COVER NOTE

SEA ENVIRONMENTAL REPORT

PART 1

To

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Or
SEA Gateway
Scottish Executive
Area 1 H (Bridge)
Victoria quay
Edinburgh EH

PART 2

An SEA Scoping Report is attached for the plan entitled

Aberdeen City and Shire Strategic Development Plan

The Responsible Authority is:

Aberdeenshire Council

PART 3

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Signature	
Date	

Contents of Environmental Report

1 Environmental Report Non Technical Summary

1.1 Purpose of this Environmental Report and key stages

We have written this environmental report ("the report") for the Aberdeen City and Shire Strategic Development Plan (SDP) under the Environmental Assessment (Scotland) Act 2005. The process taken to write this report is called Strategic Environmental Assessment (SEA). The reason for undertaking SEA is to address all the effects that a plan, programme or strategy (PPS) will have on the environment. The overall aim of the process is to protect the environment. Throughout this SEA process we have taken the views of others into account before coming to final decisions.

The key stages of this SEA are pre-screening, screening, scoping, environmental report and post-adoption statement. We do a pre-screening of a plan, as the first stage, when we show that a plan is not likely to have any effect on the environment; or even it has any effects at all, they will be minimal. After a pre-screening, we will do no further SEA. We do a screening of a plan, to replace the first stage, to find out whether we should do an SEA at all. When a plan is likely to have significant (i.e. very bad, damaging, large or long-lasting) effects on the environment, we will do an SEA. But if the effect is not significant, we will not take any further action. At the second stage, we scope a plan to set out how much information should be in an environmental report and how long we will consult with others on the report. In the environmental report, during the third stage, we show how we assess the effects of a plan on the environment; how we could address those effects through a process called mitigation, and how we will monitor any significant effects of the plan on the environment. When we address the concerns of everyone through consultations before adopting the plan, we must inform everyone about what difference the SEA process and their views have made to the final plan. And we do this through a post-adoption statement. Because of the nature of the plan, we skipped the first stage of the process and began by scoping the plan. During the third stage, we prepared an interim environmental report for the Main Issues. This report assesses the effects of the Strategic Development Plan on the environment.

1.2 The Context of the Strategy

Before this SDP was prepared, the Main Issues Report was used to engage with the public, focusing on the main strategic issues and options facing Aberdeen and Aberdeenshire and for the policies that will guide development. The engagement helped us note changes we must make to the options and to the strategic development plan. This proposed Strategic Development Plan broadly shows how we have allocated land for housing and employment over 3 phases up to 2035.

To guide and help us deliver what we plan to do in the Strategic Development Plan and other related strategies like the Local Development Plans, Local Housing Strategy and the Local Transport Strategy, we have made use of high-level documents and statements such as National Planning Framework, Strategic Transport Projects Review, Regional Transport Strategy and Aberdeen City and Shire Economic Future's Economic Manifesto. We have also used 56 documents in the SEA to influence how we will influence this strategy, and these documents cover:

- framework and policies at national level
- climate and flooding

- low carbon economy and energy
- the water environment
- biodiversity (plant and animal life on the land and in the water)
- sustainable development
- transport and air quality issues
- historic environment and landscape
- housing
- design
- soil and pollution
- how we manage our waste
- equality
- ageing, exercise and health

This Environmental Report covers the key issues, outcomes, topics and processes of the SEA process listed at paragraph 1-9 of Schedule 3 of the 2005 Act.

1.3 Baseline/Evolution, Characteristics of Areas & Environmental Problems

We have identified a number of problems and issues in Aberdeen and Aberdeenshire. In this section, we have listed the significant environmental problems and issues that we have considered in this report. We also use this section to say how baseline information in the area looks like. These issues show the challenges we must deal with through this Plan.

- We have serious air quality problems in some areas in Aberdeen called Air Quality Management Areas. The increasing number of cars, trucks and vehicles that pass through the City worsens this. This problem is not as serious in Aberdeenshire.
- We burn a lot of fuel to heat our homes and to drive our cars. This is pumping more CO2 into the air and causing our carbon and ecological footprints to rise.
- Future climate change will affect how much water we will have and how stable our soils will be.
- How we throw away waste can also affect our soils, water and climate. But new ways of how we manage waste has improved this.
- The area is rich in cultural heritage and has distinctive landscapes, but the houses we have built in the past has put pressure on these resources. But new housing development offers the opportunity to improve the efficiency of our homes and create landscapes.
- New buildings are putting pressure on animal and plant life (biodiversity).
- When we have good parks or open spaces, people will want to build and live around them.
- The make-up of the population is an issue that needs to be considered for future development. For example, there are a range of age groups living in the area, but because we are living longer there will be an increased proportion of older people, and there is an increase in people coming to live here from other countries.

1.4 Assessment of Effects

We have put together how the Strategic Development Plan could effect the environment in Table 1.1 below.

Table 1.1: Assessment of Effects

SEA Issue	Plan Impact
Air	On the whole we found that the effects of the plan on the air to be mixed (i.e. positive and negative). The effects are however not significant. Some localised air quality issues are likely in parts of Aberdeen. Where biomass is likely to be encouraged there could be problems with air quality. Because of the improvements we expect as we develop new infrastructure, the effect of the plan on air quality will also be positive.
Climatic factors	We found that the effects of the plan on climatic factors are mixed (i.e. positive, negative & neutral). Because of the improvements we expect through new infrastructure, the effect of the plan on climatic factors is not significant across the City and the Shire. The potential increased car and energy use in homes and work places may make the effect of the plan on climate significant in the long term.
Water	We think that the effects of this plan on water will be negative and significant. Although the additional amount of water abstracted should be small, some development works like infrastructure development, particularly across the Dee as well as pollution from agricultural activities can affect the general water environment.
Soil	Through house building and development, there will be soil loss, soil sealing, soil erosion and soil structural degradation. We think that the effects are significant. However, the availability of improved waste management technologies means that we do not expect contamination from these activities.
Biodiversity (flora and fauna)	The overall effects on biodiversity are mixed. If we develop 67,500 new houses in the area, we must take some greenfield sites, fragment habitat and lose species and habitats and disturb other species. The River Dee and other protected areas are the home to some protected species like otter, salmon and freshwater pearl mussel. Taking too much water can harm them.
Population	The overall effects of the plan on people are very positive. The scale of development proposed is significant. If implemented, many people in Aberdeen City and Aberdeenshire will potentially find houses to buy and rent.
Health	The overall effects of the plan on people's health are mixed. Positive in some cases but negative in some others. If traffic from new development makes air quality worse it may have a negative affect on human health but overall the effects are not thought to be significant.
Cultural Heritage	We found that the effects of the SDP to be negative although not significant on the historic environment. Design policies will

	make the impact small.
Landscape	We found that the effects of the SDP on landscape to be mixed but not significant. Development that can be seen from lots of places can have negative affects on views and scenery.
Material Assets	The overall effect of the plan on wealth creation through new buildings and roads is very significantly positive.

1.5 Broad Mitigation Measures

Some of the options and projects that flow from the SDP will have to do environmental impact assessments (EIAs) as appropriate. Those options which promote new developments that are likely to have adverse affects on the integrity of Natura 2000 sites or projects should be subject to appropriate assessment. For the strategic options, policies, and sites we have assessed, we have shown how we would address their negative or positive affects in Table 1.2 below:

Table 1.2: Mitigation Measures

SEA Issue	Mitigation Measures
Water	We will work with public bodies to regulate the amount of water taken from the Dee. We must promote policies that develop infrastructure to service new developments and to use water efficient technologies. Future plans should provide for drainage impact assessment and SUDs. Sites likely to flood should not be allocated; they should serve as buffer strips. Lower levels plans should provide for EIAs and HRAs. Future plans should do everything to improve the ecological status of water bodies.
Soil	We will make sure that development avoids peat soils. We will ensure that designs should avoid pouring concrete of many surfaces and encourage landscaping. Structure planting and landscaping so be done in such a way as to avoid soil erosion and soil loss.
Biodiversity (flora and fauna)	We will put policies in place through lower-tier plans to make sure that more brownfield land are used before green field sites. We will ensure that land that is poor in biodiversity is developed rather than land that is rich in biodiversity so that we do not lose as many of our species and habitats. We will request that lower HRAs and EIAs are undertaken for developments that are likely to affect protected species and habitats. We will continue to talk and agree with bodies charged with managing water.
Climatic factors	We will seek to enhance (i.e. add value to) the positive impacts as we work with our partners. We will look to reduce car dependence and provide people with choice on how they travel. We will have a mix of houses, jobs, shops and schools close together so that these uses are more easily reached by non motorised transport. We will avoid building on land which can be flooded. We will make sure buildings need less heat and electricity. Future land allocation will not be on peat soil.
Material Assets	We will make sure that lower-tier plans have policies that promote quality of developments - roads, drains, houses, workplaces, schools and hospitals. We will also ensure that more materials are recycled.
Population	We will encourage the provision of services, jobs, houses and facilities that cater for all sectors of society, old and young. We will avoid building where there are risks to health like areas of bad air quality or smell.

1.6 Monitoring

We will monitor the significant negative and positive affects of the plan through the monitoring plan that we have set out in the environmental report. We have stated what actions we must carry out, who must carry out each of the actions and when we must carry them out.

1.7 How to Comment on the Report

If you would like to express your views on this environmental report, please send your comments to:

David Jennings
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2. The Main Environmental Report

2.1 Introduction

As part of preparing Aberdeen City and Shire Strategic Development Plan (SDP), we (Aberdeen City and Shire Strategic Development Planning Authority) have carried out a Strategic Environmental Assessment (SEA). SEA is a systematic method for considering the likely environmental effects of certain PPS on the environment. SEA aims to integrate environmental factors into PPS preparation and decision-making; improve PPS and enhance environmental protection; increase public participation in decision making; and facilitate openness and transparency of decision-making.

SEA is required by the Environmental Assessment (Scotland) Act 2005. The key SEA stages include screening, scoping, environmental report, adoption and monitoring. In screening we aim to determine whether the PPS is likely to have significant environmental effects and whether an SEA is required. In scoping**,** we decide on the scope and level of detail for the Environmental Report, and how long we will consult with Consultation Authorities. In the Environmental Report, we publish the environmental effects of the PPS on the environment and show we will mitigate significant adverse effects and enhance significant positive effects. Through a post-adoption statement we provide information on the adopted PPS; how the consultation processes have been taken into account; and methods for monitoring the significant environmental effects of the implementation of the PPS. We will also have to monitor significant environmental effects in such a manner that we can identify any unforeseen adverse effects at an early stage and undertake appropriate remedial action.

The purpose of this Environmental Report is to provide information on the Aberdeen City and Shire Strategic Development Plan; identify, describe and evaluate the likely significant effects of the PPS and its reasonable alternatives; and provide an early and effective opportunity for the Consultation Authorities and the public to offer views on any aspect of this Environmental Report. The SEA process for this SDP involved the preparation of a scoping report and a subsequent interim environmental report for the Main Issues Report. Following a further development of the SDP and the analysis of comments on the Main Issues Report and the Interim Environmental Report we have now prepared this Environmental Report.

The organisation of the sections of this report begins with a non-technical summary at Section 1. Section 2 covers this introduction, key facts and SEA activities to date. Next, Section 3 describes the content and the alternatives of the PPS while Section 4 discusses the issues that set the context for the strategy such as other PPS and environmental protection objectives, baseline data, the evolution of the baseline without the PPS; and environmental problems relevant to the plan. Section 5 then looks at the scope and level of details comprising alternatives, and assessment framework, cumulative effects assessment, mitigation and monitoring as well as general weaknesses of the report and difficulties we have faced. The next steps are outlined in this section, while the Appendices occupy Section 6. Maps can be found in Section 7.

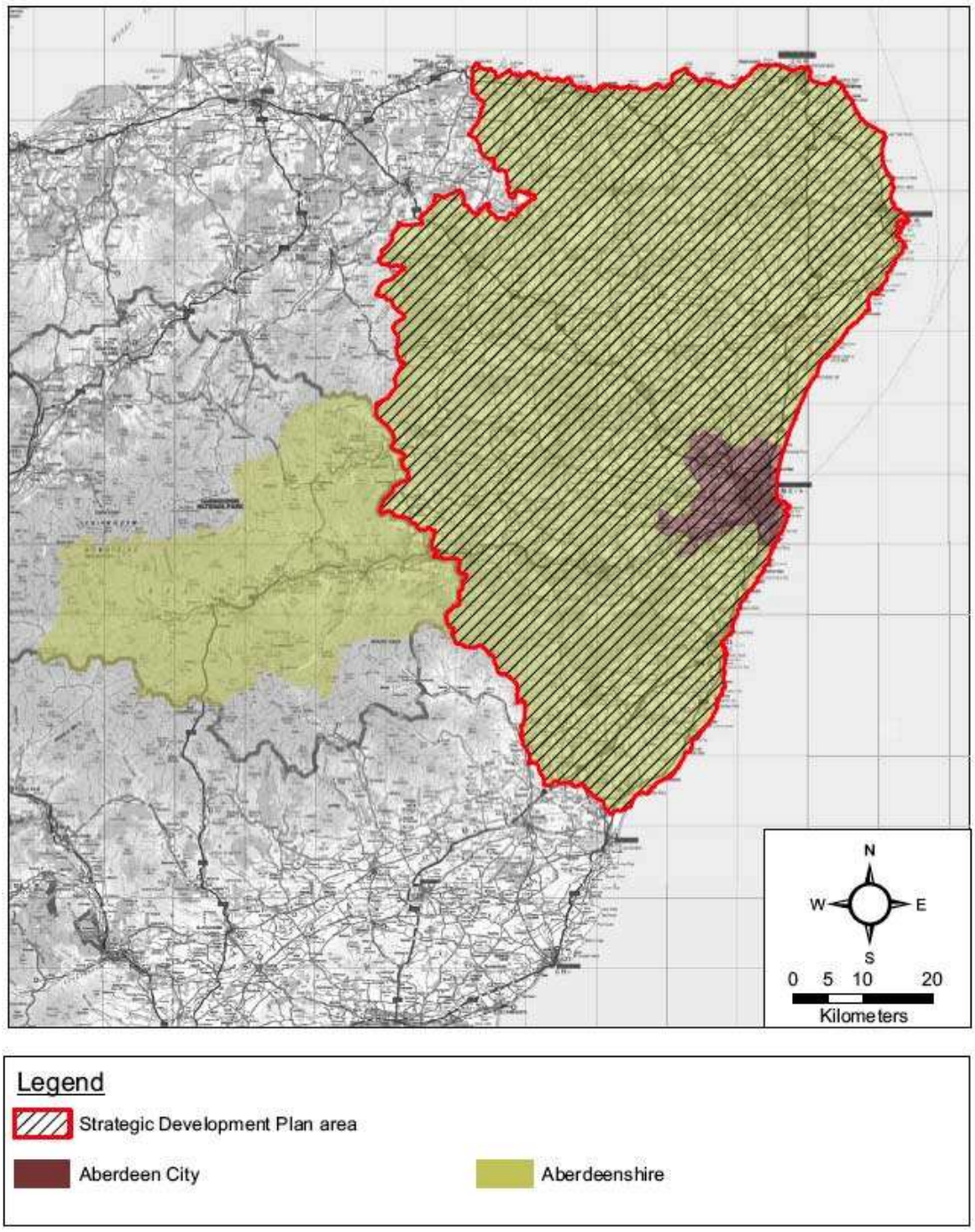
2.2 Key Facts

The key facts relating to the Aberdeen City and Shire Strategic Development Plan are set out in Table 2.1 below.

Table 2.1: Key Facts relating to the Strategic Development Plan

Name of Responsible Authority	Aberdeen City and Shire Strategic Development Authority
Title of the PPS	Aberdeen City and Shire Strategic Development Plan
What Prompted the PPS	Planning & etc. (Scotland) Act 2006
Subject	Land Use
Period Covered by the PPS	2011 to 2035
Frequency of Updates	Every five years
Area covered by the PPS	The Strategic Development Plan covers all of Aberdeen City and Aberdeenshire excepting that part of Aberdeenshire that forms part of the Cairngorms National Park. (As shown in Figure 2.1 below)
Purpose and/or objectives of the PPS	To set the framework for the development of land across the city region
Contact Point	David Jennings Strategic Development Plan Manager Aberdeen City and Shire SDPA 27-29 King Street Aberdeen AB24 5AA Telephone 01224 628214

Figure 2.1: Aberdeen City and Shire Strategic Development Plan Area



Source: The Scottish Government (Circular 3/2008)

Produced 07.10.2008

2.3 SEA activities to date

Table 2.2 summarises the SEA activities to date in relation to the Environmental Report for the Aberdeen City and Shire Strategic Development Plan

Table 2.2: SEA activities to date

SEA Action/Activity	When carried out	Notes (e.g. comment on data availability, particular issues or any advice from the Consultation Authorities that has now been taken into account)
Scoping the consultation periods and the level of detail to be included in the Environmental Report for the Main Issues Report	2 July 2010 – 3 August 2010	All advice has been taken into account
Outline and objectives of the PPS	September 2010	Discussed with partners
Relationship with other PPS and environmental objectives	October 2010	Updated using suggestions from consultation authorities
Environmental baseline established	October 2010 – February 2011	Revised and updated particularly for air quality and waste data
Environmental problems identified	March 2011	In conjunction with the main issues report
Assessment of future of area without the PPS	April 2011	As part of the baseline data collection
Alternatives considered	May 2011	Listed in the main issues report
Environmental assessment methods established	June 2011	Based on the suggested methodology in the Scoping Report
Selection of PPS alternatives to be included in the environmental assessment	July 2011	Circumscribed by currently planning legislation on modernised planning
Identification of environmental problems that may persist after implementation and measures envisaged to prevent, reduce and offset any significant adverse effects	August 2011	Reviewed to identify any changes since the scoping report was consulted on
Monitoring methods proposed	September 2011	Broad brush and tentative to be revised when the SDP is prepared
Preparation and Consultation on the Interim Environmental Report for the Main Issues Report	7 October 2011 – 5 Jan 2012	At the same time as the MIR
Taking account of the consultation outcome in formation of the final environmental report	June – July 2012	As reported in Table 5.3
Agreeing on the alternatives and options to be used in the final environmental report	July 2012	Consider reasonable alternatives taking into account previous plans and the MIR
Assessing the effects of the SDP, mitigating effects, firming monitoring measures and strategic flood risk assessment.	July 2012	Based on the methodology agreed and modified for cumulative effects assessment
Agreement of Environmental Report and	September -	Consideration by the SDPA,

Proposed Strategic Development Plan for publication.	October 2012	Aberdeenshire Council and Aberdeen City Council
Publication of Environmental Report alongside the Proposed Strategic Development Plan for consultation	November – December 2012	7 Week period for representations on both documents, closing on 21 December 2012.

3. Outline and Objectives of the Aberdeen City and Shire SDP

The Environmental Assessment (Scotland) Act 2005 requires that the Environmental Report includes "an outline of the contents and main objectives of the plan or programme". The purpose of this section is to explain the nature, contents, objectives and timescale of the SDP. The content of the SDP report and its options are listed in Table 3.1 – Table 3.3 below .

3.1 Vision

Aberdeen City and Shire will be an even more attractive, prosperous and sustainable European city region and an excellent place to live, visit and to do business. We will be recognised for:

- our enterprise and inventiveness, particularly in the knowledge economy and in high-value markets
- The unique qualities of our environment; and
- our high quality of life

We will have acted confidently and taken the courageous decisions necessary to further develop a robust and resilient economy and lead the way towards development being sustainable, including dealing with climate change and creating a more inclusive society.

3.2 Spatial Strategy and Options

The spatial strategy deals with the land use allocations and the way in which these will be delivered. In determining reasonable alternatives for the spatial strategy we have to look at the reasonable strategies developed in the north east over the past years and analysed them in light of the modernised planning system. The options/alternative available therefore include the spatial strategies for (i) Aberdeen City and Shire Structure Plan, (ii) North East Scotland Together (dispersal model) and (iii) Modification of (i) and (ii) with emphasis on development concentrated in the City. It is envisaged that 76.4% of all the developments (51,600 houses) will take place within the Strategic Growth Areas with the remaining 23.6% of developments (15,900 houses) reserved for Local Growth and Diversification Areas/Regeneration Priority Areas. 46.7% of all the developments are in the City while 53.3% of the developments are in the Shire.

The preferred option combines development in (a) Strategic Growth Areas where about half of the developments will take place within the Huntly to Laurencekirk road and rail transport corridor stretching 66 miles and other developments along the Aberdeen to Peterhead corridor with significant development potential. It also includes development in (b) local growth and diversification areas and (c) regeneration priority areas. Table 3.1 shows these strategic options. Two other alternatives considered are listed in the table below.

Table 3.1 Spatial Strategy

Options and Alternatives	
Preferred Option	This option retains the proposals in the last Aberdeen City and Shire Structure Plan. This means that most developments will be in (i) the Strategic Growth areas, with further developments in (ii) the Regeneration Priority

	and (iii) Local Growth and Diversification areas. Around half of the developments will be in Aberdeen City. 46.7% of all the developments are in the City while 53.3% of the developments are in the Shire.
Alternative 1	This option focuses the majority of development in Aberdeen City. This option will allocate around 60-75% of all developments in the City with fewer developments in the Shire.
Alternative 2	This option disperses most of the developments (60-75%) in Aberdeenshire, and allows only a smaller proportion of allocations in the City.

3.3 Alternatives within the Preferred Option

In the preferred option, most of the allocations are within Ellon - Blackdog, Portlethen – Stonehaven and Inverurie - Pitcaple corridors. For the Alternative 1, the bulk of the allocation is proposed for the Portlethen – Stonehaven corridor. There is no allocation for Ellon – Blackdog corridor in this alternative. In alternative 2, the developments are proposed to be concentrated within Inverurie – Blackburn and Portlethen – Stonehaven corridors. Table 3.2 below shows how housing and employment land will be allocated based the preferred option. From the assessments, the preferred option has the least effect on the environment.

Table 3.2 Alternatives to the preferred Option

Aberdeenshire	Preferred Option	Alternative 1	Alternative 2
Housing (SGA)			
• Huntley - Pitcaple	1000	800	1000
• Inverurie - Blackburn	6500	1000	10000
• Portlethen - Stonehaven	5600	13900	8000
• South of Dumlithie - Laurencekirk	1000	1200	1200
• Peterhead - Hatton	2200	2200	2000
• Ellon - Blackdog	3800	0	500
Housing (Other areas)			
• Local Growth Area			
• Regeneration Priority Areas			
Employment land (New/Reserve)			
• Huntley – Laurencekirk	175	175	175
• Blackdog - Peterhead	88	88	88
Aberdeen City			
Housing (SGA)			
• City Area	31000	31000	31000
• Regeneration priority areas			
Employment land (New/Reserve)			
• City Area	175	175	175

3.4 SDP Objectives – Preferred Options and Alternatives

In choosing options and alternatives for the SDP objectives, we have taken into account the outcome of the consultation on the Main Issues Report and the relevance of the Aberdeen City and Shire Structure Plan for the future of the City region. Moreover, the National Planning Framework, Scottish Planning Policy and other national policies circumscribe the policy choices that can be made. Besides, because of the modernised planning system, we consider that the reasonable alternatives will revolve around changes in successive plans. Thus the preferred objectives are those proposed for the SDP. These versions are an improvement upon the objectives in the last plan. Alternatives referred to as "Alternative objective 1" are those in Aberdeen City and Shire Structure Plan. Table 3.3 below shows how new objectives for the SDP have been modified and/or differs from previous objectives.

Table 3.3: Preferred SDP Options and Alternative Objectives

	SDP Objectives
Preferred Option	**Economic growth** - This covers employment land allocation, high-speed communication, innovation, retail and tourism, viability of town centres, regional shopping facilities, Energetica area, infrastructure needs protected and improved, supporting freight by rail and sea. *In addition it seeks to roll-out high-speed broadband throughout the area, improve high-speed digital communications networks and support regional assets such as Aberdeen airport and the region's main ports as means of accessing international markets and providing services to Orkney and Shetland.*
Alternative Objective 1	**Economic growth** (Structure plan). It covers employment land allocation, high-speed communication, innovation, retail and tourism, viability of town centres, regional shopping facilities, Energetica area, infrastructure which needs protected and improved, supporting freight by rail and sea.
Alternative 2	**Sustainable Economic growth** – This is the Main Issues Report objective. This is essentially taken into account in the preferred option and considers that a low-carbon economy (providing renewable energy and associated infrastructure and wider energy-related initiatives) brings economic benefits. Connectivity, transport infrastructure and digital infrastructure are at the heart of the main issue.
Preferred Option	**Sustainable development and Climate Change** – Reducing carbon dioxide emissions, adapting to climate change effects and limiting the use of non-renewable resources – design and use of new development to be resource efficient having minimal environmental impacts, supply and demand management of energy, renewable energy use, upgrading grid, tacking flooding, managing waste according to waste hierarchy and proximity principles, managing water use. *In addition, it encourages*

	increased energy efficiency in existing and new buildings, potential use of supplementary guidance to promote CO2 reductions in buildings through sustainability labelling, CHP in larger developments, reduced emissions from power stations, offshore wind, energy from waste, solar, biomass and ground/water/air source heat pumps, *upgraded electricity grid, carbon capture, more emphasis on waste hierarchy, 75% of capacity in SGAs close to Aberdeen and the use of self sufficiency and time-extension, regional concentration options.*
Alternative objective 1	**Sustainable development and Climate Change** (Structure Plan). Reducing carbon dioxide emissions, adapting to climate change effects and limiting the use of non-renewable resources – design and use of new development to be resource efficient having minimal environmental impacts, supply and demand management of energy, renewable energy use, upgrading grid, tacking flooding, managing waste according to waste hierarchy and proximity principles, managing water use
Alternative objective 2	**No specific topic on sustainable development and climate change** but separate objectives under waste management (import, export, self sufficiency); Landfill (time extension, site extension, new sites); The Policy and Spatial Framework for waste covers the existing spatial strategy, regional concentration and identifying sites); carbon neutrality in new development (status quo, building regulations, labelling); water efficiency (do nothing, labelling silver, gold); carbon capture; high voltage lines.
Preferred Option	Population Growth – 500 000
Alternative	Population Growth – 480 000
Preferred Option	Quality of the Environment (SDP). Improved Quality of the urban environment resulting from additional measures taken in Sustainable Development and Climate Change such as improving the efficiency of the existing housing stock
Alternative	Quality of the Environment (Structure Plan)
Preferred Option	Sustainable Mixed Communities (SDP). To the extent that CHPs are being encouraged in larger developments, there is the possibility that mixed communities are likely to be more sustainable.
Alternative	Sustainable Mixed Communities (Structure Plan)
Preferred Option	Accessibility (SDP) Strategic Transport Fund has now been introduced to enable delivery of transport projects compared with the last structure plan. *A range of transport proposals to deal with the cumulative impact of new development on the transport network including bus service, priority and frequency measures; junction improvements on the A96, A944, A956, A90, Kingswells North and Parkhill; safety improvements on the access road to the A93; Parkway and Persley Bridge improvements; and a River Dee link*
Alternatives	Accessibility (Structure Plan)

4 The Context of Aberdeen City and Shire SDP

4.1 Relationship with other PPS and environmental protection objectives

The Environmental Assessment (Scotland) Act 2005 requires that the Environmental Report includes an outline of the relationships with other relevant PPS and how environmental protection objectives have been taken into account in the PPS preparation. This section covers these issues and describes the policy context within which the PPS operates, and the constraints and targets that this context imposes on the PPS. The PPS's thought to have an influence on or be influenced by the SDP are identified in Table 4.1 and in more detail in Appendix 6.5

Consistent with Article 4(3) and Article 5(2) of Directive 2001/42/EC, if a higher level PPS and environmental protection objectives have fully been translated into UK and Scottish legislation, and no new objective is derived by maintaining the first PPS or objective, then the review in this Strategic Development Plan would be confined to latest and/or most comprehensive PPS so as to avoid duplication. In addition only those PPS and environmental protection objectives which are particularly relevant to the Strategic Development Plan have been reviewed as it is not meaningful to identify every possible plan or programme. Rather, the key plans only have been identified.

Table 4.1: Other relevant PPS & environmental protective objectives of the Strategic Development Plan

International Level
1. The Habitats Directive 92/43/EEC
2. The Birds Directive 2009/147/EC
3. European Biodiversity Framework
4. The Landfill Directive 99/31/EC
5. The Waste Framework Directive 2008/98/EC
6. Water Framework Directive 2000/60/EC
National Level
1. National Planning Framework for Scotland 2 (NPF2) (2009)
2. Scottish Planning Policy (SPP) (2010)
3. Scotland's National Transport Strategy (2006)
4. Strategic Transport Projects Review (2009)
5. The Government Economic Strategy (2011)
6. Choosing Our Future: Scotland's Sustainable Development Strategy (2005)
7. Natural Resource Productivity (2009)
8. Scottish Climate Change Delivery Plan (2009)
9. Air Quality Strategy for England, Scotland, Wales and Northern Ireland (2007)
10. Towards a Low Carbon Economy for Scotland: Discussion Paper (2010)
11. The Scottish Historic Environment Policy (2009)
12. Designing Places: A Policy Statement for Scotland (2001)
13. Scottish Executive (2006) People and Place: Regeneration Policy Statement
14. The Scottish Soil Framework (2009)
15. Scottish Landscape Forum' (2007) Scotland's living landscapes

16. Firm Foundations – The Future of Housing in Scotland – A Discussion Document (2007)
17. Infrastructure Investment Plan (2011)
18. Wildlife and Countryside Act 1981 (as amended)
19. The Nature Conservation (Scotland) Act 2004
20. Scotland's Biodiversity: It's in Your Hands. A strategy for the conservation and enhancement of biodiversity in Scotland (2004)
21. The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended)
22. The Conservation (Natural Habitats, &c.) Amendment (Scotland) Regulations 2007
23. All Our Futures: Planning for a Scotland with an Ageing Population (2007)
24. Scottish Executive Reaching Higher – Building on the Success of Sport 21(2007)
25. Lets Make Scotland More Active: a strategy for physical activity (2003)
26. Equality Act 2010
27. 'Making the Links: greenspace for a more successful and sustainable Scotland' (2009)
28. Water Environment (Controlled Activities) (Scotland) Regulations 2011
29. Water Environment and Water Services (Scotland) Act (WEWS) 2003
30. The Flood Risk Management (Scotland) Act 2009
31. River Basin Management Plan for Scotland (2009)
32. Scottish Water Strategic Asset & Capacity Development Plan (2009)
33. SEPA Indicative Flood Map (2006)
34. SEPA Groundwater Protection Policy for Scotland v3: Environmental Policy 19 (2009)
35. Action Programme for Nitrate Vulnerable Zones (Scotland) Regulations 2008
36. Our Seas – a shared resource. High Level Marine Objectives (2009)
37. Marine (Scotland) Act 2010
38. Scotland's Zero Waste Plan (2010)
Regional level
39. Aberdeen City and Shire Structure Plan 2009
40. Nestrans Regional Transport Strategy 2021 (2008)
41. 'Building on Energy Delivering the Vision for 2025' - The Economic Action Plan for Aberdeen City and Shire (2008)
42. North East Scotland Local Biodiversity Action Plan (2000)
43. Forest and Woodland Strategy for Aberdeenshire and Aberdeen (2005)
44. River Dee Catchment Management Plan (2007)
45. The North East Area Management Plan (2010)
46. Tay Area Management Plan (draft)
Local Level
47. Core Paths and Access Strategies a. Aberdeen City Council b. Aberdeenshire Council
48. Aberdeenshire Local Development Plan 2012
49. Aberdeen City Local Development Plan 2012
50. Aberdeen City Air Quality Action Plan 2011
51. Aberdeen City Waste Strategy 2010-2025

The key points relevant for the Strategic Development Plan and the SEA, drawn from identifying common themes arising in the objectives of these plans and programmes are to:

- Promote sustainable development within the Strategic Development Plan area;
- Support strategies that aim to limit or reduce the emissions of greenhouse gases;
- Focus on the sustainable use of natural resources and encourage increased use of renewable energy resources and more efficient use of energy;
- Promote sustainable economic development and regeneration;
- Encourage sustainable transport, waste management, regeneration of previously developed land and rural development;
- Promote sustainable alternatives to car and reduce congestion and traffic pollution through walking, cycling and the location of facilities;
- Promote good design, safe environment, clean environment and good quality services;
- Protect and enhance biodiversity, species and habitats. Avoid adverse effects on biodiversity, including protected sites and species, but also in relation to wider ecological networks;
- Promote the sustainable management of soils. Explore scope to achieve enhancement of soil resources, including through derelict and contaminated land remediation and redevelopment;
- Maintain, protect and enhance landscape character, including character of the built environment. Protect designated and less formally recognised historic buildings, sites and landscapes;
- Promote sustainable and efficient use of water and enhance the environmental quality of water and the biodiversity it supports;
- Avoid adverse effects on the water environment or add to or create any significant flood risks and actively promote sustainable flood risk management;
- Promote strategies that do not degrade the coastal environment
- Promote mitigation and adaption to the effects of climate change;
- Set the framework for development consents for major residential, commercial, retail, employment, infrastructure and sports developments;
- Reduce social exclusion and inequalities;
- Address housing need and demand, including affordable housing.

4.2 Relevant aspects of the current state of the environment

Schedule 3 of the Environmental Assessment (Scotland) Act 2005 requires the Environmental Report to include a description of "*the relevant aspects of the current state of the environment and the likely evolution thereof without the implementation of the Plan or Programme*", and "*the environmental characteristics of areas likely to be significantly affected*". The provision of this information allows a description of the relevant environmental context within which the Strategic Development Plan will

operate and the constraints and targets that this context imposes on the PPS. The detailed analysis of the baseline data is presented in Appendix 6.6.

4.3 Environmental problems & likely evolution of the environment

Environmental problems that affect the PPS were identified through an analysis of baseline data relevant to Aberdeen City and Shire and previous SEAs. Most of the problems emerging from the analysis of baseline data and discussions are being addressed through the Aberdeen Local Development Plan, Aberdeenshire Local Development Plan and other lower-tier PPS like core path plans and local transport strategies. The remaining strategic problems relevant to this Strategic Development Plan are those summarised in Table 4.2 below.

Without this PPS it is envisaged that the likely future changes to the environmental baseline are inevitable due to natural processes but also due to human interventions that are unconnected with the strategy. A number of the PPS listed in Table 4.1 will involve physical development which will have environmental consequences; both positive and adverse. It should be noted that the existing environmental problems described in the previous section would persist in the absence of the strategy being introduced. Potential changes to the environmental baseline without the strategy discussed under the environmental issues are listed in Table 4.2 below.

Table 4.2 Environmental Problems & likely evolution of the environment without the SDP

Environmental Topic	Issues/Trends	Likely evolution without the SDP	Possible role of SDP
Biodiversity, flora & fauna	• Potential disturbance to and loss of biodiversity from development. • Continuing need to protect internationally, nationally and locally designated sites, and enhance where possible. • Decrease and/or fragmentation of semi-natural habitats. • Potential impacts on protected and non protected species from development. • Potential loss of green space, green linkages and wildlife corridors to developments. • Pressure on River Dee SAC from further abstraction of water and impact on species within the SAC.	• The potential protection offered through the SDP would not occur. • May result in further defragmentation of habitats, loss of biodiversity due to unplanned development in potentially sensitive and/or designated areas. • Other PPS may reduce the impact of current trends and issues.	• The SDP could protect biodiversity through minimising the impact on protected and non protected designations and species. The spatial strategy may assist with this. • The SDP can only indirectly influence the condition of designated and protected sites through partnership working and controlling land use changes around these sites. • The SDP can help to achieve biodiversity action plan targets by including supportive policies. • The SDP can contribute to biodiversity within development e.g. through requiring greenspace provision.
Landscape	• Coalescence of communities through urban expansion/ribbon development. • Loss of diversity in the landscape and its character. • Capacity of landscapes to absorb development and change. • Impact on undeveloped, remote and wild countryside and coasts. • Erosion of rural character through suburbanisation and the intrusion of noise and light pollution. • Potential of large scale windfarms to adversely impact on landscape.	• Greenfield sites may be built on rather than brownfield sites thus affecting landscape character and not addressing the issue of regenerating brownfield sites which may have land contamination issues. • There would be a greater risk of unplanned and sporadic development potentially affecting sensitive landscape characters and diluting rural character. • Sporadic development would result in pockets of noise and light pollution. • The absence of a design policy could affect the quality of the built environment and affect sense of place.	• The SDP should take landscape setting into consideration when determining the spatial strategy and setting the direction for planned development. • The SDP could continue to require the use of green belt to protect the landscape setting of Aberdeen. • The SDP could consider the priority given to the development of brownfield land. • The SDP has the opportunity to include requirements for greenspace provision and consideration of design/sense of place. • The SDP will consider how it could address the issue of windfarms in conjunction with LDP's.

Cultural Heritage	• Vulnerability of historic and cultural heritage assets to insensitive developments. • Loss of heritage resources of regional and national significance.	• The absence of design policies could affect the built environment. • Negative and positive effects on the historic environment may not occur if the plan is not in place (this includes regeneration and preservation).	• The SDP will take into account urban form, settlement patterns and the desire to protect diversity and identity throughout the region.
Climatic Factors	• Greenhouse gas emissions – related to transport and energy demands. • The need to adapt to predicted climate change and its potential impacts (e.g. extreme weather events and sea level rises). • Coastal flood risk and coastal erosion. • New development in floodplains alongside increase in flood risk arising from predicted climate change. • Continuing reliance on the car to travel to work and growing travel distances. • Potential need for strategic waste management facilities. • Opportunities to support development of renewable energy (including off-shore).	• Developments could occur in inappropriate locations and result in increased commuting and greenhouse gas emissions. • Without a strong policy framework energy efficiency measures in new developments may not occur. • Other PPS will affect climatic factors.	• The SDP should encourage the use of renewable energy sources and energy efficiency measures in new development. • The SDP should take account of requirements for reduction in waste to landfill and the need for alternative waste management facilities. • The SDP can consider the effects of climate change on new development, including the location of development, building design, reducing flood risk and reducing storm damage. • The SDP should consider the potential greenhouse gas impact when determining the spatial strategy.
Air Quality	• Levels of NO2 and PM10 increasing and resulting in poorer air quality particularly in Aberdeen City, as a result of road transport, increasing traffic flows and congestion. • Increased area emissions of air pollutants in city/ town centres caused by increased development of city/ town centres for retail, business and leisure, without adequate provision of new public transport infrastructure. • Need to encourage more sustainable forms of transport.	• Without the plan air quality may continue to decrease in Aberdeen City. • Other PPS will affect air quality issues such as the regional and local transport strategies.	• The SDP should identify the means to reduce reliance on the car and direct development to accessible locations which can be served by modes of public transport. The implementation of the SDP should minimise car dependence, air pollution and nuisance.

Water	• Water bodies in close proximity to main roads are at risk from pollution caused by the impacts of contaminated surface water run-off from roads. • Agriculture, forestry and sewage disposal can increase levels of nutrients in the water environment • Over-abstraction in an area of relatively low water productivity in the area leading to environmental impacts on river reaches, groundwater sources and lakes/ lochs. • Historical soil contamination, in and around previous industrial areas in the area, is a key source of groundwater pollution. • Region has fragile river systems of international importance which are sensitive to pollution and hydrological changes. • There is some alteration to beds, banks and shores of rivers, lochs and coastal waters (such as straightening, culverting and modifying riparian habitats).	• Adverse effects on water quality would remain in the absence of the strategy. The pressure for water abstraction is directly linked to the level of development proposed. • Construction associated with other plans would still occur and agricultural run-off would continue to cause pollution of water bodies.	• The SDP can only indirectly influence the condition of the water resource through partnership working and controlling land use changes. • The SDP should minimise water pollution and avoid disturbance to qualifying features of the River Dee. • The implementation of the SDP should improve water quality and ensure sustainable use of water.
Population	• Quality of place making through design quality including secure by design and open space. • Lack of affordable housing and variety of house types to suit various needs throughout the region. • Changing demographics – ageing population. • Continuing trend of losing young educated adults – “brain drain”. • The population is increasing and this trend is projected to continue. This may assist in economic growth and protection of existing services but will impact on the built and natural environment.	• Population of the region would continue to grow in the 65+ age group. • Without development and positive action there will be a falling demand on schools and an increase of pressure on health facilities. • Continuation of current trend leading to higher house prices, lack of availability of affordable homes and increasing pressure on infrastructure, the built and natural environment.	• This is the area of which the SDP has the most direct influence as it sets the housing allocation taking population change, house type, tenure, specific needs and affordable housing into consideration. • The SDP will set the framework and direction for future sustainable economic growth across the region. • The SDP should take into account the needs of all sectors of society.

Human Health	• Access to greenspace and active travel opportunities • Opportunity for Core Path Plans throughout the area to link with new developments and assist in creating accessible communities with reduction in need for car travel. • Elevated levels of NO2 and PM10 have a negative impact on human health, particularly among vulnerable groups.	• Sporadic and unplanned development may limit or restrict access to greenspace and active travel opportunities. • Without the plan air quality may continue to decrease in Aberdeen City. • Other PPS will affect air quality issues such as the regional and local transport strategies.	• The SDP will set the framework for the provision of open space and sporting facilities through implementation of the local development plans. • The SDP should identify means to reduce reliance on the car and direct development to accessible locations which can be served by public transport, cycling and walking. The implementation of the SDP should minimise car dependence, air pollution and nuisance.
Soil	• Increased development of land on the fringes of urban areas resulting in soil sealing/loss. • Agriculture and forestry can lead to soil erosion. Soil pollution due to use of pesticides. Potential for misuse or leakages resulting in pollution incidents. • Contaminated land and its impacts on land use and soil quality. Need to prevent future land contamination. • Loss of prime agricultural land through development. • Loss of land to permanent development. • Soil erosion is a continuing problem in Scotland and there are concerns about loss of soil organic matter and soil sealing by impermeable surfaces associated with buildings and roads. Loss of soil organic matter (which acts as a carbon store) will result in increased carbon dioxide emissions.	• Impacts on soil caused by development of the strategy may not occur although impacts on soils and agricultural land with proposals within other plans and human activities would remain. Other PPS such as the Local Housing Strategies are likely to affect soils. • Continuation of current trend/issues with no remediation leading to loss of ground water resource, soil resource and adverse effects on public health.	• The implementation of the SDP should avoid soil contamination. • The SDP will set the framework for ensuring that new developments contain the appropriate drainage methods such as SUDS. • The SDP can set the agenda for remediation of contaminated land thereby improving the environment and well-being.

Material Assets	• Ongoing need to reduce reliance on landfill sites. • Brownfield sites vacant within the region. • Continuing demand for mineral extraction. • Capacity and use of existing road and rail infrastructure. • Pressure to expand Aberdeen Airport. • Desire to protect and expand ports/harbours in the region. • Pipelines throughout the region constraining land for development. • Pressure on water infrastructure to cope with new development. • Opportunity to promote sites for renewable energy and the need to upgrade electricity transmission networks.	• Continuation of current trend although other PPS may have an impact on reducing reliance on landfill. • Without planned development and a strategic approach to infrastructure shortfalls may occur in the level of facilities to meet the needs of the population. • Other PPS such as regional transport strategy may have an impact on material assets.	• The SDP should promote the waste hierarchy and reduce reliance on landfill sites through implementation of the Waste SPG and provision of alternative waste processing and treatment facilities, including recycling. • The SDP should take existing and future infrastructure requirements (schools, roads, hospitals, community facilities etc) into consideration when consulting on the Main Issues Report and developing the spatial strategy. • The SDP should promote the development of renewable energy sources.

4.4 Characteristics of Areas likely to be significantly affected

The analysis of the baseline information indicates that the strategy is likely to have more significant effects on certain areas than others. This is due to the sensitivity of those areas in terms of international, national and local designation. Although other areas may not be designated, the effects on those sites from the SDP could be cumulative. In Appendix 7.1.1 – Appendix 7.4.5, we have presented information relating to the type and number of sites which are likely to be significantly affected.

5 Assessment Mitigation and Monitoring

5.1 Alternatives to which SEA was applied

We have listed alternatives as part of this strategic environmental assessment in Table 3.1, Table 3.2 and Table 3.3 above. We have considered three levels of alternatives in this plan. These alternatives include the spatial strategy, strategic options and alternatives within the SDP objectives. We have not assessed the vision as it is a repeat of the Aberdeen City and Aberdeenshire Structure Plan. Those consulted on the Main Issues Report have supported a repeat of the vision for the proposed SDP. There is no alternative vision to assess and a repeat of the past assessment will not add any value to the exercise. We have also not assessed the proposals as each project has been assessed through EIAs in other plans or projects. An assessment at this level will only duplicate other assessments.

Spatial Strategy:

- Three alternatives considered include the Preferred Option (Structure Plan Option), Alternative 1 (Concentrating developments in the City) and Alternative 2 (Concentrating developments in the Shire – dispersal alternative). The preferred option retains proposals in the Aberdeen City and Aberdeenshire Structure Plan. This option concentrates developments in the Strategic Growth areas, with further developments in the regeneration priority and local growth and diversification areas. Alternative 1 will allocate about 60-75% of all developments in the City with fewer developments in the Shire. Alternative 2 will disperse most of the developments (60-75%) in Aberdeenshire, and allow only a smaller proportion of allocations in the City.

Strategic Options

- We have considered three alternatives within the preferred spatial strategy. The Preferred Option (balanced concentration north and south of Aberdeen and Energetica), Alternative 1 (south of Aberdeen concentration) and Alternative 2 (north-west & south of Aberdeen concentration). The preferred option will have a larger concentration of developments (i.e. within Ellon - Blackdog, Portlethen – Stonehaven and Inverurie - Pitcaple corridors). Alternative 1 will have a larger proportion of the developments within Portlethen – Stonehaven corridor while Alternative 2 will have a larger proportion of the developments within Inverurie – Blackburn and Portlethen – Stonehaven corridors.

Alternatives within the SDP objectives

- The SDP is being prepared following the approval of the last structure plan. In the transition from the Aberdeen City and Shire Structure Plan, which is in many respects consistent with the current planning legislation, to a new SDP, this plan seeks to add value to and reshape the last plan using the outcome of the consultation on Main Issues Report. The changes identified between the last structure plan and the proposed SDP have therefore shaped the choice of alternatives. For this reason, the most reasonable approach has been to pitch the last plan against the Main Issues Report and the proposed plan. The outcome of the consultation on the Main Issues Report indicates overwhelmingly that the objectives of the Aberdeen City and Shire Structure

Plan are still very relevant to the proposed SDP. Thus the alternatives we have considered are the changes between the two regional plan objectives. In Table 3.2, we have set out the alternatives within the objectives of "Economic growth," "Sustainable development and Climate Change," "Population Growth," "Quality of the Environment," "Sustainable Mixed Communities" and "Accessibility."

5.2 Framework for assessing environmental effects

We have assessed the strategic, policy and spatial strategies developed under the Strategic Development Plan against SEA topics. We have predicted whether these effects are negative, positive, uncertain, mixed or neutral effects. We have further evaluated their significance on the receptors in relation to reversibility or irreversibility of effects, risks and duration (permanent, temporary, long-term, short-term and medium-term). We have also assessed cumulative effects in a separate table. Comments from the Consultation Authorities (SNH, SEPA and The Scottish Ministers (Historic Scotland)) have been taken into account regarding the methods, scope and level of detail in this Environmental Report. In Appendix 6.1 – Appendix 6.3 below, we have shown the full assessments and our reasons.

5.3 Cumulative Effect Assessment

Paragraph 6 (e) of Schedule 3, of the Environmental Assessment (Scotland) Act 2005 requires that we assess the likely significant effects on the environment, including secondary, cumulative and synergistic effects. We have assessed cumulative effects of the SDP taking into account the information available to us. In doing so have considered the evolution of the environment without the plan, environmental characteristics of areas likely to be significantly affected as well as the assessment undertaken for this SDP. In this report, we have assessed direct/indirect/secondary, time crowding, time lag, space crowding, cross-boundary, nibbling and synergistic effects in gauging cumulative effects. We have presented the detailed assessment in Appendix 6.4 below.

5.4 Proposed Mitigation Measures

The SEA Directive requires that through mitigation measures, recommendations will be made to prevent, reduce or compensate for the negative effects of implementing the strategy. The proposed framework to be adopted to mitigate significant environmental effects is at Table 5.2. We have not presented information on any environmental issues for which we have not identified significant effects.

Table 5.2 Proposed Mitigation Measures

Issue	Effects	Mitigation Measures	When should mitigation be considered?	Who is responsible for mitigation?
Air	No significant effects	No mitigation	N.A	N.A
Water	• Development will have a negative impact on water quality and will increase water abstraction from the River Dee. • Significant negative impact on water due to an increased possibility of leachate and contamination.	• Future LDP should have policies on flooding and drainage, SG on SUDS, Drainage Impact Assessment and on Buffer Strips to provide mitigation for the effects of development. All allocations that have been identified as having a significant impact on water quality should be required to comply with these policies. • All sites substantially at risk from flooding should be removed from future LDPs. Sites included in LDPs should serve to protect areas likely to be at risk from flooding (i.e. as buffer strips) • LDPs should impose conditions for EIAs before developments are allowed where appropriate. • Habitats Regulation Assessment of sites that may impact on the River Dee SAC and other protected sites should be required by LDPs • We will ensure that new infrastructure is put in place to avoid having to increase the amount of water we take from the River Dee to service new development" through water efficient technologies and using other measures agreed with relevant bodies • Future plans should have policies to improve the ecological status of water. • Consider with relevant bodies the preparation of a water shortage plan as an adaptation measure to future climate impacts	Through LDPs, SG Through the development management and EIA process. During the Habitats Regulation Assessment	SDP and LDP Teams

Soil	• Long-term irreversible impacts on soil quality, soil structure, soil morphology and potential for development on peat soils	• Future LDP should have policies to reduce waste to landfill by providing a spatial framework for new waste facilities such as: recycling, composting and thermal treatment. This could be done through Supplementary Guidance. • Future LDP should have policies for developers to make use of construction waste to reduce landfill. • Future allocation of land should directed away from peat soils	Through the LDP and SG as well as through subsequent development management process including the use of EIAs and planning conditions.	SDP and LDP Teams, Development Management, developers Environmental Health.
Biodiversity, flora and fauna	• Long-term irreversible impacts on biodiversity through land take, habitat loss, habitat fragmentation or disturbance to species that use the site as a habitat. • Long-term positive impacts through improvements to poor-quality bio-diverse land.	• Future LDP and SG should have policies protecting the natural environment and open space • Future LDP and SG should have policies ensure that land is not allocated on sites likely to have significant effects on biodiversity. • Future LDP should have management the risk of significant effects through EIAs, Masterplanning and Habitat Regulations Assessment • Future nature conservation strategies and open space strategies should contain enhancement strategies that enable people to experience and enjoy the natural environment without damaging it. • Future LDPs should consider the need to protect or enhance existing green networks	Through the LDP and SG as well as through subsequent development management process including the use of EIAs and planning conditions, Masterplanning and Habitats Regulation Assessment	SDP and LDP Development Management, and Masterplan teams.
Climatic factors	• Long-term significant negative effects on climate change through increased use of fossil fuel and energy in developments as well as flooding in low-lying areas • Long-term positive effects on low-carbon measures in the SDP such as sustainable development and Climate Change as well as Sustainable Mixed Communities	• Future regional and local transport strategies should encourage modal hierarchy with the motor car at the bottom. • The SDP and LDP teams should work to ensure that sustainable mixed communities and the proposals in the sustainable development and climate change section of the plan are delivered, as well as the use of higher densities to reduce travel distances. • All sites substantially at risk from flooding should be removed from future LDPs. Sites included in LDPs should serve to protect areas likely to be at risk from flooding (i.e. as buffer strips) • Future LDP's should aim to make the most efficient use of infrastructure to reduce the need for additional facilities and associated emissions. • Future local transport strategies and masterplans should have scope for enhancing positive aspects of the SDP proposals	When developing masterplans, local housing strategy and LDP policies and SG.	LDP Team, Development Management, Building Standards, Transportation teams and NESTRANS

		• Future allocation of land should directed away from peat soils • Land should not be allocated for forestry activities and windfarms unless the benefits from those activities save more carbon than the peat soil displaced.		
Material Assets	• Long-term positive effects through acquisition of assets, development of new and energy efficient developments, new infrastructure, improving the efficiency of the existing housing stock, efficient waste management, and for reusing building materials	• To enhance the positive effects of the SDP, more emphasis should be placed on ensuring quality of developments through LDPs, SGs and masterplans.	Through LDP, SG, masterplanning processes	LDP, Masterplanning Team, Development Management,
Population	• Long-term positive effects for the people living in Aberdeen City and Shire through the quantity and quality of developments and employment opportunities for most people of all ages. The number of houses, the sustainable development and climate change options as well as sustainable mixed community options ensure that these positive effects are likely	To enhance the positive effects of the SDP, the SDP and LDP teams should there is adequate supply of housing and employment land at all times so that the needs of the projected population of the City and the Shire would be met.	Through housing and employment land audit. Short falls should be addressed through LDPs	SDP and LDP Team

5.5 Monitoring

Aberdeen City and Shire Strategic Development Planning Authority (SDPA) is required to monitor the significant environmental effects when the plan is implemented. In doing so, the SDPA is required to identify any unforeseen adverse effects at an early stage; and undertake appropriate remedial action. A monitoring report will be prepared to constantly monitor the significant effects. The framework for monitoring significant effect of the implementation of the plan is shown in the Table 5.3 below. A monitoring framework will be incorporated into the PPS.

Table 5.3 Monitoring Plan

Effects	What sort of information is required? (Indicators)	Where will information be obtained from?	Are there gaps in the existing information and how can it be resolved?	When should the remedial action be considered?	Who is responsible for undertaking the monitoring?	How should the results be presented?	What remedial actions could be taken?
Water	Sufficiency of River Dee to support future allocations Effects of water level on qualifying features such fresh water pearl mussel The amount of water abstracted from the River Dee and the impacts on water quality and flow rate. No of water bodies (percentage of water bodies) attaining high/good/moderate ecological potential	Scottish Water, SNH and SEPA .	Knowing the optimum level of the survival of qualifying features are at risk	When Scottish Waters, SNH and SEPA inform Aberdeen City and Shire When data from SNH indicate that the threshold of water level is being reached When the ecological potential of water bodies are becoming poor or bad	SEPA, SNH. Scottish Water and Aberdeen City and Aberdeenshire Councils SEPA	As part of SDP monitoring report	Review the action programme of the SDP and LDPs

Soil	Relationship between waste management/industrial activities and land contamination	Waste management licenses	No as SEPA monitors this regularly	When informed by SEPA	Contaminated Land Units, SEPA	As part of SDP monitoring report	Review the action programme of the SDP and LDPs
Biodiversity	Condition of qualifying features and habitats of European sites Habitat fragmentation	SNH SiteLink under site condition	No	When sites/habitats with favourable or unfavourable conditions are likely to worsen	SDP and LDP Teams, SNH	Annually	Review management plans for the sites
Climatic factors	Increase in car use and energy consumption in developments	Monitoring reports of regional transport strategy Annual report from DECC	The only gap is that DECC data are released in areas	When DECC data shows that CO2 emissions are consistently rising When transport monitoring report shows increases in congestion and a modal shift is not occurring, i.e. use of the car is increasing.	SDP, LDP and regional transport teams	Annually	Review regional transport strategy and carbon management programmes for the City and Shire

5.6 An outline of the reasons for selecting the alternatives dealt with

The preferred options are chosen because of their conformity with the modernised planning system and the fact that their effects on the environment are slightly less than the alternatives considered. Further details are also listed in Sections 3.2 – 3.4 and assessment sections in Appendices 6.1 – 6.3

5.7 General Difficulties, Weaknesses and Limitations

One difficulty relates to how the SDP differs in format and content from the Main Issues Report. The result is that while some comments relating to data can be taken on board, because the alternatives and content of the SDP are somewhat different from those of the MIR, there is some lack of continuity. Another difficulty of this Environmental Report is that the SDP is a high level document and therefore could not go into details of every development and leaves that assessment at a high strategic level. It does not consider issues relating to implementation and as a result the full impact of the strategy will not be fully understood until lower-tier plans are developed. There is little scope for enhancements. However, where potential significant negative environmental effects have been identified, this Report has enabled consideration to be given to potential negative impacts at the low level planning stage.

5.8 Next Steps and Anticipated Milestones

Table 5.4 shows the remaining steps needed for the SEA of Aberdeen City and Shire Strategic Development Plan and how these steps would be carried out and described in the final environmental report.

Table 5.4 Proposed consultation timescale and methods

Expected time frame	Milestone	Comments
November 2012 to December 2012	Consulting on the Environmental Report and Proposed SDP.	We will consult over a 7 week period.
January 2013 to June 2013	Collating views on the consultation and take the appropriate action on the Environmental Report and the plan.	Engagement will take place throughout this period with the Consultation Authorities in their role as Key Agencies in the development plan process.
June 2013 to December 2013	Examination of Proposed SDP	This process could take between 6 and 12 months.
Early 2014	Ministers publish revised Environmental Report if modifications are proposed.	This will be done by Scottish Ministers
	Publishing a Post-Adoption Statement and submitting to SEA Gateway.	This will be done within 3 months of the SDP being approved by Scottish Ministers.

In Table 5.5 below we show how we have analysed the consultation responses.

Table 5.5 Analysis of Comments on the Main Issues Report Interim Environmental Report (received January 2012)

Consultation Authority	Issue	Concern / Comments	Action proposed
Historic Scotland	General Comments	Clear report, easy document to understand and follow and happy for considering comments on the scoping report. thorough and transparent assessment Welcome the use of lower-tier plans for mitigation	Noted
Historic Scotland	Non-Technical Summary	Include the term 'built heritage features' in the cultural heritage section of Table 1 consistent assessments in Appendix 1 to show that the assessment has predicted mixed impacts on other aspects of the historic environment, not just special or old buildings.	Added
Historic Scotland	Relationship with other PPS - Table 4.1	Since responding at scoping stage the SHEP has been updated to take into account recent additions including the Historic Environment (Amendment) (Scotland) Act 2011 ("the 2011Act"); the Marine (Scotland) Act 2010 ("the 2010 Act"); the adoption of a UK Marine Policy Statement; and, Scottish Ministers' policies for the designation and management of Historic Marine Protected Areas. The updated SHEP can be found at this link HUhttp://www.historic-scotland.gov.uk/shep-dec2011.pdfU	Noted
Historic Scotland	Baseline	Since responding at scoping stage an Inventory of Historic Battlefields has been launched by Historic Scotland. And there are currently 4 historic battlefield sites listed on the Inventory in the Aberdeen City and Shire area. Historic Battlefields should therefore be included in the baseline data.	Added
Scottish Natural Heritage	Non-Technical Summary	We appreciate that the writing style is an attempt to help the public engage with some of the issues. However, in some cases it simplifies the issues to a degree that is unhelpful and misleading.	NTS is not only written in an attempt to help the public engage with some of the issues. It is required under Section 4.33 of PAN 1/2010. Besides it is a "NON-TECHNICAL" rather an "EXECUTIVE" summary and conforms to Plain Language standards. However, rendering do not convey the meanings well enough, we will amend them.

Scottish Natural Heritage	Non-Technical Summary	We suggest that Table 1 and 2 are therefore combined, so it is easier to see how the mitigation, in practice, will address some of the potential theoretical impacts of the proposals.	Noted.
Scottish Natural Heritage	Non-Technical Summary	Further, we suggest the following mitigation measure should be inserted into the table: "We will ensure that new infrastructure is put in place to avoid having to increase the amount of water we take from the River Dee to service new development."	Suggestion added. Through water saving technologies in the plan
Scottish Natural Heritage	Green Networks	We are pleased to see an update in Table 4.2 addressing the possible role of the plan in contributing to biodiversity within development e.g. through greenspace provision.	Noted
Scottish Natural Heritage	Green Networks	A future revision of this ER could include this as part of the mitigation for the possible impacts of the plan that has been identified.	Included
Scottish Natural Heritage	Green Networks	Of course, it is important to show that green networks are not just about biodiversity, but if well planned, can provide access opportunities, cycling routes to work , safe routes to school and so on.	Noted
Scottish Natural Heritage	Cumulative and Synergistic Effects – "Sustainable Economic Development"?	Table 5.6 is titled "Assessment of Cumulative and Synergistic effects of the plan options/alternatives". However it does not appear to assess alternatives or options, indeed it isn't clear quite what is being assessed. Is it the preferred option for each policy area in the plan?	Narrative added and the alternatives are clearly spelt out in Table 3.1- Table3.3
		The table itself does not allow the reader to make straightforward conclusions about synergistic or cumulative effects. We would recommend that there is some narrative here that draws out the most important cumulative/ synergistic effects and that there is some further explanation of how the impacts were assessed.	Explanation notes added in Appendix 6.4
		Table 5.6 would appear to suggest that the 'Sustainable Economic Growth' policy approach will have major negative (--) effects on Air, Water, Soil, Biodiversity, Climatic Factors, Cultural Heritage, Landscape and Human Health. It would be reasonable to conclude that if that assessment was accurate, then there must be something seriously wrong with the policy and that it should be changed. It may be more likely though that the method used in the SEA or the way the information is presented is misleading. If that is the case, we would welcome further discussion about how a revised Environmental Report might be improved.	The policy is revised following the consultation on the MIR and the reassessed Appendix 6.1- Appendix 6.4
Scottish Natural Heritage	Assessment	The Environmental Assessment (Scotland) Act 2005 requires that the assessment must include an analysis of short, medium and long-term effects; permanent and temporary effects; positive and negative effects; and secondary, cumulative and synergistic effects. Positive and negative effects must not be assumed to cancel each other out. Please reconsider this with reference to table 5.6 and any additional mitigation measures that may be required. One way of doing this would be to have a table (or series of paragraphs) which list the various types of impacts (short, medium, long etc.) and briefly state what the main impacts of the plan will be.	Assessment method is revised. See Appendix 6.1- Appendix 6.4.
		It is not clear how Appendix 1 relates to Table 5.6. For example the assessment of the proposals in Appendix 1 would suggest that each of the 4 proposals and also NRIP would have a negative effect on Biodiversity. However, Table 5.6 suggests a positive impact under the cumulative assessment. It would be useful to explain how Table 5.6 was derived, whether or not it takes into account mitigation and if not, where we can look in the	Assessment has been revised to link Appendix 1 to Table 5.6

		ER to find out how these negative impacts will be mitigated.	
Scottish Natural Heritage	Framework for assessing environmental effects	It is difficult to determine for some of the preferred MIR options if an assessment has been carried out for significance of effect on receptors in relation to reversibility or irreversibility of effects, risks, duration (permanent, temporary, long-term, short-term, medium-term). If this has been done, then some kind of straightforward summary of the important impacts would be helpful.	Assessment has been revised to explain the significance of effect. See Appendix 6.1- Appendix 6.4
Scottish Natural Heritage	Soil	The importance of carbon-rich soils has been raised previously in our scoping response yet it does not seem to have been addressed sufficiently in the ER. Given that significant areas of peat exist in the SDP area, we recommend that the soil section of table 5.7 should be amended to include the possible effects development may have on peat. Appropriate mitigation measures should be included to ensure impacts on this resource are minimised.	We have included peat soils in the baseline, the assessment and mitigation measures
Scottish Natural Heritage	Monitoring	The monitoring programme does not yet set out a comprehensive set of indicators against which to measure success for many of the topics in table 5.8. We would hope to see much more tightly defined indicators in the next revision of the ER and would be keen to explore this with you.	Noted
Scottish Natural Heritage	Monitoring	In terms of landscape change, Table 4 of Landscape Considerations in Strategic Environmental Assessment http://www.snh.gov.uk/planning-and-development/environmental-assessment/sea/ provides a number of suggested indicators for landscape change for plans and programmes that may be helpful to you.	Landscape is not a significant issue in the assessment. It is therefore not monitored
Scottish Natural Heritage	Monitoring	In terms of impacts on water, we would like to see much more specific indicators for the amount of water abstracted from the River Dee and the impacts on water quality and flow rate. In terms of impacts on Freshwater Pearl Mussel (FWPM) from too much abstraction, remedial action would be needed before levels were reached that could impact on them.	Included
Scottish Natural Heritage	Monitoring	These indicators should be agreed with Scottish Water and SEPA as part of a working group considering impacts of the Plan on the River Dee SAC and a programme of work to explore these impacts.	On-going discussion with them
Scottish Natural Heritage	Monitoring	One of the most important indicators in terms of the Biodiversity of the River Dee SAC is the condition of the interests of the SAC. Currently, the condition of the FWPM is 'unfavourable no change'.	See monitoring table
Scottish Natural Heritage		Assessment of Proposals Carbon Capture and Storage facilities & Electricity Infrastructure Upgrades We would consider that these developments would cause more than a neutral effect on landscape. Due to the nature and scale of these facilities, existing infrastructure on site and also considering the potential for the development of a large transformer plant at Peterhead, we would ask the SDPA to reconsider the cumulative landscape impacts of all these developments on the landscapes around Peterhead. It would be helpful if more specific mitigation measures to ensure no adverse impact were stated in table 5.7. For example the MIR at para. A6.25 suggests a masterplan will be prepared for this area and an 'environmental improvement plan' is currently being prepared. Will these mitigate the landscape impacts? If so, in what way?	As SNH has rightly indicated in their comment on the HRA, these projects from part of another assessment in NPF2, p122. We have little control over them The appropriate place for meaningful

			mitigation will be at EIA level
Scottish Environment Protection Agency	General Comments	We are pleased to note that many of the comments we made at the scoping stage have been acted upon. We consider that generally the ER provides a comprehensive assessment on the Main Issues Report (MIR) and for this you are to be commended. Some suggestions are made for improving other parts of the report	Noted
Scottish Environment Protection Agency	Relationship with other Plans, Policies and Strategies (PPS)	On the whole the list of PPSs is comprehensive, we suggest you check and ensure that everything is up to date before including in your ER. For example, • The North East Area Management Plan has now been finalised (2010), and the Water Environment (controlled Activities) (Scotland) Regulations 2005 have been amended and are now the Water Environment (Controlled Activities) (Scotland) Regulations 2011. • In addition we bring the following PPS to your attention: • Aberdeen City Air Quality Action Plan 2011 • Aberdeen City Waste Strategy 2010-2025	Updated and additional PPSs added.
Scottish Environment Protection Agency	Baseline information	As indicated at the scoping stage you should recognise in the baseline and throughout the assessment that flood risk is an existing problem (not just an issue in relation to climate change). We are pleased to note that the framework for a Strategic Flood Risk Assessment (SFRA) has been developed; when the SFRA itself has been produced we recommend that reference is made to the findings of this in the revised ER.	The SDP recognises that flood risk is an existing problem. The SFRA has been prepared as a separate document.
Scottish Environment Protection Agency		We recommend that the soils section specifically includes information on peatland. The Soil Survey of Scotland 1:250 000 maps provides general information on soils. This and other information on Scottish soils is available from www.Macaulay.ac.uk.	Baseline updated and maps added
Scottish Environment Protection Agency		Also in relation to the information provided on waste management in the soils section you may also wish to refer to the waste site capacity and infrastructure reports available on our website: national capacity reports - www.sepa.org.uk/waste/waste_data/site_capacity__infrastructure/national_capacity_report s.aspx and landfill capacity reports - www.sepa.org.uk/waste/waste_data/site_capacity__infrastructure/landfill_capacity_report.aspx and municipal waste annual report www.sepa.org.uk/waste/waste_data/waste_data_reports/local_authority_annual_reports.aspx	
Scottish Environment Protection Agency		Table 4.2 sets out a clear role for the SDP on water quality, and highlights the key issues which have been identified in the River Basin Management Plan for Scotland. We suggest that the reference to the SDP role as 'improve water quality and ensure sustainable use of water' should be broadened to 'improve the ecological status of water'. This reflects the range of water issues identified, and makes a clear link to Water Framework Directive requirements.	Added to the SDP
Scottish Environment Protection Agency	Alternatives	It states in 3.1 that the alternatives have been listed in Table 4.1 however Table 4.1 relates to Other PPS and Environmental Protection objectives of the SDP. We note that the ER makes an assessment of both the preferred options and alternative options considered in the MIR, this is welcomed.	Table numbering amended
Scottish Environment	Assessment Methodology	You have gone to significant effort to assess individual elements of the MIR in some detail and for this you are to be commended. We note that the assessment has been carried out against the SEA environmental topics	Noted

Protection Agency	General Comments	rather than SEA Objectives.	
		We are satisfied that the vision and spatial strategy have been assessed as part of the SEA for the Structure Plan, however should the MIR consultation lead to any changes to the vision or spatial strategy then these will need to be assessed in the revised ER.	MIR consultation did not change vision. So the is not assessed.
		We are pleased to note that you have provided an assessment of cumulative effects an aspect of the assessment which is often overlooked. However we note there is some uncertainty over the effects with Table 5.6 identifying a number of effects as being both significantly negative and positive. Perhaps in the revised ER you could provide additional commentary as to the reasons for the assessments to improve clarity.	Comprehensive comments have been made for cumulative effects
		In Table 6.3 you set out clearly how the comments made by the Consultation Authorities at the Scoping Stage has been taken into consideration in the preparation of this Interim ER, we consider this to be good practice	Noted
Scottish Environment Protection Agency	Assessment of Main Issues	It would be helpful if the main body of the ER included some text to explain exactly what has been assessed in Appendix 1 and that both used the same wording, identifying preferred options and alternatives in the interests of clarity and transparency.	This has now been clarified in Tables 6.1- Table 6.4
		In general, we are satisfied with the assessments presented with the exception of the following suggestions. Waste: You have assessed Option 1 (Net Importer of Waste) as having a negative effect on water, it is not clear why you consider that an increase in waste facilities will lead to negative impacts on the water environment, as you state in the assessment, modern waste facilities are licensed and require to operate to high standards which will minimise impact on the environment (including water) as well as human health and population, this assessment should be clearly explained.	Report amended to reflect licensing regime and improvement in waste technology In General Assessment sections of Table 6.1 and Table 6.2
		Similarly you have also assessed this option as having a significantly negative impact on soils; it is not clear why this is the case. We would again highlight modern waste facilities are licensed and require to operate to high standards, this will minimise impacts on the environment as well as human health and population. We request that you clarify your reasoning for this assessment.	Report amended to reflect licensing regime and improvement in waste technology In General Assessment sections of Table 6.1 and Table 6.2
		Landfill: you have assessed Option 3 (Identify strategic need for additional landfill) as having a negative impact on soils and water, again we highlight modern waste facilities are licensed and require to operate to high standards, this will minimise impacts on the environment as well as human health and population. We request that you clarify your reasoning for this assessment.	Report amended to reflect licensing regime and improvement in waste technology In General Assessment sections of Table 6.1 and Table 6.2
		Policy and Spatial Framework: you have assessed all options as having a negative impact on soils and water, we again highlight modern waste facilities are licensed and require to operate to high standards, this will	Report amended to reflect licensing

		minimise impacts on the environment as well as human health and population. We request that you clarify your reasoning for this assessment.	regime and improvement in waste technology In General Assessment sections of Table 6.1 and Table 6.2
		4.2.6 Strategic Transport Interventions: You have assessed these as having positive effects on air quality. However, you state in the assessment comments section that increased infrastructure can lead to increased development and traffic and thereby increased use of fossil fuels. We agree that generally new development will result in more road traffic, which is the main contributing factor to poor air quality in the City and so there may be some (perhaps localised) negative effects on air quality as a result of the package of measures. While we acknowledge that some of the measures will lead to positive effects on air quality, clarification should be provided on those aspects which could have a negative effect and captured more effectively in the assessment (perhaps an uncertain effect).	The report has been clarified. The effect is now mixed.
Scottish Environment Protection Agency	Additional Comments	We welcome the reference in the ER to the Strategic Flood Risk Assessment (SFRA). We have provided further comment on the SFRA in our response on the MIR itself. We welcome the recognition of issues relating to pressures from abstraction from the River Dee related to development. Discussion on this issue with you, SNH and other relevant parties is ongoing.	Noted
Scottish Environment Protection Agency	Mitigation	We support the strong emphasis on mitigation and the clear table showing the summary of effects, proposed mitigation measures and the stages at which they should be considered. We note that you have identified that many of the policies in the LDPs act as mitigation for the negative effects from allocations; this is often overlooked. We also welcome the fact that the table outlines those allocations which were found to have significant negative effects on the environment were removed.	Noted
Scottish Environment Protection Agency	Monitoring	We welcome the inclusion of a Monitoring Plan set out in Table 5.8 and the use of indicators and on the whole we support the indicators identified. .	Noted
		However, we would welcome a specific indicator on **ecological status of water bodies, which reflects water quality and a range of additional indicators**. SEPA can supply information on this indicator.	Added
		As a minor point, we note that under the Water category, how the results should be presented column, it states *"as and when flood risk and pollution increases"*, as one of the aims of the PPS is to minimise flood risk and contribute towards improving water quality we would suggest that the presentation of the results should not only be triggered by negative environmental effects but perhaps on an annual basis which would allow the reporting of positive or neutral effects through the monitoring plan too	We will monitor it annually

Appendices: Assessments, PPS Context & Baseline
Appendix 6.1: Assessment of Spatial Strategy

SEA Topics / Policy Options	Air	Water	Soil	Biodiversity	Climatic Factors	Cultural Heritage	Landscape	Material Assets	Population	Human health	Comment Nature of effects: negative, positive, uncertain, mixed, neutral, reversibility or irreversibility of effects, risks, duration (permanent, temporary, long-term, short-term and medium-term) and cumulative (direct, indirect, secondary and synergistic)
General impacts of each of the three impacts	-	--	--	+/--	+/--	-	+/-	++	++	+/-	The SDP has set the framework for the development of over 70, 000 new houses. These developments will be supported by the allocation of 255ha of employment land to meet the needs of the City and the Shire in the next 25 years. The developments proposed are phased between now between the 2035. This means that any effects on the environment are likely to persist from now in the **short-term,** through the **medium term** to the **long-term**. Whether the effects are **temporary and reversible or permanent and irreversible** depends on how they are implemented. An assessment of **cumulative effects (direct, indirect, secondary and synergistic**) also depends on how the plan is implemented and how the effects of the SDP interact with the effects of other plans, programmes and projects are being implemented. In general however, housing development and construction is likely to have short-term adverse affects on soil through soil erosion, desegregation, compaction and pollution during construction phases. Depending on how completed buildings are managed and operated, the plan is likely to have short to medium-term mixed effects on soil (through loss, sealing, erosion and compaction). It needs to be stated that the strict regime of waste regulation and the use of modern facilities ensures that contamination is minimised through land fill or other forms of waste management. Housing and industry or retail facilities' development could potentially have short-term negative impacts on water through a change in water table, stream flows, site water budgets, localised flooding, silt deposition and water-borne pollution. Inevitably, some localised impacts on watercourses would occur due to the development. Without the assessment and approval of Scottish Water, the scale of housing development proposed in the SDP can have a long-term effect on water abstraction, particularly during periods of unexpected prolonged drought. On the general water environment in the City and Shire, there is the potential for diffuse run-off from agricultural practices, excessive underwater noise from increased economic activity in the City Region causing disturbance to dolphin populations and commercial and sewage effluent causing deterioration of water quality. Greenfield development is likely to have long-term irreversible adverse impact on biodiversity through the loss of habitats, habitat fragmentation or disturbance to species that use the site as a habitat. The development of degraded agricultural land may be enhanced through landscaping and structure planting and become more species rich than monoculture and degraded agricultural land. The scale of development to be accommodated on sites could have a long-term negative impact on climate due to increased use of resources and increased emissions. Operation and management of existing built environment and new buildings will increase resource use. On the other hand, new buildings are more efficient than existing stock of buildings. Therefore if degraded housing stock is redeveloped through regeneration, the impact on climate is likely to have long-term positive effects. The scale of developments proposed is likely to have long-term effect on travel and air quality, particularly in towns and Aberdeen City where air quality is an issue. Development of employment land is likely to influence air quality if manufacturing industries are developed for heavy and chemical processing. Moreover, quarrying for aggregates, construction and demolition, generation, storage and disposal of waste as well as vehicular movement could contribute to release of particulate matter, point-source pollution and nuisance.
General impacts of each of the three impacts contd.	-	--	--	+/--	+/--	-	+/-	++	++	+/-	Equally, if the scale of developing biomass plants increase, it is likely to release particulate matter. For population, human health and material assets, large-scale housing development is likely to have long-term positive affects. Provision of new housing in conformity with new building standards can enhance good health and social justice for people with no access to housing now gaining access to housing. Since new homes are more energy efficient than the existing stock; they reduce

											running costs and assist in decreasing fuel poverty. However, poor air quality is likely to have long-term of effect on human health. Greenfield development is likely to have a negative impact on landscape. These effects may weaken the sense of place, the identity of existing settlements and landscape character in places. Depending on implementation strategies, housing development proposed on these sites could positively or adversely affect the built features, their context, pattern of past historic use, and associations of the historic environment, which encompasses built heritage features (ancient monuments, archaeological sites and landscapes, historic buildings, townscapes, parks, gardens and designed landscapes, as well as marine heritage) and the context or setting in which they sit, and the patterns of past use, in landscapes and within the soil (archaeology), and also in our towns, villages and streets. The planning and design of developments, which conforms, substantially to the City's existing design, layout, material and quality is likely to have long-term positive affects. But new developments that deviate from existing designs could adversely affect the setting of historic settlements in the long-term. New housing provides the scope for creation of fixed assets, the use of natural and material assets, promoting waste minimisation, recycling and composting. Development and use of the allocated employment land is also like to have similar impacts. In addition, industrial activities can additional adverse impact on climatic activities, waste discharge through manufacturing and retails activities and vehicular movements.
Preferred Option: Retaining proposal in the last Structure plan	-	--	--	+/-	+/-	-	+/-	++	++	+/-	Same as the general assessment
Alternative 1: Developments concentrated in the City (about 75%)	--	--	--	+/-	+/-	-	+/-	++	++	+/-	The general assessment applies to this option except that the following changes will occur. The effects of these developments concentrated in the City are likely to have more long-term effects on air quality, human health, cultural heritage and landscape of the City. It may however help to maintain the landscape setting of the surrounding settlement. Since the City and Shire depend on the same River Dee, the effects on water is likely to be the same. Although much land will be taken in the City, developments will be directed away from European protected sites in the Shire. Putting most developments in the City is better for the environment and travel.
Alternative 2 Dispersed Development (75% in the Shire	-	--	--	-	+/-	-	+/-	++	++	+	The general assessment applies to this option except that the following changes will occur. There is less potential for using brown field sites and therefore worsening the climate situation. Besides, more fossil fuel will be burnt travelling across the City and the Shire. Because of the number of European sites scattered in the Shire, the option is likely to have long-term effects on sensitive sites than the other options.
Key	+ = positive effect ++ = significant positive effect - = negative effect -- = significant negative effect 0 = neutral effect ? = uncertain effect										

Appendix 6.2 Housing and Employment Land Allocations

SEA Topics Policy Options	Air	Water	Soil	Biodiversity	Climatic Factors	Cultural Heritage	Landscape	Material Assets	Population	Human health	Comment Nature of effects: negative, positive, uncertain, mixed, neutral, reversibility or irreversibility of effects, risks, duration (permanent, temporary, long-term, short-term and medium-term) and cumulative (direct, indirect, secondary and synergistic)
General impacts of each of the three impacts	-	--	--	+/--	++/--	-	+/-	++	++	+/-	The SDP has set the framework for the development of over 70, 000 new houses. These developments will be supported by the allocation of 255ha of employment land to meet the needs of the City and the Shire in the next 25 years. The developments proposed are phased between now between the 2035. This means that any effects on the environment are likely to persist from now in the **short-term,** through the **medium term** to the **long-term**. Whether the effects are **temporary and reversible or permanent and irreversible** depends on how they are implemented. An assessment of **cumulative effects (direct, indirect, secondary and synergistic**) also depends on how the plan is implemented and how the effects of the SDP interact with the effects of other plans, programmes and projects are being implemented. In general however, housing development and construction is likely to have short-term adverse affects on soil through soil erosion, desegregation, compaction and pollution during construction phases. Depending on how completed buildings are managed and operated, the plan is likely to have short to medium-term mixed effects on soil (through loss, sealing, erosion and compaction). It needs to be stated that the strict regime of waste regulation and the use of modern facilities ensures that contamination is minimised through land fill or other forms of waste management. Housing and industry or retail facilities' development could potentially have short-term negative impacts on water through a change in water table, stream flows, site water budgets, localised flooding, silt deposition and water-borne pollution. Inevitably, some localised impacts on watercourses would occur due to the development. Without the assessment and approval of Scottish Water, the scale of housing development proposed in the SDP can have a long-term effect on water abstraction, particularly during periods of unexpected prolonged drought. On the general water environment in the City and Shire, there is the potential for diffuse run-off from agricultural practices, excessive underwater noise from increased economic activity in the City Region causing disturbance to dolphin populations and commercial and sewage effluent causing deterioration of water quality. Greenfield development is likely to have long-term irreversible adverse impact on biodiversity through the loss of habitats, habitat fragmentation or disturbance to species that use the site as a habitat. The development of degraded agricultural land may be enhanced through landscaping and structure planting and become more species rich than monoculture and degraded agricultural land. The scale of development to be accommodated on sites could have a long-term negative impact on climate due to increased use of resources and increased emissions. Operation and management of existing built environment and new buildings will increase resource use. On the other hand, new buildings are more efficient than existing stock of buildings. Therefore if degraded housing stock is redeveloped through regeneration, the impact on climate is likely to have long-term positive effects. The scale of developments proposed is likely to have long-term effect on travel and air quality, particularly in towns and Aberdeen City where air quality is an issue. Development of employment land is likely to influence air quality if manufacturing industries are developed for heavy and chemical processing. Moreover, quarrying for aggregates, construction and demolition, generation, storage and disposal of waste as well as vehicular movement could contribute to release of particulate matter, point-source pollution and nuisance.
General impacts of each of the three impacts contd.	-	--	--	+/--	++/--	-	+/-	++	++	+/-	Equally, if the scale of developing biomass plants increase, it is likely to release particulate matter. For population, human health and material assets, large-scale housing development is likely to have long-term positive affects. Provision of new housing in conformity with new building standards can enhance good health and social justice for people with no access to housing now gaining access to housing. Since new homes are more energy efficient than the existing stock; they reduce

											running costs and assist in decreasing fuel poverty. However, poor air quality is likely to have long-term of effect on human health. Greenfield development is likely to have a negative impact on landscape. These effects may weaken the sense of place, the identity of existing settlements and landscape character in places. Depending on implementation strategies, housing development proposed on these sites could positively or adversely affect the built features, their context, pattern of past historic use, and associations of the historic environment, which encompasses built heritage features (ancient monuments, archaeological sites and landscapes, historic buildings, townscapes, parks, gardens and designed landscapes, as well as marine heritage) and the context or setting in which they sit, and the patterns of past use, in landscapes and within the soil (archaeology), and also in our towns, villages and streets. The planning and design of developments, which conforms, substantially to the City's existing design, layout, material and quality is likely to have long-term positive affects. But new developments that deviate from existing designs could adversely affect the setting of historic settlements in the long-term. New housing provides the scope for creation of fixed assets, the use of natural and material assets, promoting waste minimisation, recycling and composting. Development and use of the allocated employment land is also like to have similar impacts. In addition, industrial activities can additional adverse impact on climatic activities, waste discharge through manufacturing and retails activities and vehicular movements.
Preferred option: Even spread of developments in all corridors.	-	--	--	+/-	+/-	-	+/-	++	++	+/-	The general assessment applies to this option except that the following differences will occur. Because developments are more evenly spread than other options the effects are not likely to differ from the general assessment. The advantage of this option is that the effects of the developments are not likely to put pressure on any critical resources in any particular area. Pressure on air quality and health problems that will increase or be exacerbated in towns and cities will be distributed to other areas. Again encroachment on the landscape will be evenly distributed in this option and so will the effects on cultural heritage be less severe. The overall effect on biodiversity will be the same for all options.
Alternative 1: The bulk of the allocation is proposed for Portlethen – Stonehaven corridor with no allocation for Ellon – Blackdog corridor.	--	--	--	+/-	+/-	-	+/-	++	++	+/-	The general assessment applies to this option except that the following differences will occur. This option is likely to put pressure on any critical resources in this particular area. Pressure on air quality and health problems will increase or be exacerbated in towns in this corridor. Again encroachment on the landscape will not be evenly distributed in this option and so will the effects on cultural heritage be more severe. Because development is likely to be concentrated within Portlethen – Stonehaven corridor, the developments are likely to have long-term effects on Red Moss of Netherly, and Garon Point. Moreover air quality issues are likely to increase Portlethen and Stonehaven.
Alternative 2: Developments are proposed to be concentrated within Inverurie – Blackburn and Portlethen – Stonehaven corridors	--	--	--	+/-	+/-	-	+/-	++	++	+/-	The general assessment applies to this option except that the following differences will occur. Pressure on air quality and health problems will increase or be exacerbated in towns in this corridor. Again encroachment on the landscape will not be evenly distributed in this option and so will the effects on cultural heritage be more severe. Developments in Inverurie - Pitcaple corridor is likely to have negative effects on River Don and its tributaries. The additional effect will be on water quality. The air quality issue will be around Inverurie.
	+ = positive effect ++ = significant positive effect										

Key	- = negative effect -- = significant negative effect 0 = neutral effect ? = uncertain effect

Appendix 6.3: Assessment of Policy Options

SEA Topics / Policy Options	Air	Water	Soil	Biodiversity	Climatic Factors	Cultural Heritage	Landscape	Material Assets	Population	Human health	Comment Nature of effects: negative, positive, uncertain, mixed, neutral, reversibility or irreversibility of effects, risks, duration (permanent, temporary, long-term, short-term and medium-term) and cumulative (direct, indirect, secondary and synergistic)
Economic Growth											
Preferred Option: (SDP Economic Growth Option)	-	--	--	+/--	++/-	-	+/-	++	++	+/-	This option essentially covers employment land allocation, high-speed communication, innovation, retail and tourism, viability of town centres, regional shopping facilities, protection and improvement of infrastructure, supporting freight by rail and sea. In addition it seeks to roll-out high-speed broadband throughout the area, improve high-speed digital communications networks and support regional assets such as Aberdeen airport and the region's main ports as means of accessing international markets and providing services to Orkney and Shetland. It is also reasonable to state that housing development will create an enabling environment for the economy to grow. For this reason, the assessment will be the same as the general assessment in Tables 6.1 and 6.2 above. The emphasis on digital and broadband technology is likely to promote remote working and increase that value of material asset in urban and rural areas. For this reason, this option is likely to be more sustainable than the other options in terms of climate change.
Alternative Objective 1: (Structure Plan Economic growth alternative**)**	-	--	--	+/--	+/--	-	+/-	++	++	+/-	This option essentially covers employment land allocation, high-speed communication, innovation, retail and tourism, viability of town centres, regional shopping facilities, protection and improvement of infrastructure and supporting freight by rail and sea. It is also reasonable to state that housing development will create an enabling environment for the economy to grow in this option too. For this reason, the assessment will be the same as the general assessment in Tables 6.1 and 6.2 above. However unlike the SDP option, this option does not emphasise digital and broadband technology. It is therefore less likely to promote remote working and increase that value of material asset in urban and rural areas. For this reason, this option is likely to be less sustainable than the SDP option in terms of climate change.
Alternative 2: (Main Issues Report sustainable economic growth alternative)	-	--	--	+/--	++/--	-	+/-	++	++	+/-	Sustainable Economic growth is the main issues objective. This is essentially taken into account in the preferred option and considered that a low-carbon economy (providing renewable energy and associated infrastructure and wider energy-related initiatives) brings economic benefits. Connectivity, transport infrastructure and digital infrastructure are at the heart of the main issue. Since this is the option translated into the SDP, this assessment is the same as the SDP option.

Sustainable Development and Climate Change											
Preferred Option: (SDP Sustainable Development and Climate Change Option)	+/-	+	0	-/0	+	-/0	-/0	+	0	+	This option is about reducing carbon dioxide emissions, adapting to climate change effects and limiting the use of non-renewable resources – design and use of new development to be resource efficient having minimal environmental impacts, supply and demand management of energy, renewable energy use, upgrading grid, tacking flooding, managing waste according to waste hierarchy and proximity principles, managing water use. *In addition it encourages increased energy efficiency in existing and new buildings, potential use of supplementary guidance to promote CO2 reductions in buildings through sustainable labelling, CHP in larger buildings, reduced emissions from power stations,* offshore wind, energy from waste, solar, biomass and ground/water/air source heat pumps, *upgraded electricity grid, carbon capture, more emphasis on waste hierarchy, 75% of capacity in SGAs close to Aberdeen and the use of self sufficiency and time-extension, regional concentration options.* Solar panels in conservation areas and wind farms are likely to have adverse effects on biodiversity (birds), landscape and cultural heritage. Major biomass plants may be an issue for air quality depending on how they are implemented. Sustainable development and efficient homes are likely to have long-term positive effects on human health. Savings from energy efficiency is likely to increase people's disposable income and thereby have a positive effect on material asset. Equally have and upgrading infrastructure is likely to have positive effects on material assets.
Alternative objective 1: (Structure Plan Sustainable Development and Climate Change Option)	+/-	+	0	-/0	+	-/0	-/0	+	0	+	This option seeks to reduce carbon dioxide emissions, adapt to climate change effects and limit the use of non-renewable resources – design and use of new development to be resource efficient having minimal environmental impacts, supply and demand management of energy, renewable energy use, upgrading grid, tacking flooding, managing waste according to waste hierarchy and proximity principles, managing water use. The major difference between this option and the SDP option is the lack of emphasis on improving efficiency in existing building stock. Besides, there is less emphasis on renewable energy. For this reason, this option is less likely to have positive effects on climate change, material asset and human health than the SDP option
Alternative objective 2: (Main issues objective not discussed under Sustainable Development and Climate Change)	+/-	+	0	-/0	++	-/0	-/0	++	0	+	**No specific topic on sustainable development and climate change** but separate objectives under waste management (import, export, self sufficiency); Landfill (time extension, site extension, new sites); Policy and Spatial Framework (Waste) existing spatial strategy, regional concentration, identifying sites); carbon neutrality in new development (status quo, building regulations, labelling); water efficiency (do nothing, labelling silver, gold); carbon capture; high voltage line. Since the preferred options in the Main Issues Report have been transferred into the SDP, the assessment is the same as the one for the SDP
Population Growth											
Preferred Option: 500000	-	--	--	+/--	+/--	-	+/-	++	++	+/-	The driving force for economic growth and housing allocation is population projections. On the other hand housing provision and economic growth are drivers of population growth in their right. This projection has had an indirect impact how and where houses are built and employment land is allocated. For this reason, the assessment is likely to be the same as that of the general assessment in Tables 6.1 and 6.2)
Alternative 480000	-	--	--	+/--	+/--	-	+/-	+	+	+/-	Like the SDP, the driving force for economic growth and housing allocation is population projections. On the other hand housing provision and economic growth are drivers of population growth in their right. This projection has had an indirect impact how and where houses are built and employment land is allocated. However, because the population target is lower in this option than that of the SDP, the impacts are less likely to be positive for population and material asset than for the SDP.

Sustainable Mixed Communities											
Preferred Option: Enhanced with CHP	-/+	+	0	-/0	++	-/0	-/0	++	0	+	This option is about sustainable Mixed Communities (SDP). This option place more emphasis on the use CHPs in larger buildings. To the extent that CHPs are being encouraged in larger buildings, there is the possibility that mixed communities are likely to be more sustainable in terms of climate change. Thus the assessment will be similar to the assessment for sustainable development and climate change.
Alternative: No CHP	-/+	+	0	-/0	+	-/0	-/0	++	0	+	Sustainable Mixed Communities (Structure Plan). Since this option places less emphasis on CHP's in larger development, it is slightly less positive on climate change.
Quality of the environment											
Preferred Option: Housing Stock efficiency	-/+	+	0	-/0	++	-/0	-/0	++	0	+	This option is about the quality of the environment (SDP). It will place emphasis on improving the quality of urban environment resulting from additional measures taken in Sustainable Development and Climate Change such as improving the efficiency of the existing housing stock. Thus this assessment is the same as that of sustainable development and climate change.
Alternative: New build efficiency	-/+	+	0	-/0	+	-/0	-/0	++	0	+	This option is about the quality of the environment. It does not place emphasis on improving the quality of urban environment as it is in the SDP. Thus this assessment is slightly less positive for climate change than that of the SDP.
Accessibility											
Preferred Option: STF	-/+	-	-	-	-	-	-	+	+	-/+	This option is about accessibility. The main idea is that it introduces Strategic Transport Fund to enable delivery of transport projects compared with the last structure plan. Indirectly this option is likely to affect how, where and when infrastructure is provided. The likely effects are varied. On air, in the short term, congestion will be reduced on the roads leading to better air quality. In the long terms, the more roads are built, the more vehicles are used thereby leading to worse air quality problems. If road projects avoid water bodies and courses, they are likely to have neutral effects on water. On the other hand, roads way transverse water courses during their construction phases and pollute water. Short-term flooding from construction works may also impact negatively on water. In general however, housing development and construction is likely to have short-term adverse affects on soil through soil erosion, desegregation, compaction and pollution during construction phases. There might be issues with land take, land fragmentation and effects on qualifying features depending on where road works take place. Road works close to the Dee are likely to be included in such impacts. If this leads to more motor cars in the future, the effects are likely to be negative for climate in the long term. Cultural heritage and landscape may be adversely impacted on depending on where the projects are located. For material assets, population and human health the effects are likely to be positive in the long term except that worsening of air quality in the long term will adversely affect human health.
Alternative: No STF	--	0	0	0	--	0	0	0	0	--	The option here excludes the use of strategic transport fund. Transport projects are less likely to be delivered or delayed. The implication is that if the projects do not go ahead, the existing roads will be choked with traffic creating serious air quality and related health issues. There will also be less positive benefits in terms of material asset. The effects are likely to be neutral for other receptors.
Key	+ = positive effect ++ = significant positive effect - = negative effect -- = significant negative effect 0 = neutral effect ? = uncertain effect										

Appendix 6.4 Cumulative Effects of the Preferred Options

Policy Options	Strategic Options	Housing Allocation	Economic Growth	Sust. Dev & C. C.	Population Growth	Sust Mixed Comm	Qual. of the env.	Access. policy	Cumulative Effects	Comment **Cumulative effects** including **Time crowding** (frequent and repetitive effect); **Time lag** (long delays in cause and effect); **space crowding** (high spatial density of effects); **cross-boundary** (effects occurring distances from source); **synergistic** (effects from multiple sources or combined effects different in nature from the individuals); i**ndirect** (secondary effects resulting from a primary activity); **nibbling** (incremental)
Air	-	-	-	-/+	-	-/+	-/+	-/+	-/+	Air; There are areas in the City which are AQMA, so the large number of houses proposed in the City is likely to create incremental air quality hotspots in other areas of the City, through **time-crowding effects**, if the proposed transport improvements do not go ahead. In the longer term, improvement of transport facilities can encourage more vehicles on the roads leading to future air quality issues through **time lag**. Depending on the timing of the developments, there is the possibility that dust nuisance will be generated by several developments or demolition works (in regeneration priority areas) leading elevated levels of particulate matter. The same argument is relevant if many biomass development activities go on in different areas, through **space crowding effects**. But the present proposals seem to suggest a phasing of developments which will prevent this from happening. Most of the developments will take place away from the structure plan boundary; there is therefore no possibility of **cross-boundary effects. Synergistic effects** of developments on air quality are unlikely. Although there NOx continue to exceed national objectives, these are limited to AQMA in Aberdeen City and the combination of rainfall with NOx is not likely to be so significant as to cause acid rain in the whole SDP area. Again it is not considered that there will be a significant and **indirect** air pollution issues for the City and the Shire arising from the deposition of air pollutants on other receptors. If the proposed transport improvements do not go ahead, small additional traffic pressures will act cumulatively in the long-term to increase overall emissions of air pollutants through nibbling effects. Specifically, the plan consists of two conflicting ideas. First, the housing and employment land developments as well as accessibility options are likely to have negative implications for this receptor. Second, sustainable development and mixed development objectives, on the other hand, are likely to have positive benefits for this receptor in the long-run. Sustainability issues do not necessarily neutralise air quality issues, through **neutralising effects** since some aspects of that provision (such as biomass) has air quality issues inherent in it. Overall, the strategic, housing allocation, economic growth and population options are likely to have negative effects on air in the grand scheme of development in the City and Shire. For LDP areas, this effect might be different. Sustainable economic growth/climate change, sustainable mixed development, quality of the environment and access options have mixed effects. This is because of the positive effects in measures such as sustainable development and renewables as well as negative effects from indirect long-term traffic build up and biomass.

Water	¦	¦	¦	+	¦	+	+	-	¦	Water: In the future numerous water abstractions are possible under the phased SDP because of the large number of houses proposed in the City and Shire. If agreements are not reached with SNH, SEPA and Scottish Water on future solutions, the SDP is likely to create incremental burden on water resources, through **time-crowding effects.** If water technologies and new ways of harvesting water are not resolved, it is likely that water requirement for water abstraction will lead to adverse effects on River Dee as well as protected species through **time lag effects**. The reasons given for time lag effects are still relevant to **space crowding effects**. Most of the developments will take place away from the structure plan boundary; there is therefore no possibility of **cross-boundary effects.** The long-term survival of the City and the Shire depend on the health of their built and natural environment. Water resources could be over-exploited if a combination of measures is not in place to tackle it. For this reason, **synergistic effects** of developments on water are likely. The essence of this SDP is to promote sustainable economic growth while addressing climate change issues. It is therefore not envisaged that unsustainable planning will be allowed to affect our water environment causing **secondary, induced or indirect effects** on this receptor. The implementation of the SDP will not permit incremental adverse effects on the water environment to go without appropriate mitigation measures. The SDP is not emphasising agricultural development. It promotes housing developments and most development is around in towns and the City. Nutrient loading from agricultural activities will not be an outcome of this plan. It is therefore not envisaged that nibbling effects are likely. The scale of development envisaged is so large that the SDP is likely to have long-term implication for water abstraction, water pollution, run-offs, localised flooding and morphology depending on how the plans flowing from the SDP will implement the SDP proposals. Although the SDP promotes water efficiency technologies, the scale of water efficiency technologies envisaged may not be able to compensate for the volume and quality of water resources needed to support the allocations. Overall, the strategic, housing allocation, economic growth and population options are likely to have significant negative effects on water in the grand scheme of development in the City and Shire. Access will have minor negative effects. For sustainable economic growth/climate change, sustainable mixed development, and quality of the environment options, the effect are likely to be positive because of the positive effects of measures such as water technologies.

Soil	--	--	--	0	--	0	0	-	--	Soil: repetitive housing activities over 25 years in the City and Shire providing over 72,000 homes and supporting employment land phased over these years is likely to cause repetitive development activities affecting soil compaction, loss, sealing and erosion; some of which are likely to short-term in nature. However, given that much of the peat soils are located in local growth areas (to the south west), the effect are likely to be **time-crowding effects.** If conditions are not set in application for development in these local growth areas of peaty soil over time the effects are likely to be cumulative in terms of **time lag**. The reasons given for time lag effects are still relevant to **space crowding effects**. But also, large scale infrastructure needed to accommodate the housing numbers is likely to compound soil sealing effects. Most of the developments will take place away from the structure plan boundary; there is therefore no possibility of **cross-boundary effects.** If safeguards are not in place effects of soil sealing, compaction and loss in places will combine with loss of peat soils elsewhere to lead to potential adverse effects on the soils in Aberdeen City and Shire through synergistic effects. For this reason, **synergistic effects** of developments on soil are likely. Equally developments in areas without peat could lead to synergistic effect if vegetation removal, soil compaction, sealing causes surface runoffs and erosion of soils **indirectly** affecting the aquatic ecosystems. It might lead pollution through sediment loadings particularly near water bodies and coastal towns. Incremental sealing, erosion, compaction through continuous development activities in the next 25 years could cause nibbling effects unless safeguards are place. From our assessment, the scale of development envisaged is so large scale that the SDP is likely to have a long-term implication for soil in terms soil lass, soil sealing, soil structural degradation and compaction and perhaps potentials for contamination if more industrial developments take place. Overall, the strategic, housing allocation, economic growth and population options are likely to have significant adverse effects on soil in the grand scheme of development in the City and Shire. Access option is likely to have minor negative effects. Effects of other parts of the SDP are neutral
Biodiversity	+/--	+/--	+/--	0/-	+/--	0/-	0/-	-	+/--	Biodiversity: the proposed housing number is large scale over 25 years; this is likely to affect biodiversity through land take, habitat fragmentation, disturbance to species, and habitat loss through **time-crowding effects** since the developments are phased to continue over all that period**.** There is also the possibility that there will be long delays for the land taken for development to affect other uses of land say for agricultural purposes. Positively, any poor bio-diverse land could enriched in biodiversity through future improvements through **time lag.** Large scale developments taking place in the land which was otherwise undeveloped could face recreational pressure from people and thereby causing disturbance to protected species**.** This is a **space crowding effect.** Most of the developments will take place away from the structure plan boundary; there is therefore no possibility of **cross-boundary effects. While adverse synergistic effects** of developments on biodiversity are likely, the combined effects of improving biodiversity through urban landscape, structure planting and improving the quality of poor biodiverse land can have positive synergistic effects. While increased recreational activity will arise from tourism promotion, development of houses in the natural environment will **indirectly** increase the prospects of recreational activity likely to cause disturbance to protected species if safeguards are not in place. Piece meal allocations in the local growth areas could compound over time to have a nibbling effect on biodiversity. The scale of development envisaged is so large that the SDP is likely to have long-term implication for biodiversity in terms land take, habitat fragmentation, disturbance to species through increased recreational use and habitat loss. On the plus side, the possibility that species-and-habitat-poor bio-diverse land (such as agricultural land) can be enhanced through development makes it possible to have some positive effects. The scoring reflects our reasoning.

Climatic Factors	+/--	+/--	+/--	++	+/--	++	++	-	--/++	Climate: Already the footprint of Aberdeen City and Shire is among the highest in Scotland through high consumption of fossil fuel from travel and domestic consumption of energy, particularly for the housing stock. Without reversing this trend, the housing numbers proposed in the SDP over the next 25 years is likely to have negative **time-crowding effects**. Given that much of the peat soils in Aberdeen City and Shire are located towards the south-west of the region and will be affected by developments in local growth areas, any development in and around peat soil are likely to have long-term effect on climate change. If longer term, improvement of transport facilities encourages more vehicles on the roads, this will lead to future consumption of more fossil fuels and thereby adversely affecting climate through **time lag**. Similarly, there is a time lag between development on peat soils and the change in climate. High density and mixed developments reduces the need to travel long distances. On the other hand if people's travel habit between the City and the Shire remain unchanged fuel consumption through travel will persist. Thus in terms of **space crowding**, the effects are likely to be mixed. Given developments in the local growth areas are more measured, these aspects of the SDP are not likely to have significant space crowding effects. Most of the developments will take place away from the structure plan boundary; but the effects of climate change transcend regional and national boundaries and for this matter some **cross-boundary effects** are possible. The effects of the plan from different perspectives are likely to have positive **synergistic effects**. For example, the efficiency of the existing housing stock, efficiency standards for new housing and mixed development are cases in point. On the other hand energy consumption through increased travel and potential effects on peat soils are likely to have adverse synergistic effects. **Indirectly** housing development will induce more energy consumption. And the combined effects of energy use in new houses and the existing housing stock (no matter how efficient they are) can accumulate to large impacts for climate. The fact that although a large proportion of house building takes place in the strategic growth areas, allowance is given for some developments in local growth areas. The combined effects of housing development in all these areas can be **nibbling** in effect. Specifically, the plan consists of two conflicting ideas. First, the housing and employment land developments as well as accessibility options are likely to have negative implications for this receptor. Second, sustainable development and mixed development objectives, on the other hand, are likely to have positive benefits for this receptor in the long-run. Sustainability issues do not necessarily neutralise climate change issues, through **neutralising effects** since some aspects of that provision (such as biomass) has air quality issues inherent in it. Overall, the strategic, housing allocation, economic growth and population options are likely to have negative effects on air in the grand scheme of development in the City and Shire. For LDP areas, this effect might be different. Sustainable economic growth/climate change, sustainable mixed development, quality of the environment and access options have mixed effects. This is because of the positive effects in measures such as sustainable development and renewables as well as negative effects from indirect long-term traffic build up and biomass. The scoring reflects our reasoning
Cultural Heritage	-	-	-	0/-	-	0/-	0/-	-	-	The developments are proposed along the transport corridors and around towns and Aberdeen City. Since historic remains are more likely to be concentrated in built environment than the natural environment, it is possible that some negative effects on the historic environment are likely. Although large scale housing will take place in the region, the protection for built features and the fact the fewer developments will take place outside the settlements means that the SDP in unlikely to have significantly negative effect on this receptor through time-crowding, time lag, space crowding effects, synergistic and nibbling effects. The effects of the SDP in relation to context, pattern of past historic use and associations of the historic environment, and the context or setting in which they sit, and the patterns of past use, in landscapes and within the soil (archaeology), and also in our towns, villages and streets are likely to be negative.

Landscape	+/-	+/-	+/-	0/-	+/-	0/-	0/-	-	+/-	**Landscape:** Repetitive housing activities over 25 years in the City and Shire providing over 72,000 homes and supporting employment land phased over these years is likely to cause repetitive development activities affecting land form, land use and land cover, water; forests, woodlands and trees; agriculture; relationship between land form and land use; buildings and structures in the landscape; urban landscape/settlement pattern; linear and/or point features, openness, scale, colour, texture, visual diversity, line, pattern, movement, solitude, naturalness, historical and/or cultural associations. On the other hand new forms of land cover could be created through the developments. Because of these potential improvements to the landscape; the effects in terms of **time-crowding** are mixed. The phasing of the developments over the next 25 years is likely to be cumulative in terms of **time lag** for how the landscape is shaped in the future. The reasons given for time lag effects are still relevant to **space crowding effects**. But also, large scale infrastructure needed to accommodate the housing numbers is likely to affect land form, land use and land cover of the City and the Shire. Most of the developments will take place away from the structure plan boundary; there is therefore no possibility of **cross-boundary effects.** If safeguards are not in place effects of loss of landscape features will lead to potential adverse effects for Aberdeen City and Shire's landscape in terms of **synergistic effects**. **C**ontinuous development activities in the next 25 years could cause **nibbling effects** unless safeguards are place. The developments in the SDP are proposed along the transport corridors and around towns and Aberdeen City. It is therefore possible that some negative effects on the landscape are possible in areas where development will take place. On the plus side, the possibility that areas of poor landscape quality can be enhanced through development and structure planting makes it possible to have some positive effects. The assessment reflects our reasoning.
Material Assets	++	++	++	++	++	++	++	+	++	Repetitive housing activities over 25 years in the City and Shire providing over 72,000 homes and supporting employment land phased over these years is likely to cause repetitive development activities affecting the acquisition of new assets and improvement of the existing infrastructure. New housing, employment land, infrastructure and sustainable mixed communities provide the scope for creation of fixed assets. The use of natural and material assets, promoting waste minimisation, recycling and composting is encouraged. Development and use of the allocated employment land is also likely to have similar impacts. In that sense it is not envisaged that there will be any adverse effects accumulating through time-crowding, time lag, space crowding effects, synergistic and nibbling effects. On the other hand the SDP is likely to have significant positive effects overall.
Population	++	++	++	0	++	0	0	+	++	Repetitive housing activities over 25 years in the City and Shire providing over 72,000 homes and supporting employment land phased over these years is likely to cause repetitive development activities affecting acquisition of new assets by most people living in Aberdeen City and Shire. New housing, employment land, infrastructure and sustainable mixed communities in the size proposed in the SDP are likely to meet the needs of many people and enhance their quality of life. In that sense it is not envisaged that there will be any adverse effects accumulating through time-crowding, time lag, and space crowding effects, synergistic and nibbling effects. The SDP is likely to have significant positive effects overall.

Human health	-/+	-/+	-/+	+	-/+	+	+	-/+	-/+	Human Health. This in part is related to air quality issues. As already mentioned under air quality, there are air quality issues in parts of Aberdeen City and much less in other towns of Aberdeenshire. The effects of large scale housing and the use of biomass has been assessed to have cumulative effect through time-crowding, time lag, space crowding effects, synergistic and nibbling effects. Since respiratory disease are related to the quality of the air breathed, there is a potential for adverse or beneficial human health effects related to how air quality improves or deteriorates. However, the number and quality of development proposed, energy efficiency measures in the existing and new housing stock as well as the air quality measures ensured through accessibility and green networks are likely to be significantly positive for the health and wellbeing of the people of Aberdeen City and Shire. In the long term, negative effects of traffic and biomass are likely to have adverse effects on people living around polluted areas. For this reason the cumulative effects on air is mixed overall. There is the potential of some mixed effects arising from the SDP including exposure to high noise levels and transport-induced vibration; reducing health inequalities and improving access to health facilities. If safeguards are not in place there is a risk of road accidents; (particularly in deprived areas) and accidents on public transport and pavements. Cumulatively if older run-down areas are regenerated and the streets are lighted the SDP will likely reduce crime and/or fear of crime as well as address employment issues related to people with low incomes. Besides the elements of the plan such as sustainable mixed communities are likely to provide accessibility of goods, opportunities and services to all, particularly those in disadvantaged communities. These positive effects will accumulate through time and space. Besides if people living in Aberdeen City and Shire are encouraged to make use of the green networks through vigorous recreational activities, as well as walking and cycling opportunities, health issues such as obesity, high blood pressure and other cardio-vascular diseases will be reduced.
Key	+ = positive effect ++ = significant positive effect - = negative effect -- = significant negative effect 0 = neutral effect ? = uncertain effect Direct (SDP → Impact A) Indirect (SDP→ Impact A → Impact B Induced (SDP→other PPS →Impact A) Additive (Impact A +Impact B= Impact A+B) Neutralising (Impact A +Impact B <Impact A+B) Synergistic (Impact A +Impact B>Impact A+B)									

Appendix 6.5: Links to other PPS & Environmental Protection Objectives

Name of PPS / Environmental protection objective	Main requirements of the PPS	Relationship with PPS
INTERNATIONAL		
Nature Conservation • The Habitats Directive 92/43/EEC • The Birds Directive 2009/147/EC • European Biodiversity Framework	Protection of habitats and species. Protection of wild birds and their habitats. Promotes the conservation and sustainable use of biological diversity.	Plan should protect identified habitats and species. Strategies and policies should not hinder protection, management and control of species and should support the conservation and sustainable use of biological diversity.
Waste • The Landfill Directive 99/31/EC • The Waste Framework Directive Directive 2008/98/EC	Sets framework for waste management. Consideration of the whole life cycle of landfilled waste Includes targets to reach by 2020. Aims to prevent or reduce the pollution potential and negative effects on the environment	Plan should consider necessary infrastructure requirements in consistency with the PPS. This includes the possible identification of suitable locations for large-scale waste management facilities whilst safeguarding the natural and built environment.
Water • Water Framework Directive 2000/60/EC	Safeguards the sustainable use of water systems; Supports the status of aquatic ecosystems and environments; Addresses groundwater pollution; flooding and droughts; river basin management planning.	The Strategic Development Plan should consider sustainable use of water and mitigate the effects of floods and droughts.
NATIONAL		
Overarching • National Planning Framework for Scotland 2 (NPF2) (2009) • Scottish Planning Policy (SPP) (2010)	Guides Scotland's development to 2030, Sets out strategic development priorities to support the Scottish Government's central purpose of sustainable economic growth. Sets out the main purpose and tasks for land use planning, development planning and control for Scotland.	The Plan must take account of NPF2, its key aims and the 3 National Developments identified within the SDP area. Underpins the development and implementation of the SDP.
Cross Sectoral • Scotland's National Transport Strategy (2006) • Strategic Transport Projects Review (2009) • The Government Economic Strategy (2007) • Choosing Our Future: Scotland's	Sets out a long term vision for transport. Identifies reduction of emissions, improved quality, accessibility and affordability Sets out recommendations for land-based strategic transport interventions in Scotland's national transport network from 2012. Identifies strategic priorities critical to achieving sustainable economic growth. Sets out a vision and commitment to build a more sustainable	The SDP should seek to integrate with the aims of the strategies. Implementing the SDP should reduce the need to use private transport and assist in the reduction of emissions. It should support sustainable economic growth whilst meeting the differing needs of a diverse population. It should aim to conserve Scotland's biodiversity whilst reducing resource depletion and encouraging responsible

Sustainable Development Strategy (2005) • Natural Resource Productivity (2009)	Scotland. Sets out a vision for the future direction of agriculture in Scotland in a way which is sustainable but delivers the maximum economic and public benefit.	use of our natural resources. SDP should take into account the need to reduce impact on, and adapt to, climate change. The SDP should consider the impact on Scottish agriculture when considering its strategy or development proposals.
Air & Climate Change • Scottish Climate Change Delivery Plan (2009) • Air Quality Strategy for England, Scotland, Wales and Northern Ireland (2007) • Towards a Low Carbon Economy for Scotland: Discussion Paper (2010)	Sets out high level measures required to meet Scotland's statutory climate change targets, to 2020 and in the long term. Provides a clear, long-term vision for improving air quality in the UK in line with the Environment Act (1995) setting out associated air quality objectives and policy options. Sets out the Scottish Government's plans to move towards a low carbon economy in Scotland.	SDP should include measures to contribute to the reduction of greenhouse gases considering methods of adaptation, diversification and mitigation. This may include policies that: • promote sustainable alternatives to car and reduce congestion traffic pollution; and • encourage sustainable development and land use. Implementation of the SDP should not result in a deterioration of air quality. The SDP must contribute to the promotion of development which helps to reduce Scotland's carbon footprint and help meet carbon saving targets for Scotland.
Cultural Heritage & Built Environment • The Scottish Historic Environment Policy (2009) • Designing Places: A Policy Statement for Scotland (2001) • Scottish Executive (2006) People and Place: Regeneration Policy Statement	Provides a framework for more detailed strategic policies and operational policies in managing the historic environment. Sets out the overarching policy on design in order to make successful places. Sets out a forward-looking strategic framework and priorities for regeneration in Scotland encouraging proactive and integrated approaches.	The Plan should promote the management of the historic environment in a sustainable way which avoids adverse impacts as a result of new development. The plan should set out concisely the local authorities priorities in relation to design, leaving the detail to be provided in guidance documents. The plan should take account of changing regeneration priorities and provide support where possible.
Landscape & Soil • The Scottish Soil Framework (2009)	The main aim of the Framework is to promote the sustainable management and protection of soils consistent with the economic, social and environmental needs of Scotland. A key aspect is the protection of soil as an asset – for the future of the Scottish economy, as well as a contribution to challenges set by climate change.	The SDP should promote the sustainable management of soils.
Material Assets • Firm Foundations – The Future of Housing in Scotland – A Discussion Document (2007) • Building a Better Scotland Infrastructure Investment Plan: Investing in the Future of Scotland (2005)	Sets out the Scottish Governments vision for the future of housing in Scotland: • An increased supply of housing across all tenures, all of which is delivered on the basis of higher environmental and design standards; • More choice of housing that those on lower incomes can afford; • Housing developments that contribute to the creation of sustainable, mixed communities; and • Social housing that provides better value for public expenditure.	The SDP will set the housing requirement for the region over a 20 year period. The spatial strategy will provide a statement of proposals as to the development and land use of land in the area considering housing numbers, types, tenure and promotion of sustainability. The SDP should consider necessary infrastructure requirements in order to achieve sustainable economic growth in the region.

	Sets out the Scottish Governments intentions to improve Scotland's infrastructure. The objectives for this Infrastructure Investment Plan are to improve the: • efficiency of how services are being delivered; • standard of our infrastructure, such as our transport network and school building estate; • business environment, promoting research and development and enabling employment and training opportunities for Scotland's workforce; • co-ordination of our infrastructure investment by geographical area and between portfolios in order to secure extra value from our existing investment and infrastructure programmes; and • co-ordination with the private sector and secure a mixed economy and mixed tenure of investment.	
Nature Conservation & Biodiversity • Wildlife and Countryside Act 1981 (as amended) • The Nature Conservation (Scotland) Act 2004 • Scotland's Biodiversity: It's in Your Hands. A strategy for the conservation and enhancement of biodiversity in Scotland (2004) • The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended) • The Conservation (Natural Habitats, &c.) Amendment (Scotland) Regulations 2007 • Scottish Landscape Forum' (2007) Scotland's living landscapes	Gives protection to wildlife and countryside from disturbance, injury intentional destruction or sale. Duties are placed on public bodies to further the conservation of biodiversity and sets out measures to protect and enhance the biological and geological natural heritage of Scotland. Protects individual sites and promotes conservation on a broader scale. Aims to halt loss and reverse decline of species and habitats. Specific measures set out how to Includes measures for designated sites, habitats and species. Promotes good management of landscapes.	The Strategic Development Plan should avoid disturbance to wildlife and the countryside through the implementation of the plan. The Strategic Development Plan should restore, maintain, conserve, promote and protect biodiversity, habitats and species.
Population & Human Health • All Our Futures: Planning for a Scotland with an Ageing Population (2007) • Scottish Executive *Reaching Higher – Building on the Success of Sport 21*(*2007)* • Lets Make Scotland More Active: A strategy for physical activity (2003) • Equality Act 2010	Provides a strategic approach which considers how best to respond to and plan for a Scotland with an ageing population. Sets out the long-term aims and objectives for sport and plans for its delivery and evaluation. Aims to increase and maintain the proportion of physically active people in Scotland setting out targets to 2022. Sets a framework which protects individuals from unfair treatment and promotes a fair and more equal society. Sets out the key actions that are needed to ensure that greenspace delivers for people, communities and places across the whole of	The SDP should consider the needs of an ageing population into its strategic actions. The SDP should increase opportunities for provision of physical activities infrastructure. The plan will consider the needs of the society in the region. The SDP should take account of the actions required to deliver quality greenspace to shape better places and increase quality of life for those working and living in the SDP area.

• 'Making the Links: greenspace for a more successful and sustainable Scotland' (2009)	urban Scotland.	
Water • Water Environment (Controlled Activities) (Scotland) Regulations 2011 • Water Environment and Water Services (Scotland) Act (WEWS) 2003 • The Flood Risk Management (Scotland) Act 2009 • River Basin Management Plan for Scotland (2009) • Scottish Water Strategic Asset & Capacity Development Plan (2009) • SEPA Indicative Flood Map (2006) • SEPA Groundwater Protection Policy for Scotland v3: Environmental Policy 19 (2009) • Action Programme for Nitrate Vulnerable Zones (Scotland) Regulations 2008 • Our Seas – a shared resource. High Level Marine Objectives (2009) • Marine (Scotland) Act 2010	Protects the water environment that integrates the control of pollution, abstractions, dams and engineering activities in the water environment. Ensures that all human activity that can have a harmful impact on water is controlled. Creates a framework in which organisations involve in flood risk managed can coordinate actions to delivery sustainable and modern approaches to flood risk management. Details the strategy for River Basin Management Planning in Scotland. Provides a description of Scottish Waters processes and systems for calculating capacity available, at the 1981 waste water treatment works (WWTW) and 294 water treatment works (WTW) serving Scotland. Provides an estimate at the national scale of areas at risk from river and coastal flooding (areas with a 0.5% (1 in 200) or greater probability of being flooded in any given year) and is to be used as a strategic flood management tool. Aims to provide a sustainable future for Scotland's groundwater resources by protecting legitimate uses of groundwater. Establishes revised action programmes for nitrate vulnerable zones which aim to reduce water pollution caused by nitrates from agricultural sources and prevent further pollution. Expresses outcomes for the UK marine area and underpins the development of the joint Marine Policy Statement (MPS) (due for completion by 2011) and will guide development of national and regional marine plans. Provides a framework which will help balance competing demands on Scotland's seas and introduces duties for sustainable development, protection and enhancement of marine areas, mitigation of and adaptation to climate change, marine planning and conservation and measures to encourage economic investment.	The plan should not promote development that would have adverse impacts on the water environment or risk failure of water bodies not achieving at least good ecological status by 2015. The SDP should not create flood risks (from the sea or rivers) and should actively promote sustainable flood risk management without conflicting with river basin management plans.
Waste • Scotland's Zero Waste Plan (2010)	The plan outlines Scotland's key objectives in relation to waste prevention, recycling and reducing the amount of waste sent to landfill on the journey to a Zero Waste Scotland. The plan proposes targets for Scotland's waste and delivering these targets will be supported by the land-use planning system. Provides a vision for Scotland where all waste is seen as a	SDP should support measures to manage waste in the SDP area.

	resource; Waste is minimised; valuable resources are not disposed of in landfills, and most waste is sorted, leaving only limited amounts to be treated.	
REGIONAL		
Cross Sectoral • Aberdeen City and Shire Structure Plan 2009 • Regional Transport Strategy 2021 (RTS) (2008) • 'Building on Energy Delivering the Vision for 2025' - The Economic Action Plan for Aberdeen City and Shire (2008) •	Guides the development of the Aberdeen City and Aberdeenshire region for the next 25 years. Sets the strategic context for Aberdeen and Aberdeenshire Councils Local Development Plans which in turn set the framework for land use development. Sets out what needs to happen over the period to 2021 to provide a transport system that ensures continued economic growth, improves accessibility and protects the environment and our quality of life in Aberdeen City and Shire. Sets out a 5 year life plan identifying actions to be undertaken towards the longer term economic ambitions for Aberdeen City and Shire.	The SDP should be compatible with the existing structure plan. SDP should seek to integrate with and complement the aims of the RTS in relation to reducing congestion, improving human health, tackling climate change and provision of public transport to reduce dependency on cars. The SDP should support sustainable economic growth.
Nature Conservation & Biodiversity • North East Scotland Local Biodiversity Action Plan (2000) • Forest and Woodland Strategy for Aberdeenshire and Aberdeen (2005)	Ensures the protection and enhancement of the biodiversity in the north east through the development of effective, local, working partnerships; Ensure that national targets for species and habitats, as specified in the UK Action Plan, are translated into effective local action. Provides a framework for woodland development and management.	The Strategic Development Plan should promote and protect biodiversity. The spatial strategy should not result in conflict with forest and woodland priorities.
Population & Human Health • Core Paths and Access Strategies for Aberdeen City Council and Aberdeenshire Council	Core Paths Plans and Access Strategies look to promote themes of: • Green spaces • Human health and well being • Accessibility • Inclusion • Biodiversity	SDP should contribute towards improving the health and well being of the SDP area by promoting core paths and accessibility to the countryside and green places.
Waste and air • Scotland's Zero Waste Plan • Aberdeen City Waste Strategy 2010-2025 • Aberdeen City Air Quality Action Plan 2011	See above. The Zero Waste Plan revoked the Area Waste Plans.	The SDP should promote the aims of the waste hierarchy and may identify new and emerging regional waste facilities. It must ensure that those waste-management facilities can be delivered in a sustainable manner and effects on surrounding communities, the environment and transportation systems are minimised as much as practicable.
Water • River Dee Catchment Management Plan (2007)	• Records the current state of the Dee catchment, including water quality, the type and extent of habitats and species in the	The Plan should contribute to delivering the actions proposed in the Catchment Management Plan. The SDP should not adversely impact on the water

• North East Scotland Area Management Plan (2010) • Tay Area Management Plan (draft)	catchment, and important land management activities. • Identifies key issues and puts forward potential solutions through a series of actions.	environment covered by the area management plans.

Appendix 6.6: Baseline data, targets & trends for Aberdeen City & Shire

Appendix 6.6.1: SEA Topic: Air & Climatic Factors

SEA Indicator	Quantified information	Comparators and targets	Trends	Issues/constraints	Data source(s)
Carbon dioxide (CO_2) emissions	Scotland in 1990 emitted 70.1 mt CO_2e and in 2006 this figure had dropped to 57.6mt CO_2e. To meet the interim target (by 2020) Scotland's emissions will need to drop to 40.5mt CO_2e which is a reduction of –42% from the 1990 baseline and –30% from the 2006 figure. An average household in Aberdeen produces 5175 kg of CO_2 per annum. An average household in Aberdeenshire produces 6318 kg CO_2 per annum.	The UK has both international (Kyoto Protocol) and domestic (Climate Change (Scotland) Act 2009) targets to reduce greenhouse gas emissions. Scotland's targets to reduce emissions of greenhouse gases: • At least 80 per cent lower than the baseline by 2050 • Interim target for 2020 of at least 42 per cent lower than the baseline The average Scottish household produces 5,505 kg CO_2 per annum.	Overall greenhouse gases are decreasing. Latest estimates produced for the UK government suggest that Aberdeen City and Shire released approximately 4.4 million tonnes of CO_2 in 2007, with Aberdeenshire accounting for 59% and Aberdeen City 41%. The high per capita emissions for Aberdeenshire result from high emissions from industrial and commercial gas users, as well as greater transport and landuse emissions. Over the three years that figures have been estimated the totals have not fluctuated greatly with the City figures showing a slight decline, and Aberdeenshire no clear pattern.	New development should consider energy efficiency and conservation as an issue as development will increase the areas carbon footprint. Materials with high CO_2 levels are still popular (e.g. concrete and tarmac). The region has a high energy dependence on fossil fuels for heat and electricity and for transportation.	*Source:* Scottish Government (2009) Climate Change Delivery Plan http://www.scotland.gov.uk/Resource/Doc/276273/0082934.pdf Aberdeen City (2007) State of the Environment Report http://www.aberdeencity.gov.uk/nmsruntime/saveasdialog.asp?lID=15960&sID=883
Natural resources consumption (footprint)	Aberdeen's City annual ecological footprint is 5.80 global hectares per person (gha/person). Aberdeenshire's annual ecological footprint is 5.64 gha/person.	The North East of Scotland exceeds Scotland ecological footprint of 5.37 global hectares per person.	The main contributors to the North East's ecological footprint remain energy consumption, food and drink, and transport.	Aberdeen consumes more resources per person than any other Scottish city and it has the largest footprint in Scotland, which cannot be sustained in the long-term	Aberdeen City (2007) State of the Environment Report http://www.aberdeencity.gov.uk/nmsruntime/saveasdialog.asp?lID=15960&sID=883

Properties at risk within inland and coastal areas	Aberdeen City: 309 inland floodplain 571 coastal (below 5m OD) Aberdeenshire 2,219 inland floodplain 1,743 coastal (below 5m OD)	Scotland: 77,191 inland floodplain 93,830 coastal (below 5m OD) Compared with the rest of Scotland, far fewer properties in Aberdeen and Aberdeenshire are at significant risk from flooding.	The impact of climate change and flooding in the North East is unpredictable. However there may be increased duration and frequency of storms and rising sea levels. Weather throughout the year is predicted to change resulting in longer wetter winters and shorter drier summers with implications for flooding.	There may be an increasing need to implement flood defence systems.	Office of Science and Technology (2005) Foresight report: *Future Flooding Scotland* http://www.foresight.gov.uk/Scotland/Final_Scotland.pdf
Air Quality	Since 2001 Air quality continuous to be an issue in Aberdeen City. Aberdeen was designated as an AQMA in 2001 for continuously exceeding the 2005 annual objective level for nitrogen dioxide (NO_2) of 40 μgm^{-3} .In 2008 the annual mean standard of NO_2 in Union St was 54 micrograms per cubic metre (μgm^{-3}) and in Market St 73 μgm^{-3}, principally from HGVs and buses. The AQMA includes Market St, Union St, King St, Guild St, and Virginia St. Air quality continuous to be an issue into 2010. In addition to the existing monitoring stations NOx, NO, PM10 are now monitored at Anderson Drive, Errol Place, Wellington Road where there are air quality exceedances. NO2 is the main air quality issue monitored	Between 1990 and 2006, UK emissions of PM10 fell by 50%.	While more air quality management areas are declared in the City. There are no air quality management areas in the Shire.	There is an increasing need to increase energy efficiency and reduce our reliance on private transport to improve air quality, greenhouse gas emissions and health. Traffic growth may be a constraining factor in the future.	Scottish Government High Level Summary of Statistics Trends for Environment (2010 as amended) http://www.scotland.gov.uk/Topics/Statistics/Browse/Environment/TrendPDF Aberdeen City Council Air Quality Updating and Screening Assessment (2009) Aberdeenshire Council (2005) *Local Air Quality Management Progress Report* Aberdeenshire Council (2006) Updating and Screening Assessment Aberdeen: Aberdeenshire Council Aberdeenshire Council (2007) *Local Air Quality Management: Progress Report 2007.* Aberdeen: Aberdeenshire Council

	in Westhill, Inverurie, Peterhead, Stonehaven, and Mintlaw. The Annual Mean ugm-3 for NO2 in 2004 ranged between 9.4 (Stonehaven 3) and 34.1 (Inverurie 1); in 2005, it ranged between 9.2 (Stonehaven 3) and 26.5 (Inverurie 1); in 2006 it ranged from 10 (Inverurie 4) to 33 (Inverurie 1) and in 2010 it is estimated that it will range between 8.8 (Inverurie 4) and 28.1 (Inveurie 1).				

Appendix 6.6.2: SEA Topic: Water

SEA Indicator	Quantified information	Comparators and targets	Trends	Issues/constraints	Data source(s)
Ground water and river levels	Scottish Water are currently permitted to abstract up to 145 megalitres per day (MLD) from the River Dee, however, the average amount taken is around 90MLD. It is not anticipated that this license will reduce the permitted abstraction level prior to 2014. Data on ground water in Scotland was not available.	By the 2080s, summer precipitation decreases of 10-20% under the low emissions (Global Sustainability), and 20-30% under the high-emissions World Markets scenario are predicted in the north of Scotland.	• Rainfall levels are predicted to decline during the summer months, which may affect a rivers yield rate, but this will be less severe further north. • Rainfall in winter months is predicted to increase. • Increase in water consumption from industrial consumers and from increased residential development. • Increase in leakages from pipe infrastructure as it 'ages' however Scottish Water continue to make progress on leakage reduction.	There is a need to start reducing water abstraction by incorporating water efficient technologies into new development (industrial and domestic) in light of the predicted decrease in summer rainfall.	Aberdeen City (2007) State of the Environment Report http://www.aberdeencity.gov.uk/nmsruntime/saveasdialog.asp?lID=15960&sID=883 Aberdeen City and Shire SDPA (2010) *Aberdeen City and Shire Structure Plan Monitoring Report*
Quality of water bodies (Ground water)	2010: high status – 0 2010: good status – 42 2010: moderate status – 0 2010: poor status – 8 2010: bad status – 0	The Water Framework Directive states that all water bodies are of good ecological status, or similar objective, by 2015.	Currently there are 121 water bodies achieving 'good' or 'high' standards, representing 46% of the total. 34% of water bodies are in the 'moderate' category and 21% are of 'poor' or 'bad' quality.	It is important that development does not prevent water bodies in the SDP area achieving at least 'good' ecological status in order for the area to reach the targets.	SEPA (09 February 2010) Data from River Basin Management Plan for the Scotland River Basin District 2009
Quality of water bodies (Coastal)	2010: high status – 6 2010: good status – 8 2010: moderate status – 1 2010: poor status – 0 2010: bad status – 0	Same as above	Same as above	Same as above	Same as above

Quality of water bodies (Transitional)	2010: high status – 4 2010: good status – 1 2010: moderate status – 1 2010: poor status – 0 2010: bad status – 0	Same as above	Same as above	Same as above	Same as above
Quality of water bodies (Loch)	2010: high status – 0 2010: good status – 1 2010: moderate status – 0 2010: poor status – 2 2010: bad status – 1	Same as above	Same as above	Same as above	Same as above
Quality of water bodies (River)	2010: high status – 5 2010: good status – 54 2010: moderate status – 87 2010: poor status – 31 2010: bad status – 12	Same as above	Same as above	Same as above	Same as above

Appendix 6.6.3: SEA Topic: Soil

SEA Indicator	Quantified information	Comparators and targets	Trends	Issues/constraints	Data source(s)
Land contamination	There are no statutorily identified contaminated sites in Aberdeen, although there are 900 potentially contaminated sites, which are being considered for investigation. There are 4 statutorily identified contaminated sites in Aberdeenshire. Aberdeenshire Council's Contaminated Land Strategy is currently under review. In Aberdeenshire, there are other potentially contaminated sites, including landfill sites, former gasworks, stations and goods yards, petrol stations and garages, distilleries, smithy's and infilled Coastal.	The total number of sites affected by contamination within Scotland is difficult to judge accurately as individual local authorities use a variety of assessment methods. However, it is estimated that approximately 67,000 sites (82,034 hectares) could be affected by land contamination.	Although only 4 contaminated sites are on the public register in the North East, this may increase as many sites are still to be investigated. Legal regime is in place to deal with contaminated sites therefore this position should improve in the future.	Contaminated land places financial and technological constraints on development. These constraints may dictate the type of development: the feasibility of remedial works may determine that a site is only suitable for industrial use; the cost of remedial works may determine that high density development is the only viable economic option. Contaminated land impacts on the water environment, i.e. coastal surface and coastal waters, and the wider environment including for instance local ecology. In preparing development plans, the Scottish Government	Aberdeen City Council (2001) *Contaminated Land Inspection Strategy* http://www.aberdeencity.gov.uk/web/files/Pollution/ContaminatedLandInspectionStrategy.pdf Aberdeenshire Council (2009) *Public Register of Contaminated Land* http://www.aberdeenshire.gov.uk/environmental/strategy/PublicRegisterofContaminatedLandAug2009.pdf SEPA (2009) *Dealing with Land Contamination in Scotland: A review of progress 2000-2008* http://www.sepa.org.uk/land/land_publications.aspx

				expects planning authorities to encourage and promote the reuse of brownfield land including sites affected by contamination. National planning policy encourages the reuse of previously developed land in preference to Greenfield land. However NPF2 recognises that the concentration of previously used land is not in the North East therefore a higher proportion of new development will have to be on greenfield sites.	
Prime agricultural land (Grades 1 to 3.1)	Aberdeenshire's prime agricultural land is concentrated in central and southern Aberdeenshire. Grade 2 near Laurencekirk (approx 950ha) Aberdeen contains very little prime agricultural land (300ha).	Net loss of Scottish agriculture land from roads, housing and industry has doubled from 588ha in 1989 to 1,402ha in 2003.	Climate change could increase the level of prime agricultural land in Scotland, however this may cause conflicts with sites of high biodiversity value, sensitive or designated sites.	Potential impacts of climate may constrain prime agricultural land available in the future. Prime agricultural land may require further protection from development as demand for development rises and as land for food production rises.	Scottish Executive Statistics (2005): Economic Report on Scottish Agriculture http://www.scotland.gov.uk/Publications/2005/06/2290402/05121 Scottish Government (2009): The Scottish Soil Framework http://www.scotland.gov.uk/Publications/2009/05/20145602/6

Biodegradable Municipal waste landfilled (tonnes): **Municipal waste landfilled (tonnes):**	Aberdeen City: 2004/05 – 74,927 2005/06 – 68,936 2006/07 – 69,931 2007/08 – 67,322 2008/09 – 63,333 2009/10 – 55,654 2010/11 - 49,277 Aberdeenshire: 2004/05 – 83,686 2005/06 – 81,092 2006/07 – 69,204 2007/08 – 70,286 2008/09 – 68,355 2009/10 – 65,864 2010/11 - 68,832 Aberdeen City: 2005/06 – 108,159 2006/07 – 110,964 2007/08 – 107,658 2008/09 – 101,136 2009/10 – 90,800 2010/11 - 80,578 Aberdeenshire: 2005/06 – 129,858 2006/07 – 110,303 2007/08 – 105,750 2008/09 – 101,746 2009/10 – 98,262 2010/11 - 103,771	Scotland's Zero Waste Plan (2010) aims for a recycling and composting rate of 70% by 2020. **Scotland** 2010/11 - 1,103,956 2010/11 - 1,844,333	Over the last 6 years both councils have made progress in increasing levels of recycling, increasing the level from 11% to 27% in Aberdeen City and 13% to 33% in Aberdeenshire. This progress should be viewed in the context of national targets set within Scotland's Zero Waste Plan (2010). There was not a substantial fall in municipal waste sent to landfill in Aberdeen City compared with Aberdeenshire for a number of years until 2009/10 when Aberdeen experienced a significant fall.	Not enough sites for recycling or composting biodegradable municipal waste (large, medium or small scale) to help the local authorities achieve their recycling and landfill targets. Housing, schools, and employment uses (e.g. retail and offices) are of inadequate design to maximise the storing and collection of waste to be recycled. Opposition from the community in relation to energy from waste plants. There has been no substantial drop in municipal waste sent to landfill which will have cost implications for the City in terms of Landfill Tax.	Aberdeen City and Shire SDPA (2010) *Aberdeen City and Shire Structure Plan Monitoring Report* Scotland's Zero Waste Plan (2010) SEPA (2009) Waste Data Digest 11 SEPA (2008) Waste Data Digest 10 SEPA (2007) Waste Data Digest 9 SEPA (2006) Waste Data Digest 8 SEPA (2005) Waste Data Digest 7 www.sepa.org.uk/waste/waste_data/site_capacity__infrastructure/landfill_capacity_report.aspx and municipal waste annual report www.sepa.org.uk/waste/waste_data/waste_data_reports/local_authority_annual_reports.aspx
Municipal waste	Aberdeen City: 2005/06 – 23,080	Scotland 2010/11- 1,200,230	Municipal Waste recycling is		

recycled (tonnes): **Municipal waste composted (tonnes):**	2006/07 – 20,005 2007/08 – 19,527 2008/09 – 19,519 2009/10 – 19,728 2010/11 - 37,471* Aberdeenshire: 2005/06 – 18,449 2006/07 – 26,978 2007/08 – 38,432 2008/09 – 38,941 2009/10 – 40,614 2010/11 - 49,933* Aberdeen City: 2005/06 – 8,825 2006/07 – 10,327 2007/08 – 11,274 2008/09 – 11,423 2009/10 – 13,439 2010/11 - Aberdeenshire: 2005/06 – 6,816 2006/07 – 6,061 2007/08 – 9,549 2008/09 – 9,684 2009/10 – 9,622 2010/11 – *include those composted		falling in Aberdeen City in contrast with Aberdeenshire. There has been an improvement in the amount of waste composted in both districts		
Total municipal waste arising (tonnes):	Aberdeen City: 2005/06 – 140,064 2006/07 – 141,296 2007/08 – 138,459 2008/09 – 132,078 2009/10 – 123,966 2010/11 - 118,049	2010/11 - 3,141,202	Things are improving		

Industrial waste arisings (tonnes): **Construction and demolition waste arisings (tonnes):** **Commercial waste arisings (tonnes):**	Aberdeenshire: 2005/06 – 155,123 2006/07 – 143,342 2007/08 – 153,731 2008/09 – 150,372 2009/10 – 151,010 2010/11 - 154,167 North East Scotland 2005 – 300,000 2006 – 420,000 2007 – 430,000 2008 - 315,525 2009 – 226,326 2005 – 621,254 2006 – 493,590 2007 - 526,013 2008 - 437,146 2009 – 448,602 2005 – 710,000 2006 – 580,000 2007 – 650,000 2008 - 672,986 2009 – 480,261	Scotland 2005 – 2,350,000 2006 – 2,720,000 2007 - 2,760,000 2008 - 2,206,017 2009 – 1,818,343 2005 – 6,412,378 2006 – 6,010,193 2007 - 6,212,857 2008 - 5,492,158 2009 - 8,125,388 2005 – 6,060,000 2006 – 4,920,000 2007 - 5,330,000 2008 - 5,600,647 2009 – 4,747,214	At both regional and national level there were reductions in the amount of C&D waste and Commercial waste but there has been an increase in industrial waste. However, this position reversed in 2009.		
Waste capacity Annual capacity (Tonnes) Quantity of waste accepted (tonnes)	North east 2007 - 3,845,306 2008 - 3,741,977 2009 - 3,500,370* 2010 - 3,516,494* 2007 - 3,899,260 2008 - 1,748,964 2009 - 1,464,247* 2010 - 1,409,272* * Aberdeen City and Shire total	Scotland 2007 - 39,987,613 2008 - 37,843,490 2009 - 38,022,367 2010 - 38,009,045 2007 - 16,392,335 2008 - 17,684,064 2009 - 14,023,400 2010 - 15,966,129			www.sepa.org.uk/waste/waste_data/site_capacity_infrastructure/national_capacity_reports.aspx and landfill capacity reports -

Landfill capacity **Inert waste Landfilled** **Inert landfill capacity** **Non hazardous landfilled** **Non hazardous landfill capacity**	Northeast 2007 - 164,824 2008 - 77,067 2009 - 41,867* 2010 - 26,077* 2007 - 2,226,950 2008 - 2,597,185 2009 - 2,556,637* 2010 - 2,524,156 2007 - 606,999 2008 - 552,750 2009 - 451,001** 2010 - 383,899** 2007 - 7,383,167 2008 - 6,782,674 2009 - 2,743,062 ** 2010 - 6,651,349 ** * Aberdeenshire data **Aberdeen City and Shire total	Scotland 2007 - 518,899 2008 - 453,990 2009 - 295,895 2010 - 318,350 2007 - 9,570,931 2008 - 10,867,340 2009 - 7,181,875 2010 - 13,609,135 2007 - 4,894,935 2008 - 4,541,536 2009 - 4,110,480 2010 - 4,043,451 2007 - 62,302,806 2008 - 70,192,059 2009 - 65,619,910 2010 - 63,977,097			www.sepa.org.uk/waste/waste_data/site_capacity__infrastructure/national_capacity_reports.aspx and landfill capacity reports -
Peat soils	4 types of peaty soils • Blanket peat • Peaty podsols • Peaty gleys • Organic soils rich in peat	With respect of the rest of Scotland Aberdeen City and Shire seem to be at the fringes of peat soils	**Blanket peat** is moderately distributed to the southwest of Aberdeen City and Shire and with a few dots in the northeast of the region **Peaty podzol** is densely distributed to the southwest of Aberdeen City and Shire and with a few dots in the northeast of the region **Peaty gleys** is sparsely distributed to the southwest of Aberdeen City and Shire and with a few dots in the northeast of the region **Organic soils rich in peat** is moderately distributed to the southwest of Aberdeen City and	Because of the relationship between peat and climate change development must be directed away from peat soils	www.macaulay.ac.uk

			Shire and with a few dots in the northeast of the region		
Soil Erosion	From Berwick to Aberdeen, the coastline is eroding, but is stable where there are rocky coasts or coastal defences. From Aberdeen to Inverness the coastline is largely eroding, but parts are being replenished with sand and gravel from larger rivers.	The north of Scotland is mostly stable with little erosion, but south of Mallaig, towards Carlisle, the coastline is predominantly eroding but stable where there are rocky coasts or coastal defences. Precipitation will be greater in the west due to the west-east precipitation gradient.	The coastline is predominantly eroding along the east. Autumn/Winter rainfall is predicted to increase, giving rise to winter storms and affecting runoff and (wind and water) erosion. Upland schemes such as wind farm access roads and recreation tracks (e.g. mountain biking) on steep land can increase surface water runoff and lead to significant soil loss (e.g. gullies).	Coastal erosion mostly where there are no rocks or coastal defences Increase silting of rivers from fluvial flooding. Increase in soil erosion from wind and water, which may also be exacerbated by bad land use practices, such as locating tracks/access roads on steep/ upland areas. Increasing use of motorised vehicles on sand dunes is contributing to coastal erosion.	Aberdeen City (2007) State of the Environment Report http://www.aberdeencity.gov.uk/nmsruntime/saveasdialog.asp?lID=15960&sID=883 SEPA (2006) State of Scotland's Environment Report 2006 http://www.sepa.org.uk/science_and_research/data_and_reports/state_of_the_environment.aspx

Appendix 6.6.4: SEA Topic: Biodiversity (natural heritage designations)

SEA Indicator	Quantified information	Comparators and targets	Trends	Issues/ constraints	Data source(s)
International natural heritage designations (Ramsar)	Aberdeenshire – sites – 3 Hectares - 1051 Aberdeen City site – 0 hectare - 0			The environment of the north east is an important resource and is recognised internationally for its value. However, biodiversity and habitats can be vulnerable to the potentially harmful effects of development and so the policies and allocations that result from the strategic development plan must focus on maintaining and improving natural, built and cultural assets. There are many nature designations of international, national and local importance throughout the region that must be protected and improved. New development has the potential to put pressure on built, natural and cultural sites, consequently development must be appropriately planned to ensure that there is no loss or damage to these important assets. It is important to note that a designated site may be protected by more than one designation.	*Source:* SNH 2009
International natural heritage	Aberdeenshire – sites – 8				*Source:* SNH 2009

designations (Special Areas of Conservation (SAC))	Hectares - 5545 Aberdeen City site – 1 hectare - 155				
International natural heritage designations (Special Protection Areas (SPA)	Aberdeenshire – sites – 7 Hectares - 2227 Aberdeen City site – 0 hectare - 0				*Source:* SNH 2009
National natural heritage designations - Sites of Special Scientific Interest (SSSI)	Aberdeenshire – sites – 69 Hectares - 15,655 Aberdeen City site – 4 hectare - 47				*Source:* SNH 2009
National natural heritage designations National Nature Reserve (NNR)	Aberdeenshire – sites – 2 Hectares - 1072 Aberdeen City site – 0 hectare - 0				*Source:* SNH 2009
Local natural heritage designations - Sites of Interest of Natural Science (SINCS)	Aberdeenshire – sites – 79 Aberdeen City site – 16				*Source:* SNH 2009
Local natural heritage designations Local Nature Reserve (LNR)	Aberdeenshire – sites – 2 Hectares - 28 Aberdeen City site – 4 hectare - 126				*Source:* SNH 2009
Local natural heritage designations - Scottish Wildlife Trust Reserves	Aberdeenshire – sites – 4 Hectares – N/A Aberdeen City site – 0 hectare – N/A				*Source:* SNH 2009
Local natural heritage designations -	Aberdeenshire – sites – 3 Hectares – N/A				*Source:* SNH 2009

RSPB Reserves	Aberdeen City site – 0 hectare – N/A				
Local natural heritage designations - District Wildlife Site	Aberdeenshire – sites – 0 Hectares – N/A Aberdeen City site – 70 hectare – N/A				*Source:* SNH 2009
Local natural heritage designations - Ancient Woodland	Aberdeenshire – sites – 2,584 Hectares - 45,000 Aberdeen City site – 140 hectare – N/A				*Source:* SNH 2009
Quality and availability of public open space in urban and rural areas	The Aberdeen City audit identified 3471 hectares of open space (not including private gardens or sites under 0.2 hectares). The quality of open space varies across the city with public parks and gardens rating the highest and allotments and business amenity open space scoring the lowest rating. Data for Aberdeenshire Councils Open Space Audit was not available.		The poorest quality parks and open spaces tend to be found within the regeneration priority areas. It is more difficult to provide open space within densely populated areas.	Development pressure to build on urban open spaces. Developer contributions may require to be sought for brownfield developments to assist in provision of open space. Revised standards for open space could encourage the development of more useful, publicly desirable and efficient types of open space, such as natural areas, green corridors, play spaces and allotments. This detail is likely to be taken forward through the local development plan and supplementary guidance.	Aberdeen City Council (2010) Open Space Audit

Quality of life in currently deprived areas	The 2009 Scottish Index of Multiple Deprivation (SIMD) found that the strategic development plan area has 42 datazones classified as the 20% most deprived by the Scottish government, representing 7.5% of the total. Deprivation is concentrated in Aberdeen City with 13% of all datazones being classified as in the most deprived 20%, while although only 2% of Aberdeenshire is in this group, these are concentrated in the coastal towns of Fraserbourgh and Peterhead. In Aberdeen the zones are situated in the North and South of the city.	Aberdeenshire has most of its datazones in the least deprived in terms of SIMD ranks. Aberdeenshire has Scotland's least deprived datazone in Banchory. The 25% most deprived datazones in Aberdeen City all rank in the 30% most deprived nationally.		Poor access to services in rural areas. Centralisation of service provision has and will continue to affect marginalised areas. Pockets of deprivation through low job opportunities and income could be adversely affecting people's mental health.	Aberdeen City and Shire SDPA (2010) *Aberdeen City and Shire Structure Plan Monitoring Report*
Sport and recreation facilities in areas of identified need	Aberdeen and Aberdeenshire both require sporting facilities ranging from badminton courts and golf courses to swimming pools		Positive steps have been made to ensure everyone has access to sport, leisure and recreation facilities, however limited progress has been made to provide.	Local facilities will be addressed through the Local Development Plans although if regional sporting facilities are identified these may come through the SDP.	Aberdeen City Council (2002) Active Aberdeen 2002-2007: A sport, recreation and physical activity strategy for Aberdeen City Aberdeenshire Council (2005) Sports Facility Study Updated Report

Appendix 6.6.5: Human Health

SEA Indicator	Quantified information	Comparators and targets	Trends	Issues/ constraints	Data source(s)
Quality and availability of public open space in urban and rural areas	The Aberdeen City audit identified 3471 hectares of open space (not including private gardens or sites under 0.2 hectares). The quality of open space varies across the city with public parks and gardens rating the highest and allotments and business amenity open space scoring the lowest rating. Data for Aberdeenshire Councils Open Space Audit was not available.		The poorest quality parks and open spaces tend to be found within the regeneration priority areas. It is more difficult to provide open space within densely populated areas.	Development pressure to build on urban open spaces. Developer contributions may require to be sought for brownfield developments to assist in provision of open space. Revised standards for open space could encourage the development of more useful, publicly desirable and efficient types of open space, such as natural areas, green corridors, play spaces and allotments. This detail is likely to be taken forward through the local development plan and supplementary guidance.	Aberdeen City Council (2010) Open Space Audit

Quality of life in currently deprived areas	The 2009 Scottish Index of Multiple Deprivation (SIMD) found that the strategic development plan area has 42 datazones classified as the 20% most deprived by the Scottish government, representing 7.5% of the total. Deprivation is concentrated in Aberdeen City with 13% of all datazones being classified as in the most deprived 20%, while although only 2% of Aberdeenshire is in this group, these are concentrated in the coastal towns of Fraserbourgh and Peterhead. In Aberdeen the zones are situated in the North and South of the city.	Aberdeenshire has most of its datazones in the least deprived in terms of SIMD ranks. Aberdeenshire has Scotland's least deprived datazone in Banchory. The 25% most deprived datazones in Aberdeen City all rank in the 30% most deprived nationally.		Poor access to services in rural areas. Centralisation of service provision has and will continue to affect marginalised areas. Pockets of deprivation through low job opportunities and income could be adversely affecting people's mental health.	Aberdeen City and Shire SDPA (2010) *Aberdeen City and Shire Structure Plan Monitoring Report*
Sport and recreation facilities in areas of identified need	Aberdeen and Aberdeenshire both require sporting facilities ranging from badminton courts and golf courses to swimming pools		Positive steps have been made to ensure everyone has access to sport, leisure and recreation facilities, however limited progress has been made to provide.	Local facilities will be addressed through the Local Development Plans although if regional sporting facilities are identified these may come through the SDP.	Aberdeen City Council (2002) Active Aberdeen 2002-2007: A sport, recreation and physical activity strategy for Aberdeen City Aberdeenshire Council (2005) Sports Facility Study Updated Report

Appendix 6.6.6: SEA Topic: Population

SEA Indicator	Quantified information	Comparators and targets	Trends	Issues/constraints	Data source(s)
Life expectancy at birth	Aberdeen: Men 75.4 years Women 80.4 years Aberdeenshire: Men 77.5 years Women 81.1 years	Scotland: 75.0 years for men and 79.9 years for women	Compared with 10 years ago in 1996-1998: Life expectancy at birth for Scotland has increased by 2.6 years for men (from 72.4 years to 75.0 years) and 1.9 years for women (from 78.1 years to 79.9 years); The gap between men and women continues to close, dropping from 5.6 years to 4.9 years over the period; There are no areas that have experienced a drop in life expectancy The gap between men and women is closing in relation to life expectancy at birth.	Aging population will create demand for certain types of facilities e.g. sheltered housing, low level housing, access to healthcare facilities.	General Register Office for Scotland (2009) *Life Expectancy for Administrative Areas within Scotland, 2006-2008*
Healthy life expectancy at birth	Aberdeen Men 67.8 years Women 72.1 Aberdeenshire Men 70.8 years Women 74.5	Scotland Men 66.3 years Females 70.2 years	The gap between men and women is closing in relation to healthy life expectancy at birth.	A population that lives longer but lives healthier will not require as much assistance as a population that lives longer but lives unhealthily.	Scottish Public Health Observatory http://www.scotpho.org.uk/home/Populationdynamics/hle/hle_data/hle_scotland.asp
Population Change	Aberdeen City 1998 – 215,650 2004 – 205,490 2008 - 210,400 Aberdeenshire 1998 – 226,220 2004 – 231,570 2008 - 241,460 SDP Area: 1998 - 438,689 2004 - 434,160	Scotland 1998 – 5,077,070 2004 – 5,078,400 2008 - 5,168,500 The population change in the SDP area has increased at a rate (3.35%) double to that of the Scottish average (1.77%) in the last ten years.	The population of Aberdeen City declined between 1998 and 2004, but over the first half of the period, however this trend has reversed, and since 2004 both the City and the Shire populations have been increasing.		General Register Office for Scotland http://www.gro-scotland.gov.uk/statistics/publications-and-data/population-estimates/index.html Aberdeen City and Shire SDPA (2010) *Aberdeen City and Shire Structure Plan Monitoring Report*

	2008 - 448,693				
Population Structure	As at June 2008, the average age was: Aberdeen – 38 (m) 40 (f) Aberdeenshire – 39 (m) 41(f)	In line with much of Scotland the population structure of Aberdeen City and Shire has aged over the last ten years.	The 2008 based projections (probable) suggest that by 2033 the population of the SDP area will increase by 14%. The number of people of pensionable age will increase by 32% much in line with Scottish figures. The population of working age is projected to rise by 11.4%, well above the Scottish figure of 2.2%. Additionally, while at a Scottish level the number of under 15's is projected to decline by 1.5% over the period, in Aberdeen City and Shire this age group could increase by 4.1%.	A rapidly aging population has significant implications for both service provision and the economic performance of the region, and results in the need to attract and retain people of working age to the region. Aberdeenshire has the largest projected rise in the pensionable age group in Scotland and this will have major implications for the region. More homes may be required which suit the needs of an ageing population e.g. bungalows, sheltered housing etc.	General Register Office for Scotland http://www.gro-scotland.gov.uk/statistics/publications-and-data/population-estimates/index.html Aberdeen City and Shire SDPA (2010) *Aberdeen City and Shire Structure Plan Monitoring Report*
Change in households **Household growth**	Aberdeen City 1991 - 89,949 2001 - 95,265 2003 - 96,944 2008 - 97,424 2001 – 2008 – 2,159 % change – 2.3% Aberdeenshire (inc Cairngorms National Park)	Scotland 1991 – 2,042,809 2001 – 2,125,577 2003 – 2,195,033 2008 – 2,211,025 2001-2008 – 85,448 % change – 4.0%	During the last decade there has been a sustained increase in numbers of households and a significant fall in average household size. This is a trend that is expected to continue, with average household size dropping to under two in the SDP area by 2021.	Decreasing household size and increasing number of households will result in constraints in the level of houses that can be built to demand. If this trend continues there may be serious issues in relation to infrastructure requirements. Possibility that the need	General Register Office for Scotland http://www.gro-scotland.gov.uk/statistics/publications-and-data/population-estimates/index.html Aberdeen City and Shire SDPA (2010) *Aberdeen City and Shire Structure Plan Monitoring Report*

Forecast household size	1991 - 80,473 2001 - 87,077 2003 - 90,902 2008 - 92,317 2001 – 2008 – 5,240 % change – 6.0% Aberdeen City and Shire (inc Cairngorms National Park) 1991 - 170,422 2001 - 182,342 2003 - 187,846 2008 - 189,741 2001-2008 – 7,399 % change – 4.1% Aberdeen City forecast household size: 2006 – 2.00 2011 – 1.93 2016 – 1.86 2021 – 1.82 2026 – 1.78 2031 – 1.74 Aberdeenshire forecast household size: 2006 – 2.36 2011 – 2.30 2016 – 2.23 2021 – 2.16 2026 – 2.09 2031 – 2.03 Aberdeen City and Shire forecast			for more development land could put pressure on or near sensitive natural heritage areas as demand for housing and land increases. Smaller households tend to produce more waste and use more energy per person than larger ones.	

	household size: 2006 – 2.18 2011 – 2.12 2016 – 2.04 2021 – 1.99 2026 – 1.94 2031 – 1.89				

Appendix 6.6.7: SEA Topic: Cultural Heritage

SEA Indicator	Quantified information	Comparators and targets	Trends	Issues/constraints	Data source(s)
Built and Cultural Heritage Designations	Aberdeen City Listed buildings – 1,212 Listed buildings at risk – 26 Conservation Areas – 11 Scheduled Ancient Monuments – 44 Archaeological Sites and Monuments Record – 699 Gardens and designed landscapes - 1 Aberdeenshire Listed buildings – 3,715 Listed buildings at risk – 228 Conservation Areas – 49 Scheduled Ancient Monuments – 581 Archaeological Sites and Monuments Record – 17,631 Gardens and designed landscapes - 27 Aberdeen City and Shire Listed buildings – 4,927 Listed buildings at risk – 254 Conservation Areas – 60 Scheduled Ancient Monuments – 625 Archaeological Sites and Monuments Record – 18,330 Gardens and designed			Development is putting pressure on these features. There is also a threat of adverse impacts to and the loss of unknown or locally known (and not formally designated) architectural and archaeological remains from new development, vandalism and coastal erosion. New development has the potential to put pressure on, or be constrained by, built and cultural sites. Consequently development must be appropriately planned to ensure that there is no loss or damage to these important assets.	Aberdeen City and Shire SDPA (2009) *Aberdeen City and Shire Structure Plan Monitoring Report*

	landscapes - 28				
Battlefields	**Aberdeenshire** Alford 1645 Barra 1308 Fyvie 1644 Harlaw 1411				http://data.historic-scotland.gov.uk/pls/htmldb/f?p=2500:10:0

Appendix 6.6.8: SEA Topic: Landscape

SEA Indicator	Quantified information	Comparators and targets	Trends	Issues/constraints	Data source(s)
Landscape character	There are 42 landscape character areas in Aberdeenshire, including 9 within the CNP. In Aberdeen there are 27 landscape character areas.	The four Landscape Character Assessments that cover the North East provides a brief overview of past land use practices and discusses potential land uses for existing landscapes.	No trend	The inappropriate scale and insensitive siting of future new development may adversely affect landscape characteristics (e.g. changing its landscape character type, not respecting local topography/contours). New development not fitting in with the landscape's capacity to absorb further developments (e.g. design, layout and sense of place) – need to promote suitable development capacity.	Scottish Natural Heritage (1997) *National programme of landscape character assessment: Banff and Buchan*, Review No 37. Scottish Natural Heritage (1996) *Cairngorms landscape assessment*, Review No 75. Scottish Natural Heritage (1996) *Landscape character assessment of Aberdeen*, Review No 80 Scottish Natural Heritage (1998) *South and Central Aberdeenshire: landscape character assessment*, Review No 102.

Appendix 6.6.9: SEA Topic: Material Assets

SEA Indicator	Quantified information	Comparators and targets	Trends	Issues/constraints	Data source(s)
Existing flood defences	There are 3 flood prevention schemes in Aberdeenshire and 2 in Aberdeen City.		Flood defence schemes will progressively be affected by soil/sand erosion from increasing rainfall and storm events, which will affect their stability and effectiveness. As a result, there will be a need to increase the maintenance these defences, and possibly relocate them.	Predicted rise in sea level may result in existing flood defences being inadequate. The predicted rise in storm events and winter precipitation is likely to increase soil/sand erosion from the wind and rain/water, which may prevent flood defence schemes functioning properly and result in their failure (e.g. collapse).	Office of Science and Technology (2005) Foresight report: *Future Flooding Scotland* http://www.foresight.gov.uk/Scotland/Final_Scotland.pdf SEPA (2006) Indicative River & Coastal Flood Map (Scotland) Aberdeenshire Council (2007) *Flooding in Aberdeenshire: Sixth Biennial Report* http://www.aberdeenshire.gov.uk/flooding/report/6th_biennial_report.pdf
Supply/delivery of Affordable Housing	Aberdeen City and Shire: 2004/05 – 246 2005/06 – 213 2006/07 – 130 2007/08 – 168 2008/09 – 312 5 year average – 214 (average of 10% of annual completions)		The supply of affordable homes in the North East is not meeting the demand but the latest data shows an increase of supply.	There is a need to review the proportion of affordable housing in new build.	Aberdeen City and Shire SDPA (2010) *Aberdeen City and Shire Structure Plan Monitoring Report*
Employment Land supply (see tables below)	The supply of immediately available employment land in Aberdeen is dispersed over six sites and is currently around 30% of the marketable supply. The marketable supply of employment land in Aberdeen City currently stands at 91ha. However, only 31ha of this is immediately available. The marketable supply of employment land in the		Aberdeen City has shown a trend of diminishing established supply of land for business use as allocations are built out. However, the marketable supply has recovered following the inclusion of the significant site at Murcar in the adopted Aberdeen Local Plan 2008. For Aberdeenshire, (within the strategic growth areas), there has been a trend of diminishing established	Uneven supply of employment land has impacts on ability to work and live within a close proximity thus increasing the likelihood of people travelling to work by private means. Economic growth will be constrained without a reasonable supply of land which is immediately available.	Aberdeen City and Shire SDPA (2010) *Aberdeen City and Shire Structure Plan Monitoring Report*

	Aberdeenshire SGAs currently stands at 146ha. Of this total, only 20ha is immediately available.		supply of land for business use. The marketable supply has remained around a consistent level.		
Quality of Life	In 2007 Aberdeenshire was top overall for the best quality of life of 32 local authorities in Scotland. In May 2008 Aberdeenshire had the best quality of life amongst rural areas in Scotland. November 2008 Aberdeenshire came second in the list of areas enjoying the best overall quality of life. In March 2009 Aberdeenshire came out top amongst ten other rural local authorities.	On several indicators, Aberdeenshire ranks above the Scottish average, including employment rate (82.6% compared to the national average of 76.6%) and school qualifications (84% achieve five or more SCQF level 4 awards compared to the Scotland average of 79%). Residents also enjoy a relatively good climate; there is, on average, less rainfall per year (999mm against the Scotland average of 1,295mm) and slightly more weekly sunshine hours (25.5 hours against the Scotland average of 24.9).			Bank of Scotland's Rural Quality of Life Survey 2009

Appendix 6.6.10 Employment Land Supply additional information:

Aberdeenshire SGAs

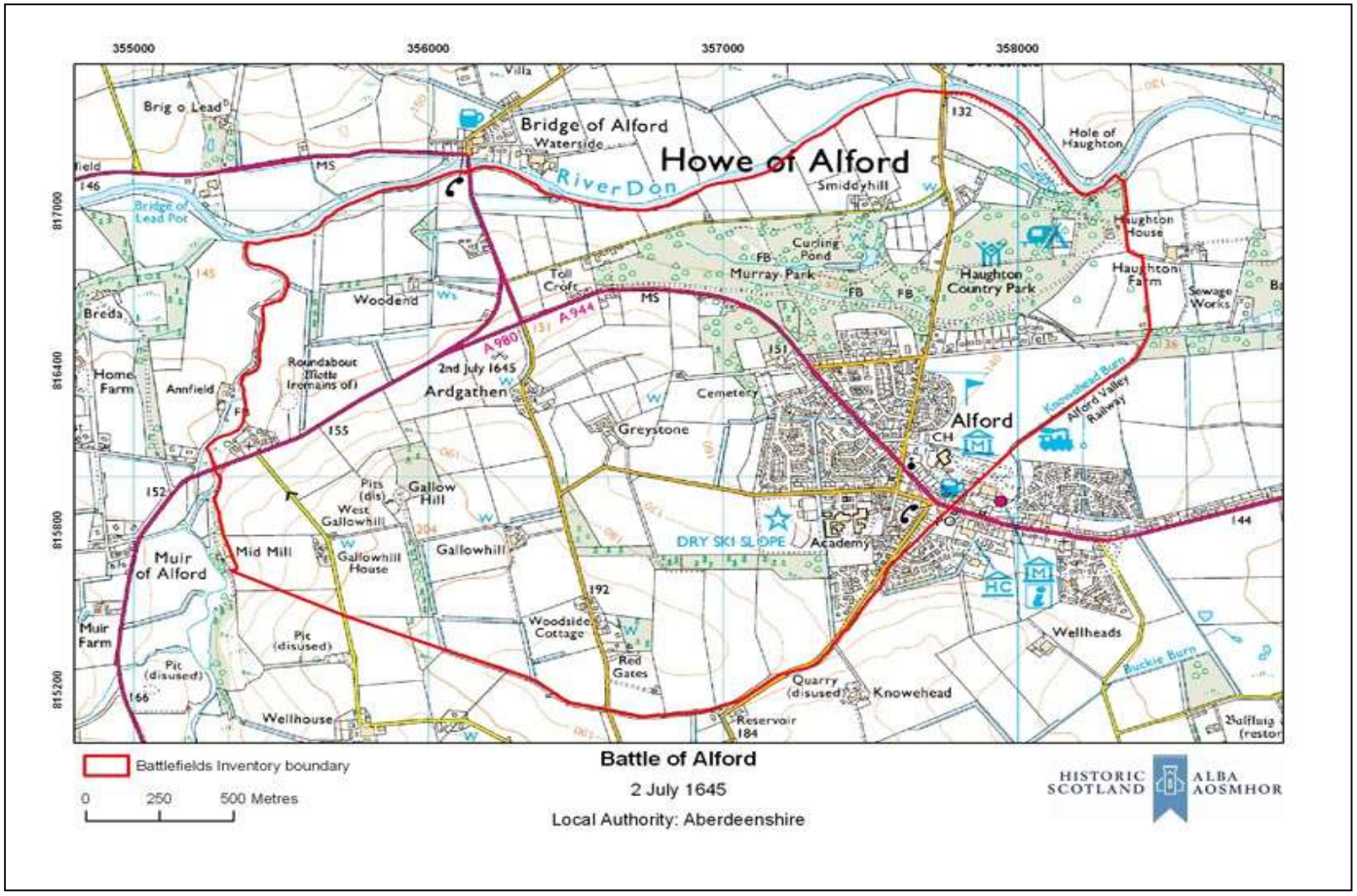
	Established	Constrained	Marketable	Immediately Available	Under Construction
2006	272	118	**155**	39	10
2007	271	112	**157**	30	8
2008	266	104	**162**	24	3
2009	246	99	**146**	20	2

Aberdeen City SGA

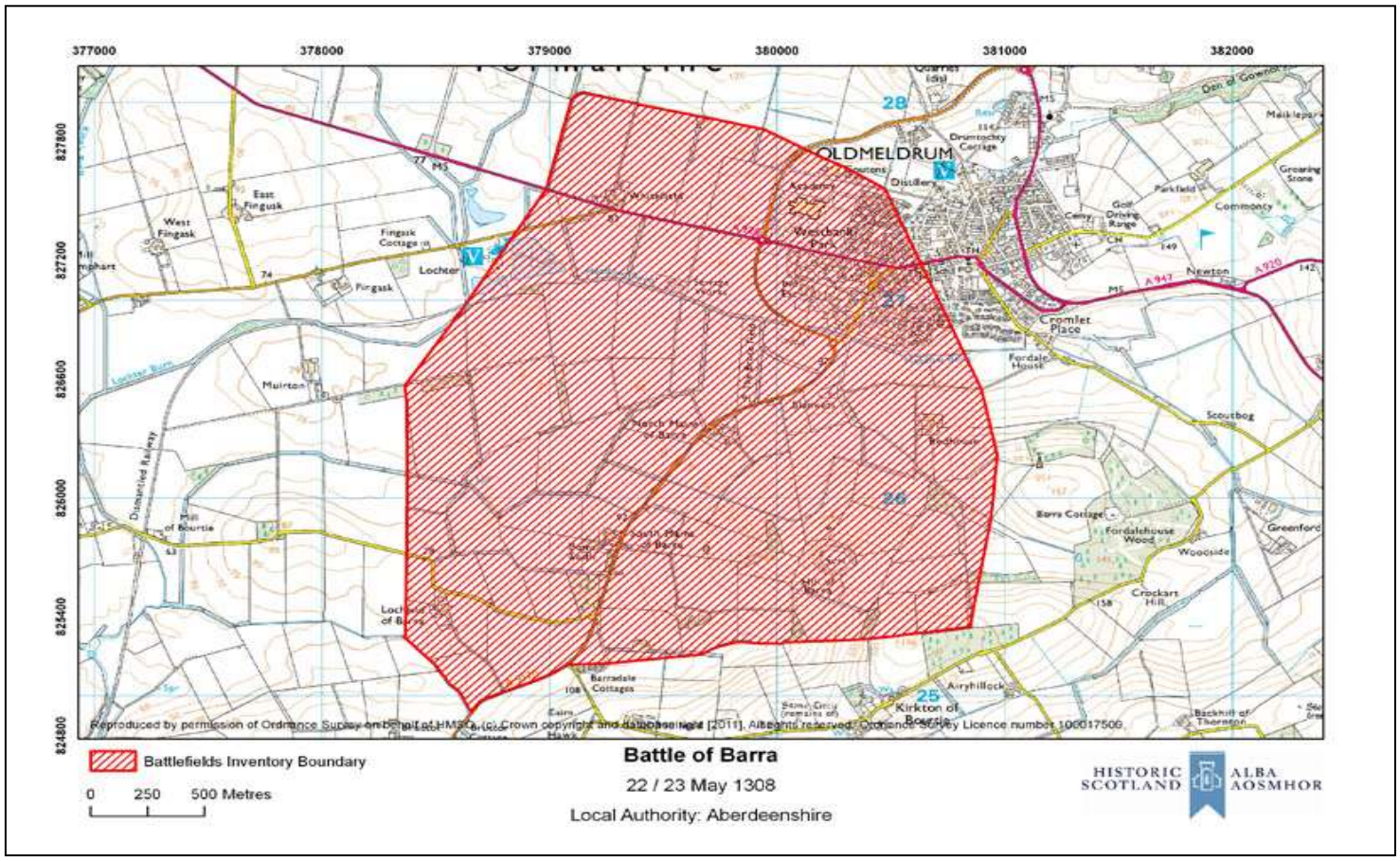
	Established	Constrained	Marketable	Immediately Available	Under Construction
2006	239	181	**40**	34	1
2007	235	171	**53**	27	7
2008	225	171	**42**	24	10
2009	217	103	**91**	31	2

N.B Data only covers those areas within Strategic Growth Areas within Aberdeen City and Aberdeenshire.

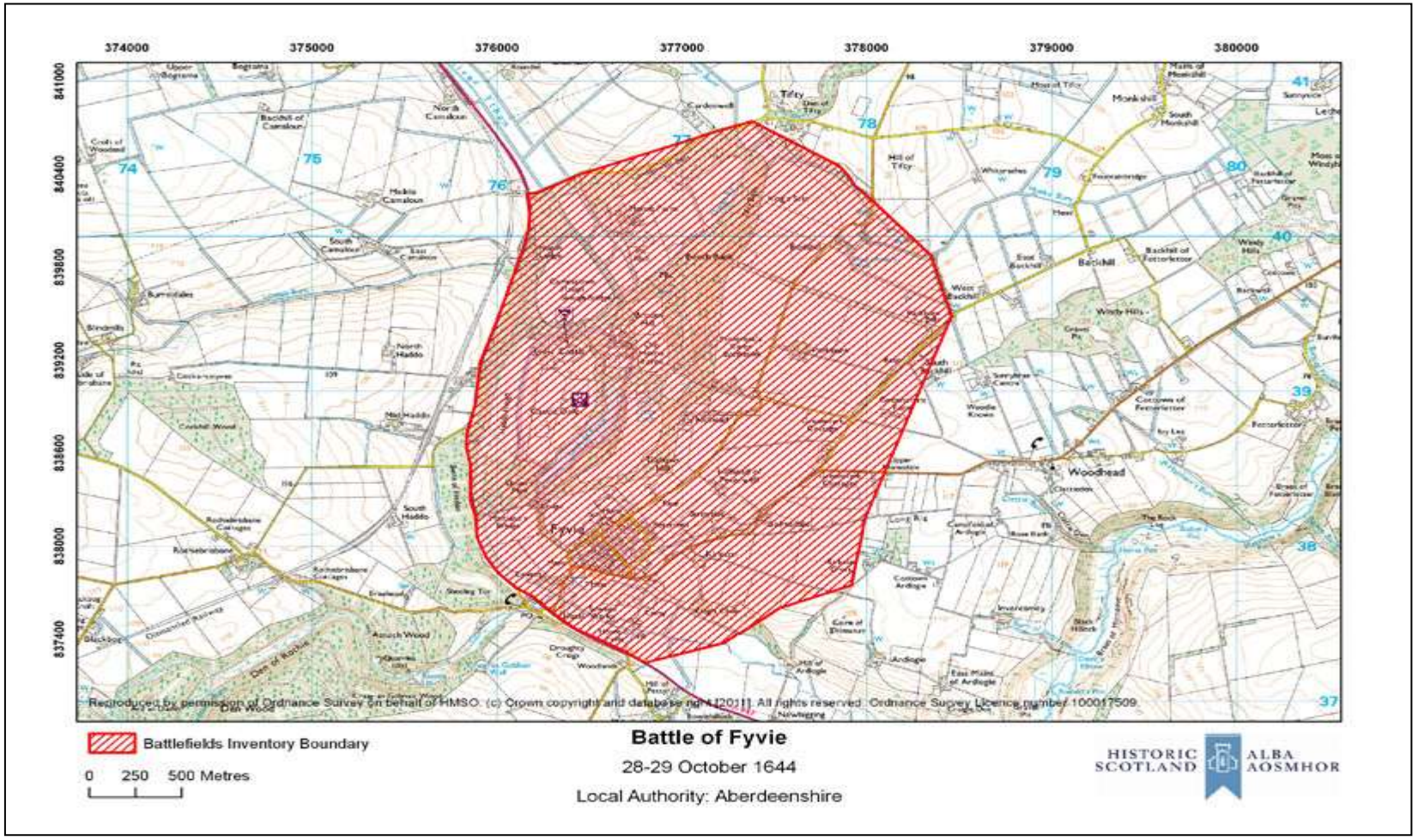
Appendix 7.1.1 **Battle of Alford**



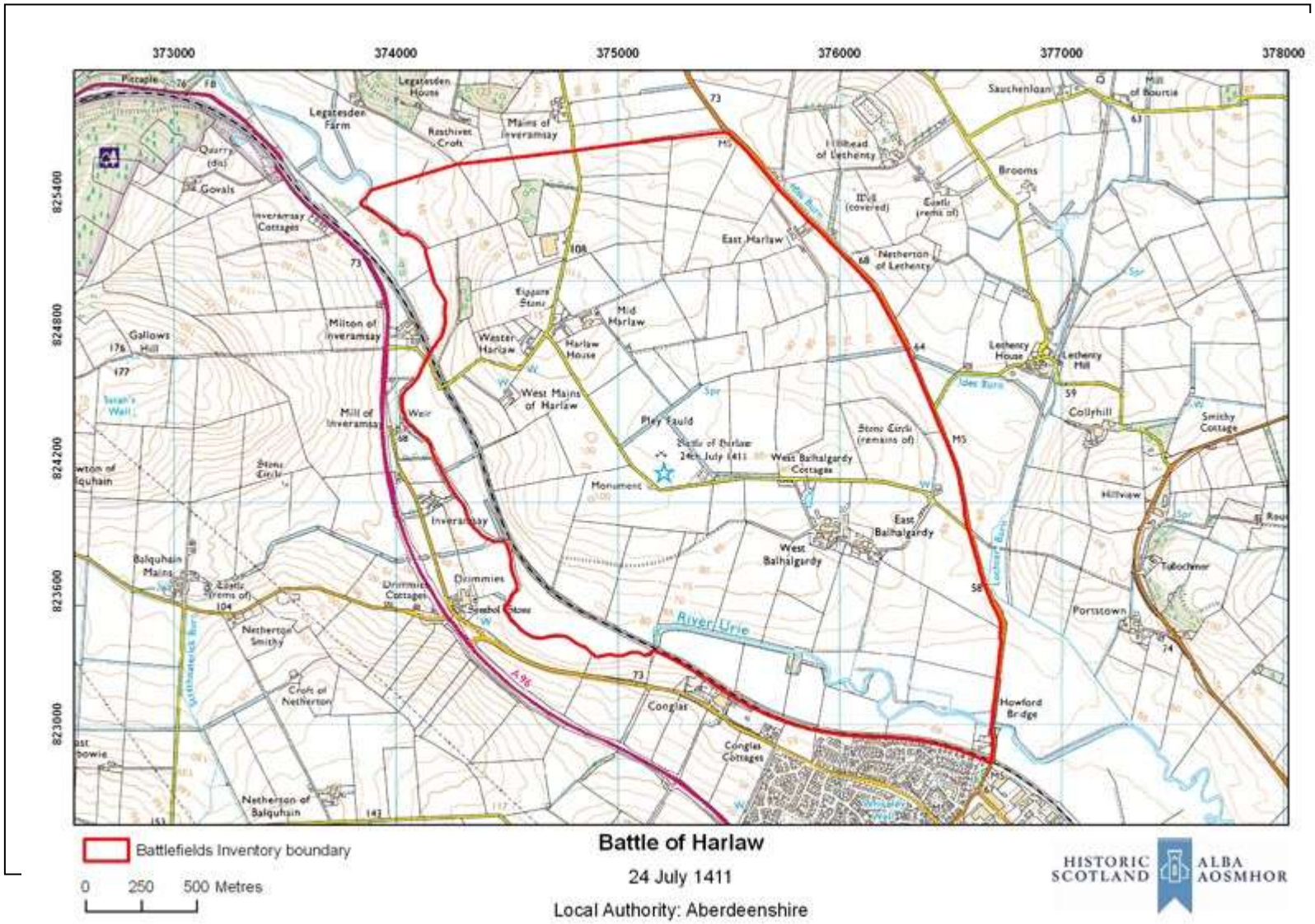
Appendix 7.1.2 Battle of Barra



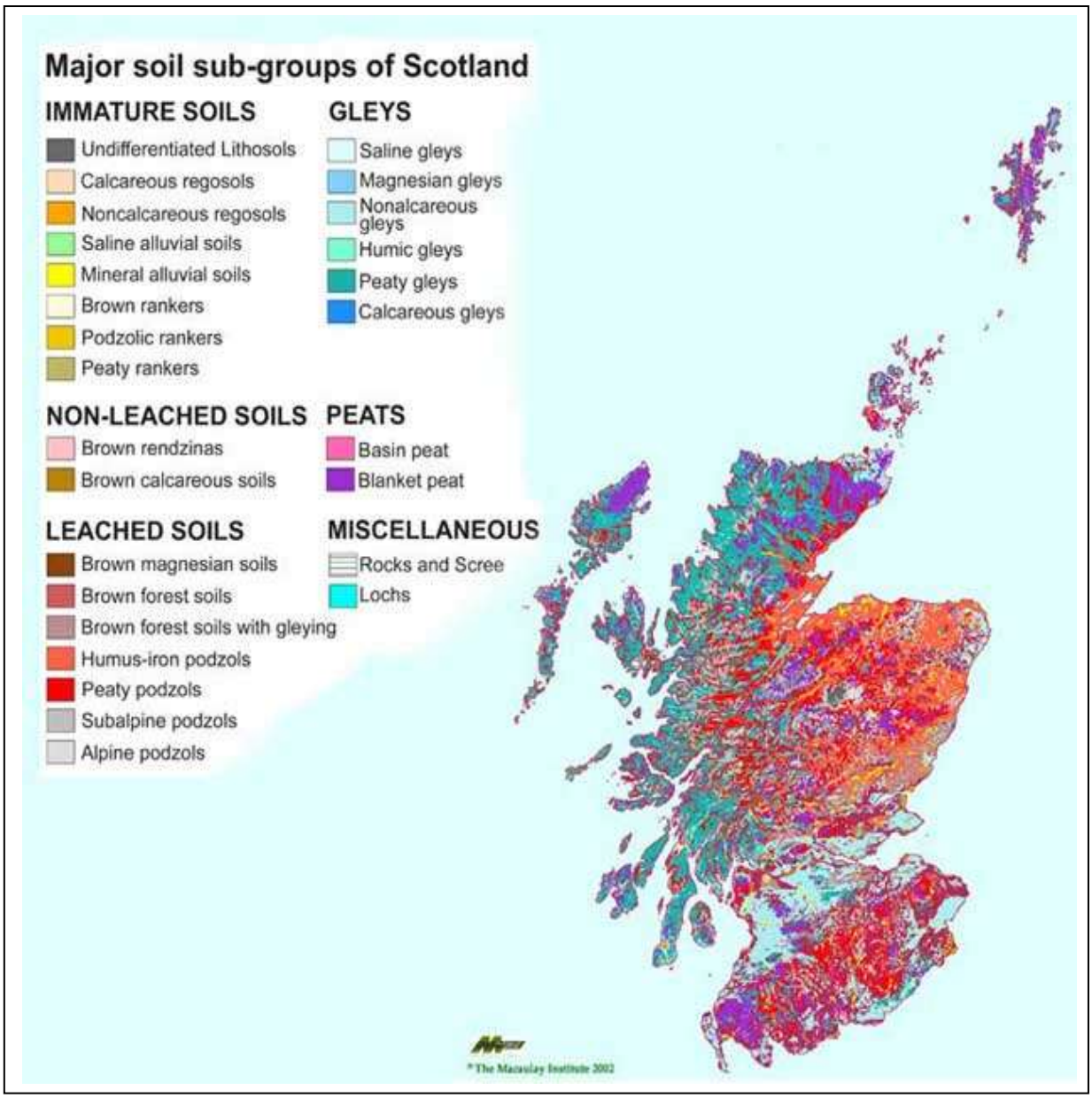
Appendix 7.1.3 Battle of Fyvie



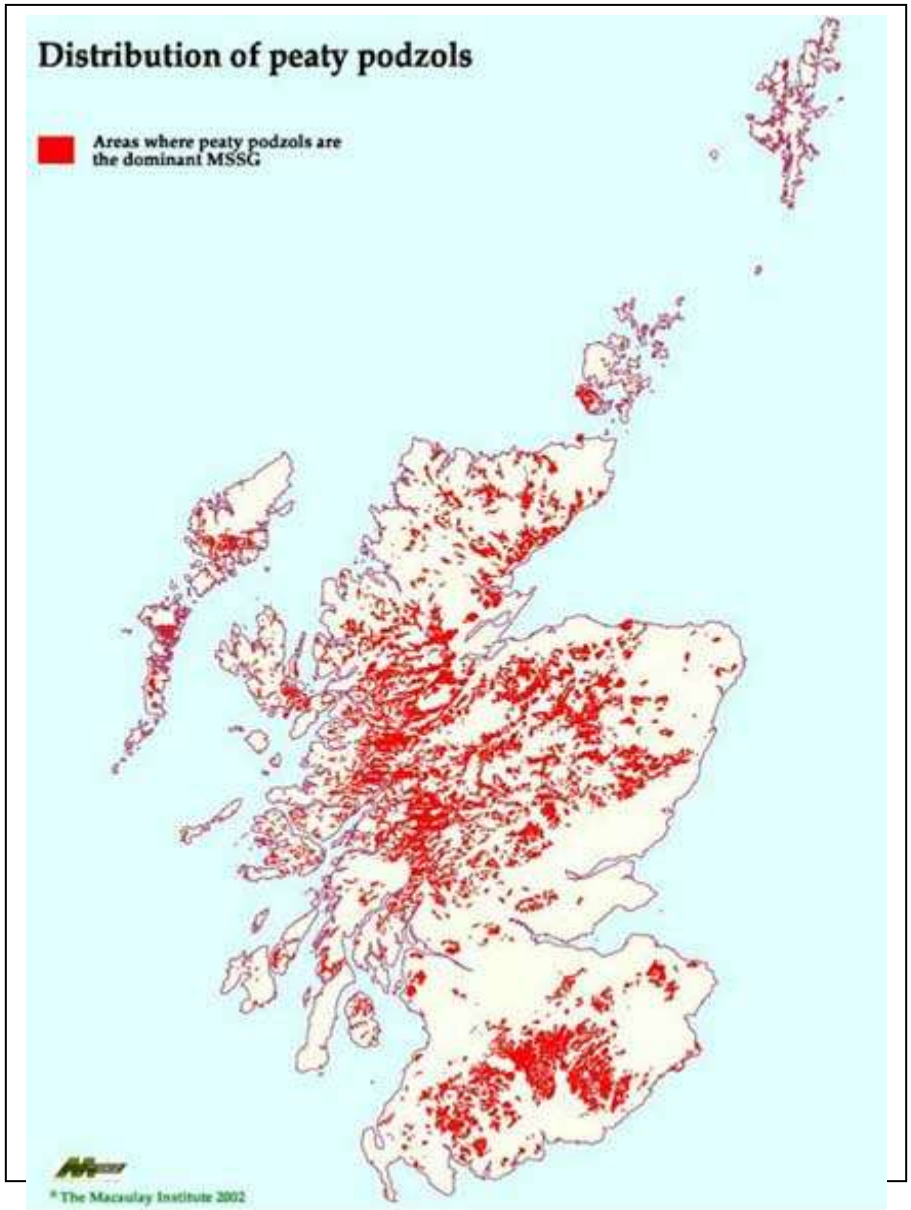
Appendix 7.1.3 Battle of Harlaw



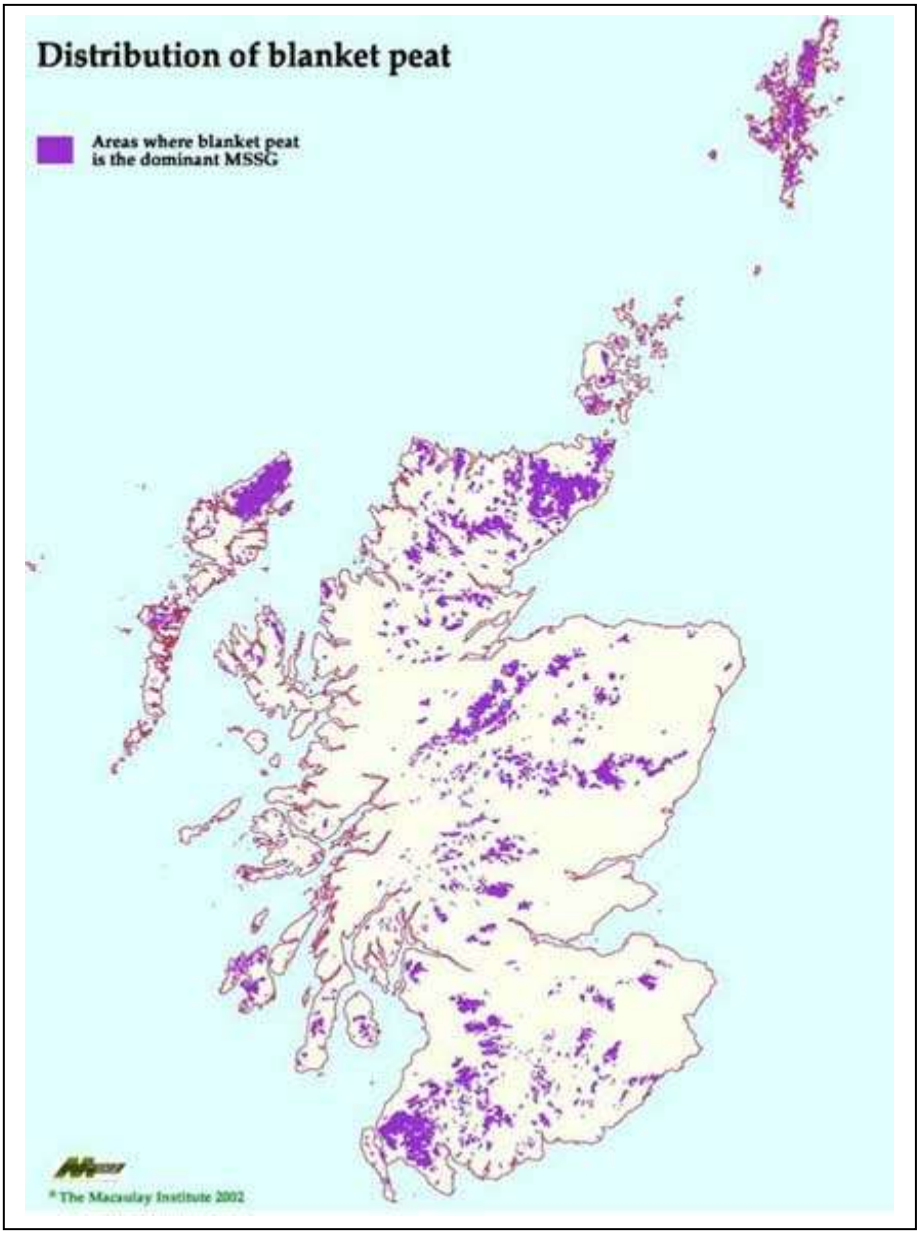
Appendix 7.2.1 Major Soil sub-groups



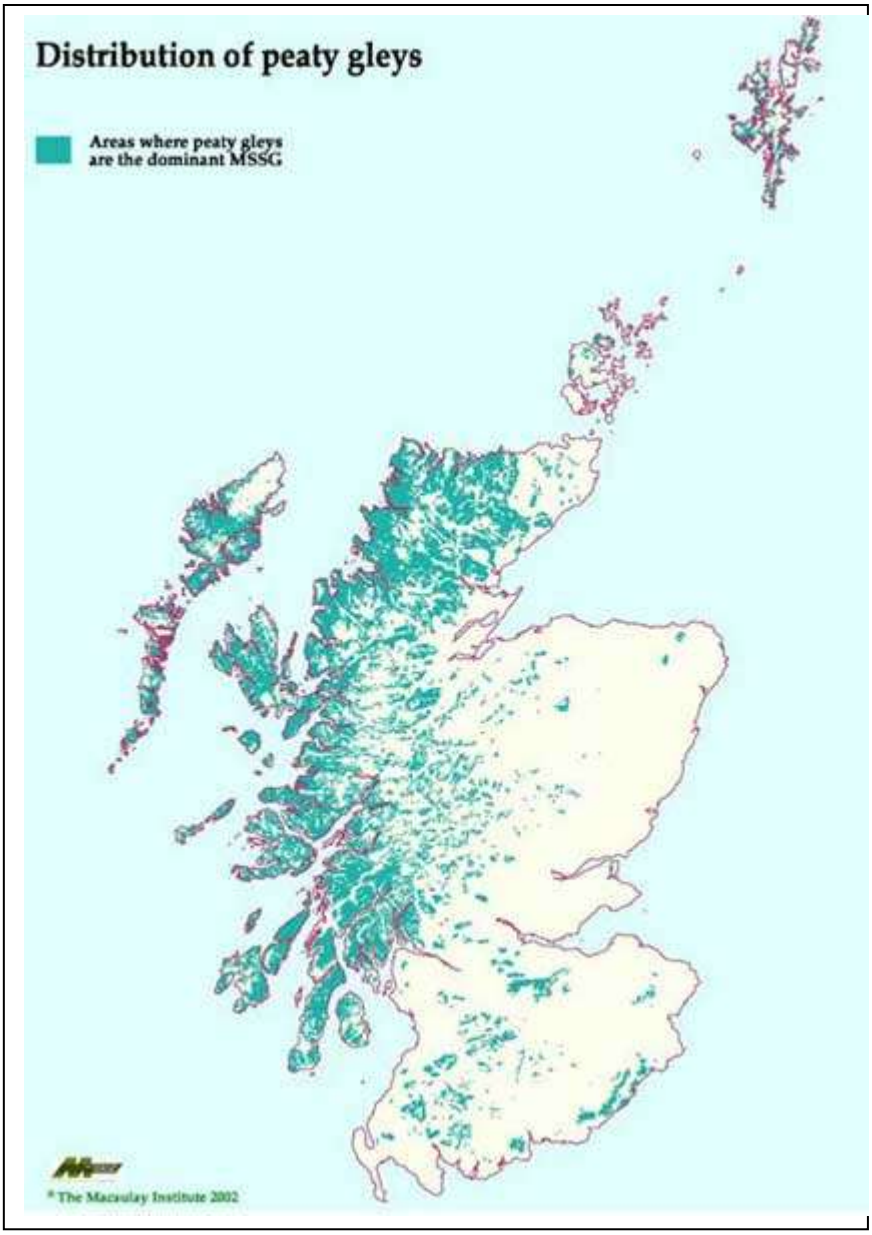
Appendix 7.2.2 Peaty Podzols



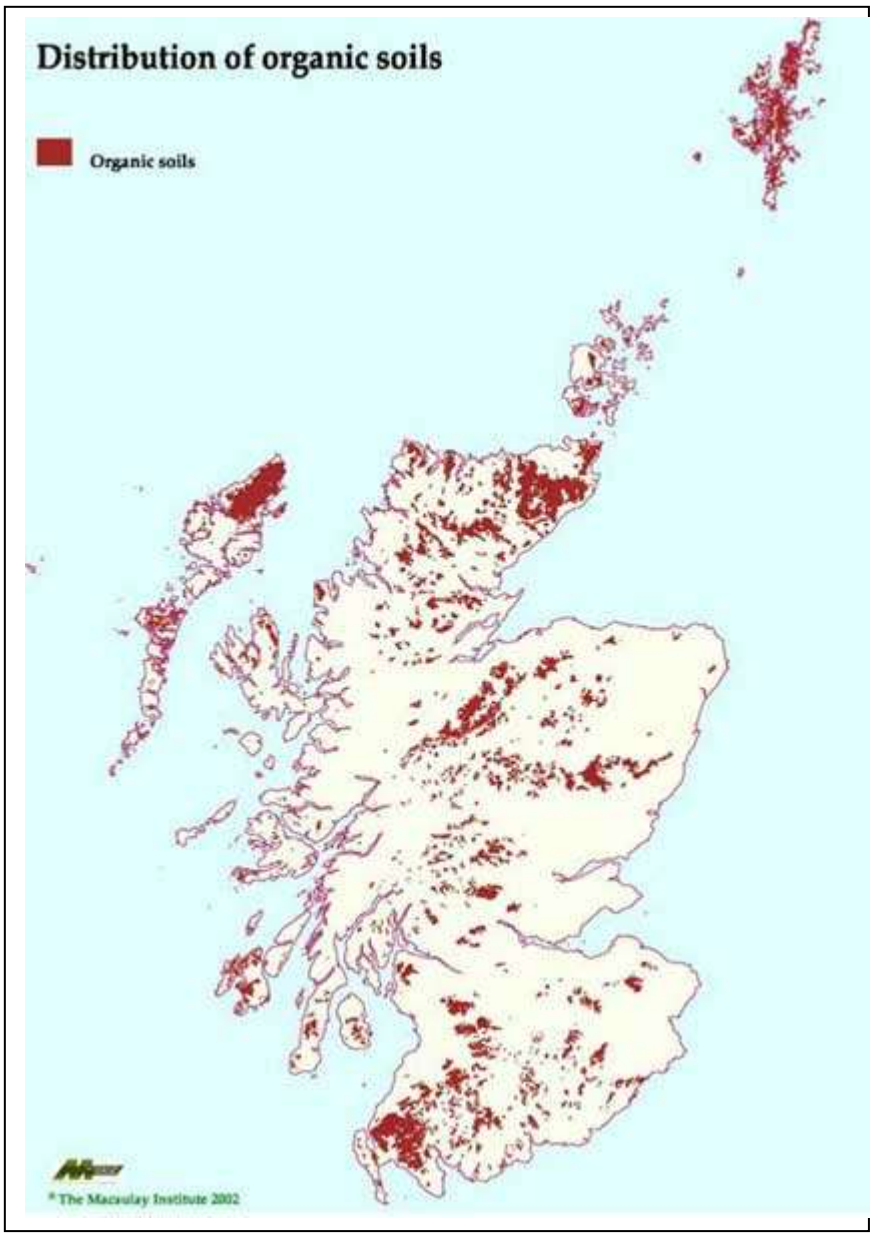
Appendix 7.2.3 Blanket Peat



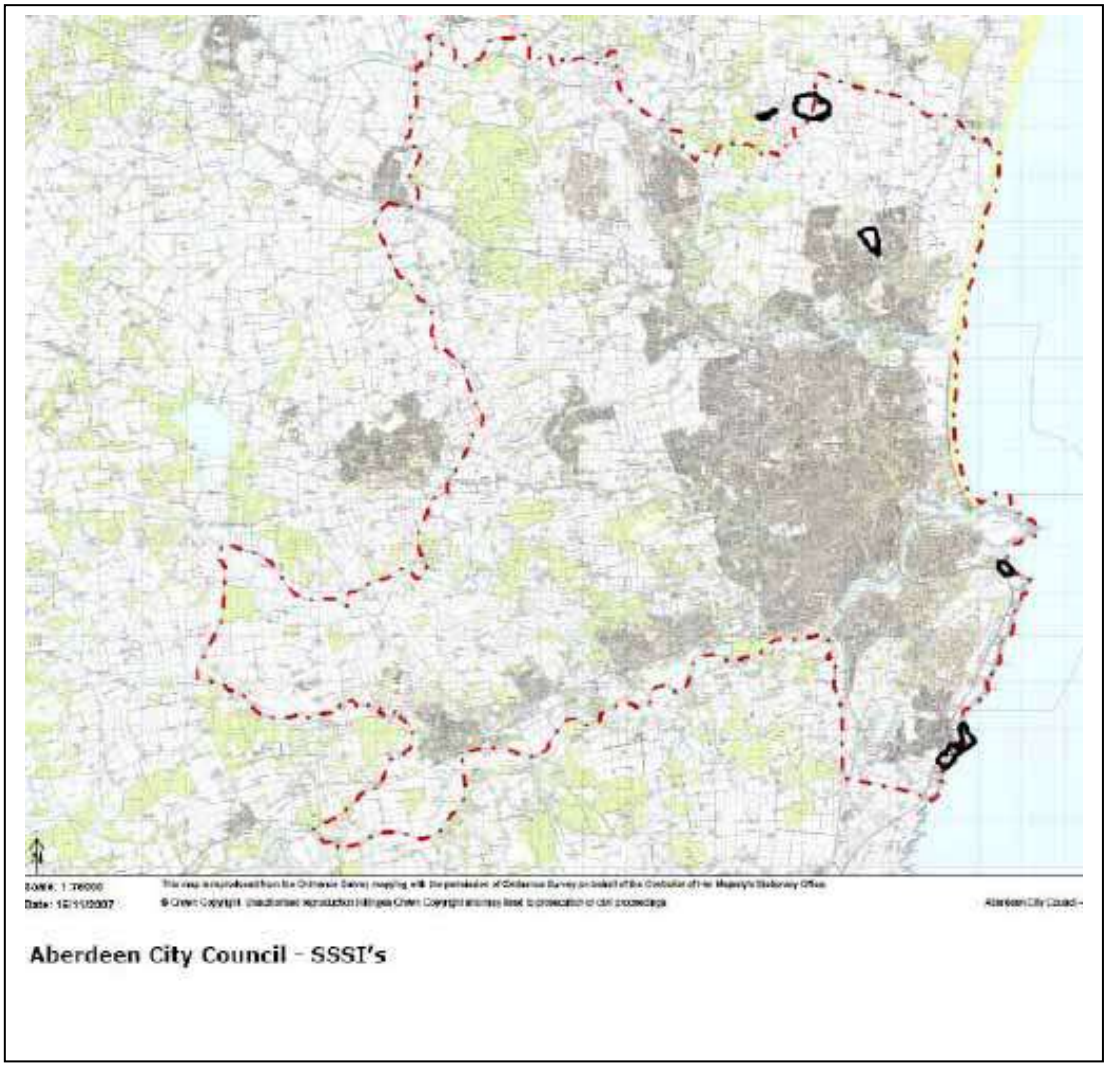
Appendix 7.2.4 Peaty Gleys



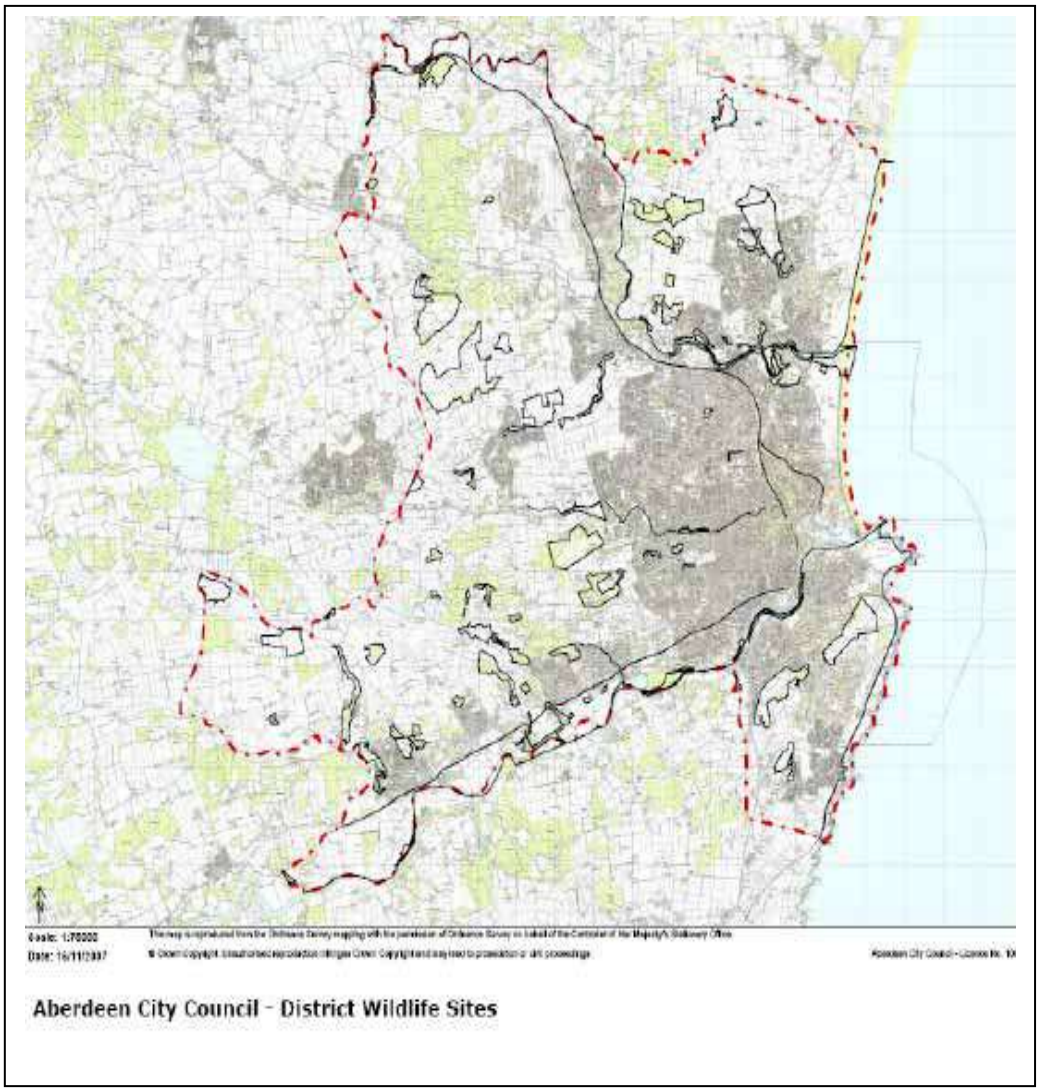
Appendix 7.2.5 Organic Soils



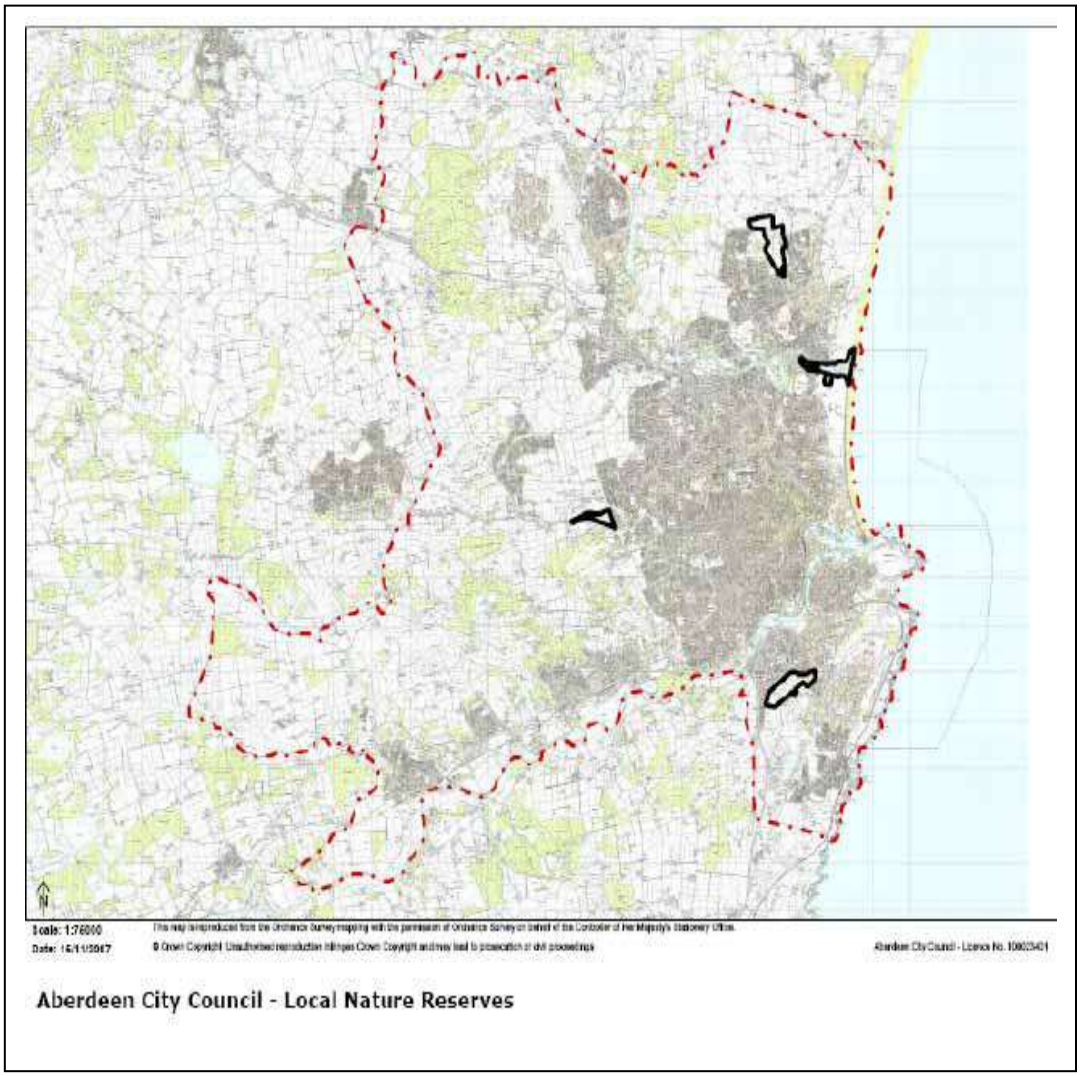
Appendix 7.3.1 SSSI



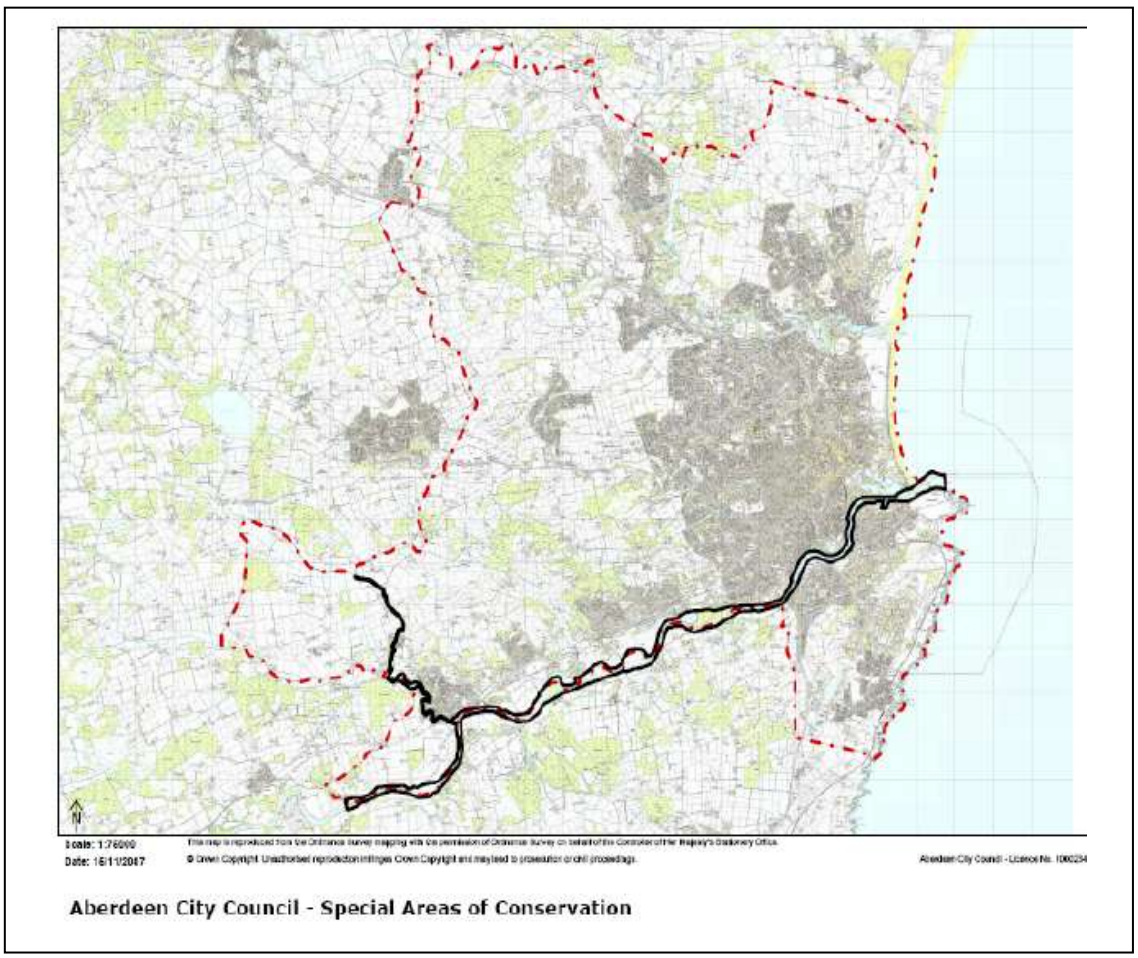
Appendix 7.3.2 District Wild Life Sites



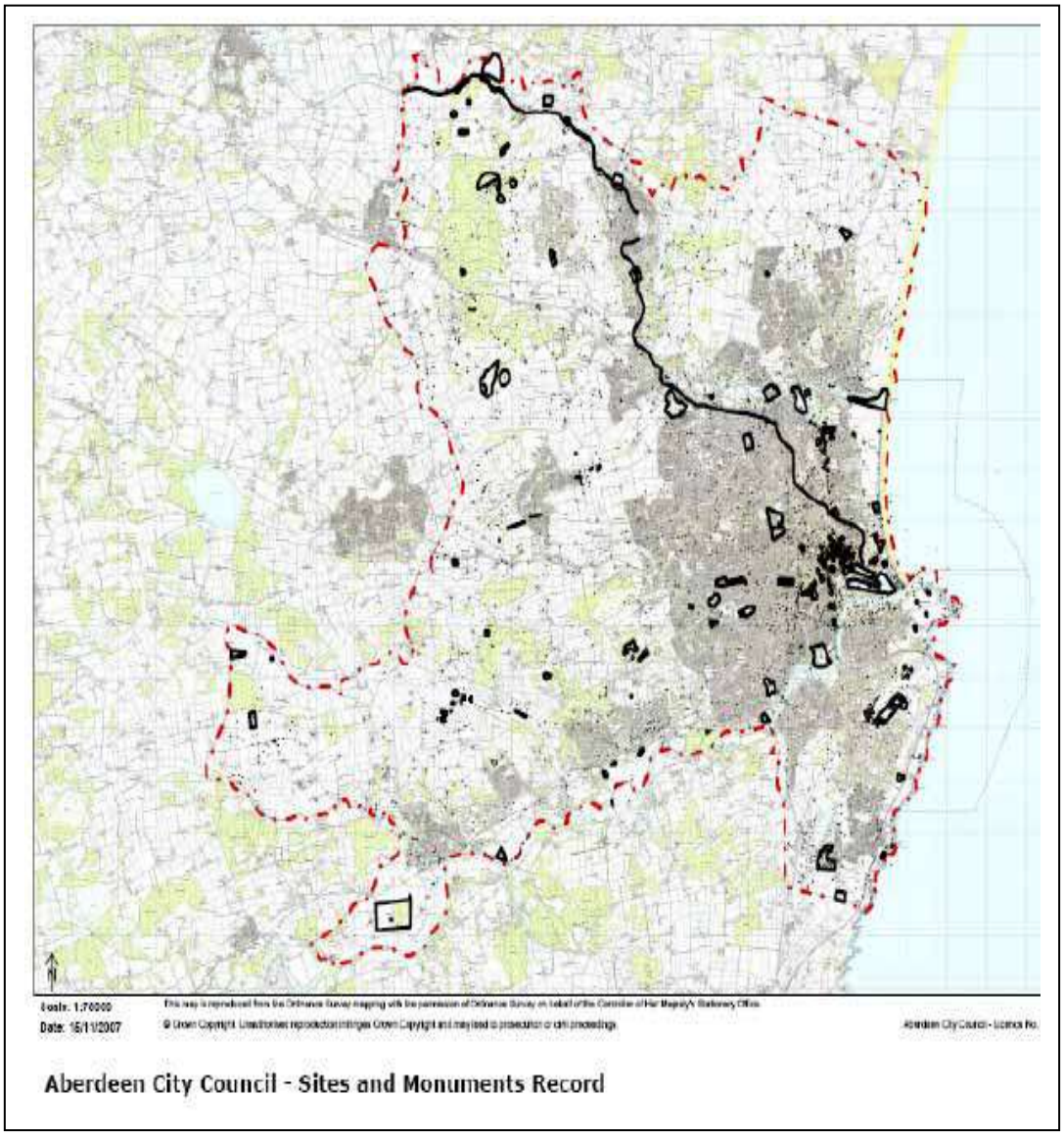
Appendix 7.3.3 Local Nature Reserves



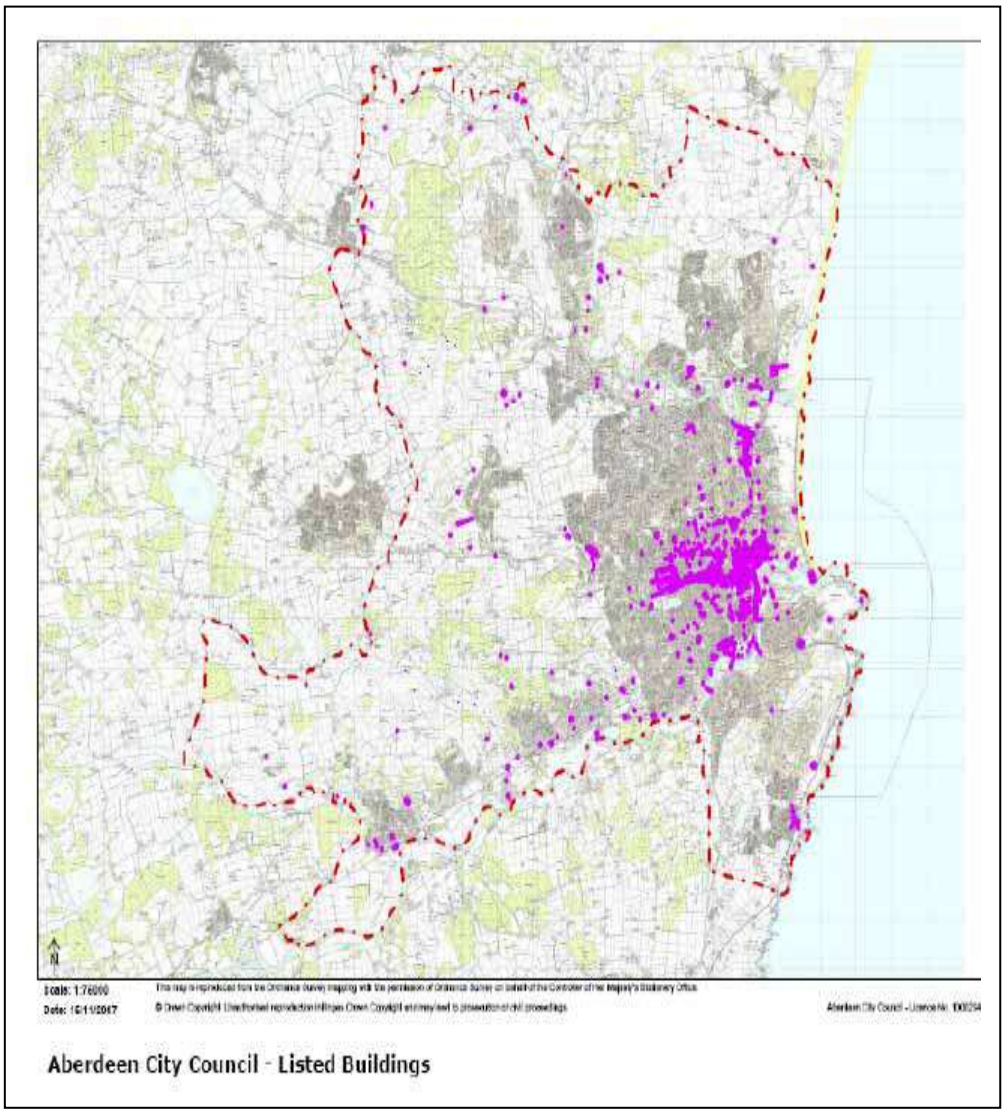
Appendix 7.3.4 Special Area of Conservation



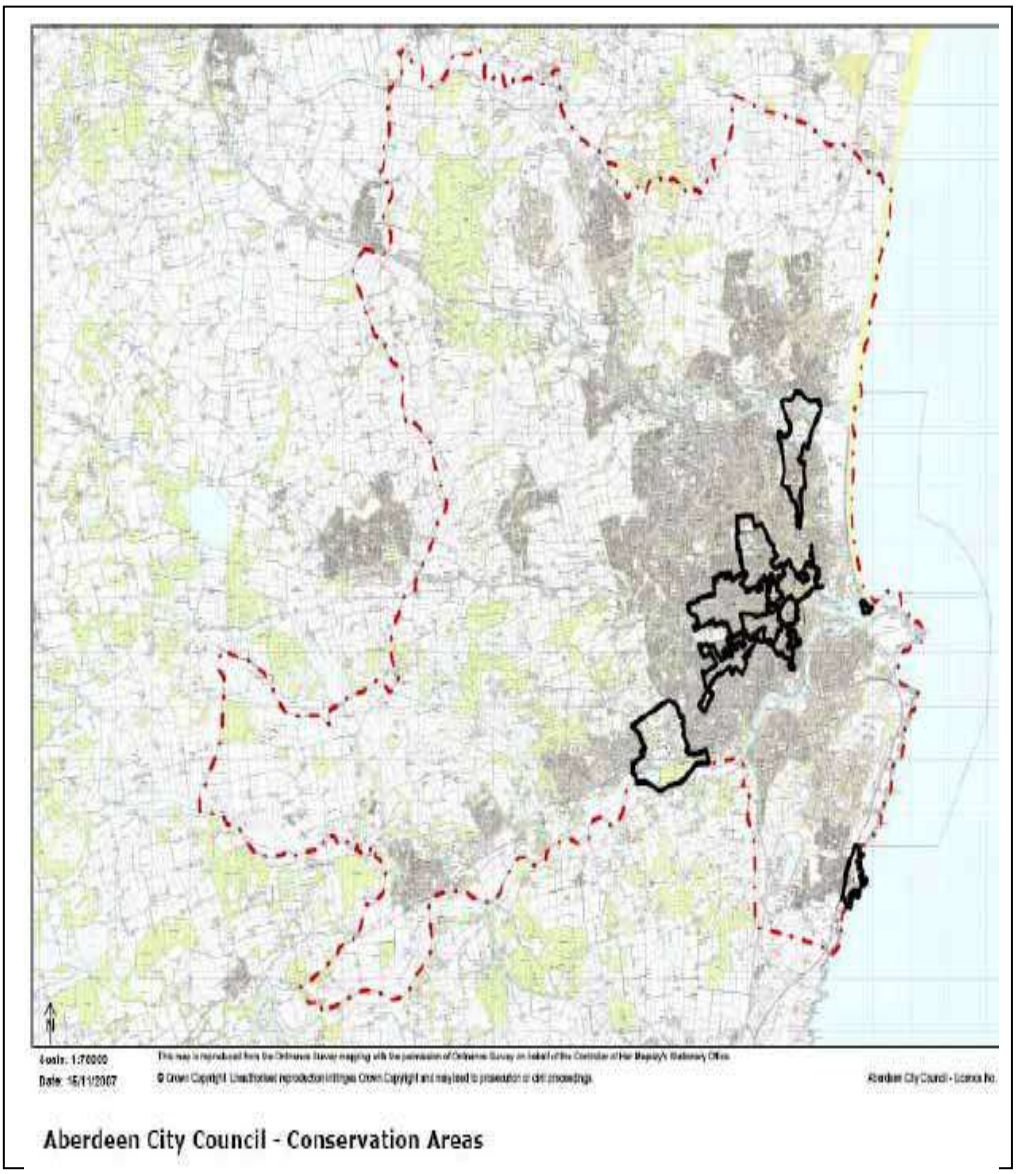
Appendix 7.3.5 Sites and Monuments Record



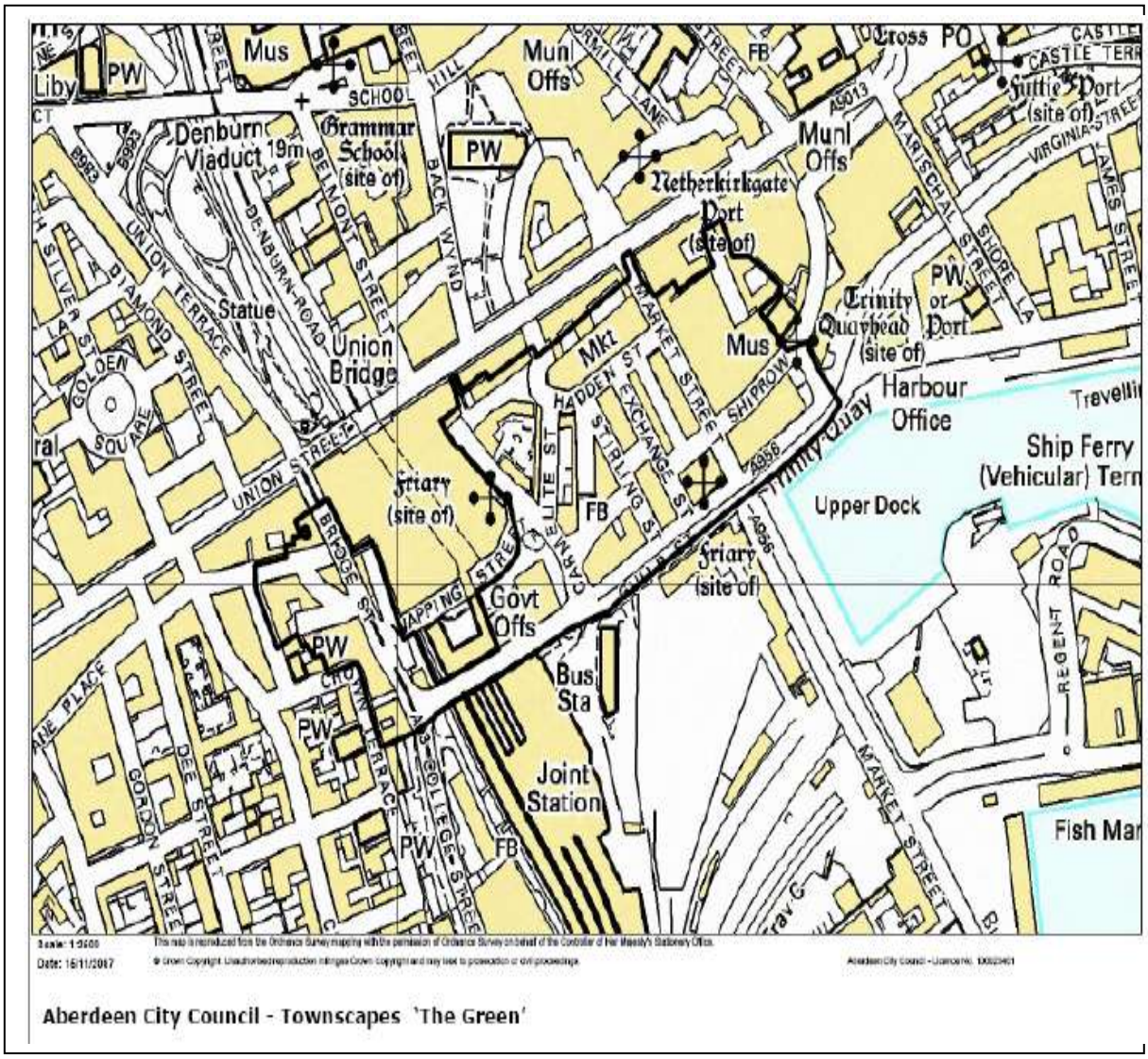
Appendix 7.3.6 Listed Buildings



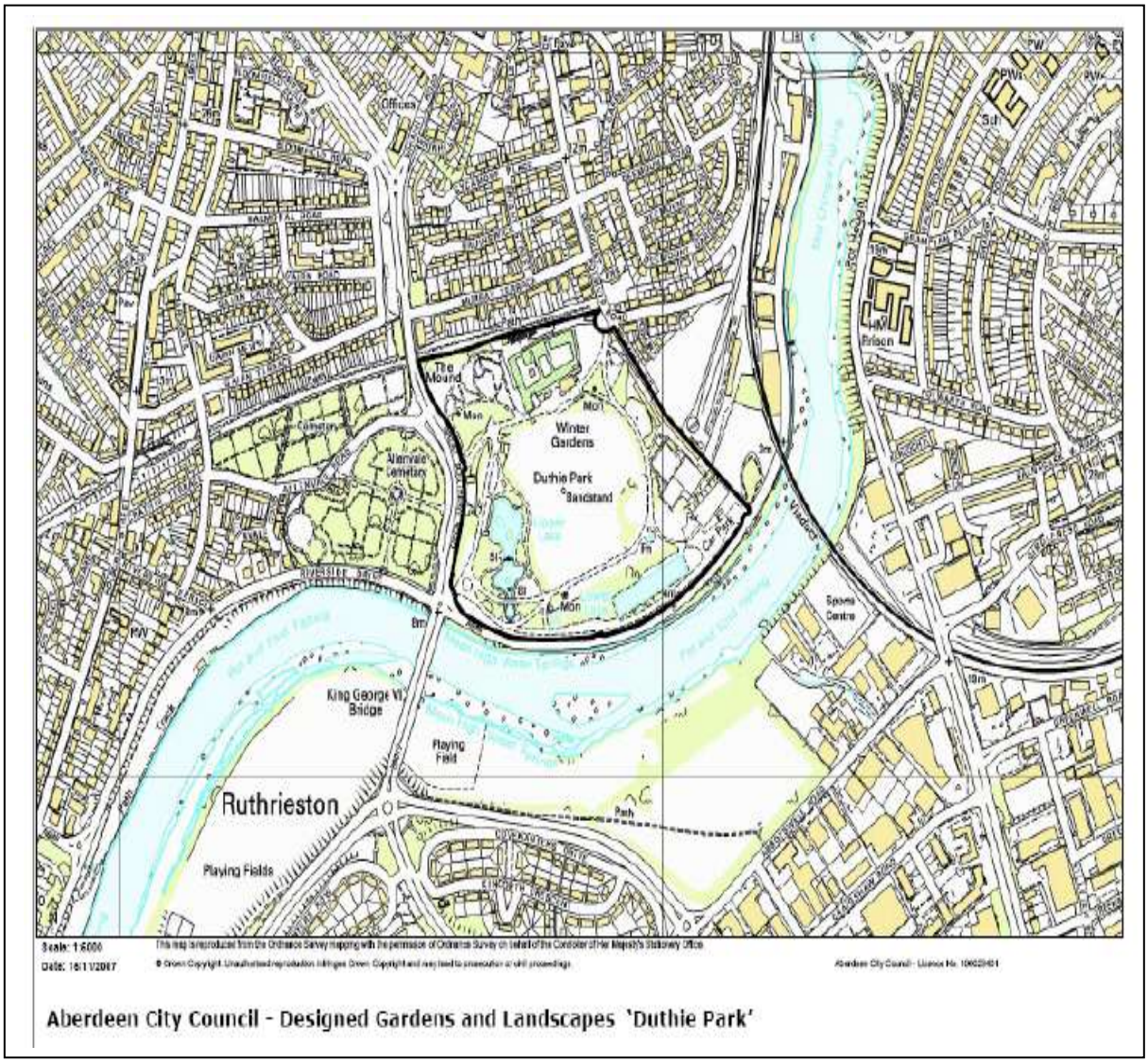
Appendix 7.3.7 Conservation Areas



Appendix 7.3.8 Townscapes – The Green



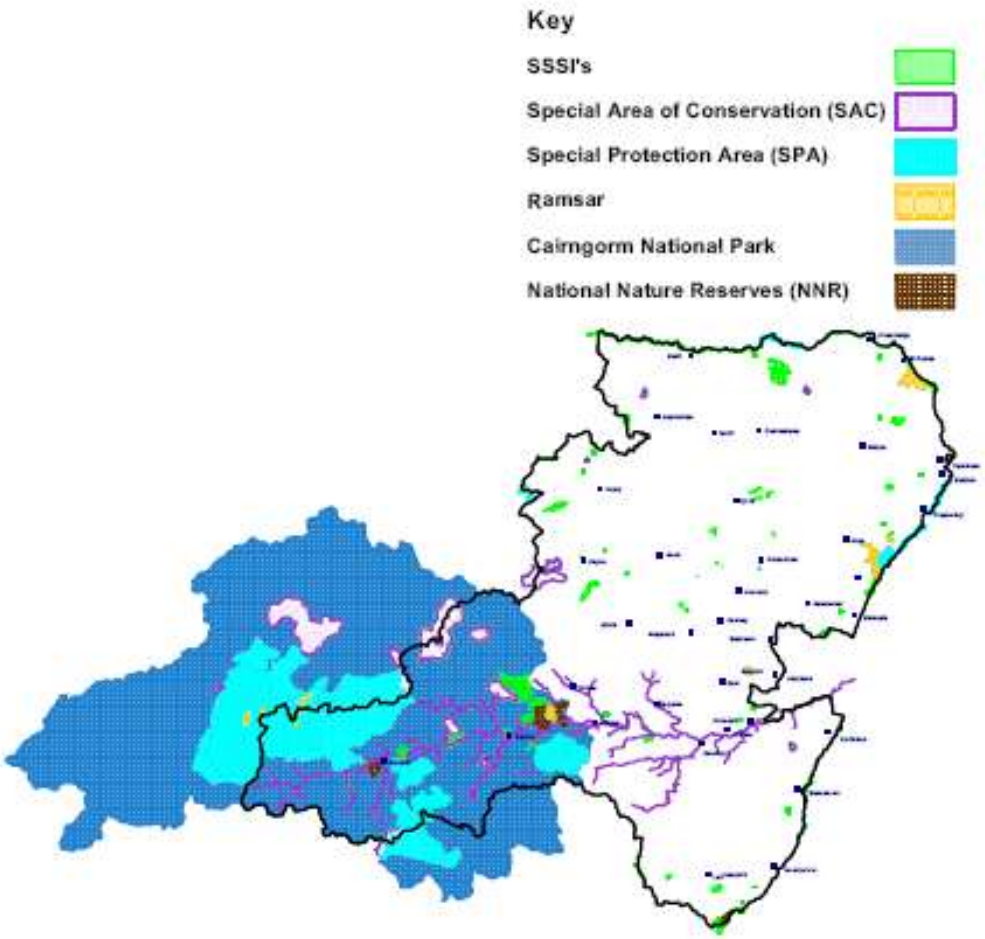
Appendix 7.3.9 Designed Garden and Landscapes – Duthie Park



Appendix 7.4.1 International and National Heritage Designations

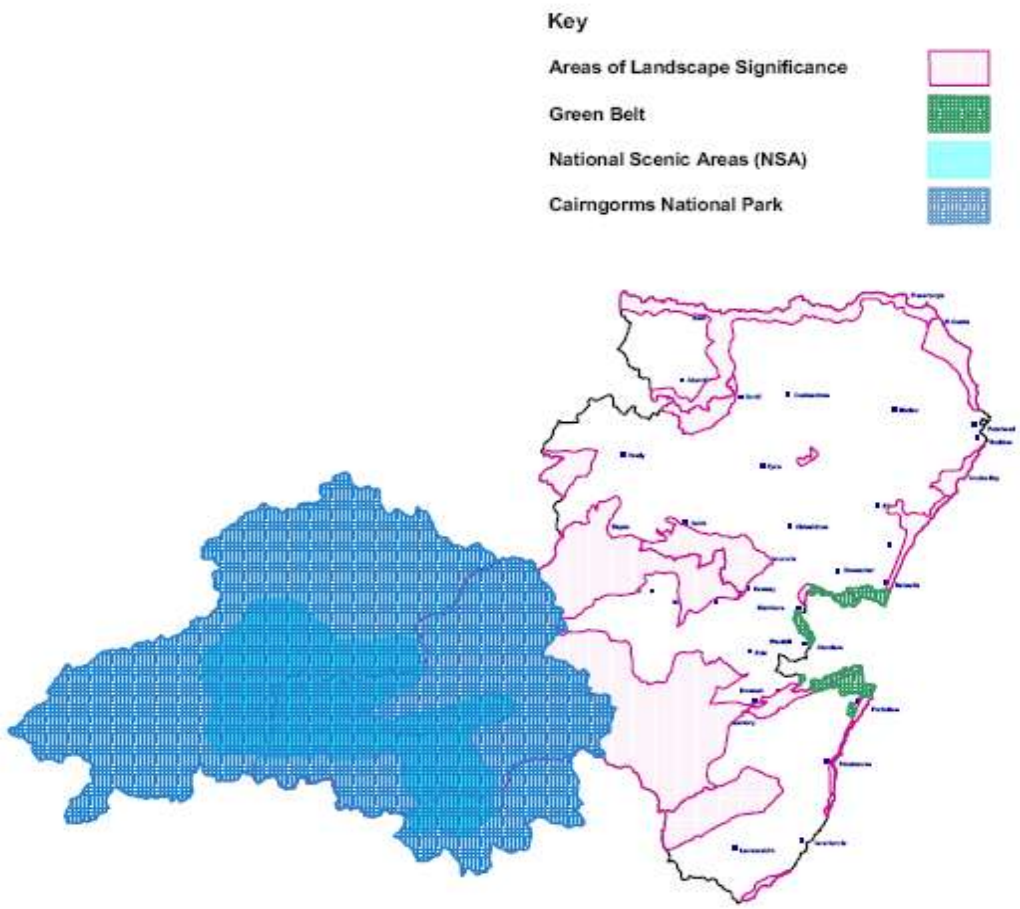
Aberdeenshire Maps

International and national natural heritage designations

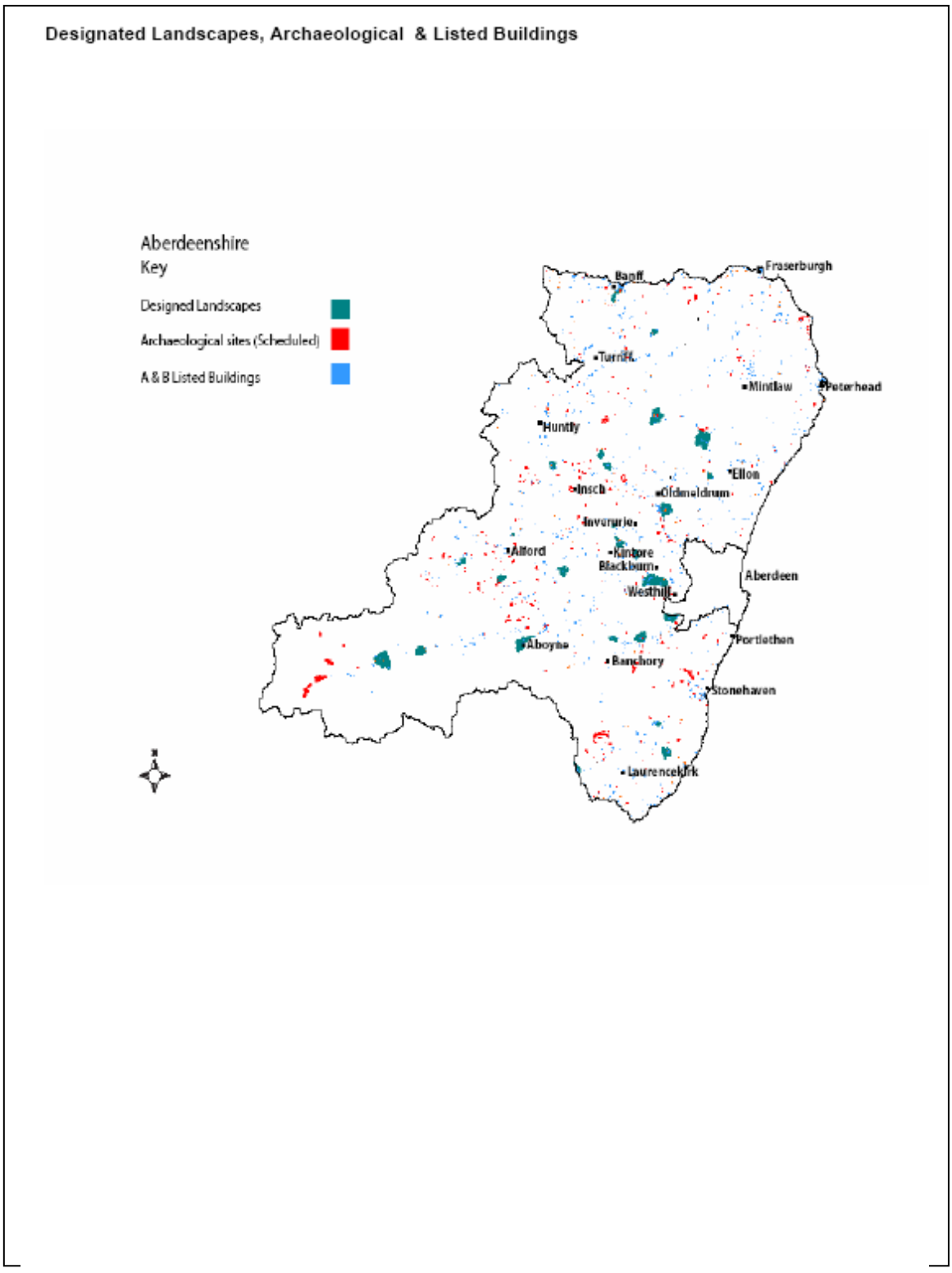


Appendix 7.4.2 Landscape Designations

Landscape designations: Areas of Landscape Significance, Cairngorms National Park, and National Scenic Areas

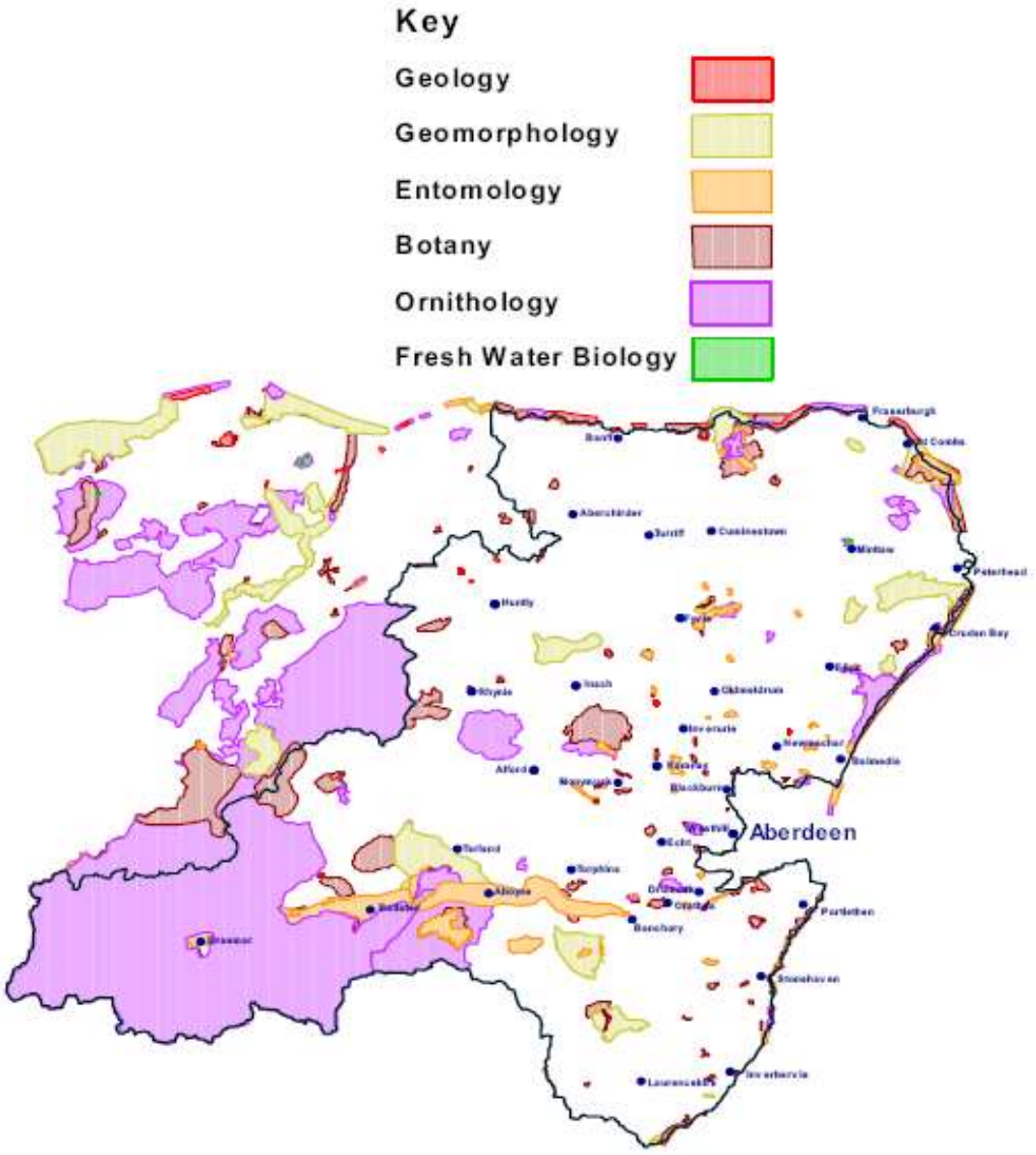


Appendix 7.4.3 Archaeological and Listed Buildings

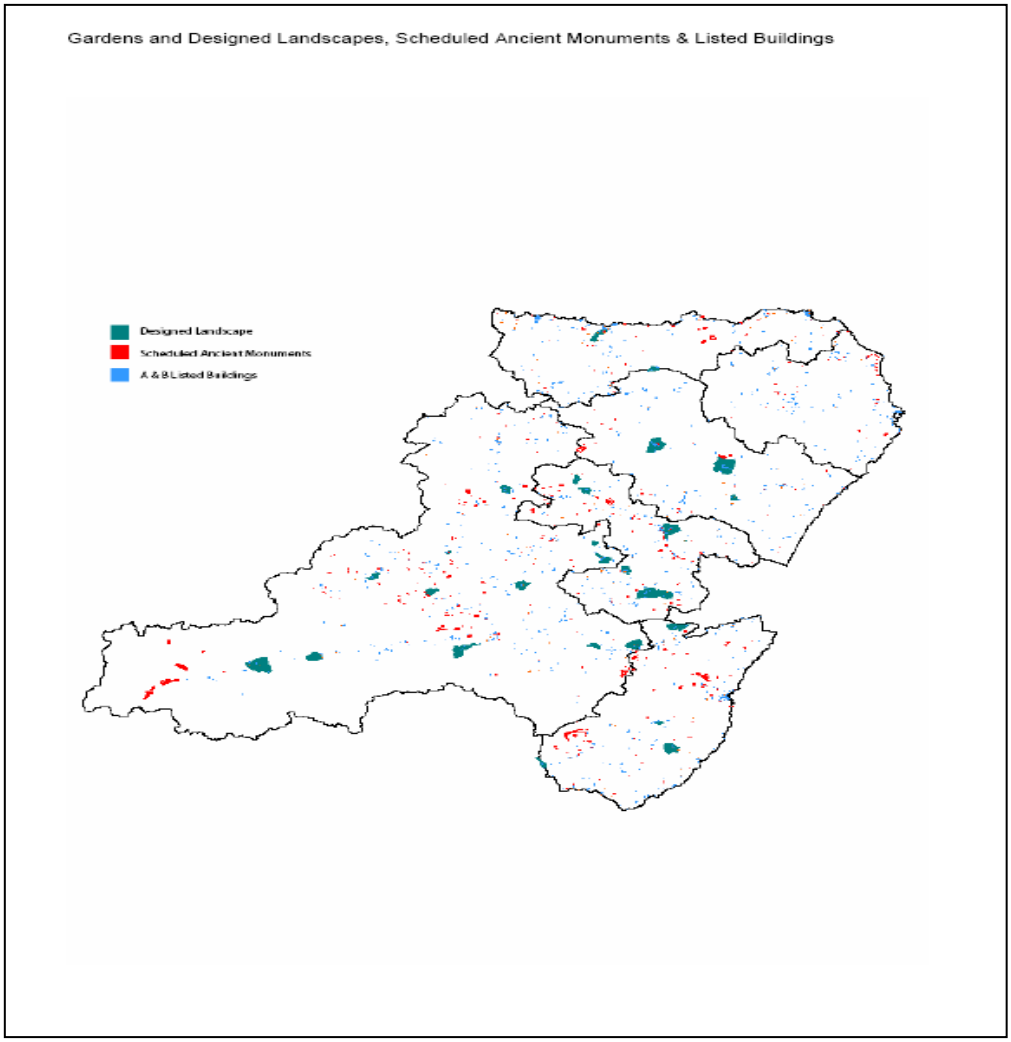


Appendix 7.4.4 Local natural heritage designations

Local natural heritage designations: Sites of Environmentally Sensitive Areas / Sites of Interest to Natural Science



Appendix 7.4.4 Scheduled Ancient Monuments



Appendix 7.4.5 Category C(S) Listed Buildings

Category C(S) Listed Buildings

Archaeological Sites (unscheduled), Category C (S) Listed Buildings & Conservation Areas