	0.10	8.35	0.09	A	0.02	7.79	0.02	A
Stream C-AB	0.05	4.84	0.04	A	0.05	5.25	0.04	A
Stream C-A	-	-	-	-	-	-	-	-
Stream A-B	-	-	-	-	-	-	-	-
Stream A-C	-	-	-	-	-	-	-	-
	Existing Layout - 2016 Projected Base							
Stream B-AC	0.04	7.80	0.04	A	0.00	0.00	0.00	A
Stream C-AB	0.02	4.78	0.02	A	0.02	5.17	0.02	A
Stream C-A	-	-	-	-	-	-	-	-
Stream A-B	-	-	-	-	-	-	-	-
Stream A-C	-	-	-	-	-	-	-	-

Values shown are the maximum values over all time segments. Delay is the maximum value of average delay per arriving vehicle.

"D1 - 2014 Surveyed Base, AM " model duration: 07:45 - 09:15
"D2 - 2016 Projected Base, AM" model duration: 07:45 - 09:15
"D3 - 2016 + Development Base, AM" model duration: 07:45 - 09:15
"D4 - 2014 Surveyed Base, PM" model duration: 16:00 - 17:30
"D5 - 2016 Projected Base, PM" model duration: 16:00 - 17:30
"D6 - 2016 + Development Base, PM" model duration: 16:00 - 17:30

Run using Junctions 8.0.4.487 at 01/09/2014 14:55:53

File summary

Title	A6124/Crookston Road
Location	Inveresk
Site Number	-
Date	01/09/2014
Version	-
Status	Final
Identifier	-
Client	CALA Homes Ltd
Jobnumber	TP186
Enumerator	Neil Dempsey
Description	

Analysis Options

Vehicle Length (m)	Do Queue Variations	Calculate Residual Capacity	Residual Capacity Criteria Type	RFC Threshold	Average Delay Threshold (s)	Queue Threshold (PCU)
5.75			N/A	0.85	36.00	20.00

Units

Distance Units	Speed Units	Traffic Units Input	Traffic Units Results	Flow Units	Average Delay Units	Total Delay Units	Rate Of Delay Units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Existing Layout - 2014 Surveyed Base, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
Existing Layout	N/A			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH mm)	Model Finish Time (HH mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2014 Surveyed Base, AM	2014 Surveyed Base	AM		ONE HOUR	07:45	09:15	90	15		✓

Junction Network

Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
1	A6124/Crookston Road	T-Junction	Two-way	A,B,C	6.56	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Arm	Name	Description	Arm Type
A6124 (Inveresk Village Road)	A	A6124 (Inveresk Village Road)		Major
Crookston Road	B	Crookston Road		Minor
A6124 (Carberry Road)	C	A6124 (Carberry Road)		Major

Major Arm Geometry

Name	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width For Right Turn (m)	Visibility For Right Turn (m)	Blocks?	Blocking Queue (PCU)
A6124 (Carberry Road)	6.80		0.00		2.20	100.00	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Name	Minor Arm Type	Lane Width (m)	Lane Width (Left) (m)	Lane Width (Right) (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate Flare Length	Flare Length (PCU)	Visibility To Left (m)	Visibility To Right (m)
Crookston Road	One lane	2.40										15	100

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	499.355	0.088	0.222	0.140	0.317
1	B-C	645.628	0.096	0.241	-	-
1	C-B	631.874	0.236	0.236	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
A6124 (Inveresk Village Road)	ONE HOUR	✓	184.00	100.000
Crookston Road	ONE HOUR	✓	16.00	100.000
A6124 (Carberry Road)	ONE HOUR	✓	330.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - A6124/ Crookston Road (for whole period)

		To		
		A6124 (Inveresk Village Road)	Crookston Road	A6124 (Carberry Road)
From	A6124 (Inveresk Village Road)	0.000	3.000	181.000
	Crookston Road	8.000	0.000	8.000
	A6124 (Carberry Road)	323.000	7.000	0.000

Turning Proportions (PCU) - A6124/ Crookston Road (for whole period)

		To		
		A6124 (Inveresk Village Road)	Crookston Road	A6124 (Carberry Road)
From	A6124 (Inveresk Village Road)	0.00	0.02	0.98
	Crookston Road	0.50	0.00	0.50
	A6124 (Carberry Road)	0.98	0.02	0.00

Vehicle Mix

Average PCU Per Vehicle - A6124/ Crookston Road (for whole period)

		To		
		A6124 (Inveresk Village Road)	Crookston Road	A6124 (Carberry Road)
From	A6124 (Inveresk Village Road)	1.000	1.000	1.000
	Crookston Road	1.000	1.000	1.000
	A6124 (Carberry Road)	1.000	1.000	1.000

Heavy Vehicle Percentages - A6124/ Crookston Road (for whole period)

		To		
		A6124 (Inveresk Village Road)	Crookston Road	A6124 (Carberry Road)
From	A6124 (Inveresk Village Road)	0.0	0.0	0.0
	Crookston Road	0.0	0.0	0.0
	A6124 (Carberry Road)	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.04	7.77	0.04	A
C-AB	0.02	4.79	0.02	A
C-A	-	-	-	-
A-B	-	-	-	-
A-C	-	-	-	-

Main Results for each time segment

Main results: (07:45-08:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	12.05	11.95	0.00	507.55	0.024	0.02	7.264	A
C-AB	7.58	7.53	0.00	758.80	0.010	0.01	4.791	A
C-A	240.87	240.87	0.00	-	-	-	-	-
A-B	2.26	2.26	0.00	-	-	-	-	-
A-C	136.27	136.27	0.00	-	-	-	-	-

Main results: (08:00-08:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	14.38	14.36	0.00	496.50	0.029	0.03	7.466	A
C-AB	9.67	9.66	0.00	783.27	0.012	0.01	4.653	A
C-A	286.99	286.99	0.00	-	-	-	-	-
A-B	2.70	2.70	0.00	-	-	-	-	-
A-C	162.72	162.72	0.00	-	-	-	-	-

Main results: (08:15-08:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	17.62	17.58	0.00	481.06	0.037	0.04	7.767	A
C-AB	12.93	12.91	0.00	816.68	0.016	0.02	4.478	A
C-A	350.41	350.41	0.00	-	-	-	-	-
A-B	3.30	3.30	0.00	-	-	-	-	-
A-C	199.28	199.28	0.00	-	-	-	-	-

Main results: (08:30-08:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	17.62	17.62	0.00	481.06	0.037	0.04	7.767	A
C-AB	12.94	12.94	0.00	816.68	0.016	0.02	4.480	A
C-A	350.40	350.40	0.00	-	-	-	-	-
A-B	3.30	3.30	0.00	-	-	-	-	-
A-C	199.28	199.28	0.00	-	-	-	-	-

Main results: (08:45-09:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	14.38	14.41	0.00	496.49	0.029	0.03	7.467	A
C-AB	9.68	9.70	0.00	783.28	0.012	0.01	4.653	A
C-A	286.98	286.98	0.00	-	-	-	-	-
A-B	2.70	2.70	0.00	-	-	-	-	-
A-C	162.72	162.72	0.00	-	-	-	-	-

Main results: (09:00-09:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	12.05	12.07	0.00	507.54	0.024	0.02	7.265	A
C-AB	7.59	7.60	0.00	758.82	0.010	0.01	4.791	A
C-A	240.85	240.85	0.00	-	-	-	-	-
A-B	2.26	2.26	0.00	-	-	-	-	-
A-C	136.27	136.27	0.00	-	-	-	-	-

Existing Layout - 2016 Projected Base, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
Existing Layout	N/A			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH mm)	Model Finish Time (HH mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2016 Projected Base, AM	2016 Projected Base	AM		ONE HOUR	07:45	09:15	90	15		✓

Junction Network

Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
1	A6124/Crookston Road	T-Junction	Two-way	A,B,C	6.56	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Arm	Name	Description	Arm Type
A6124 (Inveresk Village Road)	A	A6124 (Inveresk Village Road)		Major
Crookston Road	B	Crookston Road		Minor
A6124 (Carberry Road)	C	A6124 (Carberry Road)		Major

Major Arm Geometry

Name	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width For Right Turn (m)	Visibility For Right Turn (m)	Blocks?	Blocking Queue (PCU)
A6124 (Carberry Road)	6.80		0.00		2.20	100.00	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Name	Minor Arm Type	Lane Width (m)	Lane Width (Left) (m)	Lane Width (Right) (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate Flare Length	Flare Length (PCU)	Visibility To Left (m)	Visibility To Right (m)
Crookston Road	One lane	2.40										15	100

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	499.355	0.088	0.222	0.140	0.317
1	B-C	645.628	0.096	0.241	-	-
1	C-B	631.874	0.236	0.236	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
A6124 (Inveresk Village Road)	ONE HOUR	✓	188.00	100.000
Crookston Road	ONE HOUR	✓	16.00	100.000
A6124 (Carberry Road)	ONE HOUR	✓	337.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - A6124/ Crookston Road (for whole period)

		To		
		A6124 (Inveresk Village Road)	Crookston Road	A6124 (Carberry Road)
From	A6124 (Inveresk Village Road)	0.000	3.000	185.000
	Crookston Road	8.000	0.000	8.000
	A6124 (Carberry Road)	330.000	7.000	0.000

Turning Proportions (PCU) - A6124/ Crookston Road (for whole period)

		To		
		A6124 (Inveresk Village Road)	Crookston Road	A6124 (Carberry Road)
From	A6124 (Inveresk Village Road)	0.00	0.02	0.98
	Crookston Road	0.50	0.00	0.50
	A6124 (Carberry Road)	0.98	0.02	0.00

Vehicle Mix

Average PCU Per Vehicle - A6124/ Crookston Road (for whole period)

		To		
		A6124 (Inveresk Village Road)	Crookston Road	A6124 (Carberry Road)
From	A6124 (Inveresk Village Road)	1.000	1.000	1.000
	Crookston Road	1.000	1.000	1.000
	A6124 (Carberry Road)	1.000	1.000	1.000

Heavy Vehicle Percentages - A6124/ Crookston Road (for whole period)

		To		
		A6124 (Inveresk Village Road)	Crookston Road	A6124 (Carberry Road)
From	A6124 (Inveresk Village Road)	0.0	0.0	0.0
	Crookston Road	0.0	0.0	0.0
	A6124 (Carberry Road)	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.04	7.80	0.04	A
C-AB	0.02	4.78	0.02	A
C-A	-	-	-	-
A-B	-	-	-	-
A-C	-	-	-	-

Main Results for each time segment

Main results: (07:45-08:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	12.05	11.95	0.00	506.34	0.024	0.02	7.282	A
C-AB	7.63	7.59	0.00	761.54	0.010	0.01	4.774	A
C-A	246.08	246.08	0.00	-	-	-	-	-
A-B	2.26	2.26	0.00	-	-	-	-	-
A-C	139.28	139.28	0.00	-	-	-	-	-

Main results: (08:00-08:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	14.38	14.36	0.00	495.04	0.029	0.03	7.488	A
C-AB	9.76	9.74	0.00	786.51	0.012	0.01	4.634	A
C-A	293.20	293.20	0.00	-	-	-	-	-
A-B	2.70	2.70	0.00	-	-	-	-	-
A-C	166.31	166.31	0.00	-	-	-	-	-

Main results: (08:15-08:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	17.62	17.58	0.00	479.25	0.037	0.04	7.798	A
C-AB	13.06	13.05	0.00	820.58	0.016	0.02	4.457	A
C-A	357.98	357.98	0.00	-	-	-	-	-
A-B	3.30	3.30	0.00	-	-	-	-	-
A-C	203.69	203.69	0.00	-	-	-	-	-

Main results: (08:30-08:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	17.62	17.62	0.00	479.25	0.037	0.04	7.798	A
C-AB	13.07	13.07	0.00	820.59	0.016	0.02	4.459	A
C-A	357.98	357.98	0.00	-	-	-	-	-
A-B	3.30	3.30	0.00	-	-	-	-	-
A-C	203.69	203.69	0.00	-	-	-	-	-

Main results: (08:45-09:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	14.38	14.41	0.00	495.03	0.029	0.03	7.492	A
C-AB	9.76	9.78	0.00	786.52	0.012	0.01	4.636	A
C-A	293.19	293.19	0.00	-	-	-	-	-
A-B	2.70	2.70	0.00	-	-	-	-	-
A-C	166.31	166.31	0.00	-	-	-	-	-

Main results: (09:00-09:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	12.05	12.07	0.00	506.33	0.024	0.02	7.282	A
C-AB	7.65	7.66	0.00	761.56	0.010	0.01	4.776	A
C-A	246.06	246.06	0.00	-	-	-	-	-
A-B	2.26	2.26	0.00	-	-	-	-	-
A-C	139.28	139.28	0.00	-	-	-	-	-

Existing Layout - 2016 + Development Base, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
Existing Layout	N/A			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH mm)	Model Finish Time (HH mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2016 + Development Base, AM	2016 + Development Base	AM		ONE HOUR	07:45	09:15	90	15		✓

Junction Network

Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
1	A6124/Crookston Road	T-Junction	Two-way	A,B,C	6.97	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Arm	Name	Description	Arm Type
A6124 (Inveresk Village Road)	A	A6124 (Inveresk Village Road)		Major
Crookston Road	B	Crookston Road		Minor
A6124 (Carberry Road)	C	A6124 (Carberry Road)		Major

Major Arm Geometry

Name	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width For Right Turn (m)	Visibility For Right Turn (m)	Blocks?	Blocking Queue (PCU)
A6124 (Carberry Road)	6.80		0.00		2.20	100.00	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Name	Minor Arm Type	Lane Width (m)	Lane Width (Left) (m)	Lane Width (Right) (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate Flare Length	Flare Length (PCU)	Visibility To Left (m)	Visibility To Right (m)
Crookston Road	One lane	2.40										15	100

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	499.355	0.088	0.222	0.140	0.317
1	B-C	645.628	0.096	0.241	-	-
1	C-B	631.874	0.236	0.236	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
A6124 (Inveresk Village Road)	ONE HOUR	✓	192.00	100.000
Crookston Road	ONE HOUR	✓	39.00	100.000
A6124 (Carberry Road)	ONE HOUR	✓	346.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - A6124/ Crookston Road (for whole period)

		To		
		A6124 (Inveresk Village Road)	Crookston Road	A6124 (Carberry Road)
From	A6124 (Inveresk Village Road)	0.000	7.000	185.000
	Crookston Road	20.000	0.000	19.000
	A6124 (Carberry Road)	330.000	16.000	0.000

Turning Proportions (PCU) - A6124/ Crookston Road (for whole period)

		To		
		A6124 (Inveresk Village Road)	Crookston Road	A6124 (Carberry Road)
From	A6124 (Inveresk Village Road)	0.00	0.04	0.96
	Crookston Road	0.51	0.00	0.49
	A6124 (Carberry Road)	0.95	0.05	0.00

Vehicle Mix

Average PCU Per Vehicle - A6124/ Crookston Road (for whole period)

		To		
		A6124 (Inveresk Village Road)	Crookston Road	A6124 (Carberry Road)
From	A6124 (Inveresk Village Road)	1.000	1.000	1.000
	Crookston Road	1.000	1.000	1.000
	A6124 (Carberry Road)	1.000	1.000	1.000

Heavy Vehicle Percentages - A6124/ Crookston Road (for whole period)

		To		
		A6124 (Inveresk Village Road)	Crookston Road	A6124 (Carberry Road)
From	A6124 (Inveresk Village Road)	0.0	0.0	0.0
	Crookston Road	0.0	0.0	0.0
	A6124 (Carberry Road)	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.09	8.35	0.10	A
C-AB	0.04	4.84	0.05	A
C-A	-	-	-	-
A-B	-	-	-	-
A-C	-	-	-	-

Main Results for each time segment

Main results: (07:45-08:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	29.36	29.12	0.00	502.33	0.058	0.06	7.604	A
C-AB	17.45	17.34	0.00	760.93	0.023	0.03	4.841	A
C-A	243.04	243.04	0.00	-	-	-	-	-
A-B	5.27	5.27	0.00	-	-	-	-	-
A-C	139.28	139.28	0.00	-	-	-	-	-

Main results: (08:00-08:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	35.06	35.00	0.00	490.56	0.071	0.08	7.901	A
C-AB	22.32	22.28	0.00	785.81	0.028	0.04	4.714	A
C-A	288.73	288.73	0.00	-	-	-	-	-
A-B	6.29	6.29	0.00	-	-	-	-	-
A-C	166.31	166.31	0.00	-	-	-	-	-

Main results: (08:15-08:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	42.94	42.85	0.00	474.14	0.091	0.10	8.345	A
C-AB	29.89	29.84	0.00	819.76	0.036	0.05	4.557	A
C-A	351.06	351.06	0.00	-	-	-	-	-
A-B	7.71	7.71	0.00	-	-	-	-	-
A-C	203.69	203.69	0.00	-	-	-	-	-

Main results: (08:30-08:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	42.94	42.94	0.00	474.13	0.091	0.10	8.348	A
C-AB	29.91	29.91	0.00	819.78	0.036	0.05	4.557	A
C-A	351.05	351.05	0.00	-	-	-	-	-
A-B	7.71	7.71	0.00	-	-	-	-	-
A-C	203.69	203.69	0.00	-	-	-	-	-

Main results: (08:45-09:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	35.06	35.15	0.00	490.55	0.071	0.08	7.907	A
C-AB	22.34	22.39	0.00	785.84	0.028	0.04	4.717	A
C-A	288.71	288.71	0.00	-	-	-	-	-
A-B	6.29	6.29	0.00	-	-	-	-	-
A-C	166.31	166.31	0.00	-	-	-	-	-

Main results: (09:00-09:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	29.36	29.42	0.00	502.30	0.058	0.06	7.615	A
C-AB	17.49	17.53	0.00	760.96	0.023	0.03	4.842	A
C-A	242.99	242.99	0.00	-	-	-	-	-
A-B	5.27	5.27	0.00	-	-	-	-	-
A-C	139.28	139.28	0.00	-	-	-	-	-

Existing Layout - 2014 Surveyed Base, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
Existing Layout	N/A			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH mm)	Model Finish Time (HH mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2014 Surveyed Base, PM	2014 Surveyed Base	PM		ONE HOUR	16:00	17:30	90	15		✓

Junction Network

Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
1	A6124/Crookston Road	T-Junction	Two-way	A,B,C	5.18	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Arm	Name	Description	Arm Type
A6124 (Inveresk Village Road)	A	A6124 (Inveresk Village Road)		Major
Crookston Road	B	Crookston Road		Minor
A6124 (Carberry Road)	C	A6124 (Carberry Road)		Major

Major Arm Geometry

Name	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width For Right Turn (m)	Visibility For Right Turn (m)	Blocks?	Blocking Queue (PCU)
A6124 (Carberry Road)	6.80		0.00		2.20	100.00	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Name	Minor Arm Type	Lane Width (m)	Lane Width (Left) (m)	Lane Width (Right) (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate Flare Length	Flare Length (PCU)	Visibility To Left (m)	Visibility To Right (m)
Crookston Road	One lane	2.40										15	100

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	499.355	0.088	0.222	0.140	0.317
1	B-C	645.628	0.096	0.241	-	-
1	C-B	631.874	0.236	0.236	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
A6124 (Inveresk Village Road)	ONE HOUR	✓	237.00	100.000
Crookston Road	ONE HOUR	✓	4.00	100.000
A6124 (Carberry Road)	ONE HOUR	✓	230.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - A6124/ Crookston Road (for whole period)

		To		
		A6124 (Inveresk Village Road)	Crookston Road	A6124 (Carberry Road)
From	A6124 (Inveresk Village Road)	0.000	2.000	235.000
	Crookston Road	2.000	0.000	2.000
	A6124 (Carberry Road)	223.000	7.000	0.000

Turning Proportions (PCU) - A6124/ Crookston Road (for whole period)

		To		
		A6124 (Inveresk Village Road)	Crookston Road	A6124 (Carberry Road)
From	A6124 (Inveresk Village Road)	0.00	0.01	0.99
	Crookston Road	0.50	0.00	0.50
	A6124 (Carberry Road)	0.97	0.03	0.00

Vehicle Mix

Average PCU Per Vehicle - A6124/ Crookston Road (for whole period)

		To		
		A6124 (Inveresk Village Road)	Crookston Road	A6124 (Carberry Road)
From	A6124 (Inveresk Village Road)	1.000	1.000	1.000
	Crookston Road	1.000	1.000	1.000
	A6124 (Carberry Road)	1.000	1.000	1.000

Heavy Vehicle Percentages - A6124/ Crookston Road (for whole period)

		To		
		A6124 (Inveresk Village Road)	Crookston Road	A6124 (Carberry Road)
From	A6124 (Inveresk Village Road)	0.0	0.0	0.0
	Crookston Road	0.0	0.0	0.0
	A6124 (Carberry Road)	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.00	0.00	0.00	A
C-AB	0.02	5.18	0.02	A
C-A	-	-	-	-
A-B	-	-	-	-
A-C	-	-	-	-

Main Results for each time segment

Main results: (16:00-16:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	0.00	0.00	0.00	505.23	0.000	0.00	0.000	A
C-AB	6.86	6.81	0.00	701.70	0.010	0.01	5.180	A
C-A	166.30	166.30	0.00	-	-	-	-	-
A-B	1.51	1.51	0.00	-	-	-	-	-
A-C	176.92	176.92	0.00	-	-	-	-	-

Main results: (16:15-16:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	0.00	0.00	0.00	493.82	0.000	0.00	0.000	A
C-AB	8.62	8.61	0.00	715.74	0.012	0.01	5.090	A
C-A	198.15	198.15	0.00	-	-	-	-	-
A-B	1.80	1.80	0.00	-	-	-	-	-
A-C	211.26	211.26	0.00	-	-	-	-	-

Main results: (16:30-16:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	0.00	0.00	0.00	477.96	0.000	0.00	0.000	A
C-AB	11.31	11.29	0.00	735.27	0.015	0.02	4.972	A
C-A	241.92	241.92	0.00	-	-	-	-	-
A-B	2.20	2.20	0.00	-	-	-	-	-
A-C	258.74	258.74	0.00	-	-	-	-	-

Main results: (16:45-17:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	0.00	0.00	0.00	477.96	0.000	0.00	0.000	A
C-AB	11.32	11.32	0.00	735.27	0.015	0.02	4.974	A
C-A	241.92	241.92	0.00	-	-	-	-	-
A-B	2.20	2.20	0.00	-	-	-	-	-
A-C	258.74	258.74	0.00	-	-	-	-	-

Main results: (17:00-17:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	0.00	0.00	0.00	493.82	0.000	0.00	0.000	A
C-AB	8.63	8.64	0.00	715.75	0.012	0.01	5.092	A
C-A	198.14	198.14	0.00	-	-	-	-	-
A-B	1.80	1.80	0.00	-	-	-	-	-
A-C	211.26	211.26	0.00	-	-	-	-	-

Main results: (17:15-17:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	0.00	0.00	0.00	505.22	0.000	0.00	0.000	A
C-AB	6.87	6.88	0.00	701.71	0.010	0.01	5.180	A
C-A	166.29	166.29	0.00	-	-	-	-	-
A-B	1.51	1.51	0.00	-	-	-	-	-
A-C	176.92	176.92	0.00	-	-	-	-	-

Existing Layout - 2016 Projected Base, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
Existing Layout	N/A			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH mm)	Model Finish Time (HH mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2016 Projected Base, PM	2016 Projected Base	PM		ONE HOUR	16:00	17:30	90	15		✓

Junction Network

Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
1	A6124/Crookston Road	T-Junction	Two-way	A,B,C	5.17	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Arm	Name	Description	Arm Type
A6124 (Inveresk Village Road)	A	A6124 (Inveresk Village Road)		Major
Crookston Road	B	Crookston Road		Minor
A6124 (Carberry Road)	C	A6124 (Carberry Road)		Major

Major Arm Geometry

Name	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width For Right Turn (m)	Visibility For Right Turn (m)	Blocks?	Blocking Queue (PCU)
A6124 (Carberry Road)	6.80		0.00		2.20	100.00	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Name	Minor Arm Type	Lane Width (m)	Lane Width (Left) (m)	Lane Width (Right) (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate Flare Length	Flare Length (PCU)	Visibility To Left (m)	Visibility To Right (m)
Crookston Road	One lane	2.40										15	100

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	499.355	0.088	0.222	0.140	0.317
1	B-C	645.628	0.096	0.241	-	-
1	C-B	631.874	0.236	0.236	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
A6124 (Inveresk Village Road)	ONE HOUR	✓	242.00	100.000
Crookston Road	ONE HOUR	✓	4.00	100.000
A6124 (Carberry Road)	ONE HOUR	✓	235.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - A6124/ Crookston Road (for whole period)

		To		
		A6124 (Inveresk Village Road)	Crookston Road	A6124 (Carberry Road)
From	A6124 (Inveresk Village Road)	0.000	2.000	240.000
	Crookston Road	2.000	0.000	2.000
	A6124 (Carberry Road)	228.000	7.000	0.000

Turning Proportions (PCU) - A6124/ Crookston Road (for whole period)

		To		
		A6124 (Inveresk Village Road)	Crookston Road	A6124 (Carberry Road)
From	A6124 (Inveresk Village Road)	0.00	0.01	0.99
	Crookston Road	0.50	0.00	0.50
	A6124 (Carberry Road)	0.97	0.03	0.00

Vehicle Mix

Average PCU Per Vehicle - A6124/ Crookston Road (for whole period)

		To		
		A6124 (Inveresk Village Road)	Crookston Road	A6124 (Carberry Road)
From	A6124 (Inveresk Village Road)	1.000	1.000	1.000
	Crookston Road	1.000	1.000	1.000
	A6124 (Carberry Road)	1.000	1.000	1.000

Heavy Vehicle Percentages - A6124/ Crookston Road (for whole period)

		To		
		A6124 (Inveresk Village Road)	Crookston Road	A6124 (Carberry Road)
From	A6124 (Inveresk Village Road)	0.0	0.0	0.0
	Crookston Road	0.0	0.0	0.0
	A6124 (Carberry Road)	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.00	0.00	0.00	A
C-AB	0.02	5.17	0.02	A
C-A	-	-	-	-
A-B	-	-	-	-
A-C	-	-	-	-

Main Results for each time segment

Main results: (16:00-16:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	0.00	0.00	0.00	503.99	0.000	0.00	0.000	A
C-AB	6.90	6.85	0.00	703.37	0.010	0.01	5.168	A
C-A	170.02	170.02	0.00	-	-	-	-	-
A-B	1.51	1.51	0.00	-	-	-	-	-
A-C	180.68	180.68	0.00	-	-	-	-	-

Main results: (16:15-16:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	0.00	0.00	0.00	492.34	0.000	0.00	0.000	A
C-AB	8.68	8.67	0.00	717.74	0.012	0.01	5.076	A
C-A	202.58	202.58	0.00	-	-	-	-	-
A-B	1.80	1.80	0.00	-	-	-	-	-
A-C	215.76	215.76	0.00	-	-	-	-	-

Main results: (16:30-16:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	0.00	0.00	0.00	476.13	0.000	0.00	0.000	A
C-AB	11.41	11.39	0.00	737.73	0.015	0.02	4.955	A
C-A	247.33	247.33	0.00	-	-	-	-	-
A-B	2.20	2.20	0.00	-	-	-	-	-
A-C	264.24	264.24	0.00	-	-	-	-	-

Main results: (16:45-17:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	0.00	0.00	0.00	476.12	0.000	0.00	0.000	A
C-AB	11.41	11.41	0.00	737.74	0.015	0.02	4.958	A
C-A	247.33	247.33	0.00	-	-	-	-	-
A-B	2.20	2.20	0.00	-	-	-	-	-
A-C	264.24	264.24	0.00	-	-	-	-	-

Main results: (17:00-17:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	0.00	0.00	0.00	492.33	0.000	0.00	0.000	A
C-AB	8.69	8.70	0.00	717.75	0.012	0.01	5.078	A
C-A	202.57	202.57	0.00	-	-	-	-	-
A-B	1.80	1.80	0.00	-	-	-	-	-
A-C	215.76	215.76	0.00	-	-	-	-	-

Main results: (17:15-17:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	0.00	0.00	0.00	503.98	0.000	0.00	0.000	A
C-AB	6.91	6.92	0.00	703.38	0.010	0.01	5.170	A
C-A	170.01	170.01	0.00	-	-	-	-	-
A-B	1.51	1.51	0.00	-	-	-	-	-
A-C	180.68	180.68	0.00	-	-	-	-	-

Existing Layout - 2016 + Development Base, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
Existing Layout	N/A			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH mm)	Model Finish Time (HH mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2016 + Development Base, PM	2016 + Development Base	PM		ONE HOUR	16:00	17:30	90	15		✓

Junction Network

Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
1	A6124/Crookston Road	T-Junction	Two-way	A,B,C	6.00	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Arm	Name	Description	Arm Type
A6124 (Inveresk Village Road)	A	A6124 (Inveresk Village Road)		Major
Crookston Road	B	Crookston Road		Minor
A6124 (Carberry Road)	C	A6124 (Carberry Road)		Major

Major Arm Geometry

Name	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width For Right Turn (m)	Visibility For Right Turn (m)	Blocks?	Blocking Queue (PCU)
A6124 (Carberry Road)	6.80		0.00		2.20	100.00	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Name	Minor Arm Type	Lane Width (m)	Lane Width (Left) (m)	Lane Width (Right) (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate Flare Length	Flare Length (PCU)	Visibility To Left (m)	Visibility To Right (m)
Crookston Road	One lane	2.40										15	100

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	499.355	0.088	0.222	0.140	0.317
1	B-C	645.628	0.096	0.241	-	-
1	C-B	631.874	0.236	0.236	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
A6124 (Inveresk Village Road)	ONE HOUR	✓	245.00	100.000
Crookston Road	ONE HOUR	✓	10.00	100.000
A6124 (Carberry Road)	ONE HOUR	✓	245.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - A6124/ Crookston Road (for whole period)

		To		
		A6124 (Inveresk Village Road)	Crookston Road	A6124 (Carberry Road)
From	A6124 (Inveresk Village Road)	0.000	5.000	240.000
	Crookston Road	5.000	0.000	5.000
	A6124 (Carberry Road)	228.000	17.000	0.000

Turning Proportions (PCU) - A6124/ Crookston Road (for whole period)

		To		
		A6124 (Inveresk Village Road)	Crookston Road	A6124 (Carberry Road)
From	A6124 (Inveresk Village Road)	0.00	0.02	0.98
	Crookston Road	0.50	0.00	0.50
	A6124 (Carberry Road)	0.93	0.07	0.00

Vehicle Mix

Average PCU Per Vehicle - A6124/ Crookston Road (for whole period)

		To		
		A6124 (Inveresk Village Road)	Crookston Road	A6124 (Carberry Road)
From	A6124 (Inveresk Village Road)	1.000	1.000	1.000
	Crookston Road	1.000	1.000	1.000
	A6124 (Carberry Road)	1.000	1.000	1.000

Heavy Vehicle Percentages - A6124/ Crookston Road (for whole period)

		To		
		A6124 (Inveresk Village Road)	Crookston Road	A6124 (Carberry Road)
From	A6124 (Inveresk Village Road)	0.0	0.0	0.0
	Crookston Road	0.0	0.0	0.0
	A6124 (Carberry Road)	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.02	7.79	0.02	A
C-AB	0.04	5.25	0.05	A
C-A	-	-	-	-
A-B	-	-	-	-
A-C	-	-	-	-

Main Results for each time segment

Main results: (16:00-16:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	7.53	7.47	0.00	502.16	0.015	0.02	7.277	A
C-AB	16.75	16.63	0.00	702.89	0.024	0.03	5.246	A
C-A	167.70	167.70	0.00	-	-	-	-	-
A-B	3.76	3.76	0.00	-	-	-	-	-
A-C	180.68	180.68	0.00	-	-	-	-	-

Main results: (16:15-16:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	8.99	8.98	0.00	490.11	0.018	0.02	7.481	A
C-AB	21.09	21.05	0.00	717.19	0.029	0.04	5.171	A
C-A	199.16	199.16	0.00	-	-	-	-	-
A-B	4.49	4.49	0.00	-	-	-	-	-
A-C	215.76	215.76	0.00	-	-	-	-	-

Main results: (16:30-16:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	11.01	10.99	0.00	473.36	0.023	0.02	7.786	A
C-AB	27.72	27.67	0.00	737.08	0.038	0.05	5.074	A
C-A	242.03	242.03	0.00	-	-	-	-	-
A-B	5.51	5.51	0.00	-	-	-	-	-
A-C	264.24	264.24	0.00	-	-	-	-	-

Main results: (16:45-17:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	11.01	11.01	0.00	473.35	0.023	0.02	7.786	A
C-AB	27.74	27.73	0.00	737.09	0.038	0.05	5.077	A
C-A	242.01	242.01	0.00	-	-	-	-	-
A-B	5.51	5.51	0.00	-	-	-	-	-
A-C	264.24	264.24	0.00	-	-	-	-	-

Main results: (17:00-17:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	8.99	9.01	0.00	490.10	0.018	0.02	7.482	A
C-AB	21.11	21.16	0.00	717.22	0.029	0.04	5.174	A
C-A	199.14	199.14	0.00	-	-	-	-	-
A-B	4.49	4.49	0.00	-	-	-	-	-
A-C	215.76	215.76	0.00	-	-	-	-	-

Main results: (17:15-17:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	7.53	7.54	0.00	502.14	0.015	0.02	7.280	A
C-AB	16.78	16.82	0.00	702.92	0.024	0.03	5.247	A
C-A	167.66	167.66	0.00	-	-	-	-	-
A-B	3.76	3.76	0.00	-	-	-	-	-
A-C	180.68	180.68	0.00	-	-	-	-	-