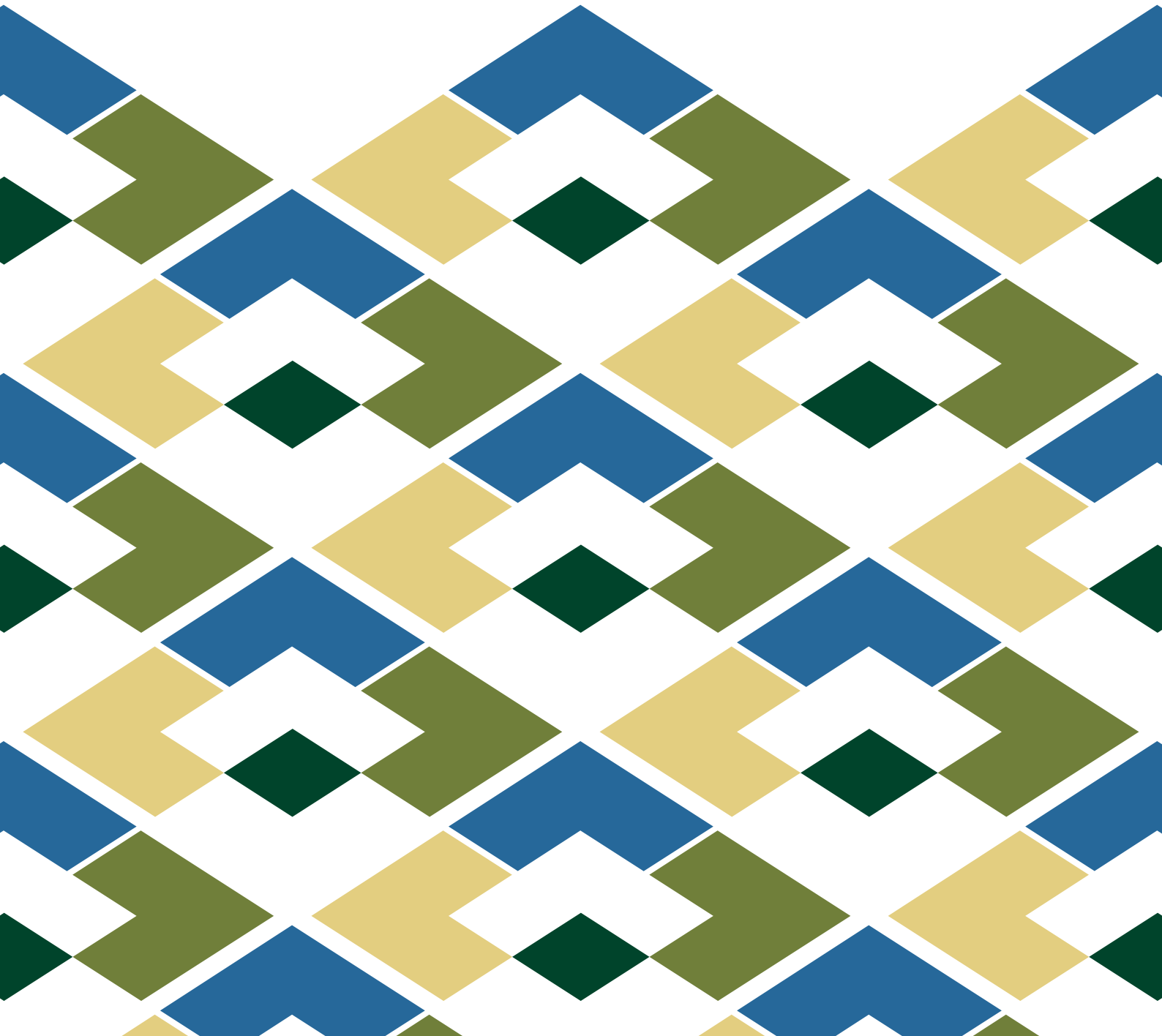


Midlothian Local Development Plan
Main Issues Report 2013:
Technical Note



Midlothian

Transport and Infrastructure



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1 Introduction

1.1 The purpose of this Technical Note is to identify the key sources of information on transport and infrastructure that have influenced and shaped the development strategy of the Main Issues Report (MIR) for the Midlothian Local Development Plan (MLDP). The information in this Technical Note includes:

- transport statistics and transport modelling affecting Midlothian;
- details of possible realignment of the A701 road west of Straiton;
- necessary improvements to school capacity in Midlothian arising from new housing development; and
- issues relating to water supply and drainage.

1.2 Flood risk is addressed in the Strategic Flood Risk Assessment (SFRA) which has been prepared to inform and support the MIR. The SFRA examines flood risk issues associated with the preferred and reasonable alternative development strategies contained in the MIR.

2 Transport

2.1 Introduction

2.2.1 This section identifies and groups together the key documents/ information sources used to inform the MIR's development strategies, both the preferred and reasonable alternative.

2.2 Transport Scotland: Midlothian Base Line Report (Dec 2010, Version 2c-Draft)

2.2.1 This Information Note was prepared by MVA Consultants on behalf of Transport Scotland. It describes baseline traffic forecast data information prepared from the LATIS transport model. The note discusses forecast changes in land use and travel patterns and subsequent predicted impacts on the strategic transport system from these factors.

2.2.2 The predicted changes in "key performance indicators" over time have been extracted between 2007, 2017 and 2032. Data for 2012 and 2022 was also provided for analysis.

2.2.3 The Information Note is provided in Appendix 1 of this Technical Note.

2.3 Transport Modelling - Midlothian

2.3.1 In addition to the transport modelling undertaken for SESplan, the Council is undertaking additional transport modelling in Midlothian to further understand the detail of traffic impact and issues for the road network from the committed development requirements set out in the Midlothian Local Plan (2008) and the additional SESplan development requirements. The first stage of the modelling work has been undertaken. MVA Consultancy has prepared a report which addresses all committed development, along with the proposed SESplan development outwith Midlothian. The results are included as Appendix 2 of this Technical Note.

2.3.2 Discussions are on-going with Transport Scotland regarding the methodology and the conclusions from the MVA Consultancy work undertaken as described above (paragraph 2.3.1). Once these discussions are concluded it is intended to run the model with the Midlothian preferred development sites for the Midlothian Local Development Plan incorporated. This will enable the impact of the SESplan requirements for Midlothian to be assessed.

2.4 A701 Realignment – Northern Corridor

2.4.1 The A701 is a main transport artery in western Midlothian which will become increasingly congested as the committed developments and new allocations are built out. The A701 provides the main transport link for The Bush. There is a pressing need to seek solutions to the growing problem of congestion on this radial route to help maintain its prestige and support potential for growth of this priority employment sector.

- 2.4.2 It is considered that a new road is required to cater for the scale of proposed housing and economic growth in this corridor. There is a consented road proposal for a realigned A701 which, if constructed, would provide good strategic access to the corridor. However, economic factors, ground conditions and difficult engineering solutions have made it increasingly unlikely that the consented road scheme will ever be delivered.
- 2.4.3 Given the unlikelihood of the consented route being delivered, the Council commissioned consultants to consider ground conditions and route options for an alternative route to replace the consented A701 road, that would meet current and future development needs.
- 2.4.4 Work by the appointed consultants, Wardell-Armstrong, was undertaken in two stages. The first stage addressed ground conditions of the land on the west side of the A701. The conclusions are included as Appendix 3 to this Technical Note. Work is being finalised on the second stage of work, which considered the engineering limitations on a number of route options. The report, when available, will be appended as Appendix 4. As part of the stage 2 work a plan has been prepared showing two route options for the A701 realignment, along with a link road to the A702. This route plan is included in the Main Issues Report.

2.5 SESplan – Strategic Development Plan

2.5.1 *Strategic Development Plan for Edinburgh and South East Scotland (SESplan), Proposed Plan (November 2011, as submitted to Scottish Ministers in August 2012)*

Figure 2 of the SESplan Proposed Plan sets out the infrastructure needed to deliver the Strategic Development Plan. The infrastructure requirements that directly relate to Midlothian are:

South East Edinburgh/ Shawfair Strategic Development Area:

- Tram Line 1C;
- Sheriffhall Junction Upgrade;
- Borders Rail;
- Orbital Bus Route;
- A68 Park and Ride;
- Millerhill Waste Facility;
- Secondary and Primary Education Facilities; and
- Water and Sewerage Infrastructure.

A7/A68/ Borders Rail Corridor and A701 Corridor Strategic Development Areas:

- Reopening of Borders Railway Line;
- Improvements to A701;
- Upgrading of Sheriffhall Roundabout and Other Junctions on A720;
- Orbital Bus Route;
- Lothianburn Park and Ride;
- Secondary and Primary Education Facilities; and
- Water and Sewerage Infrastructure.

2.5.2 SESplan: Proposed Plan, Action Programme (November 2011)

The SESplan Proposed Plan Action Programme identifies: the actions required to deliver the Strategic Development Plan's Proposed Plan; who is responsible for carrying out the action; and the timescale for carrying out each action.

The actions that directly relate to Midlothian as identified in the SESplan Action Programme are identified in the following table 1. :

Below is a web address for the Action Programme on SESplan's website:

<http://www.sesplan.gov.uk/assets/files/docs/proposed-plan/Action%20Programme%20Final.pdf>

Further information can be obtained from SESplan at www.sesplan.gov.uk tel. 0131 524 5165.

Table 1: Actions relating to Midlothian Identified in the SESplan Action Programme (November 2011)

(Extract from Table 3 Regional Core Sub Regional Area in the SESplan Action Programme)

The Action	Policy/ Strategic fit	Timing			Lead Partner(s)/ Person Responsible	Current Status
		2011 / 2019	2019 / 2024	2024 / 2032		
<p>44. Re-opening of Borders Railway line.</p> <ul style="list-style-type: none"> • Phase 1 Edinburgh to Tweedbank including rail stations: <ul style="list-style-type: none"> o Land assembly (complete); o Pre-construction surveys; (complete); o Preferred operator; o Construction; and, o Operation. • Pedestrian / cycling infrastructure to complement Borders Rail line. 	P1: The Spatial Strategy P3: Town Centres and Retail P5: Housing Land P8: Transportation P9: Infrastructure P11: Green Network	X			Transport Scotland , Rail Provider, Scottish Borders Council, Midlothian Council, City of Edinburgh Council	Funded/Committed
<p>50. Deliver Orbital Bus Route:</p> <ul style="list-style-type: none"> • stretches from west Edinburgh to Edinburgh Royal Infirmary in south –east; and • intersects all of the main radial routes into the city. 	P1: The Spatial Strategy P3: Town Centres and Retail P5: Housing Land P8: Transportation P9: Infrastructure	X	X	X	SEStran , City of Edinburgh Council, Midlothian Council, East Lothian, Transport Scotland	Policy Support
<p>51. Deliver grade separation of</p>	P1: The Spatial	X	X		Transport Scotland , City of	Policy Support

<p>Sheriffhall Roundabout on A720 Edinburgh City Bypass.</p>	<p>Strategy P2: Supply and Location of Employment Land P3: Town Centres and Retail P5: Housing Land P8: Transportation P9: Infrastructure</p>				<p>Edinburgh Council, Midlothian Council, Developers</p>	<p>(Strategic Transport Projects Review and Midlothian Local Transport Strategy)</p>
<p>55. Park and Ride:</p> <ul style="list-style-type: none"> • Extend Ingliston and Hermiston and Sheriffhall sites; and • Potential new sites include: <ul style="list-style-type: none"> - Gilmerton Road (in City of Edinburgh Council area) - Lasswade Road (in City of Edinburgh Council area); and, - North A68 /A720 junction (in Midlothian Area). 	<p>P1: The Spatial Strategy P3: Town Centres and Retail P5: Housing Land P8: Transportation P9: Infrastructure</p>	X	X	X	<p>SEStran, City of Edinburgh Council, Midlothian Council</p>	<p>Policy support (Sheriffhall, (Midlothian Local Plan 2008, Midlothian Local Transport Strategy)</p> <p>Proposed, (North A68 /A720 junction)</p>
<p>58. Deliver A68 northern Spur (A720 City Bypass to B6415 Millerhill Road Link).</p>	<p>P1: The Spatial Strategy P5: Housing Land P8: Transportation P9: Infrastructure</p>	X			<p>Developer</p>	<p>Policy support (Midlothian Local Plan 2008)</p>
<p>59. Bus Priority at Sheriffhall Roundabout.</p>	<p>P8: Transportation P9: Infrastructure</p>	X			<p>SEStran, City of Edinburgh Council, Midlothian Council Transport Scotland</p>	<p>Policy support (Regional Transport Strategy)</p>
<p>60. Implement Shawfair Road Network & Public Transport.</p>	<p>P1: The Spatial Strategy P5: Housing Land</p>	X			<p>Developers</p>	<p>Policy support (Midlothian Local Plan 2008)</p>
<p>61. Deliver Millerhill (Marshalling Yards) Waste Treatment Facility.</p>	<p>P13: Waste Management &</p>	X			<p>City of Edinburgh Council, Midlothian Council, Private</p>	<p>Proposed</p>

	Disposal				Operator	
62. Deliver improvements to water and sewerage facilities to meet strategic development needs in line with Scottish Water funding.	P9: Infrastructure P14: Water and Flooding.	X	X	X	Scottish Water, Developers	Policy support
63. Meet demand for education and other community facilities arising from strategic development: <ul style="list-style-type: none"> • Through implementation of 'Wave 3' investment programme which includes provision of 5 new schools; • Review of denominational (Roman Catholic) primary and secondary catchment areas that cross over the WLC/CEC boundary is currently underway.; and, • Development at Shawfair will require extension to Dalkeith High School. Review of secondary school provision across Midlothian may consider alternative solutions. New investment will be required to accommodate both committed and additional development. Three new primary schools (two non-denominational and one denominational) and an extension to a non- denominational primary school will be required to serve committed development at Shawfair new community. 	P1: The Spatial Strategy P5: Housing Land P8: Transportation P9: Infrastructure	X			City of Edinburgh Council, Developers	Various stages

Additional provision may be required to accommodate allocations arising from the SDP.						
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(Extract from Table 4 East Coast Sub Regional Area of the SESplan Action Programme)

The Action	Policy/ Strategic fit	Timing			Lead Partner(s)/ Person Responsible	Current Status
		2011 / 2019	2019 / 2024	2024 / 2032		
<p>65. Address capacity issues at Old Craighall junction: Full assessment required by Transport Scotland of junction's capacity to cope with current traffic, development committed already that might affect traffic, implications of any other transport projects and implications of future development. Based on the assessment a scheme of improvements can be prepared and implemented.</p>	P1: The Spatial Strategy P3: Town Centres and Retail P5: Housing Land P8: Transportation P9: Infrastructure	X	X		Transport Scotland. East Lothian Council Midlothian Council City of Edinburgh Council Developers	Proposed

(Taken from Table 6 Midlothian/ Borders Sub Regional Area of the SESplan Action Programme)

The Action	Policy/ Strategic fit	Timing			Lead Partner(s)/ Person Responsible	Current Status
		2011 / 2019	2019 / 2024	2024 / 2032		
<p>85. Deliver reopening of Borders Railway Line. Phase 1 Edinburgh to Tweedbank including rail stations:</p> <ul style="list-style-type: none"> o Land assembly (complete); o Pre-construction surveys (complete); o Preferred operator; o Construction; and, o Operation. 	<p>P1: The Spatial Strategy P3: Town Centres and Retail P5: Housing Land P8: Transportation P9: Infrastructure P11: Green Network</p>	X			<p>Transport Scotland, Rail Provider, Midlothian Council, Scottish Borders Council, City of Edinburgh Council</p>	<p>Funded / Committed (Regional Transport Strategy, Midlothian Local Transport Strategy, Midlothian Local Plan 2008, Scottish Borders Council :Local Transport Strategy, Scottish Borders Council Structure Plan, Scottish Borders Council Local Plan)</p>
<p>87. Deliver Redheugh rail station.</p>	<p>P1: The Spatial Strategy P2: Supply and Location of Employment Land P5: Housing Land P8: Transportation P9: Infrastructure</p>		X		<p>Transport Scotland, Rail Provider, Developer, Midlothian Council</p>	<p>Policy Support (Midlothian Local Plan 2008)</p>

88. Implement infrastructure improvements to complement Borders Railway (pedestrian and cycling).	P8: Transportation P9: Infrastructure P11: Green Network		X		SEStran , Midlothian Council, Scottish Borders Council	Policy Support (Regional Transport Strategy)
94. Deliver grade separation of Sheriffhall Roundabout and the upgrading of other junctions on A720 city bypass including bus priority Measures.	P1: The Spatial Strategy P2: Supply and Location of Employment Land P3: Town Centres and Retail P5: Housing Land P8: Transportation P9: Infrastructure	X	X		Transport Scotland City of Edinburgh Council,, Scottish Borders Council, Midlothian Council, developers	Policy Support (Strategic Transport Projects Review Regional Transport Strategy Midlothian Local Transport Strategy)
95. Deliver improvements to water and sewerage facilities to meet strategic development needs In line with Scottish Water funding.	P9: Infrastructure P14: Water and Flooding.	X	X	X	Scottish Water, Developers	Under Construction, Funded / committed Policy support Proposed
96. Deliver Orbital Bus Route: <ul style="list-style-type: none"> • Stretches from West Edinburgh to South East Edinburgh. 	P1: The Spatial Strategy P8: Transportation P9: Infrastructure	X	X	X	SEStran , City of Edinburgh Council, Midlothian Council, East Lothian, Transport Scotland	Policy Support
97. Deliver A7 Junction Capacity and Safety Improvements (Midlothian).	P1: The Spatial Strategy P2: Supply and Location of Employment Land P5: Housing Land P8: Transportation P9: Infrastructure	X	X		Developers	Proposed

<p>98. Deliver Improvements to A701 Corridor (Midlothian) (Relief Road).</p>	<p>P1: The Spatial Strategy P2: Supply and Location of Employment Land P3: Town Centres and Retail P5: Housing Land P8: Transportation P9: Infrastructure</p>		X		<p>Developers</p>	<p>Policy Support (Midlothian Local Plan 2008)</p>
<p>99. Implement Lothianburn Park & Ride.</p>	<p>P8: Transportation P9: Infrastructure</p>	X			<p>SEStran, City of Edinburgh Council, Midlothian Council</p>	<p>Policy Support (Midlothian Local Plan 2008, Midlothian Local Transport Strategy)</p>
<p>100. Deliver Tram Line 3 Extension to Dalkeith.</p>	<p>P8: Transportation P9: Infrastructure</p>			X	<p>City of Edinburgh Council, Midlothian Council</p>	<p>?</p>
<p>101. Implement Bus Priority measures on A7 (Midlothian).</p>	<p>P8: Transportation P9: Infrastructure</p>	X			<p>SEStran, City of Edinburgh Council, Midlothian Council</p>	<p>Policy Support (Regional Transport Strategy)</p>
<p>102. Implement reconfiguration of Leadburn junction (A701, A703, A6094).</p>	<p>P8: Transportation P9: Infrastructure</p>	X			<p>SEStran, Midlothian Council, Scottish Borders Council</p>	<p>Policy Support SEStran Regional Transport Strategy Midlothian Local Transport Strategy</p>
<p>103. Meet demand for education facilities arising from strategic development: Review of secondary school provision across Midlothian is underway to identify what new</p>	<p>P1: The Spatial Strategy P5: Housing Land</p>	X	X	X	<p>Local Authorities</p>	<p>Policy Support Proposed</p>

<p>investment will be required to accommodate both committed and additional development. Investment will also be required to accommodate allocations arising from the SDP over and above the already identified requirements for new and extended primary schools in connection with committed development;</p> <p>Three new primary schools (two non denominational and one denominational) and extension to non denominational primary school to serve Shawfair new settlement.</p> <p>And, Ongoing review of School provision within Scottish Borders.</p>						
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Notes:

1. Table 1 excludes actions listed in the SESplan Action Programme (November 2011) that are listed as relating to the National Planning Framework 2 and those in Table 8 of the SESplan Action Programme that relate to non-geographic/ cross SESplan area investments.
2. The Actions column: The numbers in “The Actions” relate to the total of 135 actions listed in the SESplan Action Programme (November 2011), i.e. number 44 in Table 1 of this Technical Note represents the 44th of the 135 actions listed in the SESplan Action Programme (November 2011).

3. Policy/ Strategic fit column: The policy references relate to the policies in the Strategic Development Plan for Edinburgh and South East Scotland (SESplan), Proposed Plan (November 2011, as submitted to Scottish Ministers in August 2012), e.g. P1 in Table 1 of this Technical Note is policy 1 of the Strategic Development Proposed Plan.
4. The Timings column: “X” represents the time period with which the action is expected to be delivered.
5. Lead Partner(s)/ Person Responsible column: The lead partner is in bold text. Where Midlothian Council is italicised that has been done to highlight that Midlothian Council has responsibility for the delivery of the action, but is not the lead partner.

3 Education Provision and Capacity

3.1 The MIR explains that there is expected to be almost no spare education capacity for further pupils arising from the new housing required to meet SESplan requirements. The MIR provides information on improvements to meet the requirements of the Midlothian Local Plan (2008) (MLP 2008) and the likely improvements to meet the additional SESplan requirements. These are set out below by settlement. However in some cases education facilities meet needs in more than one settlement, especially at secondary school level. As such, developers of new housing sites can be expected to contribute to new education provision as set out in the MLP 2008, and for new allocations, as specified in the MLDP, as discussed in the MIR. The information is provided in the table below to indicate where new education capacity is expected to be provided as a means to meet the needs of new housing development.

Table 2: Requirements for New Educational Facilities

Settlement/ Community	Requirement MLP 2008	Requirement MLDP MIR
Danderhall	<ul style="list-style-type: none"> • Extension to primary school • Secondary school capacity 	
Shawfair	<ul style="list-style-type: none"> • New primary schools • Secondary school capacity 	<ul style="list-style-type: none"> • additional primary school capacity • new high school (possibly in conjunction with East Lothian Council)
Mayfield/ Easthouses/ Newtongrange	<ul style="list-style-type: none"> • New primary school at South Mayfield or extension to Newtongrange Primary School • Secondary school capacity 	<ul style="list-style-type: none"> • Possibly additional capacity at the new Newbattle High School
Redheugh	<ul style="list-style-type: none"> • New primary school 	<ul style="list-style-type: none"> • additional primary school capacity
Gorebridge	<ul style="list-style-type: none"> • New primary school at North Gorebridge • Extensions to Gorebridge, Stobhill and St Andrews Primary Schools 	
Bonnyrigg		<ul style="list-style-type: none"> • additional primary school capacity at Bonnyrigg and Lasswade • possibly additional capacity at the new Lasswade High School
Rosewell	<ul style="list-style-type: none"> • Extension to primary school 	<ul style="list-style-type: none"> • additional primary school capacity
Loanhead	<ul style="list-style-type: none"> • Extension to Paradykes Primary School 	
Roslin		<ul style="list-style-type: none"> • possibly additional primary school capacity
Bilston	<ul style="list-style-type: none"> • New primary school (to replace Roslin PS annexe) 	<ul style="list-style-type: none"> • additional primary school capacity

Settlement/ Community	Requirement MLP 2008	Requirement MLDP MIR
Penicuik	<ul style="list-style-type: none"> Extension to Cuiken and/or Cornbank Primary Schools 	
Auchendinny		New primary school (or extension to Mauricewood Primary School) [REASONABLE ALTERNATIVE ONLY]
A701 Corridor		<ul style="list-style-type: none"> additional secondary school capacity

4 Water Supply and Drainage

- 4.1 Scottish Water has advised the Council that there is no constraint within its infrastructure and it will work with developers to accommodate new development.
- 4.2 Although no areas in Midlothian have been specifically highlighted as having limited water and/ or drainage capacity, Scottish Water has confirmed that, should treatment works or the existing network be found to have insufficient capacity, it will undertake improvements where development meets its specified criteria, one of which is that the development has Local Development Plan support. Therefore, once sites are included in the development strategy, developers have a degree of certainty that water and drainage capacity will be made available and that this will not be a constraint to development.
- 4.3 The Scottish Environment Protection Agency (SEPA) has provided the Council with commentary on water quality and flood risk issues that may arise from new development sites considered in the production of the MIR. This commentary has been incorporated into the SFRA prepared by this Council to support the MLDP.
- 4.4 As regards protection of the water environment, the MLDP will encourage developers to work with the SEPA to identify solutions which not only prevent deterioration in water quality but actively seek to improve it.

Site Assessment

- 4.5 The Development Site Assessment Technical Note sets out SEPA's comments on individual sites regarding both water quality and flood risk issues.

Appendix 1: LATIS Support to Planning Reform: Midlothian Base Line Report (10 December 2010, Note Number 1 Version 2c-Draft) – Report by MVA Consultancy on behalf of Transport Scotland

Information Note

Project Title:	LATIS: Support to Planning Reform
MVA Project Number:	C37662 08
Subject:	Midlothian Baseline Report
Note Number:	1 Version: 2c - Draft
Author(s):	Chris Robinson
Reviewer(s):	Jeffrey Davidson, Kevin Lumsden
Date:	10 December 2010

1 Introduction

1.1 Following a request from Transport Scotland, this Information Note has been prepared to describe baseline data for the Local Authority of Midlothian from the LATIS service. This note provides this analysis, discussing the forecast changes in land use and travel patterns and the subsequent predicted impacts on the strategic transport system.

1.2 For further information regarding LATIS, please visit the website at: www.latis.org.uk or by contacting the LATIS team via:

- Alison Irvine: Transport Scotland Project Manager
Tel: +44(0)141 272 7590
Em@il: Alison.Irvine@transportscotland.gsi.gov.uk

or

- Kevin Lumsden: MVA Consultancy Project Manager
Tel: +44 (0)131 240 8918
Em@il: Klumsden@mvaconsultancy.com

LATIS Modelling Capability

1.3 Land use and travel data has been extracted from the most recent versions of the LATIS modelling suite, which includes the National Transport Model - Transport Model for Scotland 07 (TMfS:07) and the National Land Use Model - Transport and Economic Land Use Model of Scotland 07 (TELMoS:07). These models have been interrogated to prepare this 'Baseline' data covering the Midlothian area. The predicted changes in key performance indicators over time have been extracted between the 2007 base year (the year in which the models were calibrated and validated), 2017 (development plan horizon year) and 2032 (visionary year). 2012 and 2022 data has also been provided for various analyses.

1.4 The LATIS transport and land use models make use of a wide range of data sources in predicting future land use and transport impacts. A summary of key inputs are as follows:

- Future Land Use development plans – Planning data has been provided by each constituent planning authority across Scotland. The planning data used in the current version of the model was collected and collated during 2007;
- Demographic Projections – The National population totals are taken from General Register of Scotland (GRoS) 2006 mid year population projections (mid range scenario). Within the modelling, the overall population growth across Scotland is constrained to the GRoS National total projections;
- Economic Projections - At the regional level, the National Model makes use of regional economic growth projections provided by Oxford Econometrics sub national economic projections 2006; and
- Transport Interventions – The current Do Minimum contains a number of transport interventions anticipated to come on line over the next few years (ie Forth Replacement Crossing, Edinburgh to Glasgow Rail Improvement Programme (EGIP), Gogar Station, Borders Railway etc). Note that, as the Dalkeith Northern Bypass was opened after 2007 the benefits/impacts associated with this road improvement are contained within the Do Minimum Scenarios (rather than within the 2007 Base Year).

The specification of transport interventions included in the Do Minimum can be found at:

http://www.latis.org.uk/services/modelling/library/download_reports/TmFS07_DoMinSchemesAssumptions_13012010.pdf

Key Notes

1.5 Some key notes to point out regarding the information contained in this report:

- The analysis presented focuses on the strategic transport network from the National Transport and Land Use models. It does not aim to represent more locally orientated impacts. More detailed analysis could be prepared through the application of the SEStran Regional Model (SRM);
- The National model forecasts are based on a wide range of data and assumptions that are subject to change as; policies, the overall economy, the level of commitment for specific development, transport projects change over time. Such changes would impact on the analysis described here and should be borne in mind when interpreting this report;
- A key benefit of the National modelling process is to compare one or more future year scenarios and to report on the differences between them by presenting key performance indicators (eg accessibility, flow\capacity, emissions, journey times etc.). In this case of the provision of this baseline information, a single view of the future is provided which should not be interpreted as an 'absolute' picture of the future;
- The National model does not include junction modeling and therefore congestion information is provided based on link related congestion effects; and
- Patronage figures associated with the introduction of the Borders Railway reflect initial model outputs and are therefore provided for comparison purposes. Further interrogation would be required to provide more definitive patronage forecasts associated with this investment.

Report Content

1.6 The Information Note covers the following areas of analysis of LATIS data and model results as agreed with Transport Scotland:

- Illustrating the coverage and detail contained within the National Models;
- Describing future changes in land use development and population forecast over time;
- Describing the change in total traffic & time lost due to congestion across Midlothian;
- Describing the forecast change in traffic volumes & public transport patronage over time;
- Illustrating predicted changes in road and public transport travel times over time;
- Describing the forecast change in Carbon Emissions within Midlothian over time; and
- Describing the type and location of traffic and public transport data available from LATIS.

2 Coverage of the National Transport & Land use Models

2.1 The LATIS modelling suite covers the strategic road and public transport networks across Scotland. The modelling consists of the road network, bus & rail services and calibrated levels of traffic and public transport (PT) patronage. The model uses a zone system to represent different areas of Scotland. Coverage of the Midlothian area is noted in Figure 2.1. Midlothian (outlined and annotated in red) is nested within the SESplan Strategic Development Plan Area (SDPa) (coloured in light yellow).



Figure 2.1 National Model: Midlothian Local Authority Boundary within SESplan SDPa.

2.2 Figures 2.2 and 2.3 present the transport network and zonal definition within the National models respectively.

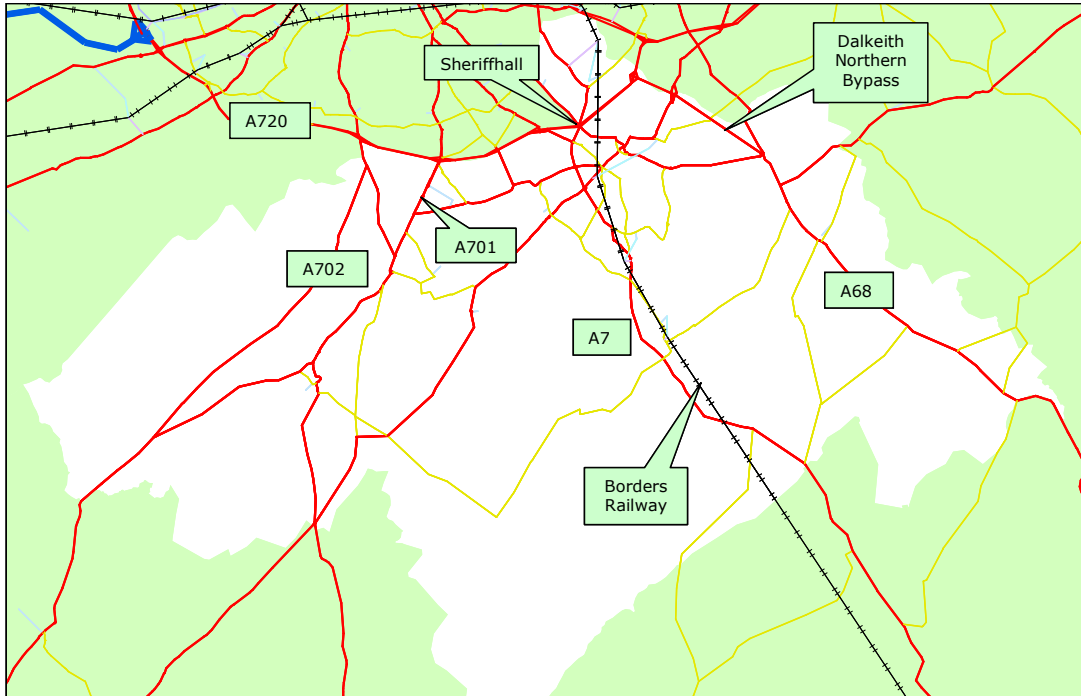


Figure 2.2 National Model: Midlothian Road & PT Network Coverage (2017)

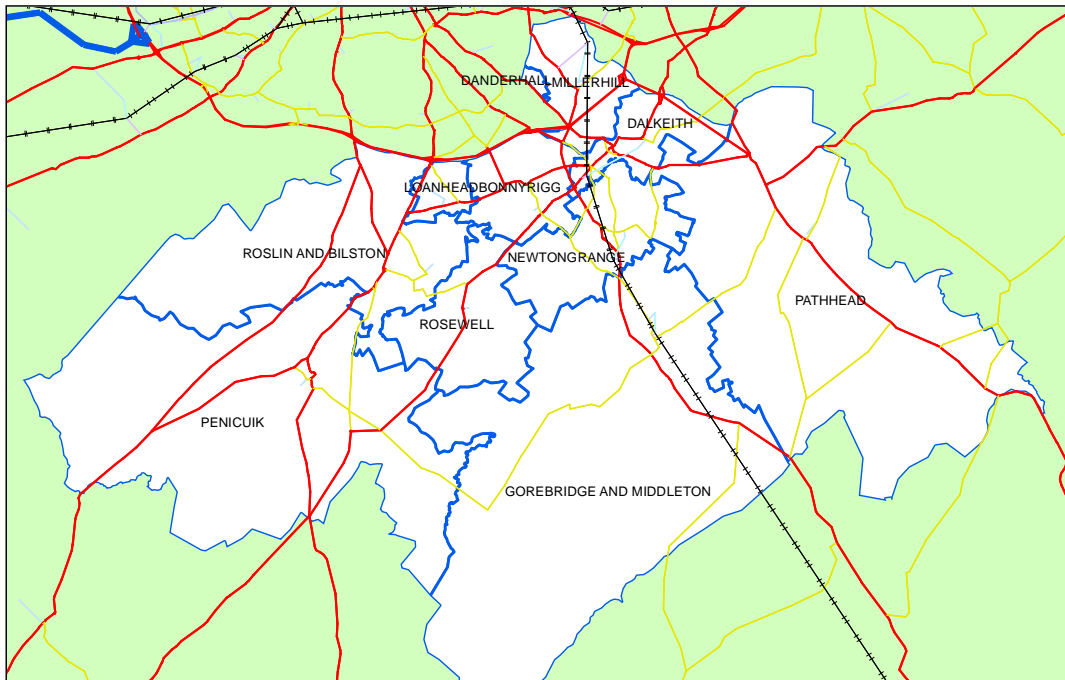


Figure 2.3 National Model: Midlothian Zone System Coverage (2017)

3 Future Changes in Land use and Development

- 3.1 By using locally derived planning data and national demographic and economic growth projections, the National land use model predicts forecast changes in households, population and employment at a zonal level over time. These forecasts take account of the anticipated distribution of new development within local plans and, at the Scotland-wide level, are constrained to nationally orientated GRoS population projections.
- 3.2 The following section describes the land use and demographic forecasts created by the land use and economic model, and where relevant, compare these household and population forecasts to those published by GRoS (2006 mid year projections).

Forecast Changes in Households

- 3.3 Figure 3.1 provides a comparison of GRoS projections and TELMoS forecasts for the number of households within the Midlothian area between 2007 and 2032. The comparison shows that GRoS-based projections suggest a steady, but slow increase in the number of households over time, with around 1,600 additional households across Midlothian over the long term horizon.

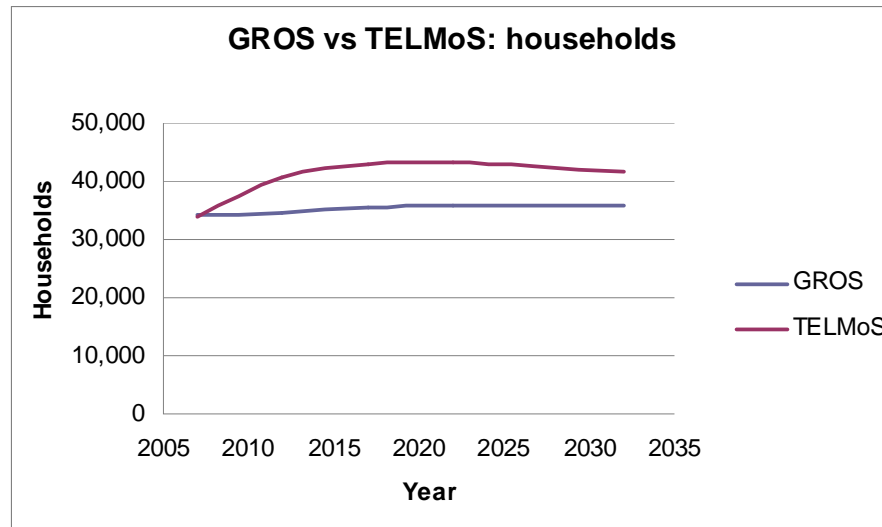


Figure 3.1 Comparison of GRoS & TELMoS Household Forecasts for Midlothian

- 3.4 TELMoS predicts a higher rate of household growth in the short to medium term, with around 10,000 additional households by 2022. The overall number of households across Midlothian then tends to level-off and reduce slightly from 2022 to 2032. Note that this specific longer term output is predominantly driven by the assumptions of regional economic performance and planning allocations included in the model.

Forecast Changes in Population

- 3.5 Figure 3.2 illustrates the predicted changes in population from both GRoS projections and the TELMoS forecasts. TELMoS forecasts an increase of around 16,000 people living within Midlothian by 2032 – which reflects the level of anticipated residential development across the area during this time frame.

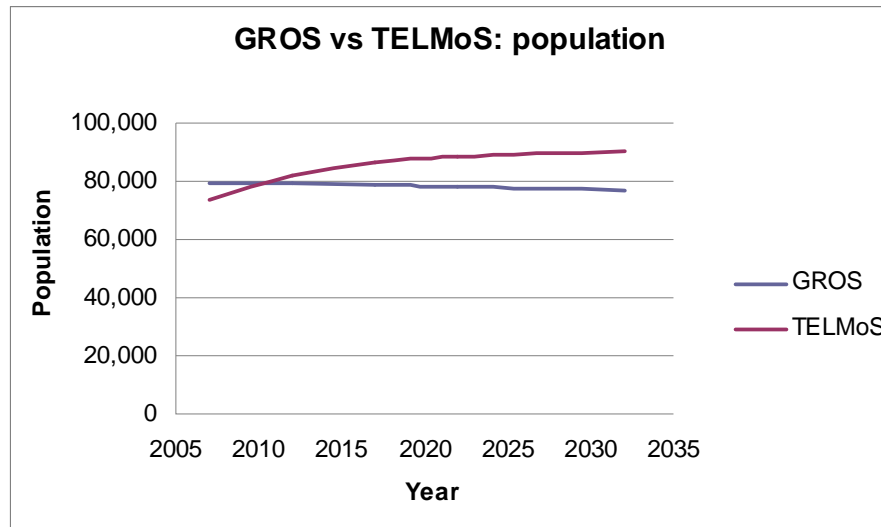


Figure 3.2 Comparison of GROS & TELMoS Population Forecasts for Midlothian

- 3.6 Similarly to the household estimates, these two sets of forecasts illustrate future changes in population from two different perspectives. Whilst TELMoS predicts a steeper short term increase in population, the GROS figures project a steady decline in population levels across Midlothian.
- 3.7 At a more detailed level of zonal planning data from TELMoS, the majority of additional population growth within Midlothian is centred on the Millerhill area, where the planned residential allocations are likely to lead to a population increase of over 6,000. There are also large increases in both households and population associated with the Gorebridge and Newtongrange areas.
- 3.8 Note that for areas where there is no change or a small increase in new residential development anticipated, population levels could reduce, which reflects the demographic trend of reducing household size across existing residential communities.

Forecast Changes in Employment

- 3.9 The National Land Use model forecasts changes in the number of jobs associated with each area by cross referencing local employment land allocations, national economic growth assumptions and differences in the demand for employment land within different areas of Scotland.
- 3.10 The land use model does not assume that all allocations will be built; rather it treats proposals as being 'permissible'. The model calculates the demand for additional development, identifying zones where development would be most attractive. Sites within these zones are assumed to be developed first, whilst sites in relatively less attractive locations may remain undeveloped.
- 3.11 Tables 3.1 to 3.3 present the predicted change in the level of households, population and employment forecast over time for each local authority within the SESplan area. Information for Midlothian is highlighted in yellow.

Table 3.1 National Model Household Forecasts for SESplan (number of households)

Households

Local Authority / Area	2007	2012	2017	2022	2032
The Borders	50,600	52,450	54,100	56,550	60,000
East Lothian	41,150	44,600	48,350	48,250	47,350
Midlothian	33,900	40,500	42,800	43,350	41,700
West Lothian	71,150	80,000	92,400	103,000	117,650
City of Edinburgh	216,250	227,550	239,150	256,100	264,200
Fife (within SESplan)	123,000	129,350	133,250	138,900	147,850
Total SESplan	536,050	574,450	610,000	646,150	678,750
Total Scotland	2,310,850	2,446,250	2,550,200	2,670,800	2,793,250

Difference in number of households (5 year intervals)

Local Authority / Area	2007-2012	2012-2017	2017-2022	2022-2032
The Borders	1,850	1,650	2,450	3,450
East Lothian	3,450	3,750	-100	-900
Midlothian	6,600	2,300	550	-1,650
West Lothian	8,850	12,400	10,600	14,650
City of Edinburgh	11,300	11,600	16,950	8,100
Fife (within SESplan)	6,350	3,900	5,650	8,950
Total SESplan	38,400	35,550	36,150	32,600
Total Scotland	135,400	103,950	120,600	122,450

Percentage difference in number of households (5 year intervals)

Local Authority / Area	2007-2012	2012-2017	2017-2022	2022-2032
The Borders	4%	3%	5%	6%
East Lothian	8%	8%	0%	-2%
Midlothian	19%	6%	1%	-4%
West Lothian	12%	16%	11%	14%
City of Edinburgh	5%	5%	7%	3%
Fife (within SESplan)	5%	3%	4%	6%
Total SESplan	7%	6%	6%	5%
Total Scotland	6%	4%	5%	5%

Table 3.2 National Model Population Forecasts for SESplan (persons)

Population

Local Authority / Area	2007	2012	2017	2022	2032
The Borders	104,350	108,450	110,350	111,650	112,600
East Lothian	87,350	89,400	94,000	94,100	95,400
Midlothian	73,800	82,250	86,750	88,450	90,200
West Lothian	156,350	174,250	199,800	214,400	226,450
City of Edinburgh	466,300	462,500	467,100	481,950	486,300
Fife (within SESplan)	261,100	270,800	274,600	275,950	275,400
Total SESplan	1,149,200	1,187,650	1,232,600	1,266,450	1,286,300
Total Scotland	4,962,800	5,098,200	5,202,000	5,269,200	5,259,400

Difference in population (5 year intervals)

Local Authority / Area	2007-2012	2012-2017	2017-2022	2022-2032
The Borders	4,100	1,900	1,300	950
East Lothian	2,050	4,600	100	1,300
Midlothian	8,450	4,500	1,700	1,750
West Lothian	17,900	25,550	14,600	12,050
City of Edinburgh	-3,800	4,600	14,850	4,350
Fife (within SESplan)	9,700	3,800	1,350	-550
Total SESplan	38,450	44,950	33,850	19,850
Total Scotland	135,400	103,800	67,200	-9,800

Percentage difference in population (5 year intervals)

Local Authority / Area	2007-2012	2012-2017	2017-2022	2022-2032
The Borders	4%	2%	1%	1%
East Lothian	2%	5%	0%	1%
Midlothian	11%	5%	2%	2%
West Lothian	11%	15%	7%	6%
City of Edinburgh	-1%	1%	3%	1%
Fife (within SESplan)	4%	1%	0%	0%
Total SESplan	3%	4%	3%	2%
Total Scotland	3%	2%	1%	0%

Table 3.3 National Model Employment Forecasts for SESplan (number of jobs)

Employment

Local Authority / Area	2007	2012	2017	2022	2032
The Borders	43,900	42,450	41,250	40,050	38,650
East Lothian	28,600	27,500	24,600	21,800	16,150
Midlothian	27,800	32,650	30,400	27,250	22,100
West Lothian	76,650	77,400	78,000	80,200	81,300
City of Edinburgh	273,500	280,400	295,250	312,750	323,350
Fife (within SESplan)	115,000	112,650	111,000	112,750	116,150
Total SESplan	565,500	573,100	580,500	594,750	597,800
Total Scotland	2,261,100	2,295,350	2,318,250	2,347,250	2,355,000

Difference in employment (5 year intervals)

Local Authority / Area	2007-2012	2012-2017	2017-2022	2022-2032	
The Borders		-1,450	-1,200	-1,200	-1,400
East Lothian		-1,100	-2,900	-2,800	-5,650
Midlothian		4,850	-2,250	-3,150	-5,150
West Lothian		750	600	2,200	1,100
City of Edinburgh		6,900	14,850	17,500	10,600
Fife (within SESplan)		-2,350	-1,650	1,750	3,400
Total SESplan		7,600	7,400	14,250	3,050
Total Scotland		34,250	22,900	29,000	7,750

Percentage difference in employment (5 year intervals)

Local Authority / Area	2007-2012	2012-2017	2017-2022	2022-2032	
The Borders		-3%	-3%	-3%	-3%
East Lothian		-4%	-11%	-11%	-26%
Midlothian		17%	-7%	-10%	-19%
West Lothian		1%	1%	3%	1%
City of Edinburgh		3%	5%	6%	3%
Fife (within SESplan)		-2%	-1%	2%	3%
Total SESplan		1%	1%	2%	1%
Total Scotland		2%	1%	1%	0%

- 3.12 The land use model predicts an increase in employment across Midlothian between 2007 and 2012, but this starts to decline from 2017 onwards. This trend reflects the economic growth assumptions and the availability of employment land planned for specific areas of Midlothian.
- 3.13 Over the longer term, a reduction in the level of employment is forecast for Midlothian. Employment forecasts, particularly over the long term, can be influenced by the level of data or planning allocations supplied by each Local Authority, but also the plans received from neighbouring areas.
- 3.14 Figure 3.3 illustrates the geographical distribution of these forecast changes to population and employment levels within Midlothian over time, highlighting the considerable growth in planned employment and residential opportunities along the A7 corridor between Millerhill and Gorebridge.

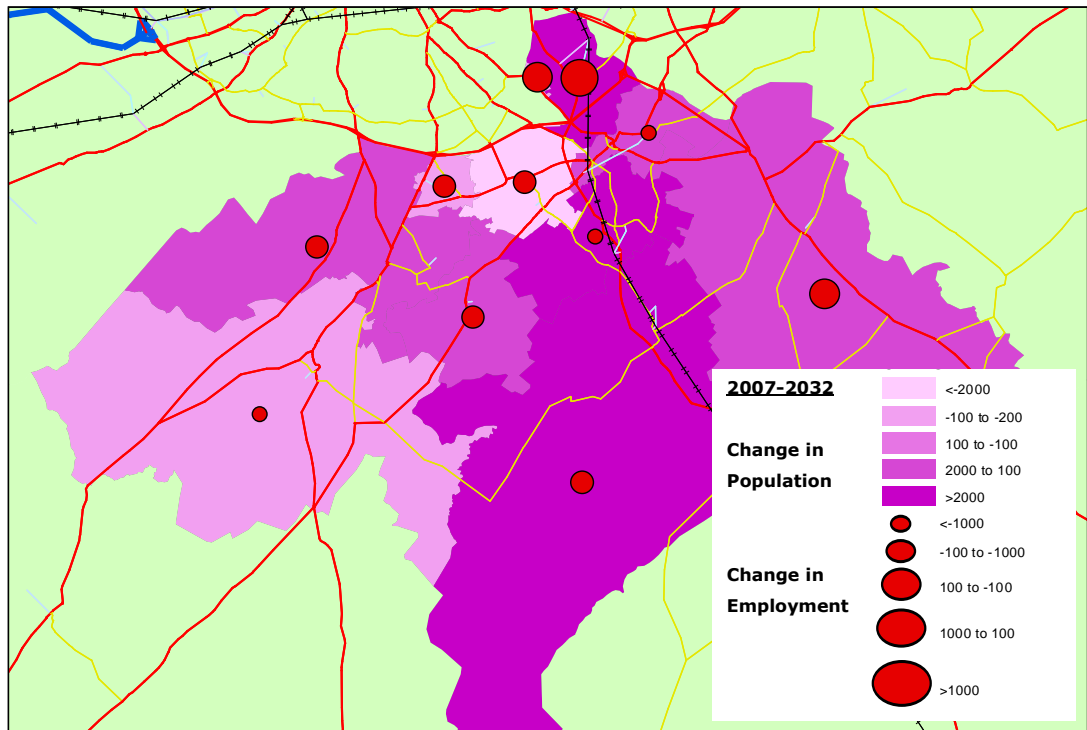


Figure 3.3 National Land use model Population & Employment Forecasts for Midlothian

4 Midlothian-Wide Road Traffic Forecasts

- 4.1 The National road traffic model (TMfS:07) predicts changes to travel patterns and traffic volumes over time. For forecast years beyond the base year of 2007, a Do Minimum Transport Network (as detailed previously) is used to represent road and rail infrastructure. The forecast change in the total level of vehicle kilometres travelled (including cars, light goods and heavy goods vehicles) across Midlothian is described in Table 4.1. Model forecasts at the Scotland-wide level are also displayed for comparison purposes.

4.2 The results are presented for each modelled hourly time period and at a daily level.

Table 4.1 Forecast Change in Vehicle Kilometres Travelled over time across Midlothian

Year / Range	Midlothian Area				Scotland
	AM Peak	Inter Peak	PM Peak	Daily	Daily
2007	119,000	83,000	136,200	1,243,000	91,465,000
2017	142,800	103,200	165,300	1,530,000	107,401,000
2032	165,000	116,000	187,000	1,729,000	126,529,000
2007-2017	23,800	20,200	29,100	287,000	15,936,000
2017-2032	22,200	12,800	21,700	199,000	19,128,000
2007-2017	20%	24%	21%	23%	17%
2017-2032	16%	12%	13%	13%	18%

4.3 Table 4.1 shows a significant and consistent increase in the level of vehicle kilometres across Midlothian between 2007, 2017 and 2032. Such a significant growth in traffic is likely to reflect the increase in population living within Midlothian, generating additional road trips over time.

4.4 Traffic growth will also reflect the rising levels of car ownership across Scotland, which, within Midlothian is anticipated to reduce the proportion of population *without* access to a car from 16% in 2007 to 9% in 2032.

4.5 There will also be an increased attraction for motorists to travel *through* Midlothian as motorists choose to use the Dalkeith Northern Bypass for their journey (note again that the Dalkeith Northern Bypass is **not** included in the 2007 base year, but is included in the Do Minimum). The change in vehicle kilometres will also be influenced by traffic growth on the A720 Edinburgh City Bypass.

4.6 The growth in traffic levels across Midlothian between 2007 and 2017 outstrips the increase predicted at the National level.

4.7 The forecast change in the total time (minutes) travelled by road vehicles (Cars, LGVs and HGVs) across Midlothian is described in Table 4.2. Model forecasts at the Scotland-wide level are also displayed for comparison purposes. The results are presented for each modelled hourly time period and at a daily level.

Table 4.2 Forecast Change in Total Vehicle Travel Time across Midlothian (Minutes)

Year /Range	Vehicle Minutes - Midlothian Area				Scotland
	AM Peak	Inter Peak	PM Peak	Daily	Daily
2007	131,100	83,100	159,100	1,303,000	98,956,000
2017	165,100	104,800	208,400	1,656,000	120,058,000
2032	206,200	122,900	262,600	1,994,000	158,400,000
2007-2017	34,000	21,700	49,300	353,000	21,102,000
2017-2032	41,100	18,100	54,200	338,000	38,342,000
2007-2017	26%	26%	31%	27%	21%
2017-2032	25%	17%	26%	20%	32%

- 4.8 Table 4.2 indicates that, similar to the trend recorded for vehicle distance, the level of total vehicle minutes across Midlothian is anticipated to increase substantially over time. The rise in travel time over the medium term horizon is greater than that forecast for the Scotland-wide average.
- 4.9 Again, the increase in vehicle minutes travelled will reflect the substantial increase in population and resultant car trips forecast across and through Midlothian.
- 4.10 Whilst total vehicle travel time indicates the change in journey times for all modelled roads, this statistic can sometimes mask the impact to travel times on more localised congested areas of the network. Table 4.3 describes the 'time lost due to congestion', (which measures only the actual time delayed in traffic congestion – this is measured as time lost below freeflow speed) across Midlothian predicted for each future year scenario.
- 4.11 By focusing on congested areas, this analysis suggests that the increase in traffic levels are likely to have a much more severe impact on the operation of the transport network, with the time lost due to traffic delays rising between 50%-100% by 2017. This statistic also represents the increase in the number of motorists using the network over time, so the impact to each or the average motorist would be less severe (as new motorists are entering the network).
- 4.12 For the average motorist, the average delay per vehicle kilometre travel in 2007 is around 17% of the average vehicle journey time within the peak periods. The level of delay or congestion is forecast to increase to around 22% of travel time by 2017 and to 29% of total travel time by 2032.
- 4.13 The greatest increases in congestion levels is likely to occur during the Inter peak period (1000-1600), which is largely uncongested in the 2007 base year model.
- 4.14 Increases in the level of congestion are mainly caused by a few specific areas or pinch points on the network – predominantly in and around Edinburgh City Bypass and in particular at Sheriffhall.

Table 4.3 Forecast Change in Time Lost due to Congestion over time across Midlothian

Year / Range	Time lost due to congestion across Midlothian (minutes)		
	AM Peak	Inter Peak	PM Peak
2007	19,100	4,800	29,600
2017	31,900	9,300	52,200
2032	51,600	15,500	86,100
2007-2017	12,800	4,500	22,600
2017-2032	19,700	6,200	33,900
2007-2017	67%	94%	76%
2017-2032	62%	67%	65%

5 Key Traffic Volumes & Public Transport Patronage

5.1 The following section, describes the forecast change to traffic and public transport passenger volumes along key routes across Midlothian. These traffic statistics represent the average flow or patronage (two-way) along the length of each route or stretch of road within the Midlothian area. These routes include:

- A702 from Carlops to the Edinburgh City Bypass;
- A7 from Middleton to Danderhall;
- A68 from Fala to the Edinburgh Bypass (reflecting the A68 through Dalkeith in 2007); and
- A720 Edinburgh Bypass between Sheriffhall and Old Craighall.

Daily Traffic Flows

5.2 Table 5.1 describes the forecast change in the average daily traffic flow along major routes across Midlothian.

Table 5.1 Daily Traffic Flow using key Trunk Roads in Midlothian (AADT - Vehicles)

Route	2007	2007-2017		2017-2032	
A702	5,800	500	9%	1,000	16%
A7	7,700	700	9%	900	11%
A68	8,600	-1,100	-13%	900	12%
A720	33,900	8,300	24%	4,900	12%

5.3 This traffic data indicates a consistent increase in traffic flows along the A702 and A7 over time – with a rise of around 10% between 2007 and 2017. Increases in traffic flow along the A7 in particular are likely to reflect the traffic associated with major development sites at Newtongrange, Gorebridge and Millerhill. The modelling suggests that the most considerable rise in traffic levels will be associated with sections of the Edinburgh Bypass. This specific increase in traffic is likely to reflect the increase in population and employment levels anticipated across the region. It will also reflect diversionary traffic impacts associated with the Dalkeith Northern Bypass (DNB), whereby traffic now feeds onto this section of the bypass from the new alignment of the A68.

5.4 The A68 analysis represents the original route through Dalkeith. The modelling highlights the reduction in traffic levels along sections of this route with the new Dalkeith Northern Bypass is in place (around 13%). The longer term forecasts suggest that the majority of these traffic reduction benefits are lost over time, as traffic growth off-sets some of the diversionary benefits associated with the DNB.

Daily Public Transport Flows

5.5 Table 5.2 describes the forecast changes in daily public transport (PT) flows along key routes through Midlothian. Table 5.3 describes the forecast change to PT mode share on these routes.

Table 5.2 Daily PT Passenger Flows using Key Routes across Midlothian

Route	2007	2007-2017		2017-2032	
A7	2,300	-300	-13%	-300	-15%
A68	700	-300	-43%	-100	-24%

Table 5.3 Daily PT Mode Share along Key Routes across Midlothian

Route	2007	2017	2032
A7	23%	19%	16%
A68	9%	6%	4%

- 5.6 The PT forecasts mainly predict a reduction in bus patronage along these routes over time. As a result of these changes, the proportion of public transport mode share (as a proportion of total daily car and PT trips) is also predicted to reduce over time along the A7 and A68.
- 5.7 The modelling also indicates that the introduction of the Borders Railway would attract travellers to use public transport to access Edinburgh. For example, rail patronage analysis suggests that around 300 passengers would board/alight the Waverley line using Midlothian rail stations during the morning peak period. As a result of these rail improvements and PT accessibility benefits, the modelling indicates a reduction in bus travel along the A7 and A68, as some existing bus users choose to use the new rail services.
- 5.8 This reduction in public transport patronage is also likely to relate to an increase in car ownership over time. An increase in traffic congestion on sections of routes into Edinburgh (such as A68 and A7 through Sheriffhall) would also discourage passengers from using the bus to access Edinburgh.
- 5.9 Note that the public transport passenger flows described here may be less than expected due to the level of network and zonal detail contained within the National model. This relates to the aggregation of the zone system which would limit the amount of local or short distance (intra-zonal) public transport journeys included within the model.

6 Road & Public Transport Accessibility

6.1 The following section discusses how road and public transport journey times are predicted to change over time and impact the level of accessibility for travel to/from Midlothian.

Changes in Road Journey Times

6.2 Table 6.1 describes the modelled road journey time from each Midlothian zone to Edinburgh City Centre during an average hour in the AM peak in 2007 and predicted change within each forecast year scenario.

Table 6.1 AM Peak Road Travel Times to Edinburgh City Centre from Midlothian (minutes)

Area / Zone	2007	2007-2012	2012-2017	2017-2022	2022-2032
Penicuik	29	6%	6%	6%	19%
Roslin and Bilston	23	6%	9%	6%	25%
Loanhead	18	12%	9%	13%	27%
Rosewell	24	8%	6%	9%	21%
Bonnyrigg	24	7%	11%	9%	27%
Danderhall	21	9%	16%	7%	30%
Millerhill	24	11%	12%	14%	14%
Gorebridge and Middleton	33	6%	9%	7%	20%
Newtongrange	27	9%	9%	11%	22%
Dalkeith	26	-2%	12%	10%	28%
Pathhead	35	4%	12%	6%	23%

- 6.3 Table 6.1 indicates that road travel times from Midlothian to central Edinburgh are forecast to steadily increase over time at a rate of approximately 7%-12% every 5 years. There is a slight reduction between 2007 and 2012 from Dalkeith to Edinburgh as a consequence of the introduction of Dalkeith Northern Bypass, but all other routes and years note an increase which is in line with the general predicted increase in road based traffic. The increases in journey times associated with the Millerhill and Danderhall areas are reflective of the level of planned developments, generation of new road trips and subsequent rise in congestion forecast for these locations.
- 6.4 More specific travel time or road speed analysis suggests that the majority of routes across Midlothian would remain relatively uncongested in the future, with the main deterioration in road travel conditions focusing on specific areas of the network. These areas include routes approaching Sheriffhall Roundabout and sections of the Edinburgh Bypass. At peak times, the network is anticipated to come under pressure in and around the Straiton area, along sections of the A7 and sections of the A701 through Penicuik.
- 6.5 The transport modelling indicates a substantial drop in average speeds along the Bypass at peak times. For example, the average speed along the section of the bypass between Old Craighall and Sheriffhall is forecast to reduce from 73kph in 2007 to 57kph in 2032 (a reduction of 22%).
- 6.6 As the Edinburgh Bypass currently operates close to capacity at peak times, the predicted increase in traffic volumes along this route is likely to have a more substantial impact than other currently uncongested routes.
- 6.7 With the planned growth in the regional economy and population, coupled with the substantial development plans in Midlothian and neighbouring authorities, the modelling suggests that the strategic network will come under increasing pressure as motorists choose to travel between locations outwith central Edinburgh. These demands on the road network are likely to pressurise the operation of the Edinburgh Bypass, which provides a key link between many planned residential and business areas.

6.8 The modelling indicates that the operation of the Dalkeith Northern Bypass would only be marginally effected by the predicted rise in traffic over time. However, as motorists use this new route to access the A720, motorists are likely to continue to experience traffic delays during other sections of their journey. Elsewhere, the traffic flows travelling through Dalkeith in 2017 are around 30% lower than that recorded in 2007, as traffic reroutes to use the DNB.

Public Transport Journey Times

6.9 Table 6.2 describes the modelled bus based public transport journey times from each Midlothian zone to Edinburgh City Centre during an average hour in the AM peak in 2007 and predicted change within each forecast year scenario. These PT travel times include; walk time, waiting time and in-vehicle transit time. They do not include any representation of public transport fares.

Table 6.2 AM Peak PT Bus Travel Times to Edinburgh City Centre from Midlothian (minutes)

Area / Zone	2007	2007-2012	2012-2017	2017-2022	2022-2032
Penicuik	61	2%	2%	2%	4%
Roslin and Bilston	48	3%	3%	3%	4%
Loanhead	44	2%	2%	2%	3%
Rosewell	54	4%	4%	4%	9%
Bonnyrigg	47	3%	3%	3%	5%
Danderhall	35	7%	6%	6%	15%
Millerhill	41	7%	6%	6%	14%
Gorebridge and Middleton	55	4%	4%	4%	5%
Newtongrange	50	5%	5%	5%	6%
Dalkeith	42	6%	5%	5%	6%
Pathhead	44	7%	6%	6%	10%

6.10 The modelling indicates that bus travel times are likely to increase for areas that rely on bus-based PT services. This trend generally reflects the predicted increase in congestion over time – which would have a subsequent impact to bus journey times.

6.11 With the introduction of Borders Rail in 2012, rail based travel times are provided (for the AM Peak) for a number of zones as follows:

- Millerhill to Edinburgh City = 18 minutes;
- Gorebridge and Middleton to Edinburgh = 32 minutes;
- Newtongrange to Edinburgh = 28 minutes; and
- Dalkeith to Edinburgh = 23 minutes.

Note that these travel times are based on the rail service pattern and therefore these travel times are constant from 2012 to 2032.

6.12 The modelling also suggests some considerable public transport time savings for areas located close to the new Borders Railway stations, whereby the new rail services would provide quicker and uncongested travel times to central Edinburgh (approximately 50% of the bus based travel time in 2012).

Access to Edinburgh by Public Transport

- 6.13 Figure 6.1 illustrates the forecast changes in the accessibility by public transport to central Edinburgh between 2007 and 2017. These calculations include the combined elements of PT travel time and PT fares (ie Generalised Cost).
- 6.14 Within this illustration, the darker green colouring represents areas with predicted PT accessibility improvements - highlighting the accessibility benefits associated with the Borders Railway for Midlothian travellers.
- 6.15 Note however, that as the payment of PT fares are included within this analysis, the full change in accessibility are less significant than that suggested by changes in travel times alone – as although the Borders Railway provides faster travel times to/from parts of Midlothian, it is likely that passengers would have to pay a higher fare to access these services.

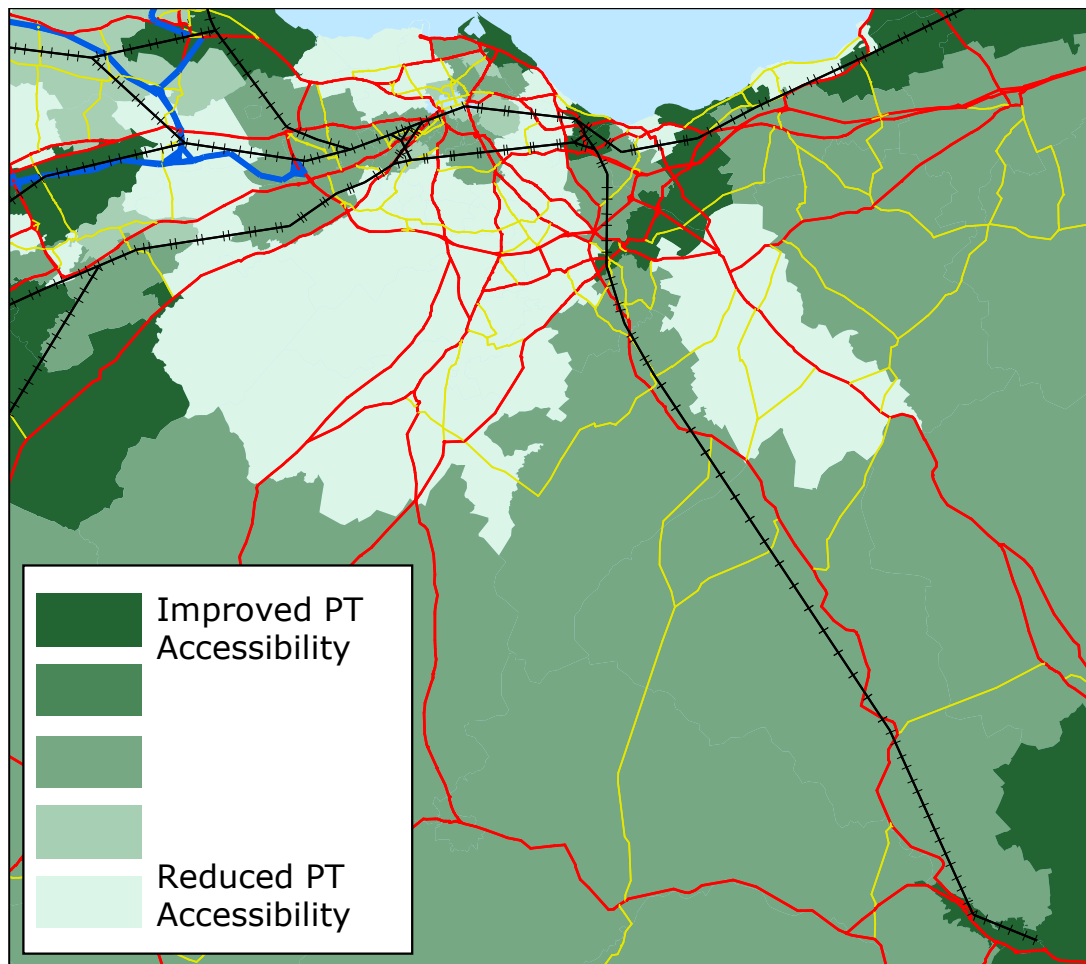


Figure 6.1 Change in PT Accessibility to central Edinburgh (2007-2017)

7 Emissions Analysis

- 7.1 The National Transport Model contains an environmental emissions module which calculates the level of Carbon emissions (tailpipe) associated with road vehicles.
- 7.2 Carbon emissions are calculated by cross referencing vehicle flow, traffic composition and vehicle congested speed data from the model with the emissions forecasting guidance contained within the guidance from the Design Manual for Roads and Bridges (DMRB) Volume 11 Section 3 Part 1.
- 7.3 Note that the figures described here reflect the volume of traffic using the strategic road network and will exclude some emissions associated with local or short distance (intra-zonal) journeys.
- 7.4 Table 7.1 describes the modelled level of road-vehicle Carbon emissions for 2007, 2017 and 2032.

Table 7.1 Forecast Change in Annual Carbon Emissions over time

Year / Range	Total Emissions of Carbon (Tonnes – Vehicle Tailpipe)	
	Midlothian	Scotland Total
2007	26,700	2,087,000
2017	29,300	2,205,000
2032	33,600	2,587,000
2007-2017	2,600	118,000
2017-2032	4,300	382,000
2007-2017	10%	6%
2017-2032	15%	17%

- 7.5 The analysis demonstrates that the level of Carbon emissions associated with vehicles travelling within Midlothian is forecast to increase over time, with around a 10% increase in emissions by 2017 and a further 15% increase by 2032. These trends are consistent with those predicted at the Scotland-wide level and reflect the anticipated rise in traffic levels over time.
- 7.6 Note that these Carbon forecasts also take account of the current webTAG assumptions of vehicle fleet and fuel efficiency over time.

8 Observed Traffic and Public Transport Data Collection

- 8.1 This section describes various observed traffic and travel data sets that are available from the LATIS service.
- 8.2 Figure 8.1 illustrates the location of Roadside Interview surveys that have been collected within or close to the Midlothian area. These surveys contain origin and destination traffic movements for cars, lights and heavy goods vehicles. Note however, that these surveys are now over ten years old.

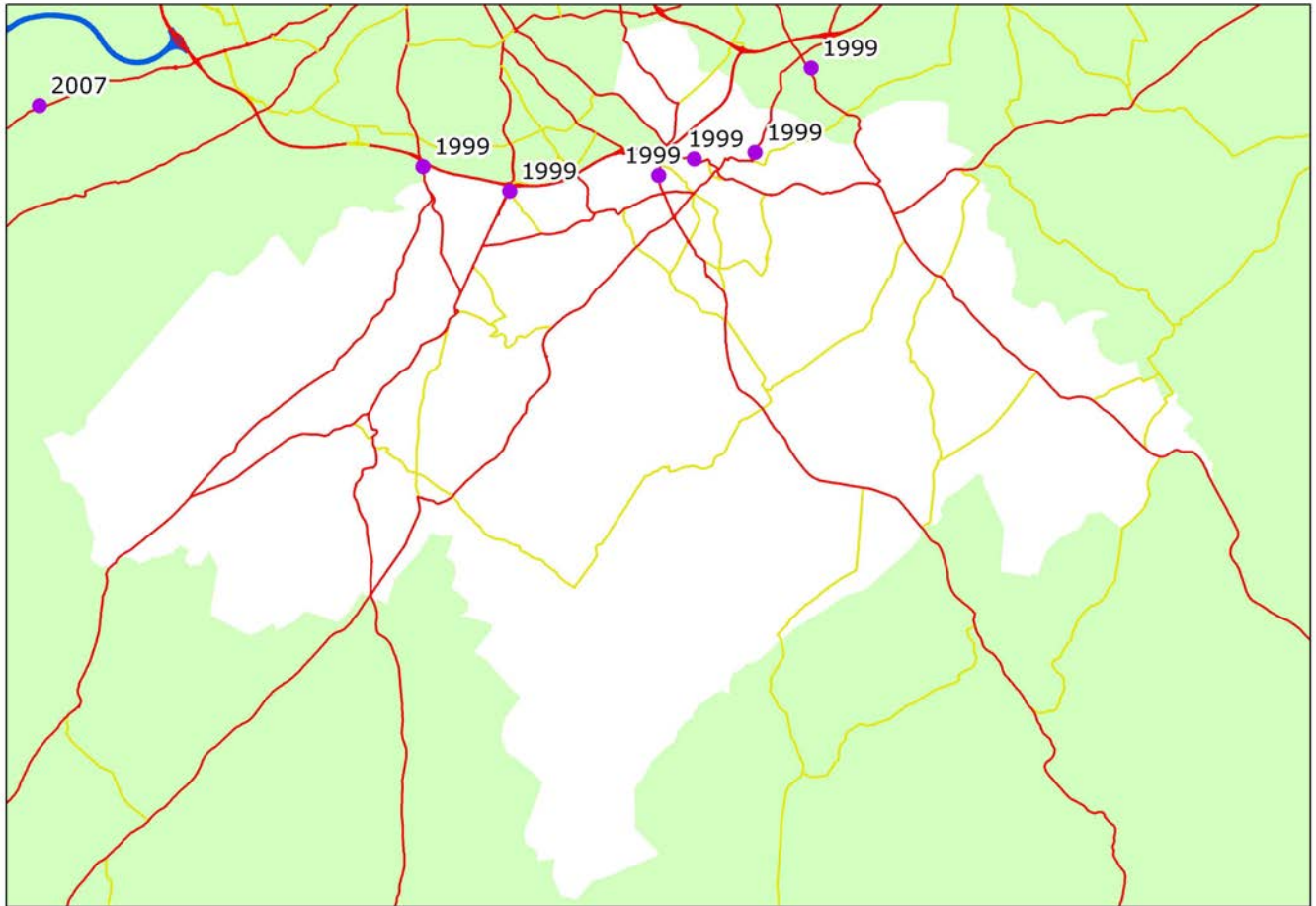


Figure 8.1 Observed Roadside Interview Data

8.3 Figure 8.2 illustrates the location of traffic counts that are available from LATIS for Midlothian and the surrounding area. These include a number of processed traffic counts that have been used in the development of the LATIS models.



Figure 8.2 Observed Traffic Count Data

8.4 Figure 8.3 illustrates the routes where car journey time surveys are available from LATIS. These include floating car surveys and also 'ITIS' data - which calculates road journey times along major routes using GPS data.

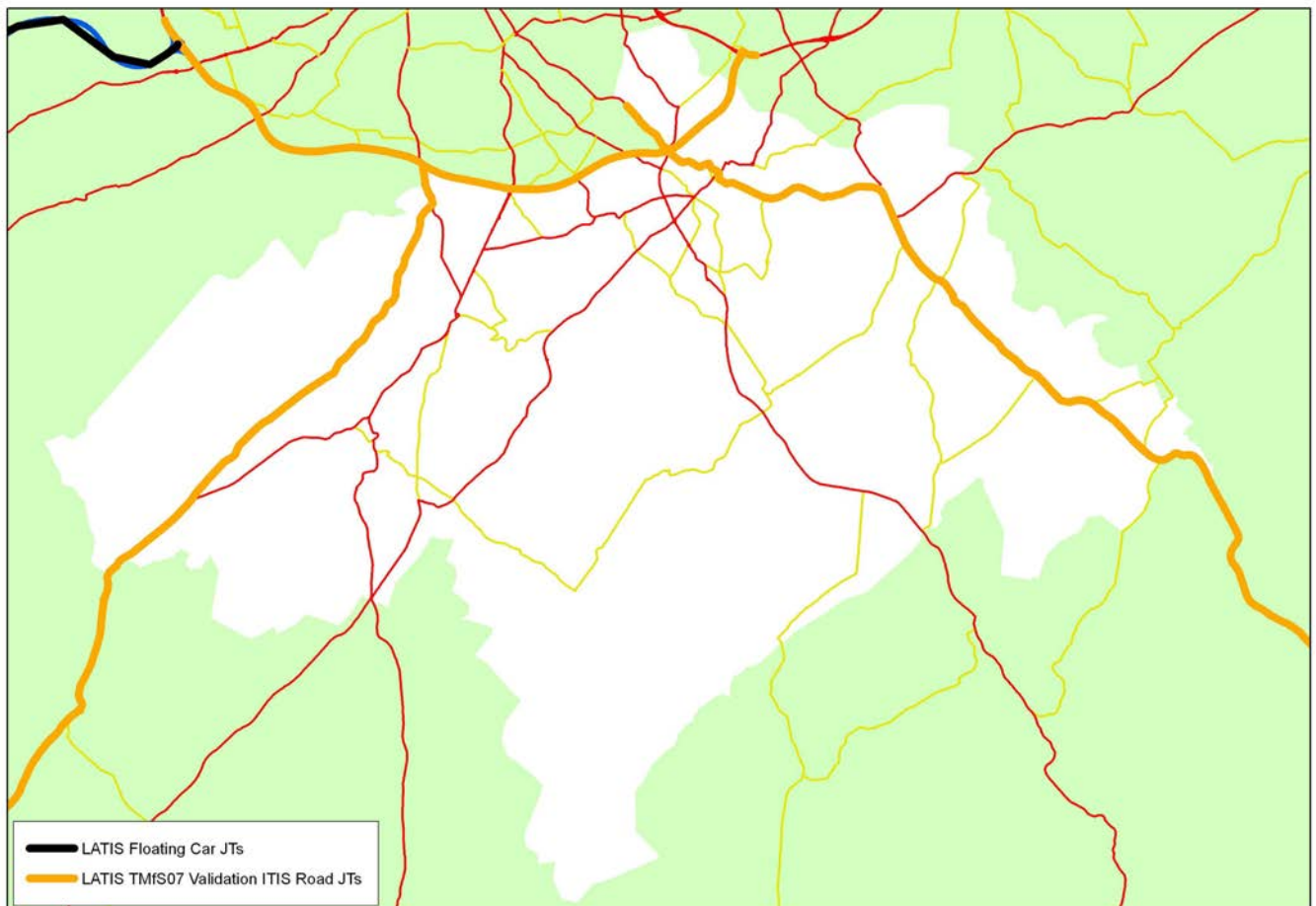


Figure 8.3 Observed Road Journey Time Data

8.5 Figure 8.4 illustrates the public transport data that is available from LATIS. These include bus and rail-based park and ride car park occupancy surveys and origin/destination passenger surveys. Rail based boarding and alighting counts are also available.

8.6 The PT observed data sets also include a number of bus passenger surveys (occupancy and origin and destination surveys) undertaken around the periphery of Edinburgh in 2007.

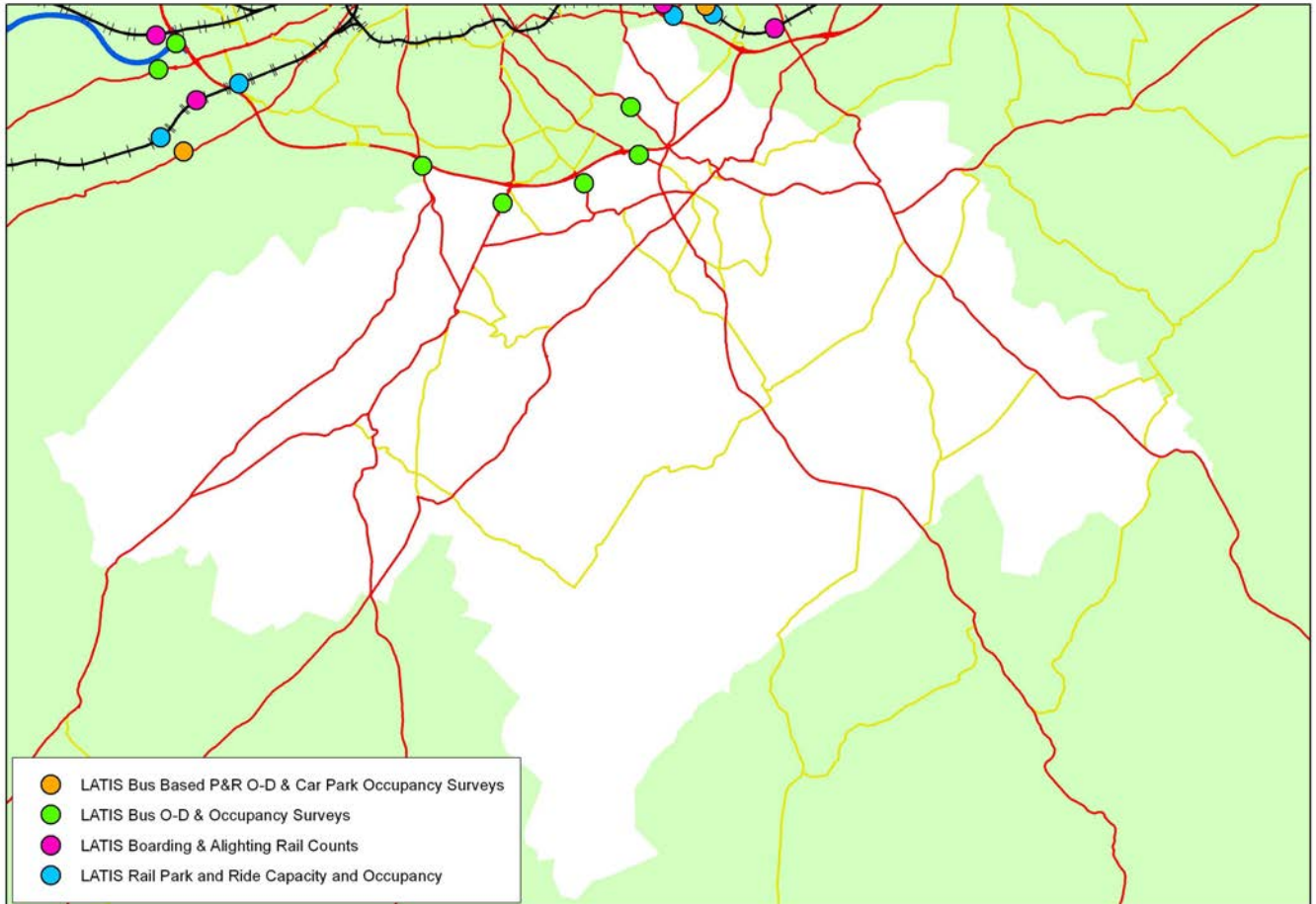


Figure 8.4 Observed Public Transport Data

8.7 In addition to specific observed traffic and travel surveys, LATIS has also processed Census travel to work data which has been used in the development of travel demand matrices. This information is also available for the Midlothian (and surrounding) area.

**Appendix 2: Midlothian Local Development Plan: Reference Case Modelling (31
January 2013, Note Number 2 Version 1.3) – Report by MVA
Consultancy on behalf of Midlothian Council**

Information Note

Project Title:	Midlothian Local Development Plan	
MVA Project Number:	100068	
Subject:	Reference Case Modelling	
Note Number:	2	Version: 1.3
Author(s):	Scott Leitham	
Reviewer(s):		
Date:	31 January 2013	

1 Introduction

1.1 This note outlines the preliminary modelling work undertaken using the SEStran Regional Model (SRM) to provide a platform for the later modelling of the proposed Midlothian Local Development Plan (LDP). This piece of work has been undertaken in two phases:

- Phase 1: the production of an enhanced version of the SRM with improved detail and accuracy in Midlothian; and
- Phase 2: the creation of a 2024 forecast scenario based on the SESplan Proposed Plan with the exception of any new Midlothian allocations – ie including existing Midlothian Local Plan allocations only.

1.2 Version 1.1 of this note contains amendments following comments received from Midlothian Council.

1.3 Version 1.2 includes updates following a meeting with Transport Scotland and Midlothian Council on 11 December 2012. It includes expanded text describing the process undertaken to date.

2 Phase 1 – SRM Model Enhancements

2.1 This process was focussed on three main aspects:

- splitting of existing model zones to improve spatial representation in Midlothian;
- adding network detail commensurate with the more detailed zone system; and
- improve model calibration / validation in Midlothian using extensive count data supplied by Midlothian Council.

2.2 The SRM forecasting process uses a two-tier zoning system. Forecasts of population (highly disaggregated) and employment are derived from the national LATIS model (incorporating the TELMoS land use and economic model). At the TELMoS level, Midlothian is represented by 11 zones. In the original SRM, these are split out to 16 zones.

2.3 For the enhanced SRM, Midlothian is now split into 27 zones, significantly improving the spatial representation of the area, and its connectivity to the road network.

2.4 The final zone hierarchy adopted is shown below.

	TELMoS Zone	SRM Zone	Exp SRM Zone	
Penicuik	50	333	333	north west Penicuik
		334	334	south east Penicuik
		335	335	south west Penicuik
Roslin and Bilston	51	207	207	Roslin
			473	Bilston
			474	Auchen
			475	Bush
Loanhead	52	254	254	south east Loanhead
			471	ikea / costco
			472	sains
			477	main st ind
			478	Asda
			479	strait north
Rosewell	53	332	332	Rosewell
Bonnyrigg	54	253	253	Lasswade
			476	Bonnyrigg
Danderhall	55	252	252	Danderhall
Millerhill	56	251	251	Millerhill
Gorebridge and Middle	57	327	327	south Gorebridge
			328	north Gorebridge
Newtongrange	58	329	329	Newtongrange
		330	330	Easthouses
		331	331	Mayfield
Dalkeith	59	255	255	Town Centre
			480	Eskbank
			481	Woodburn
Pathhead	60	326	326	Pathhead

2.5 Additional network detail was added in line with the newly disaggregated zones. The model now includes all A class and B class roads in Midlothian together with a selection of unclassified roads. A graphic of the revised network coverage is shown below.



Matrix Estimation

- 2.6 A comprehensive set of traffic count data was obtained from Midlothian Council. This data was used to undertake a 'matrix estimation' exercise to improve the accuracy of the model in the Midlothian area with a particular focus on the key north – south corridors.
- 2.7 The A68 Dalkeith Northern Bypass, a very significant scheme for Midlothian, opened in September 2008 whilst the base year of the SRM is 2007. Thus the base year calibration of the model does not reflect the post A68 situation.
- 2.8 However, a previous workstream undertaken for Transport Scotland had developed a 2010 'present day' forecast scenario. So for the purposes of this exercise the traffic data selected for the matrix estimation exercise related to the 2010, and this was used in conjunction with the 2010 'present day' scenario referred to above to develop a much more accurate set of transport demand matrices which reflected the post A68 situation.
- 2.9 The results of this exercise are found in the accompanying spreadsheet (*20121001 ME Summary v1.0.xls*). This spreadsheet shows the count, the original assigned value from the SRM (2010 present day scenario) and the final assignment value achieved here (2010 present day enhanced scenario). A traffic light colour coding is used to reflect the industry best practice 'GEH' statistic¹. The lower the value of the GEH, the better the match to the count data and it can be seen that the outcome of this process is a step change in the accuracy of the model in the Midlothian area across the three time periods.
- 2.10 These new 2010 enhanced present day matrices are then used as the basis of the forecasting exercise. This will be discussed further below.

¹ See <http://en.wikipedia.org/wiki/GEH> for details.

Summary

- 2.11 The end point of Phase 1 is a new version of the SRM with improved spatial detail in terms of networks and zoning in Midlothian, and also a level of validation which represents a step change in terms of the representation of traffic flows on the key routes in Midlothian.

3 Phase 2 2024 Midlothian Baseline Scenario

- 3.1 The objective of this phase is to create a forecast year 'reference case' scenario which can be used as the basis for assessing the impact of the new allocations contained within the Midlothian Local Development Plan. It was agreed that this should contain a representation of committed developments in Midlothian only, so the incremental impacts of the new LDP allocations can be clearly identified.
- 3.2 The basis for this is existing SRM model runs undertaken for SESplan / SEStran during the development of the SESplan Strategic Development Plan (SDP).

The Planning Scenario

- 3.3 Planning Data (ie allocations by type – residential, retail, industrial etc) is routinely collected by the LATIS commission, latterly in association with Scottish Water. Data was obtained from Midlothian Council in summer 2010 to best reflect the residential allocations as per the SESplan SDP Main Issues Report (MIR). This data was in the form of:

- completions, planning permissions, plan allocations (all with specific Ordnance Survey Grid References); and
- 'other commitments' which included 2,500 units attributed to the SDP (ie additional to any existing Midlothian Council commitments).

- 3.4 Data provided by Midlothian in 2010 suggested a figure of 14,821 additional houses by 2024 (with approximately 15,600 across the whole period to 2032).
- 3.5 These data (together with data from all the other SESplan local authorities) were used to produce the first forecast in the SRM based on the MIR allocations to 2019, 2024, and 2032 during 2010.
- 3.6 However, the SDP Proposed Plan (PP) published in November 2011 contained a revised set of residential figures and these were used to produce a new SESplan PP scenario on behalf of SEStran in early 2012. A key feature of the PP is that there is no spatial definition provided for the 24,050 new allocations post 2024. As such 2024 formed the forecast horizon year for this revised run.
- 3.7 Note that at that stage (March 2012), data, time and resources precluded a whole new modelling exercise being undertaken to reflect the Proposed Plan (ie a new run of TELMoS based on new local authority provided planning data and a resulting run of the SRM was not commissioned). Instead a process of factoring the existing MIR based outturn TELMoS planning data, focussed on households and population was undertaken to bring the data into line with the SPD PP. The underlying assumptions and methodology adopted to produce this run are described in detail in MVA Information Note 1 v3.0 'SDP MIR and Proposed Plan Modelling'. This model has been used as the basis for the Midlothian work as the best available representation of

the SESplan area in 2024 at the time. The model has also been used by Transport Scotland in a separate workstream focused on Edinburgh City Bypass.

3.8 In summary, the steps undertaken to produce this 2024 run ('PP Allocation) were:

- A - estimate the 2024 'target' additional households for the SESplan area (this figure did not feature in the PP and therefore had to be estimated by MVA) – calculated as an additional 117,000 from a 2007 base (based on GRoS SESplan area projections);
- B - allocate all local authority planning data provided in 2010 for the period to 2024 to a SDP-defined Strategic Development Area (SDA) (or non SDA area) – based on an overlay of SDP defined SDAs provided by SESplan – ie this is the 'on the shelf' planning data and can then be compared with the PP allocations;
- C - estimate the required additional households SDP figures for each SDA (and non-SDA) from Table 3 of the Proposed Plan – derived from the committed and SDP defined allocations (assuming a proportion (88%) of the committed is built by 2024, all SDP allocations are built out, and windfalls are allocated in proportion to existing allocations) to meet the 117k 'target' (PP Table 3);
- D - create factors to adjust the planning data obtained in 2010 to match the 2024 SDP PP derived figures at the SDA / model zone level (ie B / C);
- E – make final local authority level adjustments in line with Table 3 in Proposed Plan; and
- F - create a new residential allocation scenario for 2024. This scenario was used to produce the 2024 Proposed Plan traffic forecasts.

3.9 The scenario developed in 'F' above contained the full allocation of new SDP residential allocations for Midlothian. For the purposes of this exercise, we need a scenario with no new development (other than committed and windfall) in Midlothian. Therefore a new 'PP Allocation Midlothian Committed Only)' scenario was produced by subtracting the SDP allocations previously noted by MC for the period to 2024 (at MIR stage) from the 'Revised PP Allocation' scenario. This scenario therefore represents:

- the best estimate of the SDP (PP) in all other SESplan local authorities based on data provide by the local authorities and;
- committed (ie existing Local Plan only) development only for Midlothian (ie excluding the SDP new allocation data provided by Midlothian at MIR stage).

3.10 This scenario therefore represents the best 'Reference Case' platform to build on for the modelling of proposed new allocations in the Midlothian area associated with the Local Development Plan.

3.11 The figures associated with this process for Midlothian zones (at the TELMoS level) to 2024 are shown in the Table below.

TELMoS Zone	Zone Name	Original MIR Total Allocation (as modelled in TELMoS)	Revised PP Allocation (estimated from process outlined above)	MIR SDP allocation (provided by Midlothian Council)	Revised PP Allocation committed only (ie new Reference Case)
-------------	-----------	---	---	---	--

50	Penicuik	1,159	780		780
51	Roslin and Bilston	1,006	677	530	147
52	Loanhead	355	239	120	119
53	Rosewell	727	489	200	289
54	Bonnyrigg	560	467	70	397
55	Danderhall	34	38		38
56	Millerhill	3,720	4,173	0	4,173
57	Gorebridge and Middleton	3,012	2,513	180	2,333
58	Newtongrange	2,301	1,919	210	1,709
59	Dalkeith	911	760	240	520
60	Pathhead	1,035	863		863
TOTAL		14,821	12,919²	1,550	11,369

- 3.12 A key point here is that the forthcoming Midlothian Local Development Plan is likely to allocate a relatively small number of new residential land, in the context of exiting allocations.
- 3.13 The resulting zonal population and employment data at the TELMoS and SRM zone levels can be found in the accompanying spreadsheet '20121203 Midlothian Planning Data v1.0.xls'.

Use of Planning Data in Forecasting

- 3.14 The planning data in terms of additional households in a zone is used to produce highly disaggregated forecasts of population in each zone. In overview these population forecasts are used to produce growth factors which are applied to the base year matrices to produce forecast year transport demand matrices.
- 3.15 In this case, we have recalibrated the demand model to reflect the 2010 'present day' matrices developed in Phase 1. This means that planning data changes from 2007 to 2024 were applied to a 2010 traffic situation. As traffic levels were stable or flat between 2007 and 2010 it was deemed reasonable to adopt this approach. The benefits of using a post A68 opening starting position outweigh any slight inconsistency with respect to the planning data when applied as outlined above (which would be well within the bounds of uncertainty within any forecasting process in any case).
- 3.16 The 2024 demand matrices produced for highway and public transport are therefore the best reflection of present day traffic flows and the underlying and forecast year planning allocations data.

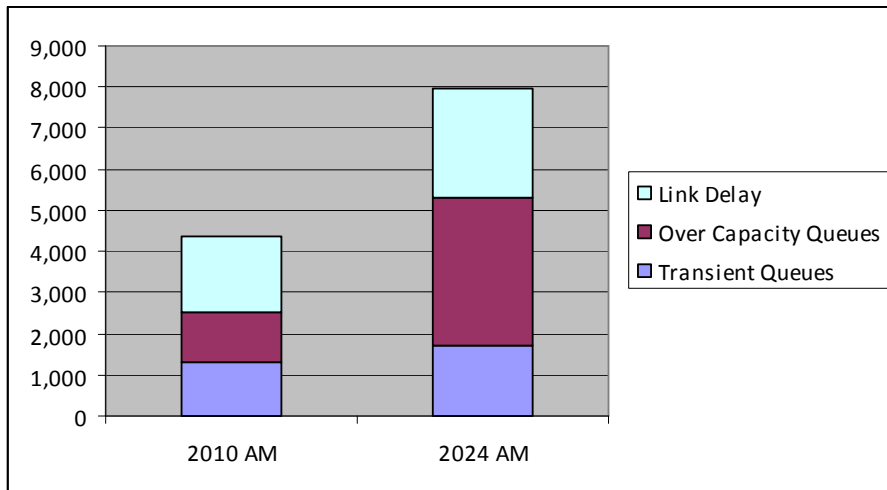
² This figure is derived as follows: PP Table 3 (10,200 + 1,700) * 0.88 (estimated build out by 2024) + 700 + 1,750

4 Traffic Modelling in the SRM

- 4.1 This section describes the outputs of the SRM when the above planning scenario is applied. The purpose is to illustrate the forecast change on the transport networks in Midlothian between 2007 and 2024. This then provides a context for the later modelling of the incremental impact of the new Local Development Plan allocations.
- 4.2 The planning data described above is therefore used to provide inputs to Demand Model. The outputs from the demand model are highway and public transport demand matrices which are 'assigned' to the traffic networks. The output of this process is a set of traffic and passenger flows on each link of the network, together with modelled traffic speeds, delays at junctions and queuing. The model is run for three one-hourly periods, 0800-0900, average hour in 1000-1600 and 1700-1800.
- 4.3 The SRM highway modelling is undertaken using the SATURN software. A feature of SATURN is that when specific movements at junctions within the given time period (the limiting factor for network capacity in most cases) reach their stop line capacity (calculated based on conflicting movements / signal timings / phases) hourly flow through this junction is capped at that actual capacity. Traffic is 'held back' behind this bottleneck and does not feature 'downstream' in the assignment, ie this traffic does not reach its destination within the time period.
- 4.4 The main finding with any forecast using the SRM is that the proportion of traffic which reaches its destination within the modelled hour decreases sharply. This essentially means that **peak spreading increases** across the peak period away from the modelled peak hour. This is because there are many movements in the base year model which are at or close to capacity, ie the network is congested in the base year at key locations, particularly around the A720 Edinburgh City Bypass. This is an intuitive finding as many people in practice do leave earlier or later to avoid the main peak hour traffic, and this would be expected to increase over time.

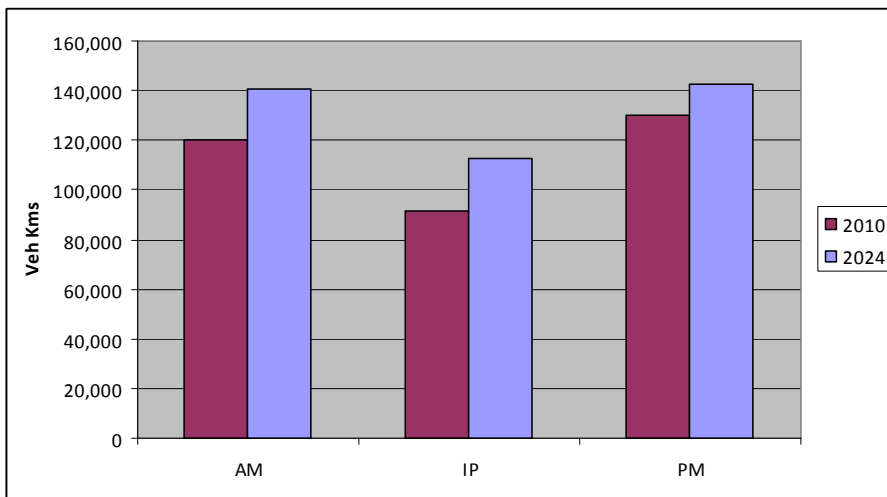
Aggregate Traffic Forecasts

- 4.5 At the SEStran wide level, peak hour traffic levels (vehicle kilometres) are forecast to grow by 15% in the AM peak hour (0800-0900), 25% in the inter-peak period (average hour between 1000 and 1600) and 14% in the PM peak hour (1700-1800) between 2010 and 2024.
- 4.6 As noted above in the AM peak hour, the proportion of traffic which 'spills over' into the next time period rises from 3% of total demand in 2007 to 7% of demand in 2024, ie peak spreading is increasing.
- 4.7 Within the AM peak hour, the average traffic speed on the network is forecast to reduce from 54kph to 46kph. As an illustration of the forecast increase in delay between 2010 and 2024 across the modelled area, the figure below shows the increase in AM peak delays on the network which nearly double. 'Transient Queues' and 'Over Capacity Queues' relate to delays which dissipate during the modelled hour and queues which persist beyond the modelled hour respectively and it can be seen that it is this latter measure which increases most, in line with the rise of peak spreading.



Midlothian Traffic Levels

4.8 Looking at Midlothian specifically, the figure below shows base and forecast traffic levels on roads in the Midlothian Council area. These figures reflect a percentage growth of 17%, 23% and 9% respectively. These are fairly typical of the wider SEStran area.



Midlothian Network Data

4.9 Detailed network graphics can be found in the accompanying Powerpoint files. Firstly, '20121001 Link and Junction VC.pptx' shows a colour coded representation of links and nodes in terms of the flow / capacity ratios (%) for 2010 and 2024 for AM and PM peak assignments at various scales across the Midlothian area.

4.10 Junctions are colour coded from green to red in terms of increasing congestion (ie increasing flow / capacity ratio). Where a junction is coded red, this means that the hourly capacity of at least one movement at that junction is being exceeded leading to 'permanent' queuing at that junction. This means that this movement is acting as a bottleneck and the demand for that movement within the hour is exceeding the capacity.

4.11 The colour coding of the approach links indicates the volume to capacity ratio of the sum of all movements at that junction (ie right turn + left turn = straight on). Usually, a red coded

junction will have at least one red coded approach arm indicating from which direction junction capacity is being reached. On these links, 'permanent' queues are established, ie all traffic which wishes to get through this junction within the hour cannot do so and is left queuing on the network. In some cases though, a junction may be coded red but the volume / capacity ratio for **all movements** approaching the junction will be less than one, and in this case a red approach arm will not be seen.

4.12 Secondly '20121001 Midlothian Queues.pptx' shows how these 'permanent' queues are manifested on the network, and these graphics show the forecast queue length (in vehicles and accounting for number of queuing lanes). Again this helpful in identifying the main bottlenecks on the network.

4.13 In the 2010 AM peak, the following junctions are modelled as having at least one movement at capacity – ie a potential bottleneck:

- A702 / Mauricewood Road;
- A703 / A702 near Hillend;
- Lasswade Road @ A768 and A720;
- A6094 in Bonnyrigg; and
- A6094 / A6106 in Dalkeith town centre.

4.14 In addition, in the 2024 AM forecast scenarios, the following junctions also show over capacity movements:

- A701 / Belwood Road;
- A701 / Damhead;
- A6094 / A68 junction; and
- B6414 / A6214

4.15 In the 2010 PM peak, the following junctions are modelled as over capacity:

- A701 / Damhead;
- A701 / A768
- A701 / Belwood Road;
- A701 / Mauricewood Road;
- Lasswade Road @ A768;
- A6094 / A68 junction;
- A7 / B704; and
- A6094 / A6106 in Dalkeith town centre.

4.16 In addition, in the 2024 PM forecast scenarios, the following junctions also show over capacity movements:

- Additional junctions in Dalkeith and Bonnyrigg.

A720 City Bypass

- 4.17 The A720 operates very close to or beyond capacity in the present day – hence the frequency of queuing on this key route, particularly around the main junction merges and Sheriffhall roundabout. As noted above, the SATURN software constrains hourly traffic flow through any junction to its operational capacity in a given hour. This includes the modelling of merges and diverges on the City Bypass and its junctions with other roads which cross the bypass. It can be seen in the graphics referred to above that by 2024 there are a very large number of movements on the A720 which are forecast to have reached capacity including all the main junctions affecting Midlothian. This has a particular impact on Midlothian with respect to southbound movements. If these capacity constraints on and around the City Bypass were alleviated, there is scope for more traffic to get through to the A702 / A701 / A7 routes. In this respect the A720 acts as a ‘filter’ for southbound traffic with traffic held back in queues on the A720 in any given hour.
- 4.18 The model is also suggesting that traffic from the A1 may re-route via the A6064 and A68 to access the A720, bypassing Old Craighall junction where significant delays are forecast. This rerouting would stop if delays at Old Craighall were tackled.
- 4.19 Note that SATURN modelling at this level is a very detailed exercise and there is considerable scope for refining and honing the modelling. The modelling is based on detailed signal timings and junction capacities (including the capacity for traffic queuing at any given junction approach arm). At the time when the SRM was developed, resources and data were not available to code each junction precisely in these respects so some junction coding is fairly generic in nature. As such particular areas of interest would merit a more detailed review of signal phasing and timing in particular. Resources have not been available to undertake a detailed analysis of the junctions identified above to enhance the coding in any detail, when the model is applied in forecasting mode. The model has been applied as coded in the original SRM with the exception of the improvements detailed in Phase 1 above.

The A701

- 4.20 The A701 is a key corridor for Midlothian as it provides a one of the main routes into the city centre. It is also the location for a major retail hub at Straiton and is the focus of ongoing development activity. The modelling suggests that the PM peak is the focus of network issues here.
- 4.21 The main issue which the modelling highlights with respect to the A701 is that in the 2024 PM peak in particular, there is a large amount of southbound demand which is ‘held back’ before it reaches the A701 and indeed the A702, ie traffic flows on these routes in the 1700-1800 period would be much higher were it not for congestion elsewhere on the network, coming off of the City Bypass and also coming out of Edinburgh. Thus if in time, significant new capacity was to be added to the A720, PM peak hour traffic volumes in Midlothian would be higher and congestion would be more severe.
- 4.22 The modelling does suggest though that even with the ‘actual’ modelled demand some movement at some junctions are reaching their modelled capacity in 2010 in both the AM and PM peak. These issues could probably be tackled with local improvements but this situation is forecast to deteriorate in the 2024 forecast even though actual forecast traffic growth on the A701 is not as high as on some routes. As such, a ‘whole route’ solution is probably appropriate.

- 4.23 The major issue worthy of further investigation for northbound traffic in particular is the impact of blocking back from City Bypass slip roads onto the A702 / A701. In practice even now this can have a 'grid-locking' effect on north-south flows in the event of an incident on the A720. As congestion increase on the A720, this is likely to happen more often.
- 4.24 A new A701 alignment would not only relieve junctions on the current A701 but would also potentially attract south to west traffic away from the A703 / A702 route to the A720, relieving the difficult junction there. At present there is often significant queuing on the A703 Seafield Moor Road at its junction with the A702, and the site lines for this turn are poor. West to south (ie A720 to A701) traffic would be expected to continue to use the A703 as this movement does not suffer from the queuing associated with the A703-A702 right turning movement.
- 4.25 Additional queuing capacity from the A720 at a reconfigured A701 / A720 junction would also tackle the potential gridlock problems noted above.

5 Suggested Next Steps

- 5.1 This modelling exercise has provided a starting point for the assessment of the Midlothian LDP proposals. It has added detail to the existing SRM and modelled a new planning data which seeks to represent the SESplan SDP with the exception of Midlothian SDP (MIR) allocations. The outcome is an initial view of traffic conditions in Midlothian and the surrounding area in 2024. As noted above the City Bypass is the key factor here, acting as a constraint on flows between Midlothian and the west in particular.
- 5.2 In order to move this process forward, the following next steps are proposed:
- (a) review and refine baseline planning scenario to 2024 with MC;
 - (b) review and refine junction coding in key corridors (A7, A701, A702, A68) – and consider including any relevant potential future schemes, particularly with respect to the A720 Sheriffhall / Old Craighall etc; and
 - (c) create and run new 2024 LDP scenario and assess the incremental traffic impacts.
- 5.3 If resources do not permit, then we can proceed straight to (c) albeit with the caveat that resources have not permitted a more detailed network review of the forecast scenario. The analysis of the 2024 LDP scenario in (c) will be focussed on the trunk road network in line with the immediate requirements of Transport Scotland.

Appendix 3: A701, A702, A703 Road Alignment Options, Preliminary Feasibility Report (October 2012) - Report by Wardell Armstrong consultants on behalf of Midlothian Council

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MIDLOTHIAN COUNCIL

A701, A702, A703 ROAD ALIGNMENT OPTIONS

Preliminary Feasibility Report

October 2012

your earth our world



DATE ISSUED: 5th October 2012
JOB NUMBER: ED10977
ELECTRONIC REFERENCE: ED10977-00030
REPORT NUMBER: ED10977-001

MIDLOTHIAN COUNCIL

A701, A702, A703 Road Alignment Options

Preliminary Feasibility Report

October 2012

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APPENDICES

- Appendix A Summary review of reports provided by Midlothian Council
Appendix B Utility Records (CD Rom)

DRAWINGS

Drawing Number	Title	Scale
ED10977-001	Constraints to Road Construction	1:5,000
ED10977-002	Location Plan	1:5,000

1 INTRODUCTION

1.1 Midlothian Council is assessing the feasibility of new road alignment options connecting the A701, A702 and A703 to assist in the preparation of the Main Issues Report for the Local Development Plan. The Council has prepared a preliminary assessment of road options that are shown on Drawing ED10977-002:

- A blue route running from Straiton roundabout generally parallel with the A701 to the west of the park and ride and Straiton Park residential caravan site before turning west towards Pentland Mains.
- A green route which runs further west than the blue route, cutting across the northern edge of Pentland Bing turning south west between Cameron Wood and Old Pentland towards Pentland Mains. The blue and the green route merge immediately south of Pentland House and turn south west to merge with the A703.
- A red route connects the A703 north of Seafield Mill to the A702 north of Boghall.

1.2 Wardell Armstrong LLP submitted a fee proposal on 7th August 2012 to review the Council's records relating to the land corridor through which the proposed new roads would be constructed. The Council's records would be supplemented with records to be provided by various utility companies, the British Geological Survey (BGS), Ordnance Survey (OS) and Scottish Environment Protection Agency (SEPA).

1.3 Wardell Armstrong was commissioned by the Council in a letter dated 21st August to undertake a phased assessment of the road alignment options as detailed in the proposal and in addition to undertake a site walkover of the preferred road alignment.

1.4 This report provides a preliminary assessment of the road alignment options. The topographical, environmental, geological, mining and geotechnical constraints to road construction are identified and recommendations are made for more detailed researches to be concentrated on the route with least constraints.

2 DESKTOP STUDY RESEARCHES

2.1 Researches

2.1.1 Desktop study researches were undertaken to identify possible constraints and the impact of these upon route selection for the proposed alignment of the new roads. Research was undertaken on the land use history of the corridor to determine the past uses that may have resulted in residual contamination, mining works that may have left residual ground stability issues, as well as geology, hydrology and existing services. The following researches were undertaken:

- 1:10,560, 1:10,000 and 1:2,500 scale historical Ordnance Survey and County Series maps from the 1817 to the present day, provided by the Council;
- British Geological Survey (BGS) sheets:
 - NT26NE, NT26SE and NT26SW - combined solid and drift geology at a scale of 1:10,560 pbl. 1965 and 1964;
 - NT26NW - combined solid and drift geology at a scale of 1:10,000 pbl. 1999;
 - 32(E) Edinburgh - solid geology at a scale of 1:50,000 pbl. 1977; and
 - 32 - drift geology at a scale of 1:63,360 pbl. 1967.
- BGS memoirs, including
 - The Geology of the Midlothian Coalfield, pbl 1958;
 - The Oil Shales of the Lothians pbl. 1912;
 - The Limestones of Scotland pbl. 1949;
- BGS Mineral Assessment Report 140, NT25, 35, NT26, 36 Dalkeith and Temple, Lothians Region - Sand and Gravel Resources pbl. 1984
- The BGS Geindex borehole database
- The BGS plans of abandoned mines library
- The BGS Groundwater Vulnerability Map of Scotland, 1995 (1:625,000)
- The Coal Authority “Interactive Map Viewer” which contains information on minerals other than coal, and the joint BGS/CA website Mining Plans Portal.
- The Museum of the Scottish Shale Oil Industry website
- Scottish Environment Protection Agency (SEPA) website, including:
 - The “Superficial Aquifers” and “Bedrock Aquifers” plans prepared by the BGS in association with SEPA in October 2004.

- The “Vulnerability of Groundwater in the Uppermost Aquifer” plan and report prepared by Sniffer and the BGS in association with SEPA in October 2004.
- The following reports prepared for and supplied by Midlothian Council:-
 - A701 Transport Improvements New Milton to Straiton Factual and interpretative Ground Investigation Report prepared by WIMTEC Environmental in December 1999
 - Midlothian Limestone Study prepared by Ove Arup & Partners Scotland in July 2001.
 - Phase II Intrusive Site Investigation and screening risk assessment at Clippens Landfill prepared by RPS in May 2006.
 - Phase I Environmental Risk Assessment- Straiton Bing¹ prepared by RPS in March 2009.
 - Development Options - Straiton Bing¹ prepared by RPS in April 2009.
- A Desktop Study Report prepared by Mason Evans for Taylor Wimpey and Hallam Land Management in January 2011, provided by Midlothian Council.

2.1.2 A brief review of the reports supplied by Midlothian Council is attached at Appendix A.

2.2 Site Location and Description

2.2.1 The site constitutes a corridor of land that stretches from the A720 Edinburgh City Bypass, just north of Straiton south-westwards through Old Pentland and Pentland Mains, north of Seafield before turning due west to meet the A702 near Boghall.

2.2.2 The route lies generally within a rural setting and is predominantly grazing and arable land. However industrial heritage has left its mark with Pentland Bing formed from the waste of the former oil works and domestic and inert landfills at Clippens and Pentland Mains making use of the voids created by sand and gravel extraction.

2.3 Site History

2.3.1 Historical 1:2,500, 1:10,000 / 10,560 (6 inch) scale Ordnance Survey (OS) and County series mapping from 1850's to present day has been reviewed. The first series of the OS maps from the 1850s record the site corridor as entirely rural, with a water

¹ The RPS reports refer to Straiton Bing rather than the correct term of Pentland Bing. Straiton Bing was located to the east of the A701.

- conduit running through the north east corner and a grave yard recorded to the west of Old Pentland.
- 2.3.2 Close to the site corridor, sandstone quarries are recorded east of Straiton, with limestone quarries and shafts recorded further north, in a line trending north east – south west. An OS plan from 1877 that covers the northern part of the site, records no significant developments within the site corridor.
- 2.3.3 By the time the OS sheets from the 1890s were published, the northern part of the site corridor had undergone significant changes. Pentland Oil Works, with its associated spoil heap (or bing) are recorded just north of Old Pentland, the oil works being located just off the A701 and circular structures, possibly storage tanks, are recorded. Railway lines are shown connecting this oil works (properly called the Pentland Paraffin Oil Works) with the Straiton Oil works on the opposite side of the A701. The source of the oil for these works was oil shale, which was mined in the area from the late 1860s, the Pentland Oil Works being built in 1882.
- 2.3.4 The oil works used retorts to produce a form of crude oil based on plant residues (kerogen) rather than the animal residues that forms petroleum crude oil. This crude oil was transported off site for refining elsewhere. No mine entries are shown in the Pentland Oil Works site on the OS maps, but two adits and one airshaft are recorded on mine plans in the eastern part of the oil works area. Rows of housing, one to the south of the Pentland Oil Works and one to the north (Pentland Cottages and Meadow Bank Cottages) are recorded on the OS maps.
- 2.3.5 As well as underground oil shale mining, the mining and quarrying of the Burdiehouse Limestone was extensively undertaken through the Pentland and Straiton areas. North of the bing, an old shaft is recorded at approximate grid reference 326621,666693, with a pumping engine also recorded just to the north, at the end of a track. Two old shafts are recorded to the east of Pentland Mains Farm on the OS sheets, at approximate grid co-ordinates 326289,665528 and 326421,665522, the latter probably being off-site in the current Nivensknowe Park caravan site. A small quarry is also recorded in this area and another old quarry is recorded at the north of Cameron Wood. A sand pit is shown to the west of the A701, just north of the oil works.
- 2.3.6 In the vicinity of the site there is a reservoir recorded close to the north western corner of the site corridor. Straiton Oil Works is recorded just to the west of the A701, near the north eastern corner of the site with numerous storage tanks as well as shafts and adits. Old sand pits are recorded on the western side of the A701 near

- Mid Straiton. Two ponds are recorded between Damhead and Pentlands Mains Farm close to the western boundary of the site corridor.
- 2.3.7 On the OS mapping from the first decade of the 20th century the Pentland Oil Works are recorded as disused. The Museum of the Scottish Shale Oil Industry notes that the works closed circa 1898. Most of the structures, including reservoirs, on the works site are still shown as are both rows of cottages. The bing to the west of the oil works is slightly larger than in the maps from the 1890s. The old shaft north of the bing is still recorded, but the pumping engine is no longer annotated as such. The two old shafts to the east of Pentland Mains are no longer shown. The course of a conduit is recorded running along Seafield Moor Road which crosses through the site corridor just north of Seafield. The old quarry in Cameron Wood is no longer shown.
- 2.3.8 The reservoir near the north east corner of the site corridor is now hatched as rough pasture. The Straiton Oil Works are recorded as disused, again with most of the structures remaining. The two ponds near Damhead are annotated as “Cisterns”.
- 2.3.9 The former Pentland Oil Works are shown in outline only in the OS mapping from around 1919 and gaps are shown in the rows of cottages near the oil works. The Museum of the Scottish Shale Oil Industry notes that the workforce moved away when the oil works closed and that most of the cottages were demolished sometime in the 1920s, although foundations are still visible in crop marks on aerial photographs. The position of the old shaft north of the bing is still recorded. An old sand pit is recorded on the site boundary, east of the A701 north of the entrance of the former oil works. Away from the mining area, a small pond is shown just to the east of Seafield Moor Road.
- 2.3.10 In the surrounding area, some of the structures in the former Straiton Oil Works appear to be in use, possibly associated with limestone mining and air shafts are recorded on the western side of the A701, just south of Mid Straiton Cottages.
- 2.3.11 By the time the OS maps from the late 1930s were published, brickworks are in the southern part of the former oil works site, near the location of the former Pentland Cottages. The cottages associated with the oil works are no longer recorded apart from a few of the Meadow Bank cottages nearest the main road. Apart from these changes there are no significant developments recorded in the site area.
- 2.3.12 The old reservoir near the north west corner of the site is no longer recorded. The former Straiton Oil Works appears to be in use, although the purpose is not recorded. Other than an expansion of housing in the surrounding villages, there is no significant development in the vicinity of the site corridor.

- 2.3.13 The OS sheets from the 1950s and 1960s record the presence of two sand pits to the west of Pentland Mains Farm. A sand quarry is recorded just south of the former Pentland Oil works in the 1950s with a precast concrete works show to the west of this. The 1960s sheet show the sand quarry much extended. In the vicinity of the site there are more sand pits south of Mid Straiton Cottages and to the north of the entrance to the former Pentland Oil Works.
- 2.3.14 A small refuse tip is recorded on the 1970s OS maps, in the area where the sand pits were recorded to the west of Pentland Mains Farm. The large sand pit south of the former oil works is annotated as a refuse tip. A saw mill is recorded to west of this former sand pit. A depot is recorded at the north end of Seafield and in the same area the mill lade off the Boghall Burn is partly culverted.
- 2.3.15 In the 1980s OS maps, the sand pit south of the oil works is still shown as is the small refuse tip at Pentland Mains. The depot at Seafield is labelled as Seafield Mill. In the surrounding area, there was expansion in commercial development (along the A701) and housing in general; residential caravan sites are shown at Straiton Park, Pentland Park and Nivensknowe Park.
- 2.3.16 On the maps from the 1990s, the area recorded as a refuse tip to the west of Pentland Mains, is no longer hatched or annotated as such, but an area immediately to the north is hatched as a refuse tip. The old shaft previously recorded on all OS sheets since the 1890s is no longer recorded. The Edinburgh City bypass, the A720, appears on the northern boundary of the site corridor.
- 2.3.17 The most recent OS maps for the site corridor show little change in the site corridor and in the surrounding area apart from further expansion of commercial and housing developments

2.4 Geology

Made Ground

- 2.4.1 The most obvious area of made ground in the site corridor is the remnants of the oil shale bing (Pentland Bing) associated with the former oil works and the area of the oil works themselves. The material in the bing is spent shale better known as “Red blaes” i.e. oil shale that has been heated in retorts to extract the kerogen content, the spent shale then being deposited in the bing. In the area of the former oil works, made ground was encountered in several boreholes during the 1999 site investigation, generally comprising clays with varying proportions of sand, gravel,

ash, burnt shale and fragments of brick, concrete, timber and plastic. The depths of this made ground varied between 4.4m and 7.7m over the area of the former oil works. One borehole, BH147, also recorded encountering hydrocarbon odour at the base of the made ground which continued into the natural superficial deposits. The extent of Pentland Bing and the oil works are shown on drawing number ED10977-001.

- 2.4.2 Made ground associated with landfill is recorded at two separate locations in the site corridor. Just to the west of Pentland Mains Farm, the former sand pits were used for the disposal of domestic waste by the local authority. The disposal of domestic waste ceased in 1980 and thereafter until the site's closure in 2000 it was used as an inert waste disposal site by various organisations. The site area was extended beyond the sand pit areas during its operational life. We have found no definitive record of the depth of waste deposited however researches suggest that the sand pits were 3 to 4m deep and the landfill is now 4 to 5m above the original ground level making the fill in the order of 7 to 9m thick. The first section of the "green" route after it merges with the "blue" route crosses this landfill. The extent of licensed landfilling at Pentland Mains is shown on drawing number ED10977-001.
- 2.4.3 The other waste disposal area is Clippens Landfill situated between Pentland Road (now known as Damhead) and the former Pentland Oil Works, which again is in an area of former sand pits. Although it started off as an inert landfill, it was later used for the disposal of domestic and commercial waste before its closure in 1980. Information from the 1999 site investigation records that the maximum depth of waste material exceeds 21m. The "blue" route passes over this. The extent of licensed landfilling at Clippens is shown on drawing number ED10977-001.
- 2.4.4 There are two other waste management facilities in the area. On the former Pentland Oil Works site there is a waste transfer station. It is our understanding that the operator has abandoned the site leaving all the imported waste and SEPA are reviewing the situation with the landowner. The second facility is on the former Old Pentland saw mill site and is operated by M McKenzie.
- 2.4.5 Other made ground areas in the site corridor will include infilled quarries and sand pits, but there are no details available as to the nature of the infill. There appears to be a significant amount of fly tipping on the northern boundary of Straiton Park caravan site.

Natural Superficial Deposits

- 2.4.6 The natural superficial deposits in the site corridor are predominantly glacial clays. However there are two distinct areas of fluvio-glacial sands and gravels either at surface or beneath a relatively thin cover of upper glacial till. The larger area runs from Straiton through Old Pentland and Pentland Mains. Borehole NT26NE255 located at Old Pentland records >26.0m of sand, gravel and clayey sand and gravel. The second area lies between Seafield and Boghall. Borehole NT26NW112 located to the east of Boghall records 1.7m of clayey sandy gravel overlying 1.5m of very clayey sand with 0.8m of silt at the base overlying stiff clay.
- 2.4.7 Alluvium is recorded around the sand and gravel deposits and along the Boghall Burn. An area of peat is recorded to the south of Damhead and West of Pentland Mains. It is likely that much of this has been removed to either extract the underlying sand and gravel deposits or during landfill operations. However they may still remain where the ground is undisturbed e.g. beneath the access road to Pentland House. The area of peat outside the landfill is shown on drawing number ED10977-001.
- 2.4.8 Alluvial Fan deposits are recorded beneath and to the east of Boghall.

Solid Geology

- 2.4.9 The site corridor sits predominantly on the strata of the Hopetoun Member (formerly known as the Upper Oil Shale Group) and the Calders Member (Lower Oil Shale Group) of the Strathclyde Group of the Lower Carboniferous. The strata of the Hopetoun member consist of mudstone, sandstones, limestones beds of oil shale and thin coals. The base of this member is taken as the Burdiehouse limestone. The Calders Member strata consist of sandstones, siltstones, mudstones, bituminous shales, thin limestones and thin beds of oil shale. The structure of the strata in the western part of the site corridor takes the form of a narrow anticline with its axis trending south west to north east, with the strata dipping steeply down to the axis located near Broomhills. This syncline is truncated on its western side by a geological fault, the Pentland Fault. The strata on the eastern part of the site corridor dip to the east, as this is part of the main Lothian syncline, with recorded strata dips in the area being between 20° and 45°.
- 2.4.10 The Pentland Fault trends south west to north east across the south west corner of the site, just to the east of Boghall. This reverse fault downthrows the Carboniferous strata to the east with andesites and basalts from the Pentland Hills Volcanic Formation of the Devonian period to the west.

2.4.11 The conjectured outcrops of the limestone and oil shale seams are shown on drawing number ED10977-001.

2.5 Mining and Quarrying

Quarries

2.5.1 Most quarrying activities in the site corridor were concentrated around the sand deposits near the A701 and west of Pentland Mains Farm. Most of these sand pits have been backfilled, some by landfill operations as previously mentioned, but several with no details as to the fill material. The minor quarries elsewhere on the site are also likely to be backfilled with unspecified material. On the aerial imagery there is what looks like a quarry to the north of the Park and Ride that has not been backfilled on the “blue” route. It is possible that there has been some fly tipping in the base of the quarry. The sand pits that have not been subsequently landfilled are shown on drawing number ED10977-001.

Limestone

2.5.2 The Burdiehouse Limestone was extensively quarried just the north and east of the site where it outcropped near Burdiehouse and Straiton. This limestone was of great economic value as it was approximately 8m thick and good quality. When the quarries became uneconomic due to thick overburden, adits were driven into the limestone and the mineral was worked underground by pillar and stall (stoop and room) methods. The plans of abandoned mines show that the limestone was worked to the main outcrop of the Burdiehouse Limestone. This outcrop runs through the eastern part of the site, from just south of Mid Straiton Cottages, through the former Pentland oil works, towards Pentland Mains, although the workings stop just south of Pentland Road. The mining of limestone continued up until the 1960s and some of the shallow working below the site were mined in the 1930s. The BGS sheet NT26NE notes subsidence features along the outcrop near the former oil works and there have been recorded collapses attributed to limestone workings at Clippens Landfill and Straiton Park caravan site. Boreholes 137 and 142, drilled as part of the Wimtec ground investigation, proved evidence of workings (voids) at the horizon of the Burdiehouse Limestone beneath Clippens Landfill and the adjoining oil works. The extent of recorded limestone mineworkings is shown on drawing number ED10977-001.

Oil Shale

- 2.5.3 The Pentland Oil Shale (correlated with the Dunnet Shale of West Lothian) was worked extensively in the Straiton/Pentland area and the plans of abandoned mines show extensive stoop and room workings, with large areas where the stoops had also been removed. The thickness of the seam was generally between 1.7m and 2m and occurs just above the Burdiehouse Limestone in the sequence. The recorded workings in the Pentland shale gain affect mainly the eastern part of the site, although the workings extend further southwards and westwards towards Pentland Mains Farm, because of fold features in the outcrop pattern. Boreholes 131, 135, 135A and 137, drilled as part of the Wimtec ground investigation, proved evidence of workings (voids) at the horizon of the Pentland Shale beneath Clippens Landfill. The extent of recorded mineworkings in the Pentland (Dunnet) oil shale is shown on drawing number ED10977-001. At least two other oil shale seams were worked in the Straiton vicinity, but the recorded workings in these shales are all to the east of the A701.

Mine Entries

- 2.5.4 In, or close to, the site corridor there are two recorded adits and five recorded shafts. All but one of these mine entries are in the eastern part of the site. All are shown on drawing number ED10977-001.
- 2.5.5 The two adits were driven from the oil works into the Pentland oil shale at near full dip. There are two recorded shafts to the east of Pentland Mains Farm, both air pits at the western extremities of the Pentland oil shale workings (the eastern one is recorded as 15 fathoms (27.4m) deep). There are two recorded air pits to the east of the site corridor; one at the former Pentland oil works and one near Mid Straiton Cottages. The remaining shaft in the site corridor is near the north west corner of the site, just south of the city bypass and the presence of a shaft at this location is difficult to explain. A shaft was first recorded at this location on the 1894 OS sheet, but we have not been able to uncover any mine plans that show workings of any nature in either oil shale or limestone in this area of the site. The only mine plans that record this shaft are those that used to OS plans either as a background or as a location insert. This shaft is noted on all OS plans up until the 1970s, the Coal Authority shaft reference is 326666-003 and the Coal Authority has no records of any treatment afforded to this shaft. The shaft location is on the small steeply inclined syncline that is truncated on its western side by the Pentland fault. The BGS sheet

NT26NE notes this shaft as both “*Old Shaft*” and “*No.5*”, again we could find no mention of a No.5 pit in any of the plans of abandoned mines or memoirs for the area. The No.5 reference seems to originate from an undated borehole log, NT26NE29 which was examined at the BGS library. Several handwritten comments that postdate the original log can be seen on the sheets and these are as almost as hard to decipher as the handwritten original log, but date from 1919. The comments refer to inaccuracies and repetitions in the original log, and mention that the borehole was sunk under instruction of JSG Wilson to prove there were outcrops of both the Dunnet Oil Shale and the Burdiehouse Limestone to the west of the main outcrop near Straiton. Mr Wilson was a prominent geologist of the 19th century. More cryptically the commentator notes that JSG Wilson “*marked the site of No.5 Pit as the same*”; presumably meaning that the shaft was at the same location as the borehole. The commentator further notes that the “*OS marks the pit just 30 yards to the east*”.

- 2.5.6 The undated borehole NT26NE29 records the depth of the Dunnet (Pentland) oil shale as 61.3m (33.5 fathoms) and the Burdiehouse limestone is at approximately 91m. It would be hard to envisage sinking a trial shaft to a depth of 60m without any associated workings. The OS sheets also note a small spoil heap near this shaft and there is a track from this shaft that leads to a feature annotated as a “Pumping Engine”, that also appears to have an associated spoil heap. Other than the spoil heaps, pumping engine and shaft, here is no other infrastructure associated with mining shown on the OS maps.
- 2.5.7 In the same strata block, to the north of the city bypass, in the valley of the Burdiehouse Burn, the BGS sheet NT26NE records an adit into what is conjectured to be the outcrop of the Fells shale, which lies above the Dunnet shale in the sequence. The BGS memoir “Oil Shales of the Lothians”, records this adit a trial driven for a short distance into an oil shale, but makes no mention of a shaft into this syncline. The presence of oil shales in this strata block was known and may have been exploited at other locations in the block.

3 CONSTRAINTS TO ROAD CONSTRUCTION

3.1 Topography

- 3.1.1 The ground level rises by c.60m from Straiton roundabout at c.139mAOD to the A702 at Boghall at c.199mAOD.
- 3.1.2 At Straiton roundabout the ground level falls away rapidly to the east by c.4m. The first section of new road will need to be constructed on an embankment. The “blue” route will require a shorter length of embankment than the “green” route but the “blue” route passes over what appears to be a former quarry that has not been backfilled. The quarry is approximately 4m deep but does not show up on the digital terrain model.
- 3.1.3 The slope gradients west of Straiton Caravan Park on the “blue” route are close to the maximum allowable road gradient of 8% and may require some cut. There are slope gradients along the “green” route through Pentland Bing that exceed 8% and there is a shallow valley feature between the bing and Pentland Kirk graveyard. It is likely that any route through the bing will require a significant volume of cut and fill. The areas where slope gradients exceed 8% are shown on drawing number ED10977-001.
- 3.1.4 There is a northerly trending ridge line rising up to Pentland Mains with Cameron Wood along the crest. The ground levels on the “blue” route to the west of Pentland Park caravan site rise 15m at >8% to the level of Pentland Mains. The “green” route rises 19m to the east of Cameron Wood at >8%. Both routes would require cut.
- 3.1.5 There are sections of the existing access road to Pentland House and the A703 that are locally >8%. There is a steep escarpment between Seafield Mill and Boghall that is likely to require cut. The effect of this could be minimised by moving the “red” route to the north.

3.2 Superficial Geology

Made Ground

- 3.2.1 Blaes has been used extensively across the central belt as a general fill particularly in road embankments and it is likely that this was the reason for its extraction at Straiton. Considering its origin, the nature of other oil shale bings and that it has been as a general fill elsewhere it is unlikely that it contains significant contaminated soils. With the exception of the fused blaes this material should be considered a

resource for road construction material and will minimise the import of materials from alternative sources.

- 3.2.2 The blaes within the Pentland Bing will probably loose although there are large fused blocks. If the road is to be routed though the bing it will be necessary to compact the underlying blaes.
- 3.2.3 The made ground in the vicinity of the former oil works generally comprises loose to medium dense sandy gravel, gravelly sand or ash with occasional soft to firm clay horizons. Wimtec's report concludes that *"Given the variable and unpredictable nature of the general made ground, it is not advisable to rely on the quality of this material in road works design"*. Consequently a road constructed over this material would certainly require a substantial capping layer and possibly other forms of ground improvement. In addition to the geotechnical constraint posed by this material it is contaminated with heavy metals, hydrocarbons and occasional cresols and white asbestos.
- 3.2.4 Not unexpectedly Wimtec make the same conclusion regarding the use of landfilled waste in road works design. Whilst it might be possible to cap the waste and/or carry out ground improvement the material is still producing high concentrations of methane gas, which confirms that the waste is still degrading and is likely to do so for decades. Consequently it can be expected that the waste will continue to consolidate resulting in settlement of the ground surface and any road constructed over it. In addition there will contamination issues and no doubt waste management issues when dealing with the arisings from road construction.

Natural Superficial deposits

- 3.2.5 An area of peat is recorded to the south of Damhead and West of Pentland Mains. The peat is likely to remain where the ground is undisturbed by landfilling in this area. Although it is possible to "float" a road over these deposits it is likely that the peat will need to be removed prior to road construction.
- 3.2.6 There are likely to be other areas where soils will have a high organic content such as the marshy area to the west of Straiton roundabout.

3.3 Mining

- 3.3.1 There are recorded oil shale and limestone mine workings beneath the corridor of the "blue" route from the western side of Straiton Park caravan site to Pentland Road.

3.3.2 Oil shale and limestone mine workings were successfully treated by drilling and pressure grouting beneath the A720, city bypass and Straiton Retail Park (including the car park). Wimtec's interpretative report records that workings beneath the A720 were grouted up to a depth of 20m below rockhead and elsewhere a geotextile blanket was placed beneath the road construction and embankments.

3.3.3 There is some evidence to suggest that there may have been unrecorded workings in the Burdiehouse Limestone and the oil shales on the northern side of the anticline beneath the "green" route corridor. If present the seams lie beneath the route from west of the park and ride to between Cameron Wood and Pentland Road / Damhead. There are boreholes drilled for oil exploration in 1984 and earlier oil shale exploration that may provide a better understanding of the risk. However these are classed as confidential and we have approached the Department of Energy and Climate Change (DECC) for their release. The potential for mining instability will need to be investigated further through intrusive works when the route is refined.

3.4 **Environmental**

3.4.1 Cameron Wood is well established woodland that is recorded on mapping from 1817.

3.4.2 There are two named watercourses within the site corridor. The Boghall Burn flows generally south east from Boghall and is a tributary of the River Esk. The "red" route connecting the A703 to the A702 is shown to cross a surface water drain / unnamed watercourse, which flows into Boghall Burn west of Seafield Mill. This route is also likely to cross a culverted mill lade immediately west of the A703. The mill lade fed into various ponds and reservoirs to the north and forms the start of Pentland Burn. Pentland Burn flows generally north east to the east of Tigh-na-Geat Cottages, under Pentland Bridge from where the majority of its route has been artificially straightened. It is culverted beneath the A720 to the west of Straiton and does not impose upon the proposed road corridor.

3.4.3 There is a 300mm drainage pipe extending from the north western end of Pentland Bing.

3.5 **Utilities**

3.5.1 Plans of utility infrastructure were obtained from Scottish Power, Scottish Water, Scotland Gas Networks and BT Openreach. In addition internet searches were made to confirm whether there are any major hydrocarbon or chemical distribution

pipelines, telephone masts or residential or business broadband cable networks at the locations of road crossings/junctions. Utilities in the vicinity of all three routes are shown on drawing number ED10977-001.

Electricity

- 3.5.2 Scottish Power's records record several overhead electricity cables that may need diversions depending on the road layout and final level. There is an 11kV overhead cable running around the north eastern side of Pentland Bing to supply Straiton Park caravan site. This crosses both the "blue" and "green" routes. A spur from this crosses the "blue" route a second time supplying the Tarmac works and sawmill.
- 3.5.3 Two sets of 33kV overhead cables run along the eastern edge of Cameron Wood and cross the "blue" and "green" routes to the east of Pentland House.
- 3.5.4 A low voltage overhead runs between Pentland Mains Farm and Pentland House and an 11kV overhead cable runs along the south side of the access road to Pentland House and crosses the fields to the south west of the house. A spur of this cable crosses the access road to the house.

Gas

- 3.5.5 A 273mm steel high pressure gas pipeline runs parallel with the A720 immediately north of Straiton roundabout. This shouldn't affect the proposed road realignments.

Water

- 3.5.6 There are several raw / trunk / distribution water mains that cross the road corridors. Although the raw water mains have now been made redundant by recent new/improved water treatment facilities, Scottish Water has confirmed that they are to be retained for potential use in the future. Immediately west of Straiton roundabout is a raw water main. As the road will need to be on an embankment through this section it is possible that the pipe would need to be protected. There are two distribution mains in Pentland Road / Damhead and a trunk main immediately to the west that crosses the road where it meets Cameron Wood. These will all need to be considered for protection works.
- 3.5.7 There is a raw water main beneath the A703. It is unlikely that road levels would be changed to the extent that protection works would be required. There are three trunk mains and a distribution main to the west of the A703. Some of these pipes have been laid within the last 12 months or so and they will all need to be considered for protection works.
- 3.5.8 There is a raw water main running along a drainage ditch running towards the A702. The main splits into two and connects to a second raw water main running parallel

with the A702. A distribution main runs adjacent to the A702 and a third raw water main runs beneath the A702. These will all need to be considered for protection works.

Telecommunication

- 3.5.9 There is an overhead BT cable running along eastern side of Damhead. A short section of this has been recently put underground during junction improvement works on the A701. An overhead cable crosses the access road to Pentland House and the old tip and field to the south of the house to supply Pentland Mains Farm. An underground BT cable runs beneath the A703. These will all need to be considered for protection / diversion works.
- 3.5.10 There are no residential or broadband cable networks recorded in the vicinity of Old Pentland, the A703 or the A702.
- 3.5.11 There is a Vodafone telephone mast adjacent to the tarmac depot. There is an O2 telephone mast south of Pentland House. It is unlikely that the proposed works would affect these.

3.6 Archaeology

- 3.6.1 A brief review of the Royal Commission on the Ancient and Historical Monuments of Scotland website has identified the following:
- RCAHMS Reference: NT26NE 149 - Oblique aerial photography has revealed an area of cropmarks, including an arc of a ditch measuring about 90m in diameter, 600m south west of Pentland Mains. This lies on the approximate alignment of the “green” route.
 - RCAHMS Reference: NT26NE 14 - The graveyard to the north west of old Pentland covers the ruins of Pentland Parish church which was erected in 1275. The graveyard contains two 14th Century gravestones. The “green” route passes to the east of this.
- 3.6.2 Both of these features are shown on drawing number ED10977-001. The county archaeologist/heritage officer was consulted to assess the impact of these constraints and they confirmed that both areas need to be evaluated prior to works commencing, and if needs be mitigated.

3.6.3 The heritage officer also commented that broadly the whole area has a fairly good potential for unknown remains to be present, although there are areas like the former shale working site that have little or no potential to contain unknown remains. He advised that the potential for the area is assessed at an early stage. There are known cist graves in proximity to the route shown which suggests that there is the potential for others. There is also a number of stray finds which while not conclusive proof of remains strongly suggest that there are potential medieval and earlier remains along the route.

4 CONCLUSIONS AND RECOMMENDATIONS

- 4.1 The “blue” route initially proposed by Midlothian Council is undermined by limestone and oil shale workings and crosses the former Pentland Oil Works site and Clippens Landfill. Whilst there are potential geotechnical solutions to shallow mining issues and constructing a road over poor ground conditions these are usually costly and likely to raise other issues such as potential pollution of the water environment and waste management issues.
- 4.2 There are no recorded underground limestone or oil shale workings within the corridor through which the “green” route passes, however there is some evidence that there may be unrecorded mine workings.
- 4.3 Both routes cross the northern part of the Pentland Mains landfill.
- 4.4 Both routes have similar issues with crossings of utilities infrastructure.
- 4.5 We recommend that:
- The “blue” route should be abandoned due to the likely high cost of treatment of shallow mineworkings and geotechnical solutions for poor ground conditions that would be required.
 - Researches should be concentrated on the “green” and “red” route corridors.
 - Researches should include a more detailed study of the northern part of Pentland Mains landfill to establish whether a crossing is economically viable or an alternative route is required.
 - Researches should include the confidential borehole records held by DECC.
 - Researches should include further consultation with the county archaeologist/heritage officer.
 - Consideration should be given to utilising the blaes within Pentland Bing as road construction material.
 - Consideration should be given to utilising the sub-soil and topsoil arisings from road construction to providing a growing medium for a reprofiled bing.

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Suite 2/3, Great Michael House
14 Links Place
Edinburgh
EH6 7EZ
Tel: +44 (0)131 555 3311

GREATER MANCHESTER
2 The Avenue
Leigh
Greater Manchester
WN7 1ES
Tel: +44 (0)1942 260101

LONDON
Sutherland House
5-6 Argyll Street
London
W1F 7TE
Tel: +44 (0)20 7287 2872

NEWCASTLE UPON TYNE
City Quadrant
11 Waterloo Square
Newcastle upon Tyne
NE1 4DP
Tel: +44 (0)191 232 0943

PENRYN
Tremough Innovation Centre
Tremough Campus
Penryn
Cornwall
TR10 9TA
Tel: +44 (0)1872 560738

SHEFFIELD
Unit 5
Newton Business Centre
Newton Chambers Road
Thornccliffe Park
Chapelton
Sheffield
S35 2PH
Tel: +44 (0)114 245 6244

TRURO
Wheal Jane
Baldhu
Truro
Cornwall
TR3 6EH
Tel: +44 (0)1872 560738

WEST BROMWICH
Thynne Court
Thynne Street
West Bromwich
West Midlands
B70 6PH
Tel: +44 (0)121 580 0909

International offices:

ALMATY
29/6 Satpaev Avenue
Rahat Palace Hotel
Office Tower
9th floor
Almaty
Kazakhstan
050040
Tel : +7-727-3341310

MOSCOW
Suite 2, Block 10,
Letnikovskaya St.
Moscow, Russia
115114
Tel: +7(495) 980 07 67

Wardell Armstrong Archaeology:

CUMBRIA
Cocklakes Yard
Carlisle
Cumbria
CA4 0BQ
Tel: +44 (0)1228 564820

APPENDIX A

Summary review of reports provided by Midlothian Council

Interpretative Report - A701 Transport Improvements New Milton to Straiton – WIMTEC Environmental – December 1999

The section of report that is relevant to the Councils “blue” road option is from the Pentland Road overbridge at chainage c.3350 to Straiton roundabout at c. chainage 4500. Sections 1 to 5 are a repetition of the factual report providing

- Introduction and route description;
- Basic background information on geology, hydrology and hydrogeology and mining.
- The scope of ground investigations carried out include trial pits, cable tool percussive and rotary boreholes, geophysics and laboratory geotechnical and chemical analyses.

Section 6 explains the assessment of all the geotechnical design parameters.

Section 7 summarises the ground conditions separating out various soil types and made ground and their distribution along the route. The sections on Pentland Road overbridge and Straiton Bing Underpass are relevant.

Section 8 details the material properties of the various soil types and made ground. Sections 8.6 and 8.7 on landfill materials and general made ground would be of particular interest however the design parameters have not been provided only maximum and minimum values of the parameters assessed. The report states “*Given the variable and unpredictable nature of the landfill materials / general made ground, it is not advisable to rely on the quality of this material in roadworks design*”.

Section 9.5 “PCL Area 9 - Pentland Oil Works and Landfill” and Section 9.6 “PCL Area 10 - Former Sand and Gravel Pit discuss the conditions encountered and chemical contamination. Whilst the infilled former sand and gravel pit is unlikely to pose a significant geochemical hazard, there are elevated heavy metals, hydrocarbons and occasional cresols and white asbestos within the former oil works and landfill that may pose a risk.

Section 10 – discusses the evidence of workings in the Burdiehouse Limestone and Pentland Shale recorded in the boreholes drilled over Clippens Landfill and the oil works. The potential mineral instability is reviewed and recommendations made for sections of the route where remedial measures such as drilling and grouting and use of geotextiles will probably be required.

Figure 58 - Site Plan and Longitudinal Section No.3 shows the location of ground investigations along the “blue” route of the proposed road and a section line with boreholes logs.

RPS - Phase II Intrusive Site Investigation and screening risk assessment at Clippens Landfill – May 2006

The report was prepared for Midlothian Council to enable the Council to determine whether the site appears to be “Statutory Contaminated Land” under Part IIA of the Environmental Protection Act, 1990. Consequently the report concentrates on waste, soil and groundwater contamination and landfill gas generation and there is no geotechnical assessment. Chemical testing suggests that within the waste there are elevated concentrations of heavy metals, metalloids (arsenic) and polycyclic aromatic hydrocarbons (PAHs) at shallow depth.

In 2006, 16 years after closure of the landfill, the waste was still generating landfill gas with up to 24% methane. This confirms that the waste is still degrading and is likely to do so for decades. Consequently it can be expected that the waste will continue to consolidate resulting in settlement of the ground surface. The report concluded that further ground investigations were required to enable the site to be determined.

The report utilises data from an Interpretative ground investigation report prepared by WIMTEC Environmental in December 1999. Boreholes 132 – 146 and TPs 252 to 256 record mixed waste clays, ash, tyres and builders waste. Some organic material – garden waste, newspaper, wood is still recognisable suggesting that material will continue to degrade and consolidate. Waste is generally medium dense / firm but varies from loose (generally <6m deep) to very dense. The deepest waste within the landfill is recorded in borehole 138 within a former sand quarry at >21.05m. The rotary boreholes contain evidence of workings within the Burdiehouse Limestone and oil shales in the form of voids and waste.

Ove Arup & Partners Scotland - Midlothian Limestone Study – July 2001

The report was prepared to assess the risk of collapse of limestone workings for Midlothian Council. Site 1 of the report is Clippens Lime Works, Straiton. The report identifies the relevant historical and geological mapping sheets and aerial images for the site. Section 4.2 details the quarrying and mining activities and refers to Figure 2, which shows the approximate location of quarries, underground workings and mine entries based on abandonment plans and historical mapping. Section 5 discusses the subsidence event in Ferniehill approximately 3km north east of Straiton roundabout in November/December 2000. This was the result of the progressive collapse of shallow underground mineworkings in the Burdiehouse Limestone. The report goes on to assess the measurement of risk to existing properties and recommends more detailed researches for future development.

Phase I Environmental Risk Assessment- Straiton Bing – RPS – March 2009

This report was prepared for Midlothian Council to assess the risk of harm to human health and the water environment from potential contamination on and within Pentland Bing although it is referred to incorrectly as Straiton Bing in the report. Figure 1.2 shows the main features of the bing such as steep slopes, mine entries, a spring, adjacent properties/land-use and a 300mm drainage pipe. The report references the Arups limestone report and details a crown hole collapse at Straiton Residential Caravan Park in 1986. There is reference to a former tip fire although there are no longer any surface indicators of this.

The site was assessed as having a high potential risk for unauthorised site users and a moderate/high potential risk to the water environment. Geohazards are also identified associated with a combination of potential mining subsidence, crown holes and slope instability.

Development Options - Straiton Bing – RPS - April 2009

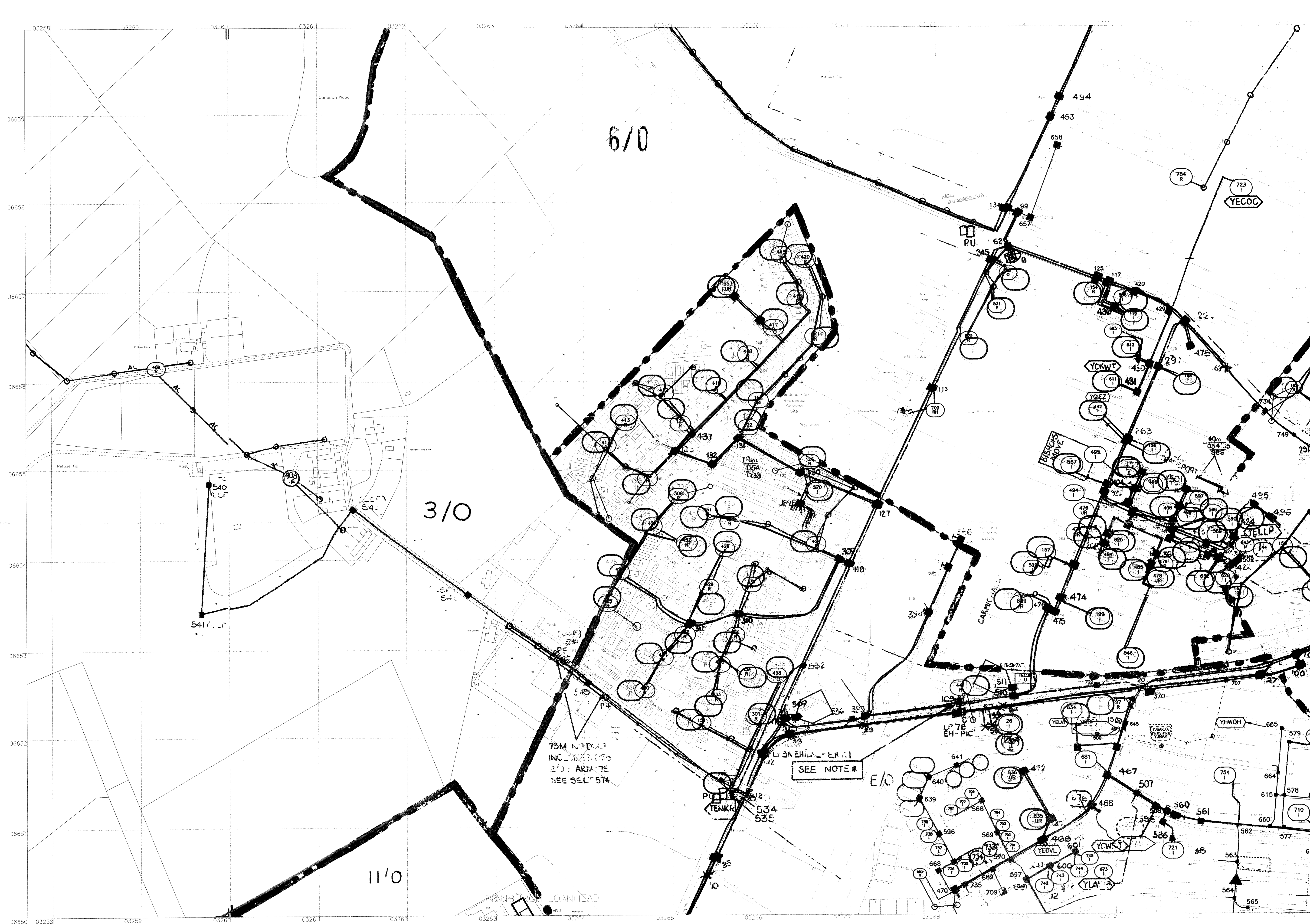
This report follows on from the Phase I Environmental Risk Assessment to explore four potential development options. Option 1 involves a regrade described as a cut and fill balance although it requires a significant import of materials. Option 2 involves the assessment of generating high level (145mAOD) industrial development platform within the bing using existing and inert imported waste and option 3 a low level platform (140mAOD). Options 1 and 2 require an import of inert waste from c.60,000m³ and c.45,000m³ respectively. Option 3 results in an excess cut of c.64,000m³. Option 4 does not generate a development platform but forms a restoration profile with up to 21m of fill requiring an import of c.250,000m³. Cost estimates have been made for the various options with the import and disposal of inert waste acting as revenue. An import figure of c.270,000m³ is used in the revenue assessment for Option 4.

Mason Evans - Desktop Study Report - Jan 2011 for Taylor Wimpey and Hallam Land Management

The report was prepared in support of a 2nd phase of residential development proposed by Taylor Wimpey and Hallam Land Management to the south and west of Pentland Mains Farm. The report includes an Envirocheck report by Landmark Information Group and a GeoRecords Plus+ report by the BGS. The residential development extends over the later stages of landfilling, which we understand “piggyback” the original landfill in part. The original landfill area appears to be retained as greenspace or agricultural land. The report indicates that the Burdiehouse Limestone and the Dunnet (Pentland) and Broxburn Oil Shales above it, are conjectured to outcrop to the south of the farm. The report recommends soils, gas and mining investigations are carried out.

APPENDIX B

Utility Records (CD Rom)



KEY TO BT SYMBOLS

- PLANT**
- UNDERGROUND PLANT
 - A/C, D/W or W OVERHEAD PLANT
 - JOINT BOX
 - 456 or 456 DISTRIBUTION POINT
 - or 72 MANHOLE
 - POLE
 - ⊠ CABINET
 - BURIED JOINT
 - J JOINTING POST
 - ANTENNA MICROCONNECT DISTRIBUTED ANTENNA
 - - - PROPOSED U/G
 - A/C, D/W or W PROPOSED O/H
 - PROPOSED BOX
- NON PLANT**
- - - DP BOUNDARY
 - or ○ OTHER BT BOUNDARY
- Other proposed plant is shown using dashed lines.
- Existing BT plant may not be recorded.
- Information valid at the time of preparation.

DIAL BEFORE YOU DIG
 0800 917 3993
 Fax - 01332 578650
 Professional on-site assistance prior to commencement of excavation works

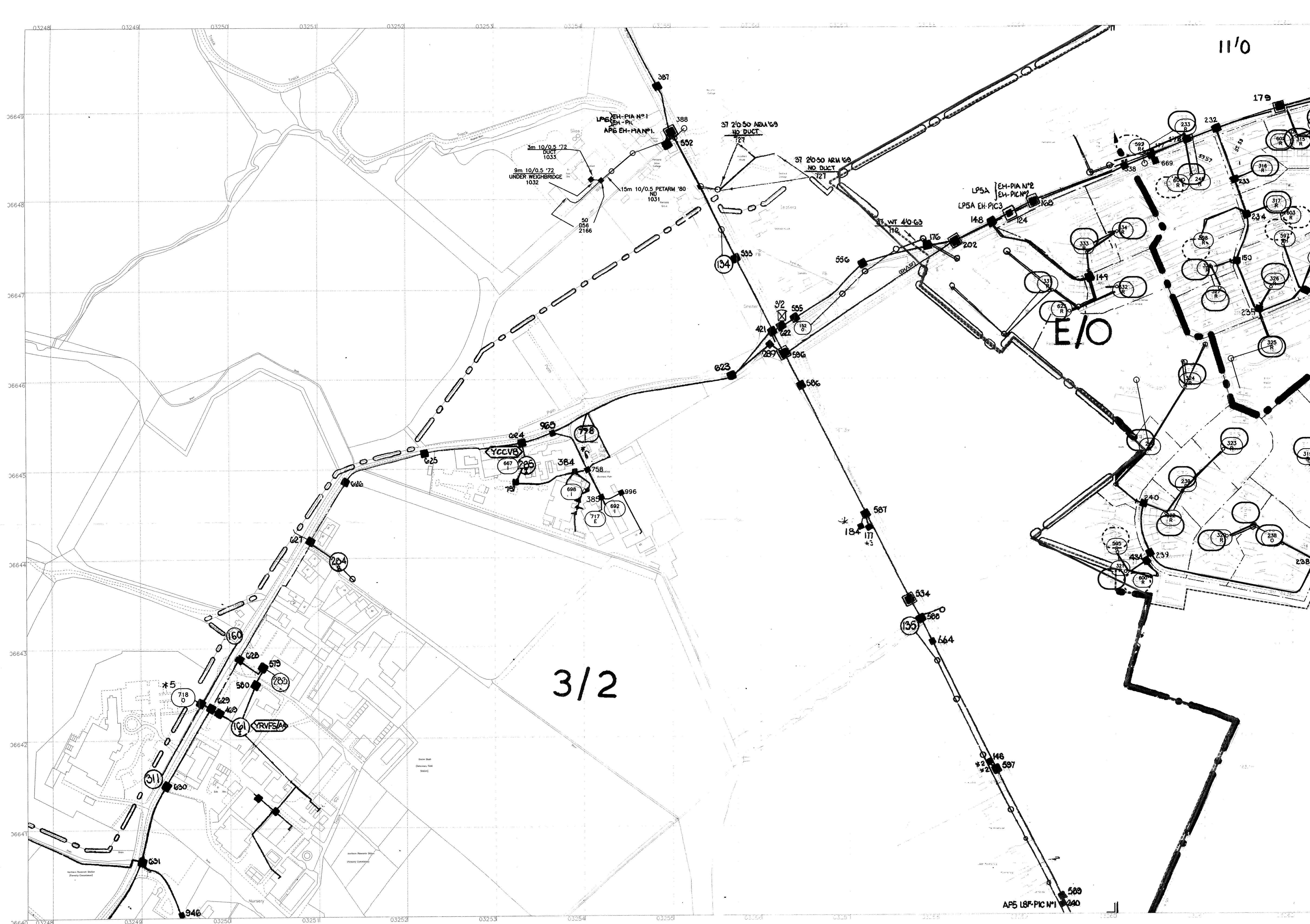
IMPORTANT WARNING:
 Information regarding the location of BT apparatus is given for your assistance and is intended for general guidance only. No guarantee is given of its accuracy. It should not be relied upon in the event of excavations or other works being made near to BT apparatus which may exist at various depths and may deviate from the marked route.

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PLANT INFORMATION REPLY

Notes: A701 STRAITON, MIDLOTHIAN
 NT2665

If more detailed information is required please submit larger scale plans



KEY TO BT SYMBOLS

- PLANT**
- UNDERGROUND PLANT
 - A/C, D/W or W OVERHEAD PLANT
 - JOINT BOX
 - 456 or 456 DISTRIBUTION POINT
 - or 72 MANHOLE
 - POLE
 - ⊠ CABINET
 - BURIED JOINT
 - J JOINTING POST
 - ANTENNA MICROCONNECT DISTRIBUTED ANTENNA
 - - - PROPOSED U/G
 - A/C, D/W or W PROPOSED O/H
 - PROPOSED BOX
- NON PLANT**
- - - DP BOUNDARY
 - OR ○ OTHER BT BOUNDARY

Other proposed plant is shown using dashed lines.

Existing BT plant may not be recorded.

Information valid at the time of preparation.

DIAL BEFORE YOU DIG
 0800 917 3993
 Fax - 01332 578650

Professional on-site assistance prior to commencement of excavation works

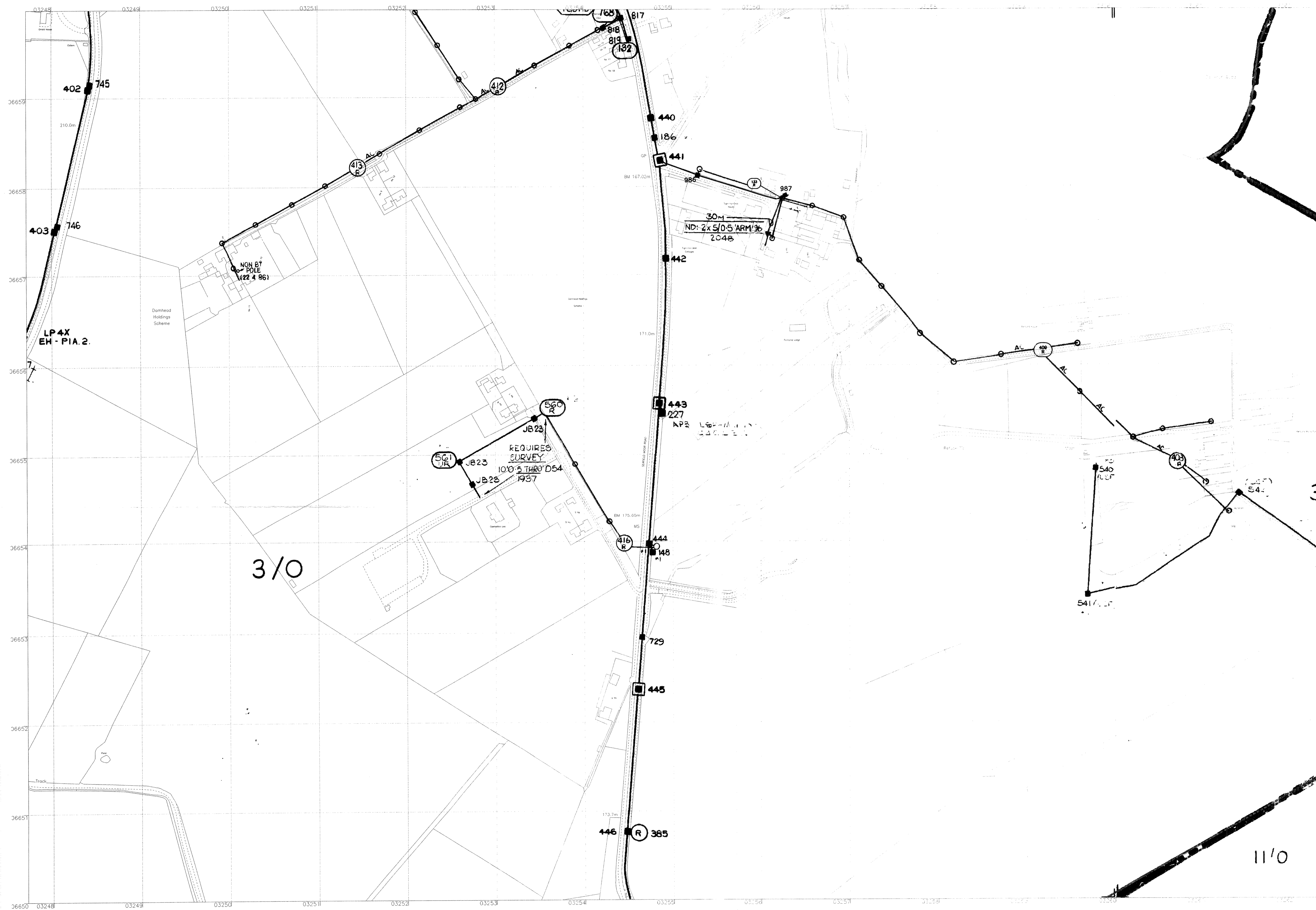
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PLANT INFORMATION REPLY

Notes: A701 STRAITON, MIDLOTHIAN
 NT2564

If more detailed information is required please submit larger scale plans



KEY TO BT SYMBOLS

- PLANT
- UNDERGROUND PLANT
- A/C, D/W or W OVERHEAD PLANT
- JOINT BOX
- DISTRIBUTION POINT
- MANHOLE
- POLE
- CABINET
- BURIED JOINT
- JOINTING POST
- MICROCONNECT DISTRIBUTED ANTENNA
- PROPOSED U/G
- PROPOSED O/H
- PROPOSED BOX
- NON PLANT
- DP BOUNDARY
- OTHER BT BOUNDARY

Other proposed plant is shown using dashed lines.

Existing BT plant may not be recorded.

Information valid at the time of preparation.

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Fax - 01332 578650

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PLANT INFORMATION REPLY

Notes: A701 STRAITON, MIDLOTHIAN
 NT2565

If more detailed information is required please submit larger scale plans

KEY TO BT SYMBOLS

PLANT

- UNDERGROUND PLANT
- A/C, D/W or W OVERHEAD PLANT
- JOINT BOX
- (456) OR (456) DISTRIBUTION POINT
- OR 72 MANHOLE
- POLE
- ⊠ CABINET
- BURIED JOINT
- J JOINTING POST
- ANTENNA MICROCONNECT DISTRIBUTED ANTENNA
- PROPOSED U/G
- A/C, D/W or W PROPOSED O/H
- PROPOSED BOX
- NON PLANT
- DP BOUNDARY
- OR --- OTHER BT BOUNDARY

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Information valid at the time of preparation.

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Fax - 01332 578650

Professional on-site assistance prior to commencement of excavation works



PLANT INFORMATION REPLY

Notes: A701 STRAITON, MIDLOTHIAN
NT2464

If more detailed information is required please submit larger scale plans

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KEY TO BT SYMBOLS

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- or 72 MANHOLE
- POLE
- ⊗ CABINET
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- J JOINTING POST
- ANTENNA MICROCONNECT DISTRIBUTED ANTENNA
- - - PROPOSED U/G
- A/C, D/W or W PROPOSED O/H
- PROPOSED BOX
- NON PLANT
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- OR ○ OTHER BT BOUNDARY

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Information valid at the time of preparation.

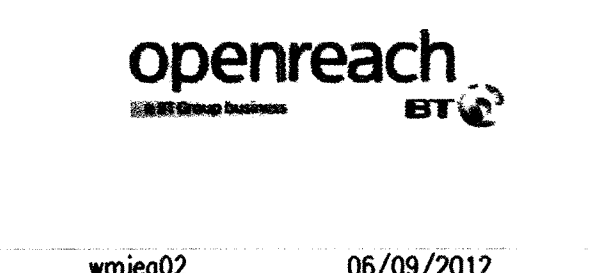
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PLANT INFORMATION REPLY
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KEY TO BT SYMBOLS

- PLANT**
- UNDERGROUND PLANT
 - A/C, D/W or W OVERHEAD PLANT
 - JOINT BOX
 - ⊙ OR 456 DISTRIBUTION POINT
 - OR 72 MANHOLE
 - POLE
 - ⊗ CABINET
 - ⊠ BURIED JOINT
 - ⊞ JOINTING POST
 - ANTENNA MICROCONNECT DISTRIBUTED ANTENNA
 - - - - PROPOSED U/G
 - - - - A/C, D/W or W PROPOSED O/H
 - PROPOSED BOX
- NON PLANT**
- - - - DP BOUNDARY
 - OR — OTHER BT BOUNDARY

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Information valid at the time of preparation.

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Fax - 01332 578650

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PLANT INFORMATION REPLY

Notes: A701 STRAITON, MIDLOTHIAN
 NT2766

If more detailed information is required please submit larger scale plans



Broadband | checker

Business Broadband Summary

Broadband services for the **EH20 9NU** area on 4th October 2012

[Business ADSL](#)



ADSL Broadband using a standard BT line is available

Broadband services may be subject to additional line tests and available network capacity in your area.

Business ADSL Broadband

Availability for the **EH20 9NU** area on the **Loanhead** exchange

Exchange



- Your local BT Exchange (Loanhead) is ADSL broadband enabled

Line



- Your line should be capable of supporting download speeds **up to 8Mb**.
- Your line will be fully tested when you place a broadband order
- Postcode-only checks are not 100% accurate
- Please [click here and enter your phone number](#)



[BT Business Broadband](#)



- Up to 17Mb BT Business Broadband from £11 per month**
 - 10GB monthly usage allowance included (regular user)
- Up to 17Mb BT Business Unlimited Broadband from £15 per month**
- Add a business phone line for only £15.50 per month**
 - get broadband and unlimited calls for only 1p a month each special offer for the first 3 months
 - 500 free UK call minutes each month
 - unlimited UK landline/mobile & international calls for only £12.50 extra a month
- Free activation**
- New BT Business Hub 3 wireless router with firewall only £59 (online orders only)**
- Unlimited Wi-Fi roaming at over 3.5 million BT hotspots
- 10 e-mail addresses and 50MB web space
- E-mail anti-spam and anti-virus service
- Free online support

All prices exclude VAT

Got any questions about ordering BT Business Broadband?

Call the BT Business Broadband sales team on **0808 208 5173**

[Click here for more information on this offer](#)

Free Broadband Updates

Receive occasional updates when new broadband services or offers become available in your area.

Your e-mail address



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Broadband | checker

Broadband Summary



Broadband services for the **EH20 9NU** area on 4th October 2012

- ADSL**  ADSL Broadband using a standard BT line is available
- Cable**  Cable Broadband is not available from the service providers we checked
- Satellite**  Broadband & Satellite TV is available
- Mobile 3G**  Mobile Broadband for your PC using wireless 3G

Broadband services may be subject to additional line tests and available network capacity in your area.

ADSL Broadband

Availability for the **EH20 9NU** area on the **Loanhead** exchange

- Exchange**  • Your local BT Exchange (Loanhead) is ADSL broadband enabled
- Line**  • Your line should be capable of supporting download speeds **up to 8Mb**.
• Your line will be fully tested when you place a broadband order
• Postcode-only checks are not 100% accurate
• Please [click here and enter your phone number](#)
• **Unbundled broadband services up to 20Mb (around 400 times faster than dial-up) are available in your area**



[TalkTalk Broadband](#)


- **£3.25 per month for up to 14Mb TalkTalk unlimited broadband and calls**
 - 12 months half-price broadband (usually £6.50 a month - save £39)
 - unlimited evening & weekend calls to local & national UK landline numbers
- Switch to TalkTalk phone line rental from £9.50 per month (required)
 - no need to pay BT line rental or change phone number
 - only £9.50 a month when paying 12 months in advance (usually £14.50)
 - **free £50 welcome credit with new or reconnected phone lines**
 - **free 1500 landline to mobile calling minutes**
-  • **Free connection for online orders - save £30**
- **Free wireless router - save £30**
- **Free £25 Love2Shop voucher**
 - offer ends 3rd October
- **30 day trial - option to cancel the service within 30 days**
- Free technical support calls from your TalkTalk phone
- Single bill for broadband and phone

www.talktalk.co.uk/broadband

[Click here for more information on this offer](#)



[BT Total Broadband](#)

-  • **Free up to 16Mb BT Broadband + evening & weekend calls**
 - special offer for the first 6 months (usually £13 per month)
 - includes UK landline evening & weekend calls
 - 10GB monthly usage allowance included (regular user)
- **£9 per month for up to 16Mb BT More Broadband & calls**
 - special offer for the first 3 months (usually £18 per month)
 - includes UK landline evening & weekend calls
 - 40GB monthly usage allowance included (heavy user)
- **£20 per month for up to 16Mb unlimited BT Total Broadband & calls**
 - special offer for the first 3 months (usually £26 per month)

- unlimited monthly usage allowance
- includes UK landline evening & weekend calls
- **£0 broadband connection charge** (optional engineer home installation available)
- Line rental only £10.75 a month when paying 12 months in advance (required)
- **No connection charge for new BT phone line installations - save £130**
- **Includes next generation Home Hub wireless router**
- **Free £25 Sainsbury's Gift Card for online orders**
- **Optional free BT Vision+ box for on demand digital entertainment** - worth £199
 - £49 activation fee - BT Vision service from only £4 a month
- Parental controls and enhanced security features for total protection
- Free BT Digital Vault - securely store and retrieve your personal files
- **Free unlimited Wi-Fi roaming at over 3.5 million BT Wi-Fi hotspots**
- Compatible with Playstation Net, Xbox Live and Apple Mac
- **Single bill for broadband and BT phone**
- **Free 24-hour 0800 technical support line**

Got any questions about ordering BT Broadband?

Call our sales team on 0800 783 5378 to order BT Total Broadband today.

Lines are open 08:30 - 19:00 Monday to Friday.

www.bt.com/btbroadband

[Click here for more information on this offer](#)



[Plusnet Broadband](#)

- **£6.49 per month for up to 16Mb Value Broadband**
 - price promise - lowest priced standalone broadband in UK
 - 10GB monthly usage allowance included (regular user) + unlimited overnight use
- **£11.49 per month for up to 16Mb Extra Broadband**
 - 60GB monthly usage allowance included (heavy user) + unlimited overnight use
- **£16.49 per month for up to 16Mb Pro Broadband**
 - all traffic prioritised at all times - low latency and pings
 - access to Plusnet gaming servers
 - 20GB monthly usage allowance included (heavy user) + unlimited overnight use
- £25 activation fee
 - add home phone from only £9.49 a month and get free broadband activation
 - + get 12 months half price broadband when you order online



- **click here for more info**
- **Wireless router included**
- **No-contract option available - only 10 days' notice and no penalties**
- E-mail with anti-spam and anti-virus protection
- Compatible with Playstation Net, Xbox Live and Apple Mac
- 24-hour support line at standard call rates

Got any questions about ordering Plusnet Broadband?

Call our sales team on 0800 073 1120 to order Plusnet Broadband today.

www.plus.net/broadband

[Click here for more information on this offer](#)



[AOL Broadband](#)

- **£7.10 per month for up to 24Mb broadband & phone line**
 - first month free - save £7.10
 - includes evening & weekend calls to UK landlines
 - switch to AOL phone line rental for £13.90 per month (required)
 - no need to pay BT line rental or change phone number
 - 10GB monthly usage allowance included (regular user)
- **Free connection**
- **Includes wireless router - save £50**



- 7 e-mail addresses with anti-virus and anti-spam filters
- Safety & Security Centre with parental control system

Got any questions about ordering AOL Broadband?

Call the AOL sales team FREE on 0800 049 1331 and order AOL Broadband today.

www.aolbroadband.co.uk

[Click here for more information on this offer](#)





[Orange Home Broadband](#)

- **£10 per month for Orange unlimited usage home broadband & calls**
 - **only £5 per month for existing Orange & T-Mobile customers**
 - unlimited broadband usage - no extra costs
 - inclusive evening & weekend UK landline calls
 - switch to Orange home phone line rental for £13.50 per month (required) *no need to pay BT line rental or change phone number*
 - add anytime calls to UK landlines for only £5 extra per month
- **Free connection**
- **Free Bright Box wireless N router - save £95**
- **Free £40 Marks & Spencer voucher**
- Get 2 cinema tickets for the price of 1 with Orange Wednesdays
- Free McAfee Security Suite with parental controls - save £49.99
- Fully compatible with Playstation Net and Xbox Live

Got any questions about ordering Orange Home Broadband?
Call the Orange sales team on 0800 072 4224 to order Orange Home Broadband today.

www.orange.co.uk/broadband

[Click here for more information on this offer](#)

Cable Broadband

Availability of selected Cable services in the **EH20 9NU** area



[Virgin Broadband](#)

- ntl, Telewest and Virgin.net have come together to form Virgin Media.
- **£7.25 per month for up to 30Mb Broadband + phone**
 - special offer for the first 6 months (usually £14.50 a month)
- **£11.25 per month for up to 60Mb Broadband + phone**
 - special offer for the first 6 months (usually £18.50 a month)
- **£18.25 per month for up to 100Mb Broadband + phone**
 - special offer for the first 6 months (usually £25.50 a month)
- Download as much as you like with no hidden charges
- **Free Virgin Media Super Hub with wireless N**
- ✗ **Free installation when ordering broadband & phone - save £49.95**
- Bundle offers require Virgin phone line rental at £13.90 per month
- **28 day Money Back Guarantee**
- Add 3G Mobile Broadband + free USB modem for only £8.17 a month
- Free Virgin Media Security package with parental controls
- Free technical support calls from your Virgin phone

Got any questions about ordering Virgin Broadband?
Call our sales team on 0800 840 5384 to order Virgin Broadband today.

[Click here for more information on this offer](#)

Broadband & Satellite TV

Availability of selected Broadband & Satellite TV services in the **EH20 9NU** area



[Sky Broadband](#)

- **Sky+ TV, Broadband and Talk from £21.50 a month**
- **Free Sky Broadband when ordered with Sky TV + Sky Talk**
 - 2GB monthly usage allowance (light user)
- **Free for 6 months Sky Broadband Unlimited when ordered with Sky TV + Sky Talk Weekends - click here for full details**
 - special offer for the first 6 months (usually £7.50 per month)
- **Free for 6 months Sky Broadband Unlimited without Sky TV + Sky Talk Weekends - click here for full details**
 - free £25 M&S gift voucher when you join online
 - special offer for the first 6 months (usually £10 per month)
- **Wireless router included - save £50**
- **Free Sky+ box & standard set-up when you order Sky TV online**
- **Free Sky+ HD box & standard set-up when you join Sky+HD online**

- **Free £25 M&S gift voucher when you join Sky TV or Sky+HD online**
- Broadband offers shown require Sky Talk + line rental at £14.50 per month
 - inclusive weekend UK landline phone calls
 - unlimited UK landline calls + 20 International destinations only £5 extra a month

Got any questions about ordering Sky Broadband?

Call our sales team on 0800 840 5385 to order Sky Broadband today.

[Click here for more information on this offer](#)

Mobile 3G Broadband

Please check availability for all home, work & mobile locations with your chosen supplier



[Three Mobile 3G Broadband](#)



- **£7.87 per month for Three HSPA+ mobile broadband contract**
 - free standard USB modem dongle
 - 1GB monthly usage allowance included
- **£15.99 per month for Three HSPA+ mobile broadband with 1 month contract**
 - USB modem dongle only £4.99
 - 5GB monthly usage allowance included
- **Pay As You Go Three HSPA+ mobile broadband with no-contract**
 - USB modem dongle from only £29.99
- iPad data from £7.50 and MiFi from £10.87 a month
- **£34.61 per month for Three HSPA+ mobile broadband & laptop bundle**
- **14 day money back guarantee**

[Click here for more information on this offer and to check mobile broadband coverage](#)

Need help choosing the right deal? Call for free, impartial advice - 0800 466 1046

Experts available

Mon-Fri 8am-8pm; Sat 9am-5:30pm; Sun 10am-5:30pm

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Free Broadband Updates

Receive occasional updates when new broadband services or offers become available in your area.

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Broadband | checker

Business Broadband Summary

Broadband services for the **EH10 7DX** area on 4th October 2012

**Business
ADSL**



ADSL Broadband using a standard BT line is available

Broadband services may be subject to additional line tests and available network capacity in your area.

Business ADSL Broadband

Availability for the **EH10 7DX** area on the **Fairmilehead** exchange

Exchange



- Your local BT Exchange (Fairmilehead) is ADSL broadband enabled

Line



- Your line should be capable of supporting download speeds **up to 4.5Mb**.
- Your line will be fully tested when you place a broadband order
- Postcode-only checks are not 100% accurate
- Please [click here and enter your phone number](#)



[BT Business
Broadband](#)



- Up to 17Mb BT Business Broadband from £11 per month**
 - 10GB monthly usage allowance included (regular user)
- Up to 17Mb BT Business Unlimited Broadband from £15 per month**
- Add a business phone line for only £15.50 per month**
 - **get broadband and unlimited calls for only 1p a month each** special offer for the first 3 months
 - **500 free UK call minutes each month**
 - **unlimited UK landline/mobile & international calls for only £12.50 extra a month**
- Free activation**
- New BT Business Hub 3 wireless router with firewall only £59 (online orders only)**
- Unlimited Wi-Fi roaming at over 3.5 million BT hotspots
- 10 e-mail addresses and 50MB web space
- E-mail anti-spam and anti-virus service
- Free online support

All prices exclude VAT

Got any questions about ordering BT Business Broadband?

Call the BT Business Broadband sales team on **0808 208 5173**

[Click here for more information on this offer](#)

Free Broadband Updates

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Your e-mail
address



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Broadband | checker

Broadband Summary



Broadband services for the **EH10 7DX** area on 4th October 2012

- ADSL**  ADSL Broadband using a standard BT line is available
- Cable**  Cable Broadband is not available from the service providers we checked
- Satellite**  Broadband & Satellite TV is available
- Mobile 3G**  Mobile Broadband for your PC using wireless 3G

Broadband services may be subject to additional line tests and available network capacity in your area.

ADSL Broadband

Availability for the **EH10 7DX** area on the **Fairmilehead** exchange

- Exchange**  • Your local BT Exchange (Fairmilehead) is ADSL broadband enabled
- Line**  • Your line should be capable of supporting download speeds **up to 4.5Mb**.
- Your line will be fully tested when you place a broadband order
 - Postcode-only checks are not 100% accurate
 - Please [click here and enter your phone number](#)
 - **Unbundled broadband services up to 24Mb (around 480 times faster than dial-up) are available in your area**



[TalkTalk Broadband](#)


- **£3.25 per month for up to 14Mb TalkTalk unlimited broadband and calls**
 - 12 months half-price broadband (usually £6.50 a month - save £39)
 - unlimited evening & weekend calls to local & national UK landline numbers
- Switch to TalkTalk phone line rental from £9.50 per month (required)
 - no need to pay BT line rental or change phone number
 - only £9.50 a month when paying 12 months in advance (usually £14.50)
 - **free £50 welcome credit with new or reconnected phone lines**
 - **free 1500 landline to mobile calling minutes**
-  • **Free connection for online orders - save £30**
- **Free wireless router - save £30**
- **Free £25 Love2Shop voucher**
 - offer ends 3rd October
- **30 day trial - option to cancel the service within 30 days**
- Free technical support calls from your TalkTalk phone
- Single bill for broadband and phone

www.talktalk.co.uk/broadband

[Click here for more information on this offer](#)



[BT Total Broadband](#)

-  • **Free up to 16Mb BT Broadband + evening & weekend calls**
 - special offer for the first 6 months (usually £13 per month)
 - includes UK landline evening & weekend calls
 - 10GB monthly usage allowance included (regular user)
- **£9 per month for up to 16Mb BT More Broadband & calls**
 - special offer for the first 3 months (usually £18 per month)
 - includes UK landline evening & weekend calls
 - 40GB monthly usage allowance included (heavy user)
- **£20 per month for up to 16Mb unlimited BT Total Broadband & calls**
 - special offer for the first 3 months (usually £26 per month)

- unlimited monthly usage allowance
- includes UK landline evening & weekend calls
- **£0 broadband connection charge** (optional engineer home installation available)
- Line rental only £10.75 a month when paying 12 months in advance (required)
- **No connection charge for new BT phone line installations - save £130**
- **Includes next generation Home Hub wireless router**
- **Free £25 Sainsbury's Gift Card for online orders**
- **Optional free BT Vision+ box for on demand digital entertainment** - worth £199
 - £49 activation fee - BT Vision service from only £4 a month
- Parental controls and enhanced security features for total protection
- Free BT Digital Vault - securely store and retrieve your personal files
- **Free unlimited Wi-Fi roaming at over 3.5 million BT Wi-Fi hotspots**
- Compatible with Playstation Net, Xbox Live and Apple Mac
- **Single bill for broadband and BT phone**
- **Free 24-hour 0800 technical support line**

Got any questions about ordering BT Broadband?

Call our sales team on 0800 783 5378 to order BT Total Broadband today.

Lines are open 08:30 - 19:00 Monday to Friday.

www.bt.com/btbroadband

[Click here for more information on this offer](#)



[Plusnet Broadband](#)

- **£6.49 per month for up to 16Mb Value Broadband**
 - price promise - lowest priced standalone broadband in UK
 - 10GB monthly usage allowance included (regular user) + unlimited overnight use
- **£11.49 per month for up to 16Mb Extra Broadband**
 - 60GB monthly usage allowance included (heavy user) + unlimited overnight use
- **£16.49 per month for up to 16Mb Pro Broadband**
 - all traffic prioritised at all times - low latency and pings
 - access to Plusnet gaming servers
 - 20GB monthly usage allowance included (heavy user) + unlimited overnight use
- £25 activation fee
 - add home phone from only £9.49 a month and get free broadband activation + get 12 months half price broadband when you order online



- **click here for more info**
- **Wireless router included**
- **No-contract option available - only 10 days' notice and no penalties**
- E-mail with anti-spam and anti-virus protection
- Compatible with Playstation Net, Xbox Live and Apple Mac
- 24-hour support line at standard call rates

Got any questions about ordering Plusnet Broadband?

Call our sales team on 0800 073 1120 to order Plusnet Broadband today.

www.plus.net/broadband

[Click here for more information on this offer](#)



[O2 Home Broadband](#)



- **£13.50 per month for up to 16Mb O2 Home Broadband**
 - only £3.50 per month for O2 pay monthly / Pay & Go mobile customers
 - 20GB monthly usage allowance included (regular user)
- **£8.75 per month for up to 16Mb O2 Unlimited Home Broadband**
 - special offer for the first 6 months (usually £17.50 per month - save £52.50)
 - from only £6.25 per month for O2 pay monthly / Pay & Go mobile customers
 - O2 mobile customer for 2+ years? Get 12 months half price broadband
 - download as much as you want (fair usage policy)
- **£13 per month for up to 16Mb O2 Unlimited The Works Broadband**
 - special offer for the first 6 months (usually £26 per month - save £78)
 - from only £10.50 per month for O2 pay monthly / Pay & Go mobile customers
 - O2 mobile customer for 2+ years? Get 12 months half price broadband
 - faster pro user uploads speeds
 - download as much as you want (fair usage policy)
- **£25.53 connection fee**
- **30-day low commitment contract option** (additional £30.63 connection fee)
- **30-day money back guarantee**
- **ADSL2+ wireless box with firewall security included**
- **Add 3G mobile broadband from £5.11 a month + unlimited access to Wi-Fi hotspots**

- Includes McAfee security software with parental controls
- **24/7 UK-based support**

Got any questions about ordering O2 Broadband?

Call the O2 sales team on 0808 168 8379 to order O2 Broadband today.

o2broadbandoffer.co.uk

[Click here for more information on this offer](#)



[Be Broadband](#)



- **£17 per month for up to 10Mb unlimited broadband**
- **£22 per month for up to 16Mb unlimited broadband**
- **£27 per month for up to 16Mb unlimited pro broadband**
 - pro upload speeds of up to 1.9Mb
- 3 or 9 month contract option available with up to 16Mb connections
- **Unlimited broadband - no additional download charges**
- **Free connection (save £24)**
- **Free ADSL2+ wireless equipment for online orders**
- **24/7 freephone support**
- Be Broadband are part of the O2 Group

www.bethere.co.uk

[Click here for more information on this offer](#)



[Orange Home Broadband](#)



- **£10 per month for Orange unlimited usage home broadband & calls**
 - **only £5 per month for existing Orange & T-Mobile customers**
 - unlimited broadband usage - no extra costs
 - inclusive evening & weekend UK landline calls
 - switch to Orange home phone line rental for £13.50 per month (required)
 - no need to pay BT line rental or change phone number*
 - add anytime calls to UK landlines for only £5 extra per month
- **Free connection**
- **Free Bright Box wireless N router - save £95**
- **Free £40 Marks & Spencer voucher**
- Get 2 cinema tickets for the price of 1 with Orange Wednesdays
- Free McAfee Security Suite with parental controls - save £49.99
- Fully compatible with Playstation Net and Xbox Live

Got any questions about ordering Orange Home Broadband?

Call the Orange sales team on 0800 072 4224 to order Orange Home Broadband today.

www.orange.co.uk/broadband

[Click here for more information on this offer](#)

Cable Broadband

Availability of selected Cable services in the **EH10 7DX** area



[Virgin Broadband](#)



- ntl, Telewest and Virgin.net have come together to form Virgin Media.
- **£7.25 per month for up to 30Mb Broadband + phone**
 - special offer for the first 6 months (usually £14.50 a month)
- **£11.25 per month for up to 60Mb Broadband + phone**
 - special offer for the first 6 months (usually £18.50 a month)
- **£18.25 per month for up to 100Mb Broadband + phone**
 - special offer for the first 6 months (usually £25.50 a month)
- Download as much as you like with no hidden charges
- **Free Virgin Media Super Hub with wireless N**
- **Free installation when ordering broadband & phone - save £49.95**
- Bundle offers require Virgin phone line rental at £13.90 per month
- **28 day Money Back Guarantee**
- Add 3G Mobile Broadband + free USB modem for only £8.17 a month
- Free Virgin Media Security package with parental controls
- Free technical support calls from your Virgin phone

Got any questions about ordering Virgin Broadband?
Call our sales team on 0800 840 5384 to order Virgin Broadband today.

[Click here for more information on this offer](#)

Broadband & Satellite TV

Availability of selected Broadband & Satellite TV services in the **EH10 7DX** area



[Sky Broadband](#)



- **£17 per month for Sky Broadband Connect when ordered with Sky TV + Sky Talk**
- 40GB monthly usage allowance included (heavy user)
- **Wireless router included - save £50**
- **Free Sky+ box & standard set-up when you order Sky TV online**
- **Free Sky+ HD box & standard set-up when you join Sky+HD online**
- **Free £25 M&S gift voucher when you join Sky TV or Sky+HD online**
- Broadband offers require Sky Talk + line rental at £14.50 per month
 - inclusive weekend UK landline phone calls
 - unlimited UK landline calls + 20 International destinations only £5 extra a month

Got any questions about ordering Sky Broadband?
Call our sales team on 0800 840 5385 to order Sky Broadband today.

[Click here for more information on this offer](#)

Mobile 3G Broadband

Please check availability for all home, work & mobile locations with your chosen supplier



[Three Mobile 3G Broadband](#)



- **£7.87 per month for Three HSPA+ mobile broadband contract**
 - free standard USB modem dongle
 - 1GB monthly usage allowance included
- **£15.99 per month for Three HSPA+ mobile broadband with 1 month contract**
 - USB modem dongle only £4.99
 - 5GB monthly usage allowance included
- **Pay As You Go Three HSPA+ mobile broadband with no-contract**
 - USB modem dongle from only £29.99
- iPad data from £7.50 and MiFi from £10.87 a month
- **£34.61 per month for Three HSPA+ mobile broadband & laptop bundle**
- **14 day money back guarantee**

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Mon-Fri 8am-8pm; Sat 9am-5:30pm; Sun 10am-5:30pm

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Business Broadband Summary

Broadband services for the **EH10 7GZ** area on 4th October 2012

**Business
ADSL**



ADSL Broadband using a standard BT line is available

Broadband services may be subject to additional line tests and available network capacity in your area.

Business ADSL Broadband

Availability for the **EH10 7GZ** area on the **Fairmilehead** exchange

Exchange



• Your local BT Exchange (Fairmilehead) is ADSL broadband enabled

Line



- Your line should be capable of supporting download speeds **up to 5.5Mb**.
- Your line will be fully tested when you place a broadband order
- Postcode-only checks are not 100% accurate
- Please [click here and enter your phone number](#)



[BT Business
Broadband](#)



- **Up to 17Mb BT Business Broadband from £11 per month**
- 10GB monthly usage allowance included (regular user)
- **Up to 17Mb BT Business Unlimited Broadband from £15 per month**
- **Add a business phone line for only £15.50 per month**
- **get broadband and unlimited calls for only 1p a month each**
special offer for the first 3 months
- **500 free UK call minutes each month**
- **unlimited UK landline/mobile & international calls for only £12.50 extra a month**
- **Free activation**
- **New BT Business Hub 3 wireless router with firewall only £59 (online orders only)**
- Unlimited Wi-Fi roaming at over 3.5 million BT hotspots
- 10 e-mail addresses and 50MB web space
- E-mail anti-spam and anti-virus service
- Free online support

All prices exclude VAT

Got any questions about ordering BT Business Broadband?

Call the BT Business Broadband sales team on **0808 208 5173**

[Click here for more information on this offer](#)

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Broadband Summary



Broadband services for the **EH10 7GZ** area on 4th October 2012

- ADSL**  ADSL Broadband using a standard BT line is available
- Cable**  Cable Broadband is not available from the service providers we checked
- Satellite**  Broadband & Satellite TV is available
- Mobile 3G**  Mobile Broadband for your PC using wireless 3G

Broadband services may be subject to additional line tests and available network capacity in your area.

ADSL Broadband

Availability for the **EH10 7GZ** area on the **Fairmilehead** exchange

- Exchange**  • Your local BT Exchange (Fairmilehead) is ADSL broadband enabled
- Line**  • Your line should be capable of supporting download speeds **up to 5.5Mb**.
- Your line will be fully tested when you place a broadband order
 - Postcode-only checks are not 100% accurate
 - Please [click here and enter your phone number](#)
 - **Unbundled broadband services up to 24Mb (around 480 times faster than dial-up) are available in your area**



[TalkTalk Broadband](#)


- **£3.25 per month for up to 14Mb TalkTalk unlimited broadband and calls**
 - 12 months half-price broadband (usually £6.50 a month - save £39)
 - unlimited evening & weekend calls to local & national UK landline numbers
- Switch to TalkTalk phone line rental from £9.50 per month (required)
 - no need to pay BT line rental or change phone number
 - only £9.50 a month when paying 12 months in advance (usually £14.50)
 - **free £50 welcome credit with new or reconnected phone lines**
 - **free 1500 landline to mobile calling minutes**
-  • **Free connection for online orders - save £30**
- **Free wireless router - save £30**
- **Free £25 Love2Shop voucher**
 - offer ends 3rd October
- **30 day trial - option to cancel the service within 30 days**
- Free technical support calls from your TalkTalk phone
- Single bill for broadband and phone

www.talktalk.co.uk/broadband

[Click here for more information on this offer](#)



[BT Total Broadband](#)

-  • **Free up to 16Mb BT Broadband + evening & weekend calls**
 - special offer for the first 6 months (usually £13 per month)
 - includes UK landline evening & weekend calls
 - 10GB monthly usage allowance included (regular user)
- **£9 per month for up to 16Mb BT More Broadband & calls**
 - special offer for the first 3 months (usually £18 per month)
 - includes UK landline evening & weekend calls
 - 40GB monthly usage allowance included (heavy user)
- **£20 per month for up to 16Mb unlimited BT Total Broadband & calls**
 - special offer for the first 3 months (usually £26 per month)

- unlimited monthly usage allowance
- includes UK landline evening & weekend calls
- **£0 broadband connection charge** (optional engineer home installation available)
- Line rental only £10.75 a month when paying 12 months in advance (required)
- **No connection charge for new BT phone line installations - save £130**
- **Includes next generation Home Hub wireless router**
- **Free £25 Sainsbury's Gift Card for online orders**
- **Optional free BT Vision+ box for on demand digital entertainment** - worth £199
 - £49 activation fee - BT Vision service from only £4 a month
- Parental controls and enhanced security features for total protection
- Free BT Digital Vault - securely store and retrieve your personal files
- **Free unlimited Wi-Fi roaming at over 3.5 million BT Wi-Fi hotspots**
- Compatible with Playstation Net, Xbox Live and Apple Mac
- **Single bill for broadband and BT phone**
- **Free 24-hour 0800 technical support line**

Got any questions about ordering BT Broadband?

Call our sales team on 0800 783 5378 to order BT Total Broadband today.

Lines are open 08:30 - 19:00 Monday to Friday.

www.bt.com/btbroadband

[Click here for more information on this offer](#)



[Plusnet Broadband](#)

- **£6.49 per month for up to 16Mb Value Broadband**
 - price promise - lowest priced standalone broadband in UK
 - 10GB monthly usage allowance included (regular user) + unlimited overnight use
- **£11.49 per month for up to 16Mb Extra Broadband**
 - 60GB monthly usage allowance included (heavy user) + unlimited overnight use
- **£16.49 per month for up to 16Mb Pro Broadband**
 - all traffic prioritised at all times - low latency and pings
 - access to Plusnet gaming servers
 - 20GB monthly usage allowance included (heavy user) + unlimited overnight use
- £25 activation fee
 - add home phone from only £9.49 a month and get free broadband activation
 - + get 12 months half price broadband when you order online



- **click here for more info**
- **Wireless router included**
- **No-contract option available - only 10 days' notice and no penalties**
- E-mail with anti-spam and anti-virus protection
- Compatible with Playstation Net, Xbox Live and Apple Mac
- 24-hour support line at standard call rates

Got any questions about ordering Plusnet Broadband?

Call our sales team on 0800 073 1120 to order Plusnet Broadband today.

www.plus.net/broadband

[Click here for more information on this offer](#)



[O2 Home Broadband](#)



- **£13.50 per month for up to 16Mb O2 Home Broadband**
 - only £3.50 per month for O2 pay monthly / Pay & Go mobile customers
 - 20GB monthly usage allowance included (regular user)
- **£8.75 per month for up to 16Mb O2 Unlimited Home Broadband**
 - special offer for the first 6 months (usually £17.50 per month - save £52.50)
 - from only £6.25 per month for O2 pay monthly / Pay & Go mobile customers
 - O2 mobile customer for 2+ years? Get 12 months half price broadband
 - download as much as you want (fair usage policy)
- **£13 per month for up to 16Mb O2 Unlimited The Works Broadband**
 - special offer for the first 6 months (usually £26 per month - save £78)
 - from only £10.50 per month for O2 pay monthly / Pay & Go mobile customers
 - O2 mobile customer for 2+ years? Get 12 months half price broadband
 - faster pro user uploads speeds
 - download as much as you want (fair usage policy)
- **£25.53 connection fee**
- **30-day low commitment contract option** (additional £30.63 connection fee)
- **30-day money back guarantee**
- **ADSL2+ wireless box with firewall security included**
- **Add 3G mobile broadband from £5.11 a month + unlimited access to Wi-Fi hotspots**

- Includes McAfee security software with parental controls
- **24/7 UK-based support**

Got any questions about ordering O2 Broadband?

Call the O2 sales team on 0808 168 8379 to order O2 Broadband today.

o2broadbandoffer.co.uk

[Click here for more information on this offer](#)



[Be Broadband](#)



- **£17 per month for up to 10Mb unlimited broadband**
- **£22 per month for up to 16Mb unlimited broadband**
- **£27 per month for up to 16Mb unlimited pro broadband**
 - pro upload speeds of up to 1.9Mb
- 3 or 9 month contract option available with up to 16Mb connections
- **Unlimited broadband - no additional download charges**
- **Free connection (save £24)**
- **Free ADSL2+ wireless equipment for online orders**
- **24/7 freephone support**
- Be Broadband are part of the O2 Group

www.bethere.co.uk

[Click here for more information on this offer](#)



[Orange Home Broadband](#)



- **£10 per month for Orange unlimited usage home broadband & calls**
 - **only £5 per month for existing Orange & T-Mobile customers**
 - unlimited broadband usage - no extra costs
 - inclusive evening & weekend UK landline calls
 - switch to Orange home phone line rental for £13.50 per month (required)
 - no need to pay BT line rental or change phone number*
 - add anytime calls to UK landlines for only £5 extra per month
- **Free connection**
- **Free Bright Box wireless N router - save £95**
- **Free £40 Marks & Spencer voucher**
- Get 2 cinema tickets for the price of 1 with Orange Wednesdays
- Free McAfee Security Suite with parental controls - save £49.99
- Fully compatible with Playstation Net and Xbox Live

Got any questions about ordering Orange Home Broadband?

Call the Orange sales team on 0800 072 4224 to order Orange Home Broadband today.

www.orange.co.uk/broadband

[Click here for more information on this offer](#)

Cable Broadband

Availability of selected Cable services in the **EH10 7GZ** area



[Virgin Broadband](#)



- ntl, Telewest and Virgin.net have come together to form Virgin Media.
- **£7.25 per month for up to 30Mb Broadband + phone**
 - special offer for the first 6 months (usually £14.50 a month)
- **£11.25 per month for up to 60Mb Broadband + phone**
 - special offer for the first 6 months (usually £18.50 a month)
- **£18.25 per month for up to 100Mb Broadband + phone**
 - special offer for the first 6 months (usually £25.50 a month)
- Download as much as you like with no hidden charges
- **Free Virgin Media Super Hub with wireless N**
- **Free installation when ordering broadband & phone - save £49.95**
- Bundle offers require Virgin phone line rental at £13.90 per month
- **28 day Money Back Guarantee**
- Add 3G Mobile Broadband + free USB modem for only £8.17 a month
- Free Virgin Media Security package with parental controls
- Free technical support calls from your Virgin phone

Got any questions about ordering Virgin Broadband?
Call our sales team on 0800 840 5384 to order Virgin Broadband today.

[Click here for more information on this offer](#)

Broadband & Satellite TV

Availability of selected Broadband & Satellite TV services in the **EH10 7GZ** area



[Sky Broadband](#)



- **£17 per month for Sky Broadband Connect when ordered with Sky TV + Sky Talk**
- 40GB monthly usage allowance included (heavy user)
- **Wireless router included - save £50**
- **Free Sky+ box & standard set-up when you order Sky TV online**
- **Free Sky+ HD box & standard set-up when you join Sky+HD online**
- **Free £25 M&S gift voucher when you join Sky TV or Sky+HD online**
- Broadband offers require Sky Talk + line rental at £14.50 per month
 - inclusive weekend UK landline phone calls
 - unlimited UK landline calls + 20 International destinations only £5 extra a month

Got any questions about ordering Sky Broadband?
Call our sales team on 0800 840 5385 to order Sky Broadband today.

[Click here for more information on this offer](#)

Mobile 3G Broadband

Please check availability for all home, work & mobile locations with your chosen supplier



[Three Mobile 3G Broadband](#)



- **£7.87 per month for Three HSPA+ mobile broadband contract**
 - free standard USB modem dongle
 - 1GB monthly usage allowance included
- **£15.99 per month for Three HSPA+ mobile broadband with 1 month contract**
 - USB modem dongle only £4.99
 - 5GB monthly usage allowance included
- **Pay As You Go Three HSPA+ mobile broadband with no-contract**
 - USB modem dongle from only £29.99
- iPad data from £7.50 and MiFi from £10.87 a month
- **£34.61 per month for Three HSPA+ mobile broadband & laptop bundle**
- **14 day money back guarantee**

[Click here for more information on this offer and to check mobile broadband coverage](#)

Need help choosing the right deal? Call for free, impartial advice - 0800 466 1046

Experts available

Mon-Fri 8am-8pm; Sat 9am-5:30pm; Sun 10am-5:30pm

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Business Broadband Summary

Broadband services for the **EH10 7DP** area on 4th October 2012

**Business
ADSL**



ADSL Broadband using a standard BT line is available

Broadband services may be subject to additional line tests and available network capacity in your area.

Business ADSL Broadband

Availability for the **EH10 7DP** area on the **Fairmilehead** exchange

Exchange



- Your local BT Exchange (Fairmilehead) is ADSL broadband enabled

Line



- Your line should be capable of supporting download speeds **up to 5.5Mb**.
- Your line will be fully tested when you place a broadband order
- Postcode-only checks are not 100% accurate
- Please [click here and enter your phone number](#)



[BT Business
Broadband](#)



- Up to 17Mb BT Business Broadband from £11 per month**
 - 10GB monthly usage allowance included (regular user)
- Up to 17Mb BT Business Unlimited Broadband from £15 per month**
- Add a business phone line for only £15.50 per month**
 - **get broadband and unlimited calls for only 1p a month each** special offer for the first 3 months
 - **500 free UK call minutes each month**
 - **unlimited UK landline/mobile & international calls for only £12.50 extra a month**
- Free activation**
- New BT Business Hub 3 wireless router with firewall only £59 (online orders only)**
- Unlimited Wi-Fi roaming at over 3.5 million BT hotspots
- 10 e-mail addresses and 50MB web space
- E-mail anti-spam and anti-virus service
- Free online support

All prices exclude VAT

Got any questions about ordering BT Business Broadband?

Call the BT Business Broadband sales team on **0808 208 5173**

[Click here for more information on this offer](#)

Free Broadband Updates

Receive occasional updates when new broadband services or offers become available in your area.

Your e-mail
address



We take your [privacy seriously](#) - you will only ever receive e-mails from Broadband Checker





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Broadband | checker

Broadband Summary



Broadband services for the **EH10 7DP** area on 4th October 2012

- ADSL**  ADSL Broadband using a standard BT line is available
- Cable**  Cable Broadband is not available from the service providers we checked
- Satellite**  Broadband & Satellite TV is available
- Mobile 3G**  Mobile Broadband for your PC using wireless 3G

Broadband services may be subject to additional line tests and available network capacity in your area.

ADSL Broadband

Availability for the **EH10 7DP** area on the **Fairmilehead** exchange

- Exchange**  • Your local BT Exchange (Fairmilehead) is ADSL broadband enabled
- Line**  • Your line should be capable of supporting download speeds **up to 5.5Mb**.
- Your line will be fully tested when you place a broadband order
 - Postcode-only checks are not 100% accurate
 - Please [click here and enter your phone number](#)
 - **Unbundled broadband services up to 24Mb (around 480 times faster than dial-up) are available in your area**



[TalkTalk Broadband](#)


- **£3.25 per month for up to 14Mb TalkTalk unlimited broadband and calls**
 - 12 months half-price broadband (usually £6.50 a month - save £39)
 - unlimited evening & weekend calls to local & national UK landline numbers
- Switch to TalkTalk phone line rental from £9.50 per month (required)
 - no need to pay BT line rental or change phone number
 - only £9.50 a month when paying 12 months in advance (usually £14.50)
 - **free £50 welcome credit with new or reconnected phone lines**
 - **free 1500 landline to mobile calling minutes**
-  • **Free connection for online orders - save £30**
- **Free wireless router - save £30**
- **Free £25 Love2Shop voucher**
 - offer ends 3rd October
- **30 day trial - option to cancel the service within 30 days**
- Free technical support calls from your TalkTalk phone
- Single bill for broadband and phone

www.talktalk.co.uk/broadband

[Click here for more information on this offer](#)



[BT Total Broadband](#)

-  • **Free up to 16Mb BT Broadband + evening & weekend calls**
 - special offer for the first 6 months (usually £13 per month)
 - includes UK landline evening & weekend calls
 - 10GB monthly usage allowance included (regular user)
- **£9 per month for up to 16Mb BT More Broadband & calls**
 - special offer for the first 3 months (usually £18 per month)
 - includes UK landline evening & weekend calls
 - 40GB monthly usage allowance included (heavy user)
- **£20 per month for up to 16Mb unlimited BT Total Broadband & calls**
 - special offer for the first 3 months (usually £26 per month)

- unlimited monthly usage allowance
- includes UK landline evening & weekend calls
- **£0 broadband connection charge** (optional engineer home installation available)
- Line rental only £10.75 a month when paying 12 months in advance (required)
- **No connection charge for new BT phone line installations - save £130**
- **Includes next generation Home Hub wireless router**
- **Free £25 Sainsbury's Gift Card for online orders**
- **Optional free BT Vision+ box for on demand digital entertainment** - worth £199
 - £49 activation fee - BT Vision service from only £4 a month
- Parental controls and enhanced security features for total protection
- Free BT Digital Vault - securely store and retrieve your personal files
- **Free unlimited Wi-Fi roaming at over 3.5 million BT Wi-Fi hotspots**
- Compatible with Playstation Net, Xbox Live and Apple Mac
- **Single bill for broadband and BT phone**
- **Free 24-hour 0800 technical support line**

Got any questions about ordering BT Broadband?

Call our sales team on 0800 783 5378 to order BT Total Broadband today.

Lines are open 08:30 - 19:00 Monday to Friday.

www.bt.com/btbroadband

[Click here for more information on this offer](#)



[Plusnet Broadband](#)

- **£6.49 per month for up to 16Mb Value Broadband**
 - price promise - lowest priced standalone broadband in UK
 - 10GB monthly usage allowance included (regular user) + unlimited overnight use
- **£11.49 per month for up to 16Mb Extra Broadband**
 - 60GB monthly usage allowance included (heavy user) + unlimited overnight use
- **£16.49 per month for up to 16Mb Pro Broadband**
 - all traffic prioritised at all times - low latency and pings
 - access to Plusnet gaming servers
 - 20GB monthly usage allowance included (heavy user) + unlimited overnight use
- £25 activation fee
 - add home phone from only £9.49 a month and get free broadband activation + get 12 months half price broadband when you order online



- **click here for more info**
- **Wireless router included**
- **No-contract option available - only 10 days' notice and no penalties**
- E-mail with anti-spam and anti-virus protection
- Compatible with Playstation Net, Xbox Live and Apple Mac
- 24-hour support line at standard call rates

Got any questions about ordering Plusnet Broadband?

Call our sales team on 0800 073 1120 to order Plusnet Broadband today.

www.plus.net/broadband

[Click here for more information on this offer](#)



[O2 Home Broadband](#)



- **£13.50 per month for up to 16Mb O2 Home Broadband**
 - only £3.50 per month for O2 pay monthly / Pay & Go mobile customers
 - 20GB monthly usage allowance included (regular user)
- **£8.75 per month for up to 16Mb O2 Unlimited Home Broadband**
 - special offer for the first 6 months (usually £17.50 per month - save £52.50)
 - from only £6.25 per month for O2 pay monthly / Pay & Go mobile customers
 - O2 mobile customer for 2+ years? Get 12 months half price broadband
 - download as much as you want (fair usage policy)
- **£13 per month for up to 16Mb O2 Unlimited The Works Broadband**
 - special offer for the first 6 months (usually £26 per month - save £78)
 - from only £10.50 per month for O2 pay monthly / Pay & Go mobile customers
 - O2 mobile customer for 2+ years? Get 12 months half price broadband
 - faster pro user uploads speeds
 - download as much as you want (fair usage policy)
- **£25.53 connection fee**
- **30-day low commitment contract option** (additional £30.63 connection fee)
- **30-day money back guarantee**
- **ADSL2+ wireless box with firewall security included**
- **Add 3G mobile broadband from £5.11 a month + unlimited access to Wi-Fi hotspots**

- Includes McAfee security software with parental controls
- **24/7 UK-based support**

Got any questions about ordering O2 Broadband?

Call the O2 sales team on 0808 168 8379 to order O2 Broadband today.

o2broadbandoffer.co.uk

[Click here for more information on this offer](#)



[Be Broadband](#)



- **£17 per month for up to 10Mb unlimited broadband**
- **£22 per month for up to 16Mb unlimited broadband**
- **£27 per month for up to 16Mb unlimited pro broadband**
 - pro upload speeds of up to 1.9Mb
- 3 or 9 month contract option available with up to 16Mb connections
- **Unlimited broadband - no additional download charges**
- **Free connection (save £24)**
- **Free ADSL2+ wireless equipment for online orders**
- **24/7 freephone support**
- Be Broadband are part of the O2 Group

www.bethere.co.uk

[Click here for more information on this offer](#)



[Orange Home Broadband](#)



- **£10 per month for Orange unlimited usage home broadband & calls**
 - **only £5 per month for existing Orange & T-Mobile customers**
 - unlimited broadband usage - no extra costs
 - inclusive evening & weekend UK landline calls
 - switch to Orange home phone line rental for £13.50 per month (required)
 - no need to pay BT line rental or change phone number*
 - add anytime calls to UK landlines for only £5 extra per month
- **Free connection**
- **Free Bright Box wireless N router - save £95**
- **Free £40 Marks & Spencer voucher**
- Get 2 cinema tickets for the price of 1 with Orange Wednesdays
- Free McAfee Security Suite with parental controls - save £49.99
- Fully compatible with Playstation Net and Xbox Live

Got any questions about ordering Orange Home Broadband?

Call the Orange sales team on 0800 072 4224 to order Orange Home Broadband today.

www.orange.co.uk/broadband

[Click here for more information on this offer](#)

Cable Broadband

Availability of selected Cable services in the **EH10 7DP** area



[Virgin Broadband](#)



- ntl, Telewest and Virgin.net have come together to form Virgin Media.
- **£7.25 per month for up to 30Mb Broadband + phone**
 - special offer for the first 6 months (usually £14.50 a month)
- **£11.25 per month for up to 60Mb Broadband + phone**
 - special offer for the first 6 months (usually £18.50 a month)
- **£18.25 per month for up to 100Mb Broadband + phone**
 - special offer for the first 6 months (usually £25.50 a month)
- Download as much as you like with no hidden charges
- **Free Virgin Media Super Hub with wireless N**
- **Free installation when ordering broadband & phone - save £49.95**
- Bundle offers require Virgin phone line rental at £13.90 per month
- **28 day Money Back Guarantee**
- Add 3G Mobile Broadband + free USB modem for only £8.17 a month
- Free Virgin Media Security package with parental controls
- Free technical support calls from your Virgin phone

Got any questions about ordering Virgin Broadband?
Call our sales team on 0800 840 5384 to order Virgin Broadband today.

[Click here for more information on this offer](#)

Broadband & Satellite TV

Availability of selected Broadband & Satellite TV services in the **EH10 7DP** area



[Sky Broadband](#)



- **£17 per month for Sky Broadband Connect when ordered with Sky TV + Sky Talk**
- 40GB monthly usage allowance included (heavy user)
- **Wireless router included - save £50**
- **Free Sky+ box & standard set-up when you order Sky TV online**
- **Free Sky+ HD box & standard set-up when you join Sky+HD online**
- **Free £25 M&S gift voucher when you join Sky TV or Sky+HD online**
- Broadband offers require Sky Talk + line rental at £14.50 per month
 - inclusive weekend UK landline phone calls
 - unlimited UK landline calls + 20 International destinations only £5 extra a month

Got any questions about ordering Sky Broadband?
Call our sales team on 0800 840 5385 to order Sky Broadband today.

[Click here for more information on this offer](#)

Mobile 3G Broadband

Please check availability for all home, work & mobile locations with your chosen supplier



[Three Mobile 3G Broadband](#)



- **£7.87 per month for Three HSPA+ mobile broadband contract**
- free standard USB modem dongle
- 1GB monthly usage allowance included
- **£15.99 per month for Three HSPA+ mobile broadband with 1 month contract**
- USB modem dongle only £4.99
- 5GB monthly usage allowance included
- **Pay As You Go Three HSPA+ mobile broadband with no-contract**
- USB modem dongle from only £29.99
- iPad data from £7.50 and MiFi from £10.87 a month
- **£34.61 per month for Three HSPA+ mobile broadband & laptop bundle**
- **14 day money back guarantee**

[Click here for more information on this offer and to check mobile broadband coverage](#)

Need help choosing the right deal? Call for free, impartial advice - 0800 466 1046

Experts available

Mon-Fri 8am-8pm; Sat 9am-5:30pm; Sun 10am-5:30pm

simplifydigital

In association with **Straight talking about digital**

Free Broadband Updates

Receive occasional updates when new broadband services or offers become available in your area.

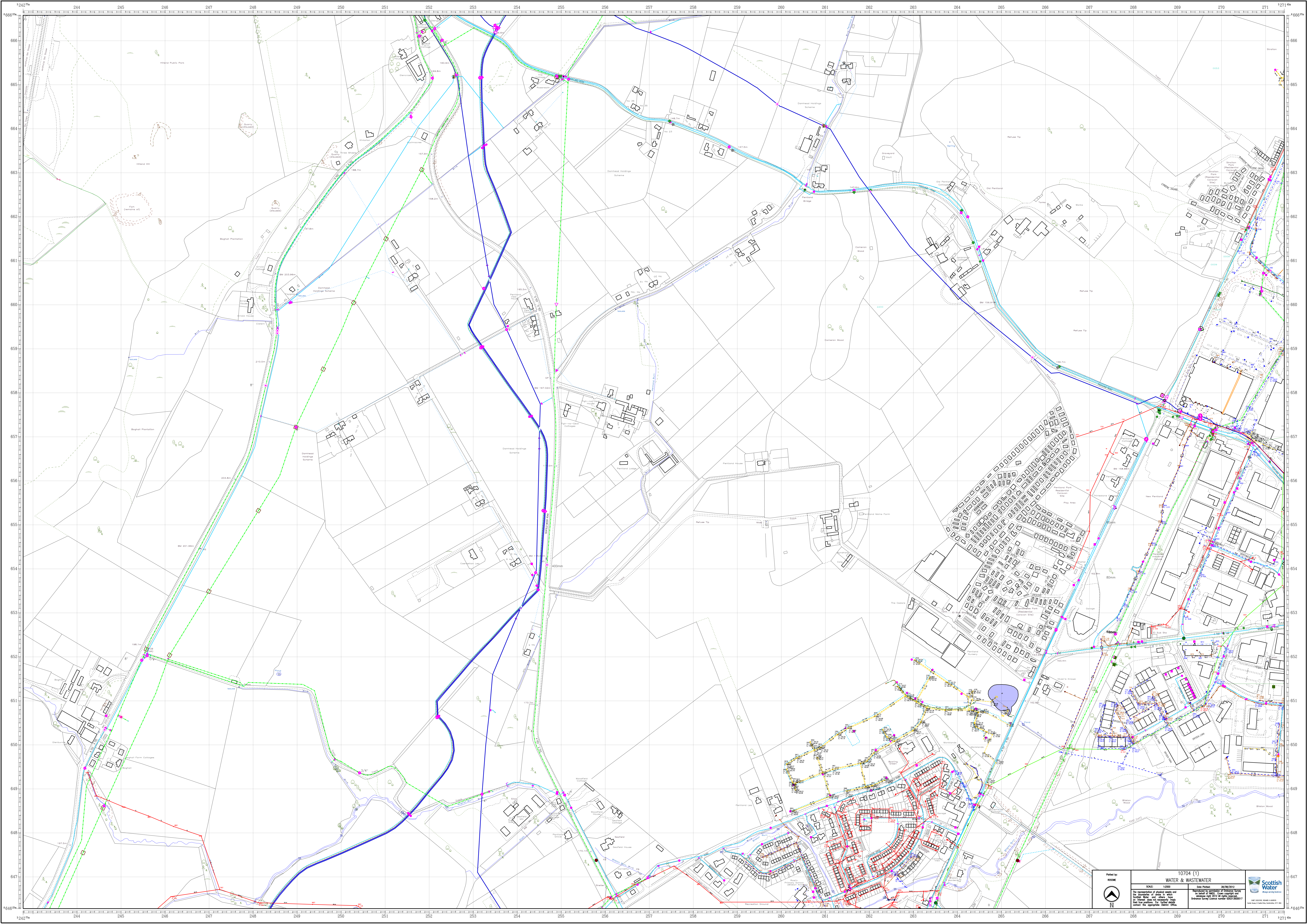
Your e-mail
address





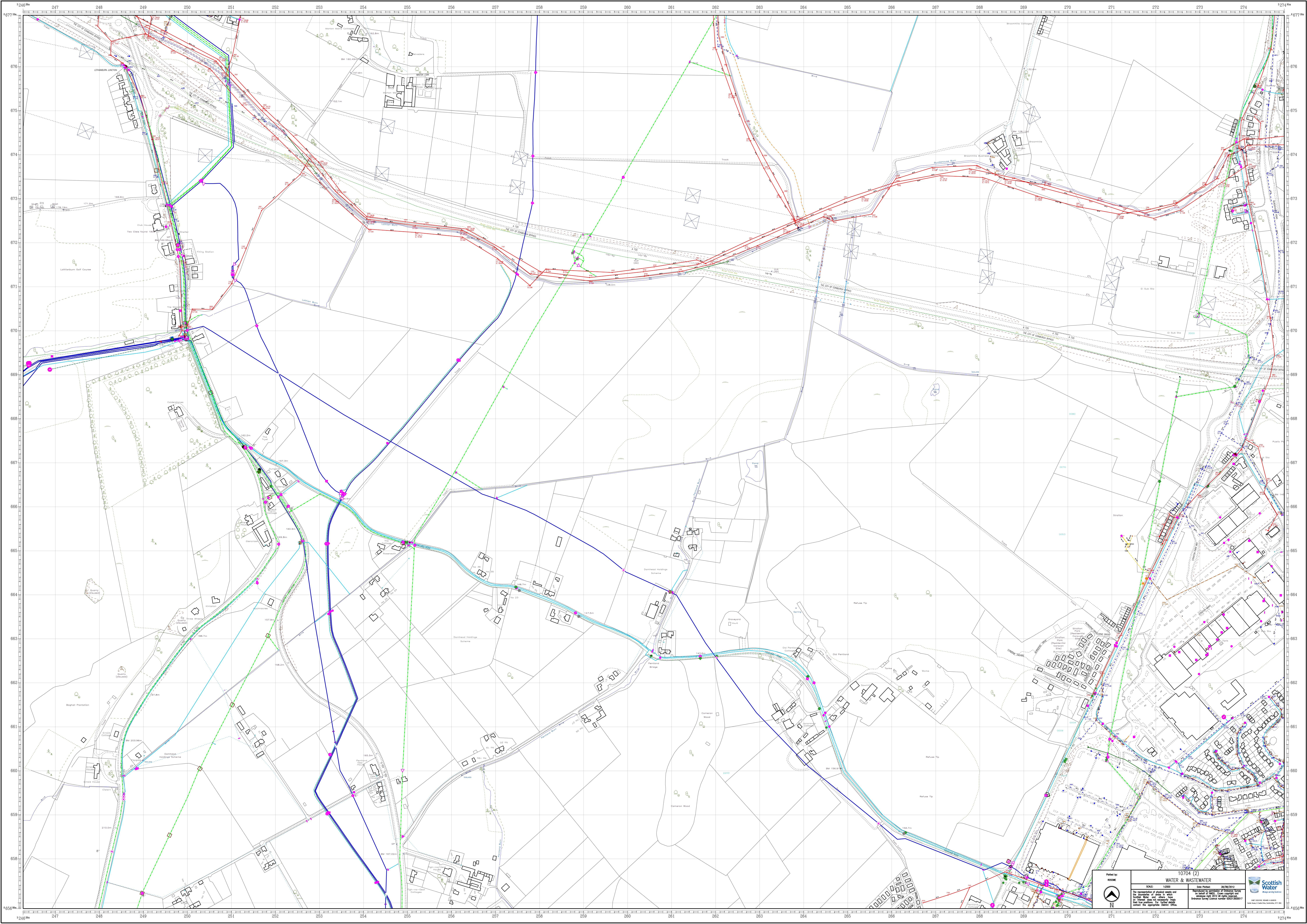
We take your [privacy seriously](#) - you will only ever receive e-mails from Broadband Checker

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	10704 (1)	
	WATER & WASTEWATER	
SCALE: 1:2000	Date Plotted: 28/09/2012	
The representation of physical assets and the boundaries of plots in this plan are shown as they are. It does not necessarily show the true position. For legal purposes, contact the appropriate Survey Office.		



	10704 (2)	
	WATER & WASTEWATER	
SCALE: 1:2000	Date Plotted: 28/09/2012	
The representation of physical assets and the boundaries of plots in this plan are shown as they are not necessarily true. The user should verify the accuracy of the data by contacting the appropriate Survey Office.		

Smallworld GIS Water & Wastewater Legend



Wastewater Legend

	Combined (red)		Lamphole
	Foul (brown)		Change of Attributes
	Surface Water (blue)		Outfall
	Natural Water (light blue)		Inlet
	CSO (dark blue)		Pumping Station
	Trade Effluent (brown)		Rodding Eye
	Treated Effluent (black)		Septic Tank
	Abandoned (grey)		Sewer Junction
	Water Course (green)		Sewer Structure
	Rising Main (red)		Sewerage Air Valve
	Syphon		Sewerage Pipe Bridge
	Chamber (same colour as pipework)		Sluice Valve
	Dual Chamber (same colour as pipework)		Storm Tank
	Collapse/Choke (not visible by default)		Unknown End
	Combined Storm Overflow		Treatment Plant
	Connection (not visible)		Vent Column
	Duct		Buchan Trap
	Ghost Node (not visible by default)		
	Hatchbox		
	Hydraulic Control Chamber		

Water Legend

	Trunk Main (in use)		Level Control Valve
	Distribution Main		Valve - Other
	Raw Water Main		BC WSZ Valve
	Mains (abandoned)		BC DMA Valve
	Mains (proposed)		BC WOA Valve
	Mains (isolated)		BC PRA Valve
	Communication Pipe		BC PCC Valve
	Supply Pipe		BC PSA Valve
	Tunnel		Pipebridge
	Open Course		
	Aqueduct		
	Logical Service Link		
	Duct		
	Stopcock		
	Sample Point		
	Service Point		
	Water Treatment Works		
	Pressure Reducing Valve		
	Pressure Sustaining Valve		
	Reflux (Non-Return) Valve		

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Warning! This area contains gas mains operating at HIGH PRESSURE in excess of 7 bar. Before excavating in the area contact the Local Network Office.



USER ID: chamer
 DATE: 27 Aug 2012
 EXTRACT DATE: 22 Jun 2012
 MAP REF: NT2565NW
 CENTRE: 325285, 665677
 SCALE: 1:5,000

- LP Mains
- MP Mains
- IP Mains
- LHP Mains
- NHP Mains

This plan shows those pipes owned by Scotia Gas Networks plc in their role as a Licensed Gas Transporter (GT). Gas pipes owned by other GTs, or otherwise privately owned, may be present in this area. Information with regard to such pipes should be obtained from the relevant owners. The information shown on this plan is given without warranty, the accuracy thereof cannot be guaranteed. Service pipes, valves, syphons, stub connections, etc. are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Scotia Gas Networks plc or their agents, servants or contractors for any error or omission. Safe digging practices, in accordance with HS(G)47, must be used to verify and establish the actual position of mains, pipes, services and other apparatus on site before any mechanical plant is used. It is your responsibility to ensure that this information is provided to all persons (either direct labour or contractors) working for you on or near gas apparatus. The information included on this plan should not be referred to beyond a period of 28 days from the date of issue.

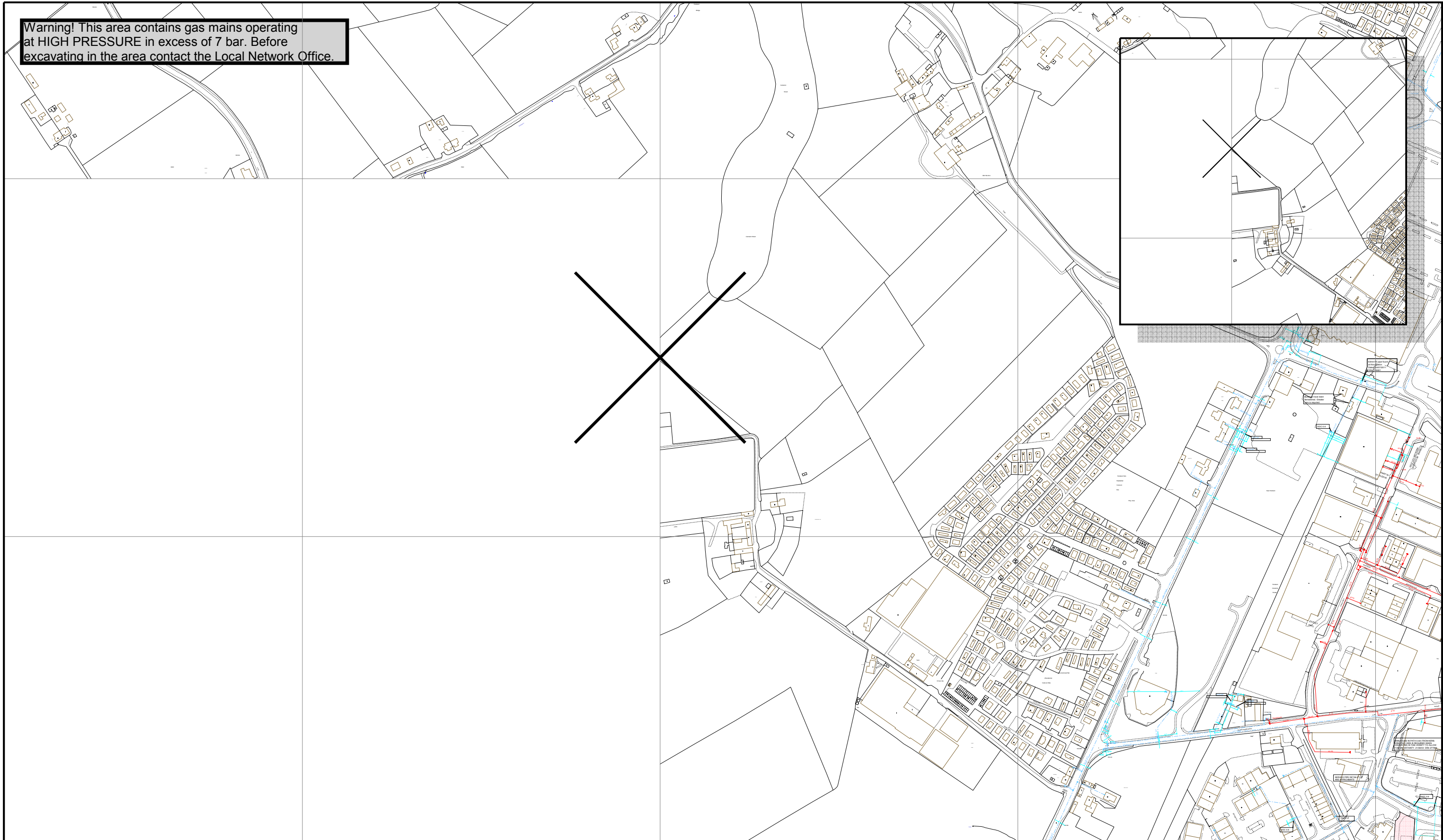
- Valve
- Depth of Cover
- Syphon
- Diameter Change
- Material Change

Product: UtilityMaps
 Version: 1.5.1.1
 Template: 'Scotia Gas Networks (A3 Landscape)'



This plan is reproduced from or based on the OS map by Scotia Gas Networks plc, with the sanction of the controller of HM Stationery Office. Crown Copyright Reserved.

Warning! This area contains gas mains operating at HIGH PRESSURE in excess of 7 bar. Before excavating in the area contact the Local Network Office.




USER ID: chamer
 DATE: 27 Aug 2012
 EXTRACT DATE: 22 Jun 2012
 MAP REF: NT2665NW
 CENTRE: 326088, 665659
 SCALE: 1:5,000

LP Mains	
MP Mains	
IP Mains	
LHP Mains	
NHP Mains	


This plan shows those pipes owned by Scotia Gas Networks plc in their role as a Licensed Gas Transporter (GT). Gas pipes owned by other GTs, or otherwise privately owned, may be present in this area. Information with regard to such pipes should be obtained from the relevant owners. The information shown on this plan is given without warranty, the accuracy thereof cannot be guaranteed. Service pipes, valves, syphons, stub connections, etc. are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Scotia Gas Networks plc or their agents, servants or contractors for any error or omission. Safe digging practices, in accordance with HS(G)47, must be used to verify and establish the actual position of mains, pipes, services and other apparatus on site before any mechanical plant is used. It is your responsibility to ensure that this information is provided to all persons (either direct labour or contractors) working for you on or near gas apparatus. The information included on this plan should not be referred to beyond a period of 28 days from the date of issue.

Valve		Depth of Cover		Syphon		Diameter Change		Material Change	
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Product: UtilityMaps
 Version: 1.5.1.1
 Template: 'Scotia Gas Networks (A3 Landscape)'

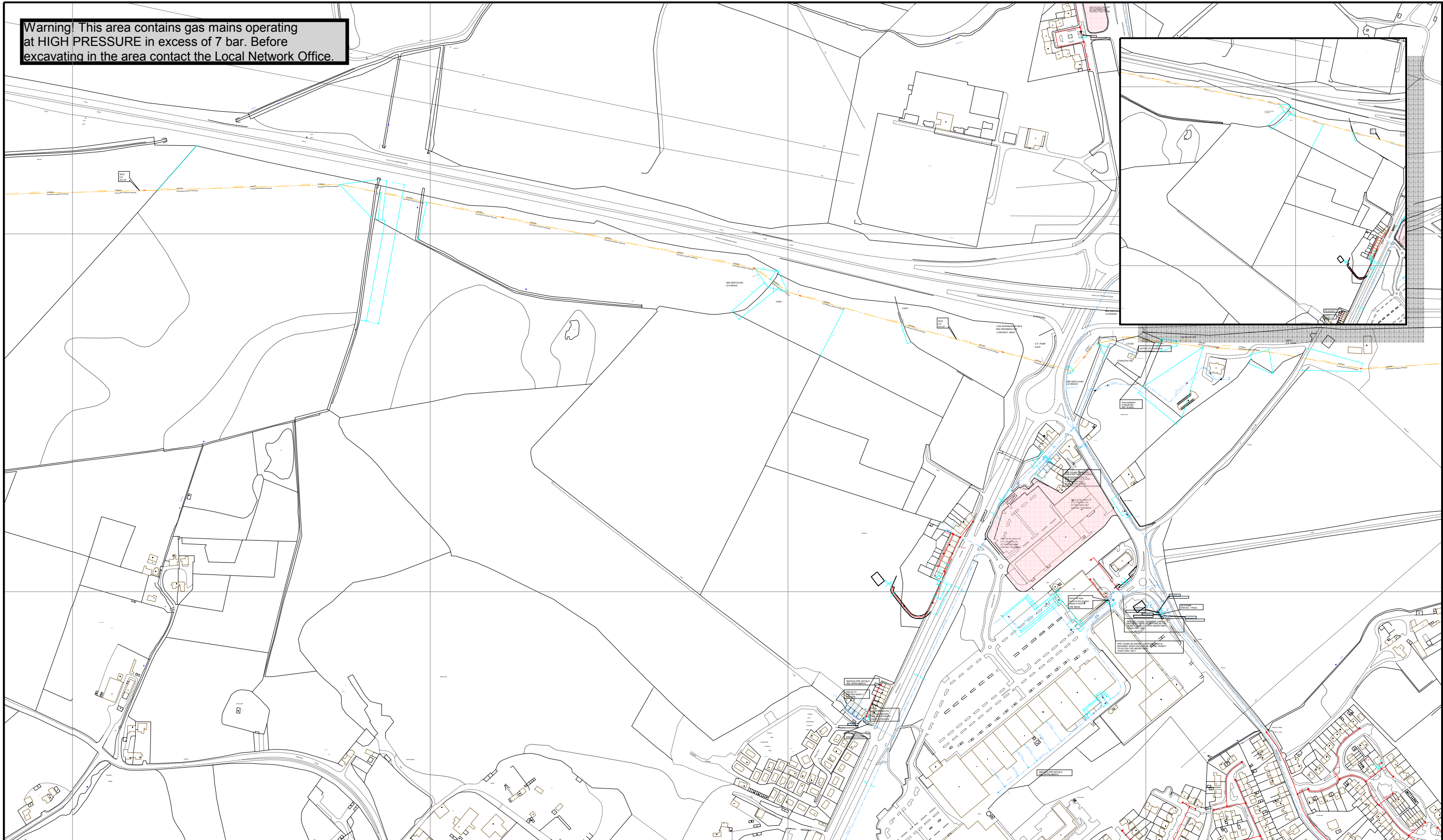


Delivering gas safely, reliably and efficiently



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Warning! This area contains gas mains operating at HIGH PRESSURE in excess of 7 bar. Before excavating in the area contact the Local Network Office.



USER ID: chamer
 DATE: 27 Aug 2012
 EXTRACT DATE: 22 Jun 2012
 MAP REF: NT2666NE
 CENTRE: 326909, 666736
 SCALE: 1:5,000

- LP Mains
- MP Mains
- IP Mains
- LHP Mains
- NHP Mains

This plan shows those pipes owned by Scotia Gas Networks plc in their role as a Licensed Gas Transporter (GT). Gas pipes owned by other GTs, or otherwise privately owned, may be present in this area. Information with regard to such pipes should be obtained from the relevant owners. The information shown on this plan is given without warranty, the accuracy thereof cannot be guaranteed. Service pipes, valves, syphons, stub connections, etc. are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Scotia Gas Networks plc or their agents, servants or contractors for any error or omission. Safe digging practices, in accordance with HS(G)47, must be used to verify and establish the actual position of mains, pipes, services and other apparatus on site before any mechanical plant is used. It is your responsibility to ensure that this information is provided to all persons (either direct labour or contractors) working for you on or near gas apparatus. The information included on this plan should not be referred to beyond a period of 28 days from the date of issue.

- Valve
- Depth of Cover
- Syphon
- Diameter Change
- Material Change

Product: UtilityMaps
 Version: 1.5.1.1
 Template: 'Scotia Gas Networks (A3 Landscape)'



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Search Results

Thank you for your enquiry: LS-120827-YR-286-RZC

Subject always to our standard terms and conditions, this enquiry result is valid for 28 days only from the date of enquiry and is based on the confirmed information you entered. If the location of the work changes then a further enquiry must be made. Should the work not be undertaken within 28 days of the enquiry then a further enquiry must be made.

ENQUIRER DETAILS	ENQUIRY DETAILS
Name: Mr Carl Hamer	Your reference: ED10977 / North
Company: Wardell Armstrong LLP	Your location: 326890 666630
Email: chamer@wardell-armstrong.com	Confirmed location: OS grid reference (326890 666630)
Tel: 0131 555 3311	Estimated start date: 1st September 2012
	Planned works: No
	Type of work: Highways - Construction/Realignment
	Distance covered: 500 metres

NOT IN THE ZONE OF INTEREST

BOC Limited (A Member of the Linde Group)	Manchester Jetline Limited
BPA	Marchwood Power Ltd (Gas Pipeline)
Centrica Energy	NPower CHP Pipelines
ConocoPhillips UK Ltd	National Grid Gas and Electricity
Coryton Energy Co Ltd (Gas Pipeline)	Transmission
E-on UK Plc (Gas Pipelines Only)	Oikos Storage Limited
ESSAR	Perenco UK Limited (Purbeck
Esso Petroleum Company Limited	Southampton Pipeline)
FibreSpeed Limited	Phillips 66
Geo Networks Limited	Premier Transmission Ltd (SNIP)
Government Pipelines & Storage System	RWEnpower (Little Barford and South
HV Cables	Haven)
INEOS Manufacturing (Scotland and TSEP)	SABIC UK Petrochemicals
Ineos Enterprises Limited	Scottish Power Generation
Mainline Pipelines Limited	Shell Pipelines
	Star Energy
	Total UK (Finaline, Colnbrook & Colwick
	Pipelines)
	Wingas Storage UK Ltd

Thank you for your enquiry, there is no further action necessary.

Please note

The Linesearch.org system only contains information on National Grid's Transmission assets. All other National Grid or other local high pressure (above 7 bar) gas pipelines and lower pressure gas mains are not included.

For all other energy network operators' information and contact details see <http://www.energynetworks.org/>

Please quote the Linesearch enquiry reference number in *all* correspondence

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Search Results

Thank you for your enquiry: LS-120827-TY-320-TFI

Subject always to our standard terms and conditions, this enquiry result is valid for 28 days only from the date of enquiry and is based on the confirmed information you entered. If the location of the work changes then a further enquiry must be made. Should the work not be undertaken within 28 days of the enquiry then a further enquiry must be made.

ENQUIRER DETAILS	ENQUIRY DETAILS
Name: Mr Carl Hamer	Your reference: ED10977 / West
Company: Wardell Armstrong LLP	Your location: 324930 665250
Email: chamer@wardell-armstrong.com	Confirmed location: OS grid reference (324930 665250)
Tel: 0131 555 3311	Estimated start date: 1st September 2012
	Planned works: No
	Type of work: Highways - Construction/Realignment
	Distance covered: 500 metres

NOT IN THE ZONE OF INTEREST

BOC Limited (A Member of the Linde Group)	Manchester Jetline Limited
BPA	Marchwood Power Ltd (Gas Pipeline)
Centrica Energy	NPower CHP Pipelines
ConocoPhillips UK Ltd	National Grid Gas and Electricity
Coryton Energy Co Ltd (Gas Pipeline)	Transmission
E-on UK Plc (Gas Pipelines Only)	Oikos Storage Limited
ESSAR	Perenco UK Limited (Purbeck
Esso Petroleum Company Limited	Southampton Pipeline)
FibreSpeed Limited	Phillips 66
Geo Networks Limited	Premier Transmission Ltd (SNIP)
Government Pipelines & Storage System	RWEnpower (Little Barford and South
HV Cables	Haven)
INEOS Manufacturing (Scotland and TSEP)	SABIC UK Petrochemicals
Ineos Enterprises Limited	Scottish Power Generation
Mainline Pipelines Limited	Shell Pipelines
	Star Energy
	Total UK (Finaline, Colnbrook & Colwick
	Pipelines)
	Wingas Storage UK Ltd

Thank you for your enquiry, there is no further action necessary.

Please note

The Linesearch.org system only contains information on National Grid's Transmission assets. All other National Grid or other local high pressure (above 7 bar) gas pipelines and lower pressure gas mains are not included.

For all other energy network operators' information and contact details see <http://www.energynetworks.org/>

Please quote the Linesearch enquiry reference number in *all* correspondence

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Confirm Search

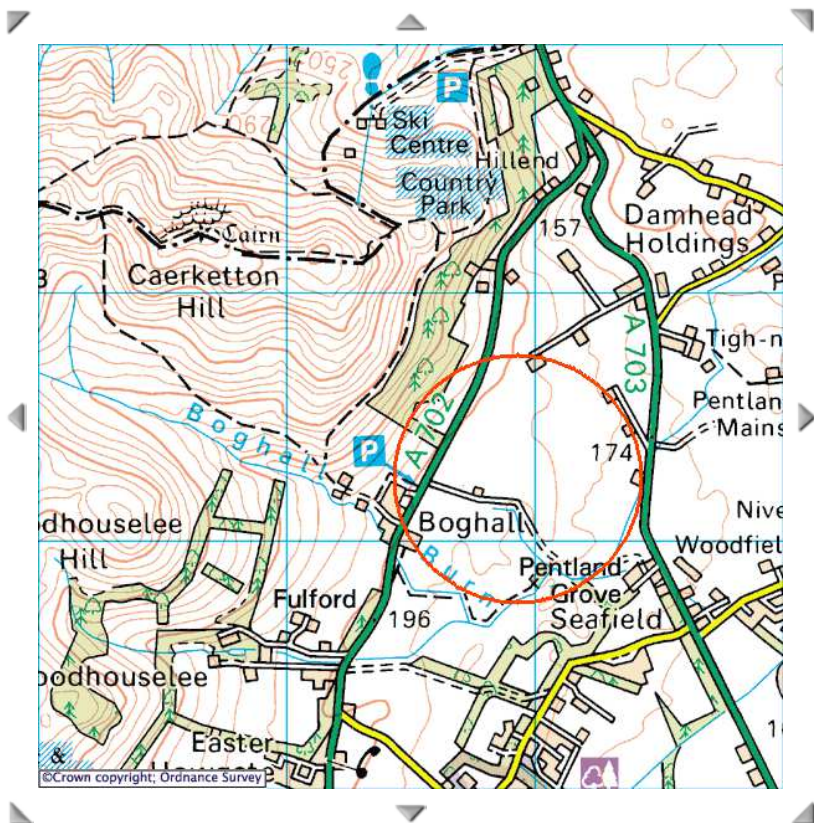
Please check the enquiry details below and confirm your search location on the map.

Location	Estimated start date	Type of Work	Distance covered
Coordinates 324930 665250	1st September 2012 Initial enquiry	Highways Construction/Realignment	500m

[Amend Search](#)

Please confirm your location on the map below.

Click on the map to change location and use the change distance option below the map to amend your search until the red circle surrounds your area of work.



Current distance: **500** (metres)

N.B. Minimum distance for this type of work 25 (metres)

Click confirm when you have confirmed the correct location.

Your results will then be displayed.

If you cannot confirm the location please click cancel.

You will be able to amend your search criteria.

LATEST NEWS

New Linesearch Service Announcement

7th February 2012
New Service LinesearchbeforeUdig.co.uk to be launched

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Having problems?

We can help you

[CLICK HERE](#) to send us an email



Search Results

Thank you for your enquiry: LS-120827-HQ-127-JSZ

Subject always to our standard terms and conditions, this enquiry result is valid for 28 days only from the date of enquiry and is based on the confirmed information you entered. If the location of the work changes then a further enquiry must be made. Should the work not be undertaken within 28 days of the enquiry then a further enquiry must be made.

ENQUIRER DETAILS	ENQUIRY DETAILS
Name: Mr Carl Hamer	Your reference: ED10977 / South West
Company: Wardell Armstrong LLP	Your location: 325500 665250
Email: chamer@wardell-armstrong.com	Confirmed location: OS grid reference (325500 665250)
Tel: 0131 555 3311	Estimated start date: 1st September 2012
	Planned works: No
	Type of work: Highways - Construction/Realignment
	Distance covered: 500 metres

NOT IN THE ZONE OF INTEREST

BOC Limited (A Member of the Linde Group)	Manchester Jetline Limited
BPA	Marchwood Power Ltd (Gas Pipeline)
Centrica Energy	NPower CHP Pipelines
ConocoPhillips UK Ltd	National Grid Gas and Electricity
Coryton Energy Co Ltd (Gas Pipeline)	Transmission
E-on UK Plc (Gas Pipelines Only)	Oikos Storage Limited
ESSAR	Perenco UK Limited (Purbeck
Esso Petroleum Company Limited	Southampton Pipeline)
FibreSpeed Limited	Phillips 66
Geo Networks Limited	Premier Transmission Ltd (SNIP)
Government Pipelines & Storage System	RWEnpower (Little Barford and South
HV Cables	Haven)
INEOS Manufacturing (Scotland and TSEP)	SABIC UK Petrochemicals
Ineos Enterprises Limited	Scottish Power Generation
Mainline Pipelines Limited	Shell Pipelines
	Star Energy
	Total UK (Finaline, Colnbrook & Colwick
	Pipelines)
	Wingas Storage UK Ltd

Thank you for your enquiry, there is no further action necessary.

Please note

The Linesearch.org system only contains information on National Grid's Transmission assets. All other National Grid or other local high pressure (above 7 bar) gas pipelines and lower pressure gas mains are not included.

For all other energy network operators' information and contact details see <http://www.energynetworks.org/>

Please quote the Linesearch enquiry reference number in *all* correspondence

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Confirm Search

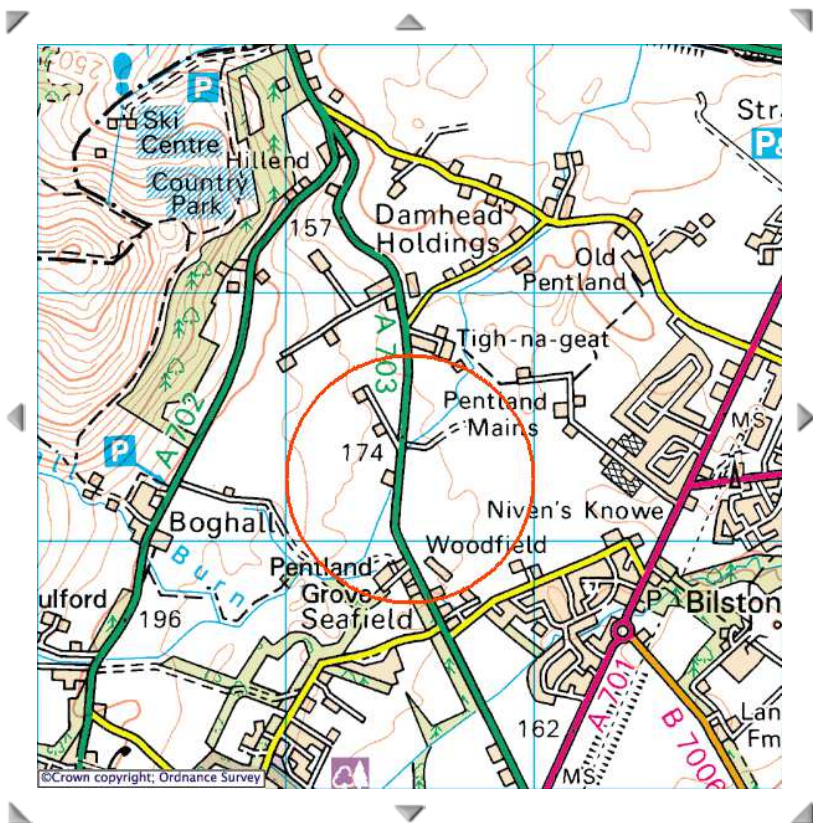
Please check the enquiry details below and confirm your search location on the map.


Location	Estimated start date	Type of Work	Distance covered
Coordinates 325500 665250	1st September 2012 Initial enquiry	Highways Construction/Realignment	500m

[Amend Search](#)

Please confirm your location on the map below. 

Click on the map to change location and use the change distance option below the map to amend your search until the red circle surrounds your area of work.



Current distance: **500** (metres) 

N.B. Minimum distance for this type of work 25 (metres)

Click confirm when you have confirmed the correct location.

Your results will then be displayed.

If you cannot confirm the location please click cancel.

You will be able to amend your search criteria.

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7th February 2012

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Search Results

Thank you for your enquiry: LS-120827-PT-244-WWQ

Subject always to our standard terms and conditions, this enquiry result is valid for 28 days only from the date of enquiry and is based on the confirmed information you entered. If the location of the work changes then a further enquiry must be made. Should the work not be undertaken within 28 days of the enquiry then a further enquiry must be made.

ENQUIRER DETAILS	ENQUIRY DETAILS
Name: Mr Carl Hamer	Your reference: ED10977 / South
Company: Wardell Armstrong LLP	Your location: 326000 665750
Email: chamer@wardell-armstrong.com	Confirmed location: OS grid reference (326000 665750)
Tel: 0131 555 3311	Estimated start date: 1st September 2012
	Planned works: No
	Type of work: Highways - Construction/Realignment
	Distance covered: 500 metres

NOT IN THE ZONE OF INTEREST

BOC Limited (A Member of the Linde Group)	Manchester Jetline Limited
BPA	Marchwood Power Ltd (Gas Pipeline)
Centrica Energy	NPower CHP Pipelines
ConocoPhillips UK Ltd	National Grid Gas and Electricity
Coryton Energy Co Ltd (Gas Pipeline)	Transmission
E-on UK Plc (Gas Pipelines Only)	Oikos Storage Limited
ESSAR	Perenco UK Limited (Purbeck
Esso Petroleum Company Limited	Southampton Pipeline)
FibreSpeed Limited	Phillips 66
Geo Networks Limited	Premier Transmission Ltd (SNIP)
Government Pipelines & Storage System	RWEnpower (Little Barford and South
HV Cables	Haven)
INEOS Manufacturing (Scotland and TSEP)	SABIC UK Petrochemicals
Ineos Enterprises Limited	Scottish Power Generation
Mainline Pipelines Limited	Shell Pipelines
	Star Energy
	Total UK (Finaline, Colnbrook & Colwick
	Pipelines)
	Wingas Storage UK Ltd

Thank you for your enquiry, there is no further action necessary.

Please note

The Linesearch.org system only contains information on National Grid's Transmission assets. All other National Grid or other local high pressure (above 7 bar) gas pipelines and lower pressure gas mains are not included.

For all other energy network operators' information and contact details see <http://www.energynetworks.org/>

Please quote the Linesearch enquiry reference number in *all* correspondence

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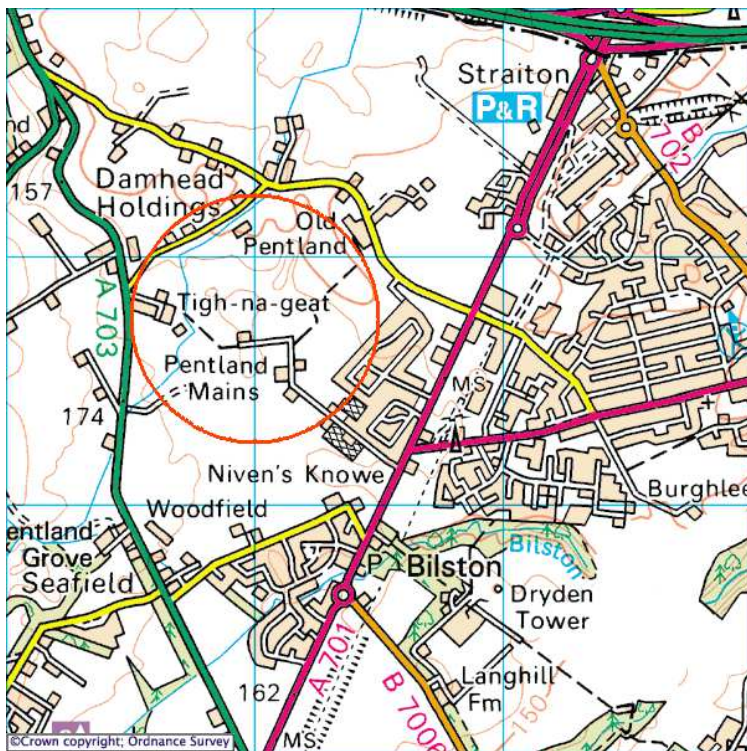
Please check the enquiry details below and confirm your search location on the map.


Location	Estimated start date	Type of Work	Distance covered
Coordinates 326000 665750	1st September 2012 Initial enquiry	Highways Construction/Realignment	500m

[Amend Search](#)

Please confirm your location on the map below. 

Click on the map to change location and use the change distance option below the map to amend your search until the red circle surrounds your area of work.



Current distance: **500** (metres) 

N.B. Minimum distance for this type of work 25 (metres)

Click confirm when you have confirmed the correct location.

Your results will then be displayed.

If you cannot confirm the location please click cancel.

You will be able to amend your search criteria.

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7th February 2012

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Search Results

Thank you for your enquiry: LS-120827-LE-234-DKE

Subject always to our standard terms and conditions, this enquiry result is valid for 28 days only from the date of enquiry and is based on the confirmed information you entered. If the location of the work changes then a further enquiry must be made. Should the work not be undertaken within 28 days of the enquiry then a further enquiry must be made.

ENQUIRER DETAILS	ENQUIRY DETAILS
Name: Mr Carl Hamer	Your reference: ED10977 / Central
Company: Wardell Armstrong LLP	Your location: 326600 666180
Email: chamer@wardell-armstrong.com	Confirmed location: OS grid reference (326600 666180)
Tel: 0131 555 3311	Estimated start date: 1st September 2012
	Planned works: No
	Type of work: Highways - Construction/Realignment
	Distance covered: 500 metres

NOT IN THE ZONE OF INTEREST

BOC Limited (A Member of the Linde Group)	Manchester Jetline Limited
BPA	Marchwood Power Ltd (Gas Pipeline)
Centrica Energy	NPower CHP Pipelines
ConocoPhillips UK Ltd	National Grid Gas and Electricity
Coryton Energy Co Ltd (Gas Pipeline)	Transmission
E-on UK Plc (Gas Pipelines Only)	Oikos Storage Limited
ESSAR	Perenco UK Limited (Purbeck
Esso Petroleum Company Limited	Southampton Pipeline)
FibreSpeed Limited	Phillips 66
Geo Networks Limited	Premier Transmission Ltd (SNIP)
Government Pipelines & Storage System	RWEnpower (Little Barford and South
HV Cables	Haven)
INEOS Manufacturing (Scotland and TSEP)	SABIC UK Petrochemicals
Ineos Enterprises Limited	Scottish Power Generation
Mainline Pipelines Limited	Shell Pipelines
	Star Energy
	Total UK (Finaline, Colnbrook & Colwick
	Pipelines)
	Wingas Storage UK Ltd

Thank you for your enquiry, there is no further action necessary.

Please note

The Linesearch.org system only contains information on National Grid's Transmission assets. All other National Grid or other local high pressure (above 7 bar) gas pipelines and lower pressure gas mains are not included.

For all other energy network operators' information and contact details see <http://www.energynetworks.org/>

Please quote the Linesearch enquiry reference number in *all* correspondence

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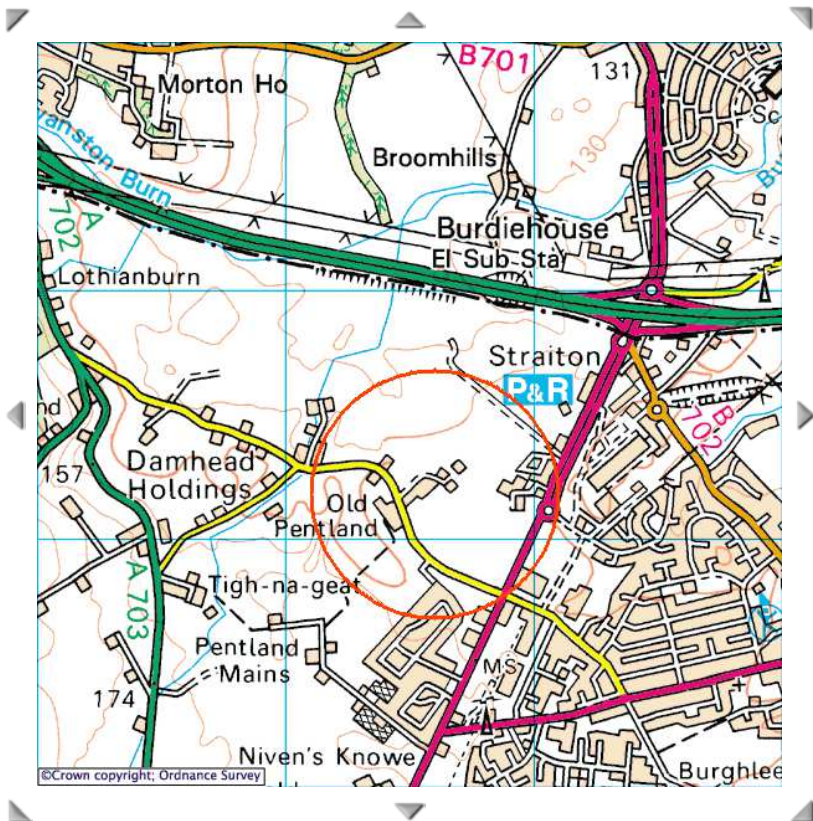
Please check the enquiry details below and confirm your search location on the map.


Location	Estimated start date	Type of Work	Distance covered
Coordinates 326600 666180	1st September 2012 Initial enquiry	Highways Construction/Realignment	500m

[Amend Search](#)

Please confirm your location on the map below. 

Click on the map to change location and use the change distance option below the map to amend your search until the red circle surrounds your area of work.



Current distance: **500** (metres) 

N.B. Minimum distance for this type of work 25 (metres)

Click confirm when you have confirmed the correct location.

Your results will then be displayed.

If you cannot confirm the location please click cancel.

You will be able to amend your search criteria.

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7th February 2012
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Confirm Search

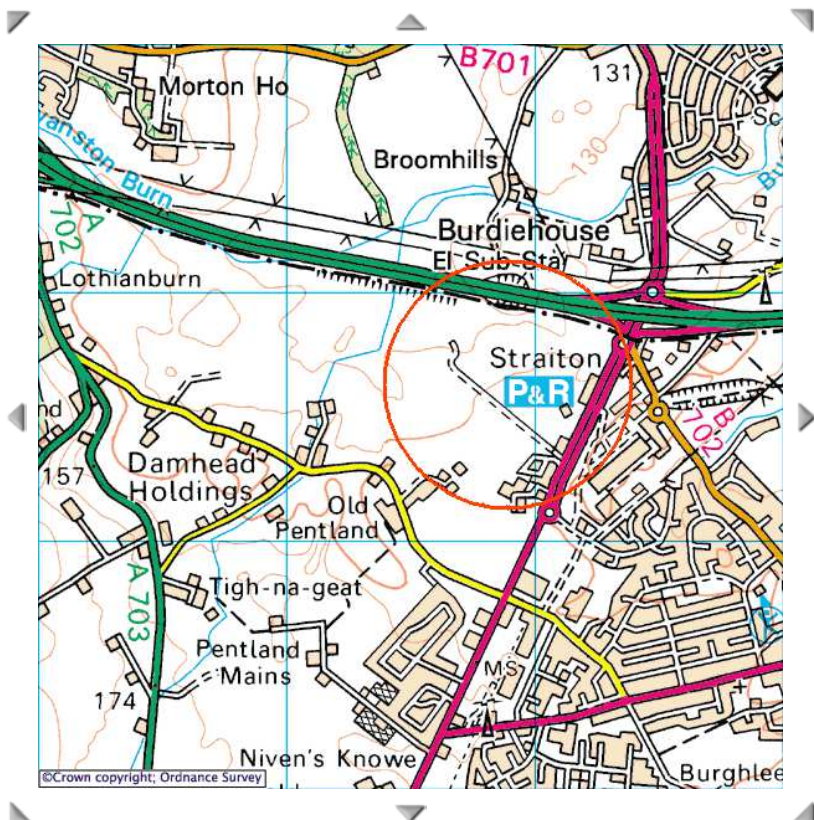
Please check the enquiry details below and confirm your search location on the map.

Location	Estimated start date	Type of Work	Distance covered
Coordinates 326890 666630	1st September 2012 Initial enquiry	Highways Construction/Realignment	500m

Amend Search

Please confirm your location on the map below. !

Click on the map to change location and use the change distance option below the map to amend your search until the red circle surrounds your area of work.



Current distance: 500 (metres) !

Change

N.B. Minimum distance for this type of work 25 (metres)

Click confirm when you have confirmed the correct location.

Your results will then be displayed.

If you cannot confirm the location please click cancel.

You will be able to amend your search criteria.

Confirm Cancel

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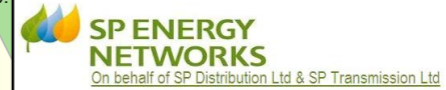
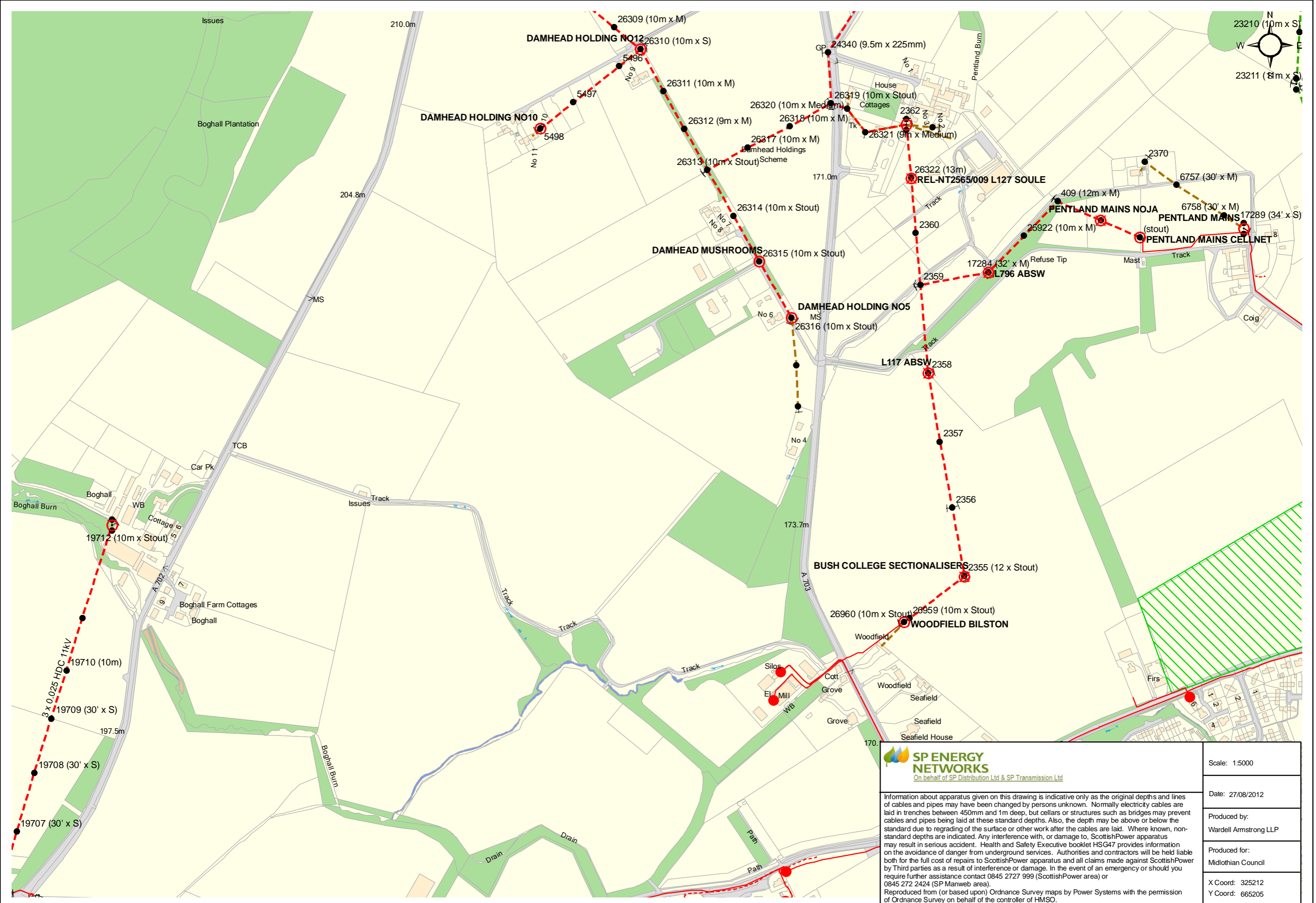
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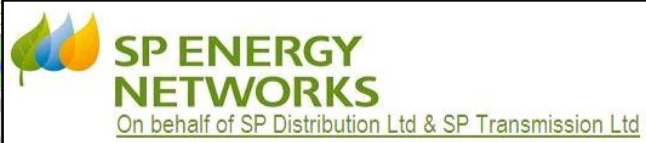
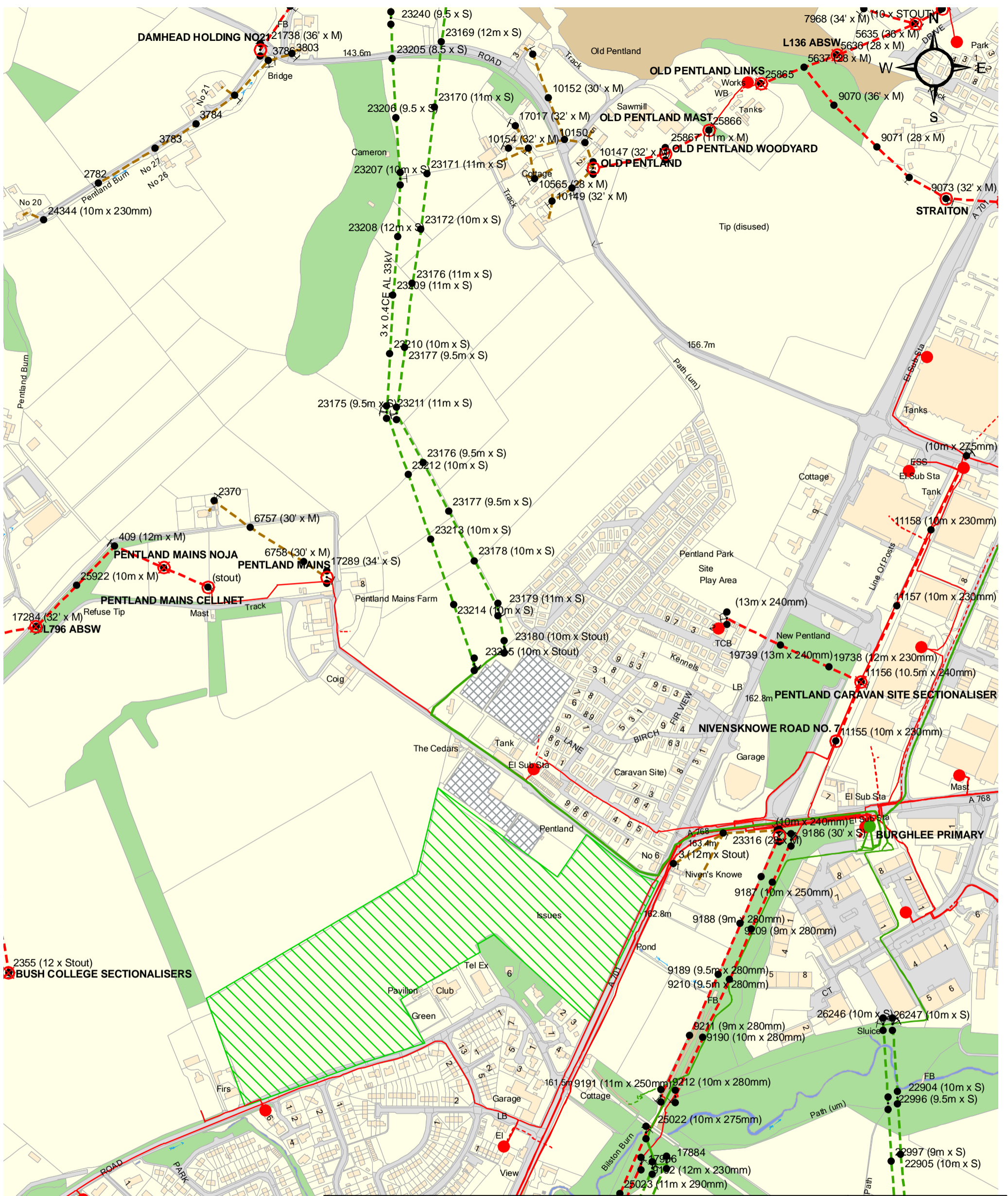
A710 Alignment



Information about apparatus given on this drawing is indicative only as the original depths and lines of cables and pipes may have been changed by persons unknown. Normally electricity cables are laid in trenches between 450mm and 1m deep, but cellars or structures such as bridges may prevent cables and pipes being laid at these standard depths. Also, the depth may be above or below the standard due to regrading of the surface or other work after the cables are laid. Where known, non-standard depths are indicated. Any interference with, or damage to, ScottishPower apparatus may result in serious accident. Health and Safety Executive booklet HSG47 provides information on the avoidance of danger from underground services. Authorities and contractors will be held liable both for the full cost of repairs to ScottishPower apparatus and all claims made against ScottishPower by Third parties as a result of interference or damage. In the event of an emergency or should you require further assistance contact 0845 2727 999 (ScottishPower area) or 0845 272 2424 (SP Manweb area).
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Scale: 1:5000
Date: 27/08/2012
Produced by: Wardell Armstrong LLP
Produced for: Midlothian Council
X Coord: 325212 Y Coord: 665205

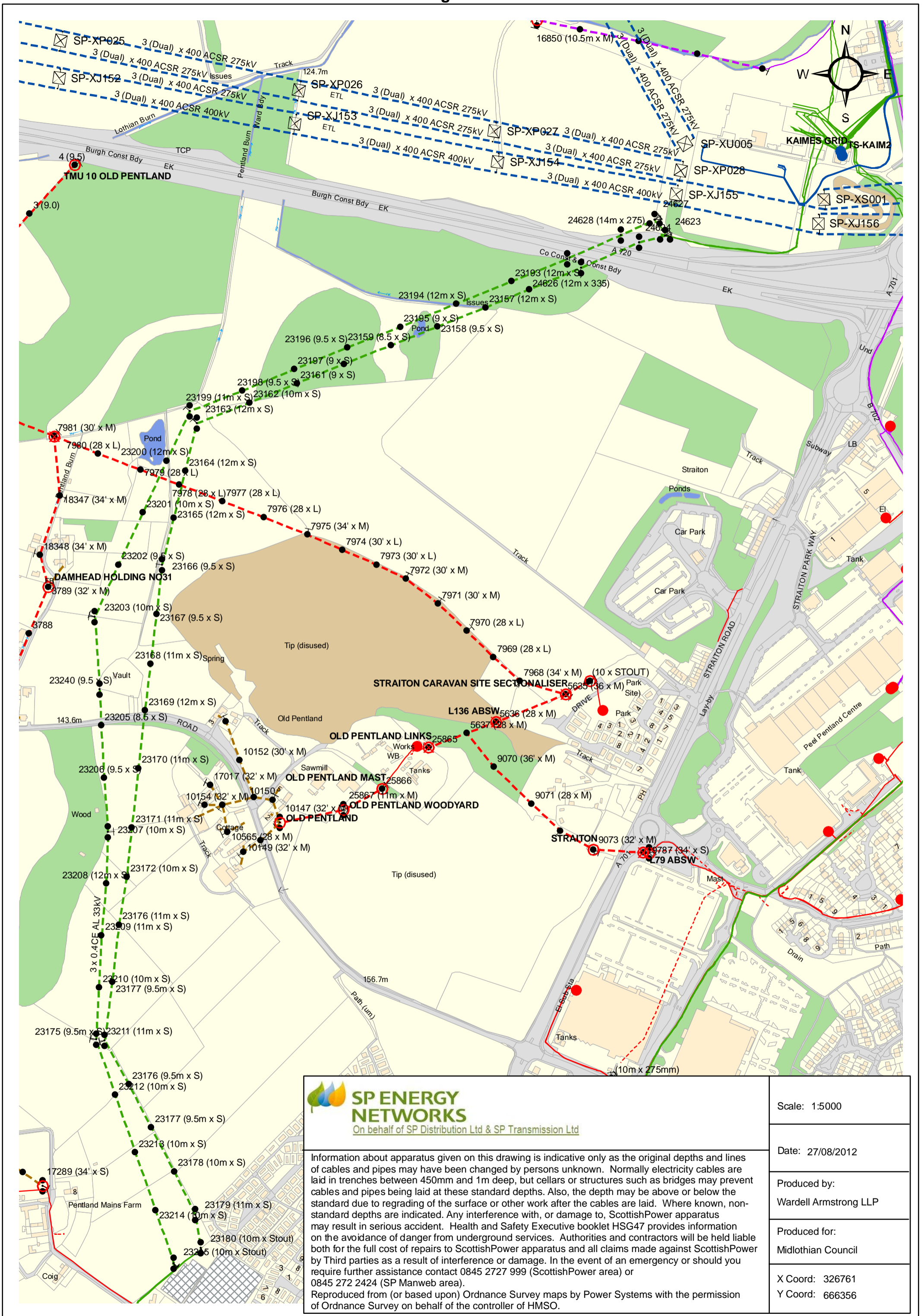
A710 Alignment



Information about apparatus given on this drawing is indicative only as the original depths and lines of cables and pipes may have been changed by persons unknown. Normally electricity cables are laid in trenches between 450mm and 1m deep, but cellars or structures such as bridges may prevent cables and pipes being laid at these standard depths. Also, the depth may be above or below the standard due to regrading of the surface or other work after the cables are laid. Where known, non-standard depths are indicated. Any interference with, or damage to, ScottishPower apparatus may result in serious accident. Health and Safety Executive booklet HSG47 provides information on the avoidance of danger from underground services. Authorities and contractors will be held liable both for the full cost of repairs to ScottishPower apparatus and all claims made against ScottishPower by Third parties as a result of interference or damage. In the event of an emergency or should you require further assistance contact 0845 2727 999 (ScottishPower area) or 0845 272 2424 (SP Manweb area).
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Scale: 1:5000
Date: 27/08/2012
Produced by: Wardell Armstrong LLP
Produced for: Midlothian Council
X Coord: 326358 Y Coord: 665347

A701 Alignment North

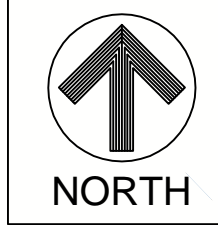
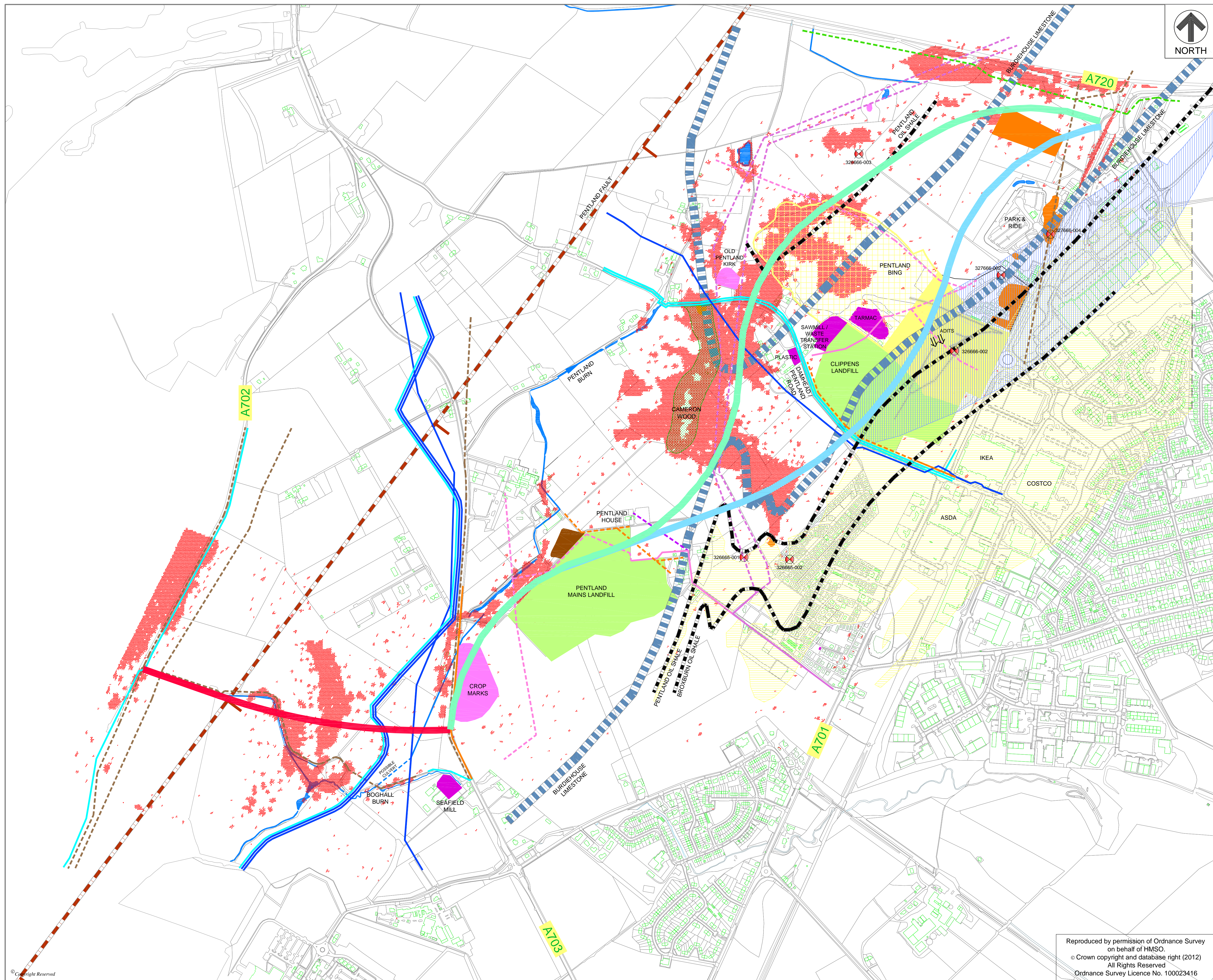


SP ENERGY NETWORKS
 On behalf of SP Distribution Ltd & SP Transmission Ltd

Information about apparatus given on this drawing is indicative only as the original depths and lines of cables and pipes may have been changed by persons unknown. Normally electricity cables are laid in trenches between 450mm and 1m deep, but cellars or structures such as bridges may prevent cables and pipes being laid at these standard depths. Also, the depth may be above or below the standard due to regrading of the surface or other work after the cables are laid. Where known, non-standard depths are indicated. Any interference with, or damage to, ScottishPower apparatus may result in serious accident. Health and Safety Executive booklet HSG47 provides information on the avoidance of danger from underground services. Authorities and contractors will be held liable both for the full cost of repairs to ScottishPower apparatus and all claims made against ScottishPower by Third parties as a result of interference or damage. In the event of an emergency or should you require further assistance contact 0845 2727 999 (ScottishPower area) or 0845 272 2424 (SP Manweb area).
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Scale: 1:5000
 Date: 27/08/2012
 Produced by:
 Wardell Armstrong LLP
 Produced for:
 Midlothian Council
 X Coord: 326761
 Y Coord: 666356

DRAWINGS



DO NOT SCALE FROM THIS DRAWING

- KEY**
- Road 1
 - Road 2
 - Road 3
 - ▨ Slope Gradient >8%
 - ▨ Pentland Oil Shale bing
 - ▨ Pentland Oil Works
 - ▨ Recorded Oil Shale workings
 - ▨ Recorded Limestone workings
 - ▨ Landfill
 - ▨ Former Quarry / Sand pit
 - ▨ Peat
 - ▨ Historical Features
 - ▨ Local Businesses
 - Made ground former Railway
 - ~ Surface Watercourse
 - ◊ Pond
 - Overhead Low Voltage Transmission Cables
 - Overhead 11kV Electricity
 - Underground 11kV Electricity
 - Overhead 33kV Electricity
 - Underground 33kV Electricity
 - High pressure gas pipeline
 - Trunk Water Main
 - Distribution Water Main
 - Raw Water Main
 - BT Underground
 - BT Overhead
 - ⇨ Recorded Adit (Coal Authority Ref)
 - ⊗ Recorded Mine Shaft (Coal Authority Ref)
 - Line of fault at surface (tick on downthrow side)
 - Conjectured outcrop of Limestone (as named)
 - Conjectured outcrop of Oil Shale (as named)

BASED ON THE FOLLOWING:

- DTM MODEL
- Copyright Intermap 2012
- HISTORICAL MAPPING & CONTAMINATED LAND DATA
- provided by Midlothian Council
- GEOLOGICAL MAPPING & MINE ABANDONMENT PLANS
- provided by British Geological Survey
- UTILITIES
- provided by Statutory Undertakers

NOTE: FOR INFORMATION ONLY - REFER TO ORIGINAL UTILITY SERVICE PROVIDERS DRAWINGS

REVISION	NO.	DATE	BY	CHKD	APPD
A	First Issue	14/09/12	JA	CBH	NS

CLIENT: Midlothian Council

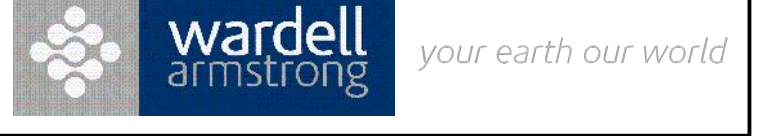
PROJECT: A701, A702, A703 Road Alignment Options

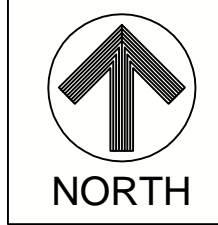
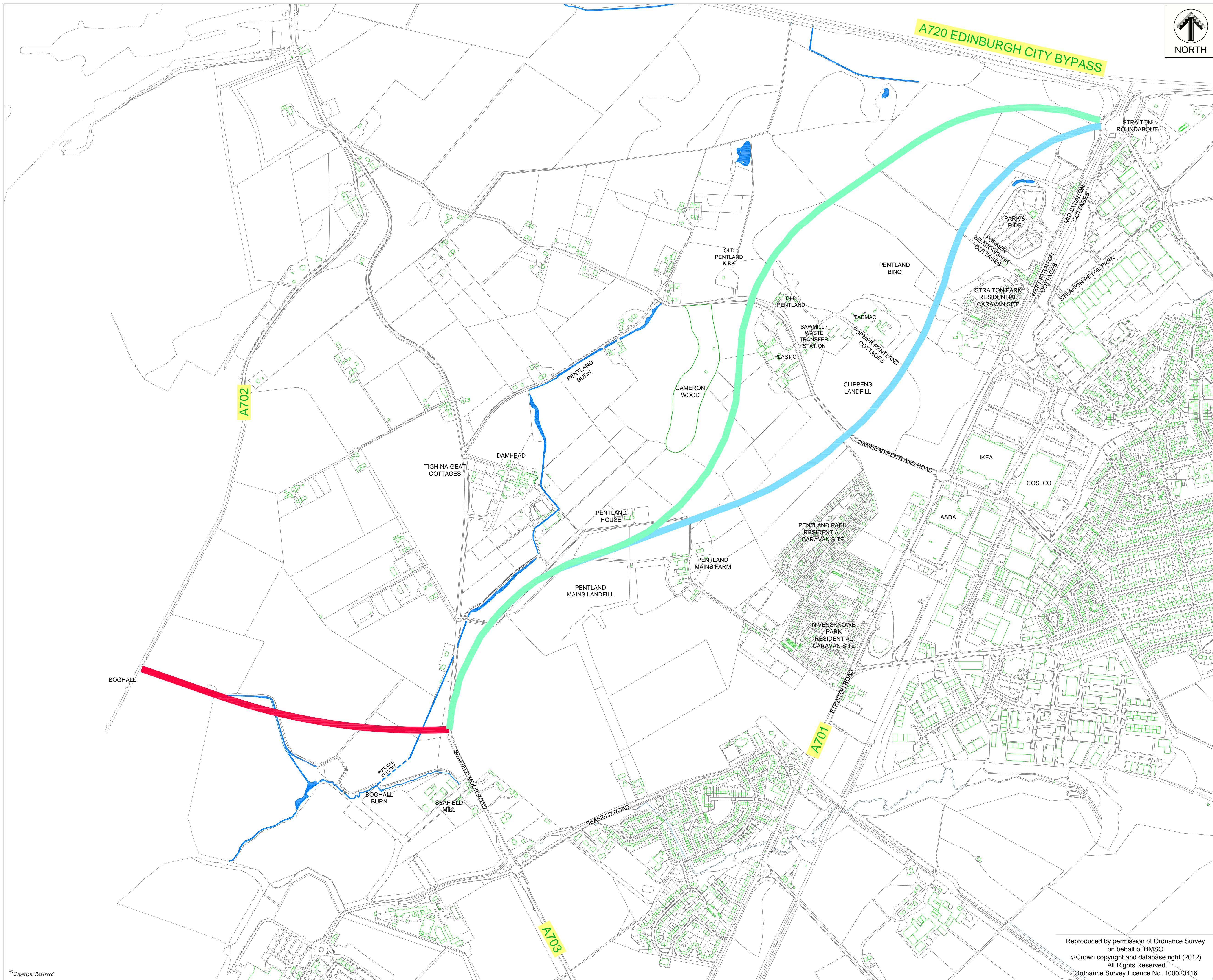
DRAWING TITLE: CONSTRAINTS TO ROAD CONSTRUCTION

DRG No.	SCALE	DATE
ED10977-001	1:5000	12/09/12
DRAWN BY	CHECKED BY	APPROVED BY
JA	CBH	NS

<input type="checkbox"/> STOKES ON TRENT (HEAD OFFICE)	TEL 0845 111 7777	<input type="checkbox"/> CARDIFF	TEL 09 2072 9191
<input type="checkbox"/> NEWCASTLE UPON TYNE	TEL 0191 232 0943	<input type="checkbox"/> SHEFFIELD	TEL 0114 245 6244
<input type="checkbox"/> WEST BROMWICH	TEL 0121 580 0909	<input type="checkbox"/> EDINBURGH	TEL 0131 555 3311
<input type="checkbox"/> LONDON	TEL 020 7287 2872	<input type="checkbox"/> LIVERPOOL	TEL 0151 494 5431

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- KEY
- Road 1
 - Road 2
 - Road 3
- Preliminary Road Alignment options suggested by Midlothian Council

Revision	Details	Date	Drawn	Checked	Approved
A	First Issue	01/10/12	JA	CBH	MGD

CLIENT: Midlothian Council

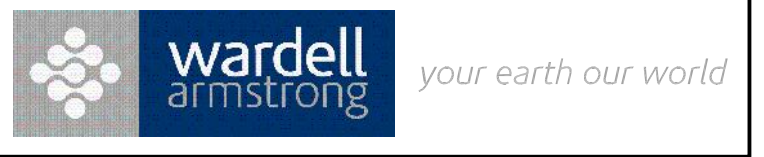
PROJECT: A701, A702, A703 Road Alignment Options

DRAWING TITLE: LOCATION PLAN

DRG No.	SCALE	DATE
ED10977-002	1:5000	01/10/12
DRAWN BY	CHECKED BY	APPROVED BY
JA	CBH	MGD

- | | | | |
|--|-------------------|------------------------------------|-------------------|
| <input type="checkbox"/> STOKES ON TRENT (HEAD OFFICE) | TEL 0845 111 7777 | <input type="checkbox"/> CARDIFF | TEL 029 2072 9191 |
| <input type="checkbox"/> NEWCASTLE UPON TYNE | TEL 0191 232 0943 | <input type="checkbox"/> SHEFFIELD | TEL 0114 265 6244 |
| <input type="checkbox"/> WEST BROMWICH | TEL 0121 580 0909 | <input type="checkbox"/> EDINBURGH | TEL 0131 555 5311 |
| <input type="checkbox"/> LONDON | TEL 020 7287 2872 | <input type="checkbox"/> LIVERPOOL | TEL 0151 494 5431 |

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Contact 0131 270 7500 or email: enquiries@midlothian.gov.uk