APPENDIX 1

SPATIAL FRAMEWORK AND GUIDANCE FOR WIND ENERGY DEVELOPMENT

SUPPLEMENTARY PLANNING GUIDANCE NOTE

FINALISED DRAFT

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INTRODUCTION

1. BACKGROUND

- 1.1 The Scottish Government is committed to the exploitation of the country's renewable energy potential where technologies can operate efficiently and where environmental issues can be satisfactorily addressed. Onshore wind energy is a key sector, and the Scottish Planning Policy (SPP) requires planning authorities to prepare spatial frameworks for wind energy developments in order to guide developments to suitable locations.
- 1.2 The Falkirk area is experiencing increasing pressure for wind farms and particularly single and small groups of wind turbines, stimulated by ongoing subsidies for these developments. Wind turbines raise a wide range of environmental, community and technical issues. At present these are assessed using a criteria-based policy in the Falkirk Council Local Plan. Whilst this highlights the key factors in decision-making, it gives limited guidance to developers on parts of the area where wind turbines are more, or less, likely to be acceptable.
- 1.3 Accordingly, the Council has decided to prepare this 'Spatial Framework and Guidance for Wind Energy Development' as Supplementary Planning Guidance (SPG) to the Local Plan. Its purpose is:
 - to provide a spatial framework which identifies areas requiring significant protection, areas of potential constraint and areas of search following the specific methodology in the SPP; and
 - to provide guidance against which planning applications for wind turbine proposals can be assessed. It will be regarded as a material consideration in the determination of such applications
- 1.4 The Spatial Framework relates to larger proposals (20 megawatt [MW] and above) for which there is relatively little scope within the Falkirk Council area. However, the guidance is designed to apply to a range of typologies, including the single turbine/smaller cluster developments for which there has been most pressure recently. It will be used as a framework for decision making within Falkirk Council, in order to provide a consistent, fair approach to wind energy developments. It is also intended that the guidance, in particular the updated landscape baseline, will be useful for key external stakeholders such as SNH in terms of their decision-making. It is intended to provide guidance to developers of both larger schemes and single turbine/small cluster schemes.
- 1.5 The Council commissioned a Landscape Capacity Study for Wind Energy Development specifically to inform the spatial analysis of landscape constraints and to inform further guidance as to how each landscape unit could accommodate wind energy.
- 1.6 Although the SPG aims to provide more definitive guidance on where wind energy development may be acceptable, variables in type/scale of development, as well as rapid technological advances in the industry make it difficult to provide certainty on constraints without detailed assessment.

2. FORMAT OF THE SUPPLEMENTARY PLANNING GUIDANCE

- 2.1 Part 1 comprises the Spatial Framework for wind energy developments of 20MW and above. This section follows the Scottish Government methodology as set out in the SPP and online guidance. This sets out:
 - Areas of significant protection
 - Areas of potential constraint
 - Areas of search
- 2.2 Following the Scottish Government Methodology, two areas of search have been identified where appropriate proposals are likely to be supported subject to detailed consideration against identified criteria. These areas are not, however, free from constraint and the guidance in part 2 provides information on these constraints
- 2.3 Part 2 is organised according to the key environmental constraints or issues which may affect the location of wind turbines. These are:
 - Ecology
 - Landscape and Visual
 - Green Belt
 - Flood Risk Areas
 - Soils
 - The Water Environment
 - Air Quality
 - The Historic Environment
 - Aviation
 - Telecommunications
 - Community Impacts
- 2.4 For each constraint, the following is outlined:
 - The broad nature of the constraint
 - The relevant policies in the Local Plan
 - The spatial definition of the constraint across the area, and an assessment of the implications for wind energy development capacity
 - Any relevant additional guidance
- 2.5 The guidance is followed by an overview of key areas of constraint within each Landscape Character Unit which are applicable to all wind energy development. It is intended that this guidance will provide developers with further clarify when initially identifying sites.

3. POLICY CONTEXT

Current National Targets

3.1 The Climate Change (Scotland) Act came into force in 2009 and underpins the government's strategy on renewable energy. The Scottish Government has set the ambitious target of 100% of Scotland's electricity generation to come from renewable sources by 2020. There is also a new interim energy target to generate the <u>equivalent</u> of 50% of Scotland's gross annual electricity consumption from renewables by 2015. This is pursued through the Renewables Obligation (Scotland) which came into force in 2002. As a result, a duty has been placed on local authorities to provide a supportive policy framework for renewable energy development, and nationally, to provide the strategic infrastructure to support the renewable energy industry. This has considerable spatial planning implications which need to be addressed through appropriate development plan policies.

National Policy & Guidance

- 3.2 Scottish Planning Policy (SPP) requires planning authorities to set out in the development plan a spatial framework for onshore wind farms of over 20 megawatts (MW) generating capacity. The SPP recommends that this identifies:
 - Areas requiring significant protection because they are designated for their national or international landscape or natural heritage value, are designated as green belt or are areas where there are significant cumulative issues from existing wind farms.
 - Areas where constraints exist but where proposals will be assessed on their individual merits against identified criteria
 - Areas of search where proposals are likely to be supported subject to assessments against identified criteria.
- 3.3 The Scottish Government has produced online guidance relating to renewable energy including onshore wind turbines and guidance on preparing spatial frameworks for wind farms.

Development Plan Policy

- 3.4 Policy ENV.13 of the Falkirk Council Structure Plan is broadly supportive of renewable energy in appropriate locations.
- 3.5 Policies ST20 and ST21 of the Falkirk Council Local Plan set out the broad criteria against which renewable energy, and specifically wind energy proposals will be assessed against. The aim of this SPG is to provide further clarity and guidance on these policy criteria. The full policies are replicated in Appendix 1.
- 3.6 The Falkirk Local Development Plan (LDP) Proposed Plan was published in April 2013. This retains the supportive policy framework for renewable energy and cross refers to the spatial framework and guidance for wind energy development. It is intended that this SPG will be rolled forward and given enhanced status as formal Supplementary Guidance in association with the LDP.

PART 1: SPATIAL FRAMEWORK FOR WIND ENERGY DEVELOPMENTS OF 20MW AND ABOVE

4. SPATIAL FRAMEWORK METHODOLOGY

4.1 The SPP and online guidance sets out the following to be included as areas of significant protection and areas of potential constraint. These are listed below, as relevant to Falkirk Council:

| AREAS OF SIGNIFICANT PROTECTION | | | |
|--|--|--|--|
| International/National Natural Heritage Designations | Special Protection areas RAMSAR sites Special Areas of Conservation (SAC) Sites of Special Scientific Interest (SSSIs) | | |
| Green Belt | All areas of Green Belt | | |
| World Heritage Sites | Antonine Wall WHS and buffer zone | | |

| AREAS OF POTENTIAL CONSTRAINT | | | |
|--|---|--|--|
| Historic Environment | Scheduled Ancient Monuments(not spatially identified on MAP 1B) Listed Buildings(not spatially identified on MAP1B) Conservation Areas(not spatially identified on MAP 1B) Inventory of Battlefield Sites Inventory of Historic Gardens and Designed Landscapes | | |
| Areas designated for regional or local landscape or natural heritage value | Areas of Great Landscape Value (AGLV) Wildlife Sites Sites of Importance for Nature Conservation (SINC) Local Nature Reserves | | |
| Impact on communities | 2km buffer zone around Urban and Village limits | | |
| Impact on aviation interests | Edinburgh Airport Safeguarding Zone | | |

4.2 A spatial assessment and sieving exercising was undertaken based upon the three stage requirements in SPP and the Scottish Government online renewables guidance for spatial frameworks. Once the areas requiring significant protection and areas with constraints are identified, it is evident that there are numerous overlapping constraints on wind energy development in the area. This is largely due to the more urbanised and populated of Falkirk, its proximity to airports, and a complex range of natural and built heritage designations. Two areas of search for larger-scale (over 20MW) onshore wind farm developments were identified and are shown on Map 1C.

5. AREAS OF SIGNIFICANT PROTECTION (MAP 1A)

International/National Nature Conservation Sites

5.1 The Falkirk Council area has a number of internationally and nationally designated sites. These are shown on Map 1A and listed in Figure 1.

| Figure | 1: Inter | national/Na | ational Natu | re Conservat | tion Sites |
|--------|----------|-------------|--------------|--------------|------------|
|--------|----------|-------------|--------------|--------------|------------|

| INTERNATIONAL SITES | | | |
|----------------------------|---|--|--|
| Site | Qualifying Interest and | | |
| | characteristics | | |
| Firth of Forth SPA | Aggregations of non-breeding birds including Common scoter (Melanitta nigra), Pink-footed goose (Anser brachyrhynchus, Redshank (Tringa tetanus) and Eider (Somateria mollissima), | | |
| Firth of Forth RAMSAR site | Aggregations of non-breeding birds. A number of qualifying species associated with the SPA are given additional protection through the RAMSAR citation for protection of international important wetlands. | | |
| Slamannan Plateau SPA | Taiga bean goose (Anser fabalis fabalis), | | |
| Black Loch Moss SAC | Active raised bog Degraded raised bog | | |

| NATIONAL SITES | |
|------------------------|-----------------------------------|
| Site | Characteristics |
| Avon Gorge SSSI | Broad-leaved, mixed and yew |
| | woodland |
| Bo'mains Meadow SSSI | Lowland Neutral Grassland |
| Black Loch Moss SSSI | Lowland Raised Bog |
| Carron Dams SSSI | Transition open fen |
| Carron Glen SSSI | Upland oak woodland, Upland mixed |
| | ash woodland, Lowland neutral |
| | grassland |
| Darnrig Moss SSSI | Lowland Raised Bog |
| Denny Muir SSSI | Subalpine acid grassland, Blanket |
| | bog, Basin fen |
| Firth of Forth SSSI | Aggregations of breeding and non- |
| | breeding birds |
| Howierig Muir SSSI | Lowland Raised Bog |
| Slamannan Plateau SSSI | Taiga bean goose (Anser fabalis |
| | fabalis), non-breeding |

5.2 Because of the international/national importance of these sites, they are regarded as areas requiring significant protection, within which wind farm development will not be supported.

Green Belt

5.3 The areas of Green Belt within the Falkirk Council Area are shown on Map 2G. For the purposes of the Spatial Framework, Green Belt within the Falkirk Council Area is identified as an area requiring significant protection for wind energy developments of 20MW and above. The main purpose of the Green Belt within the Falkirk Council Area is to maintain the visual separation between communities, to protect the landscape setting of communities, and to safeguard countryside for recreational use. Therefore, is may be possible to accommodate small schemes (below 20MW). Further guidance is given in Part 2.

Antonine Wall World Heritage Site and Buffer Zone

- 5.4 The Antonine Wall World Heritage Site and its associated Buffer Zone are identified as an area of significant protection on Map 1A in the context of the Spatial Framework.
- 5.5 The Antonine Wall is a World Heritage Site and significant sections of it are Scheduled Ancient Monuments. Identification as an area of significant protection for wind energy developments of 20MW and above is in accordance with the SPP and online guidance. The Antonine Wall Buffer Zone is also included as an area requiring significant protection as it is intrinsically linked to the setting of the Wall, and was subject to a robust assessment as part of the original World Heritage Site nomination. The Buffer Zone is also safeguarded under existing planning policy and managed under the current Antonine Wall Management Plan.
- 5.6 Further guidance for developments of under 20MW is given in Part 2 of this document.

6. AREAS OF POTENTIAL CONSTRAINT (MAP1B)

Historic Environment

- 6.1 In accordance with the SPP and the Scottish Government online renewables guidance, the following Historic Environment designations are identified as areas of potential constraint for wind energy developments of 20MW and above.
 - Scheduled Ancient Monuments
 - Listed Buildings
 - Conservation Areas
 - Inventory of Battlefield Sites
 - Inventory of Historic Gardens and Designed Landscapes
- 6.2 Relevant to all development, further guidance on the Historic Environment, including the protection of key features is set out in Part 2 of this document.

Areas Designated for Local Landscape or Natural Heritage Value

6.3 Areas of Great Landscape Value (AGLV) are identified as areas of potential constraint for wind energy developments of 20MW and above, in accordance

with the approach set out in the SPP and Scotish Government online guidance. AGLVs are identified in Map 2G.

- 6.4 Further detailed advice on landscape and visual issues, relevant to all scales of development is set out within Part 2 of this document.
- 6.5 In accordance with the SPP and the Scottish Government online renewables guidance, the following local ecological designations are identified as Areas of Potential Constraint for wind energy developments of 20MW and above (See Map 1B):
 - Wildlife Sites
 - Sites of Importance for Nature Conservation (SINC)
 - Local Nature Reserves
- 6.6 Further detailed advice, relevant to all scales of development is set out within Part 2 of this document.

International Ecological Sites – Supporting Habitat

6.7 The Bean Geese fields form vital supporting habitat for the Slamannan Plateau SPA and are identified as an Area of Potential Constraint according. Further information can be found in Section 8.

Aviation

- 6.8 Edinburgh Airport Safeguarding Zone is identified on Map 1B as an Area of Potential Constraint. Land within an approximate 13km radius of the airport lies in a CAA-defined safeguarded area within which the purpose is to control the height and design of development which may affects the airport operations.
- 6.9 However, certain smaller wind energy developments, including single turbines may be able to be accommodated within this zone, following on from consultation with the airport operator and the Civil Aviation Authority (CAA). Further guidance on aviation issues is given within Part 2.

Impact on Communities

- 6.10 Scottish Planning Policy advises that for the purposes of the Spatial Framework, there should be a separation distance of up to 2km between areas of search for wind energy developments of over 20MW and the edge of cities, towns and villages, but that decisions on individual developments should take into account specific local circumstances and geography.
- 6.11 Map 1B identifies a 2km buffer from Urban/Village limits in the Falkirk Council area, and this is considered appropriate as an area of potential constraint for developments of 20MW and above.

7. AREAS OF SEARCH FOR WIND ENERGY DEVELOPMENTS OVER 20MW

- 7.1 Map 1C shows the Broad Area of Search for wind energy development of over 20MW within the Falkirk Council Area. In terms of assessment in accordance with the methodology set out in SPP, only one area of search was identified. This location has been the subject of a previous planning application for a 13-turbine scheme.
- 7.2 Proposals for wind energy developments of over 20MW in this location are likely to require Appropriate Assessment to assess potentially significant impacts on Natura 2000 sites. An assessment of the effects on the Blawhorn Moss SAC (in West Lothian) was undertaken as part of the recently-consented scheme.

PART 2: GENERAL GUIDANCE FOR ALL WIND ENERGY DEVELOPMENTS AND GUIDANCE FOR WIND ENERGY DEVELOPMENTS OF BELOW 20MW

8. ECOLOGY

Background

8.1 Wind energy developments can impact on ecological interests in a variety of ways. They can result in loss or degradation of habitat through the construction of the turbines and their associated infrastructure and access tracks. Pollution can result from construction activities. Disturbance of wildlife can occur from construction or operation of turbines. Bird strike is also a risk during the operational phase.

Relevant Policies

8.2 The Falkirk Council Structure Plan and the Falkirk Council Local Plan both contain policies which seek to ensure that development proposals do not have an adverse effect on international, national and local ecological designations. These policies are listed in Appendix 1.

Spatial Assessment

International/National Sites

8.3 International/National sites are listed in Section 5. These sites are identified as Areas of Significant Protection where wind energy development of over 20MW will not be permitted as set out within the SPP and online renewables guidance. International sites are unlikely to be able to accommodate any wind energy development given their sensitivity.

International Sites Supporting Habitat – Guidance for All Developments

- 8.4 For international sites, impacts on qualifying species can take place outwith the boundaries of the designated sites. Areas in the immediate vicinity of, or with some ecological connection to the sites, may be constrained. In particular, for the Firth of Forth and Slamannan Plateau SPAs, areas of supporting habitat are used by birds for feeding or loafing. SNH have produced guidance 'Assessing Connectivity with Special Protection Areas (SPAs)' (March 2012) which sets out further guidance to assess whether there is connectivity in terms of dispersal and foraging distances between the proposal and the qualifying interests of the site.
- 8.5 For the Slamannan Plateau SPA, the Bean Geese fields provide an indication of supporting habitat. These are shown in Map 2 and these fields are identified as an Area of Potential Constraint for the purposes of the Spatial Framework. All scales of wind energy development will be heavily constrained in and around the Bean Goose fields and all proposals are likely to require an Appropriate Assessment. The main feeding areas for the Bean Geese are:

- Improved grassland. This includes species of grass and clover of high agricultural value. Such grasslands are generally established by reseeding and are maintained by livestock grazing and/or mowing and by the use of lime and fertilizers.
- Unimproved grassland. This includes less than 30% of ryegrass, white clover, and/or other sown species indicative of cultivation and has not been improved by management practices in recent years. The land will not normally have been cultivated, reseeded, drained or ploughed for 12 to 15 years.
- 8.6 Loafing areas used by bean geese are areas of rough, wet ground made up of a mixture of heather, coarse grasses and bog habitats. There may also be areas of open water present. These habitats include standing open water, lowland raised bog, or intermediate bog.
- 8.7 For the <u>Firth of Forth SPA</u>, grassland up to 20 km from the sites may be used, although use has yet to be mapped comprehensively. Development within supporting habitat will require further investigation as to the use and importance of the site by the relevant qualifying species. Due to the many species which form the qualifying interests of the SPA/RAMSAR site it is not possible to define spatially the flight paths for each species. SNH and the RSPB are continuing to augment their data and will be able to provide further information.
- 8.8 Wide distribution of supporting habitat across the Council area is less of an issue for nationally designated sites within the Falkirk Council Area (SSSIs), and impacts tend to be close to the boundary of the sites. However, ecosystems such as peatland and wetland habitat can be affected by proposals outwith their boundaries. Further details are set out in Section 8.

Local Nature Conservation Sites

8.9 The Council has a system of non-statutory locally designated sites comprising some 60 Wildlife Sites and 25 Sites of Importance for Nature Conservation. In addition there is a Local Nature Reserve at Bonnyfield, and at Carron Dams. The distribution of these sites is shown on Map 1 and they are listed in Appendix 3 of this document. These embrace a broad range of habitats spread across the area. In terms of existing policy, the emphasis is on avoiding impacts on these sites unless there are overriding local benefits. These sites identified in the Spatial Framework as areas of potential constraint for wind energy developments of 20MW and above. However, because they are generally of small scale, avoidance, or appropriate mitigation/ compensation should generally be possible for all scales of development.

Other Habitats and Species

8.10 A variety of habitats and species outwith designated sites may be important, notably priority species identified in the Falkirk Local Biodiversity Action Plan (LBAP). However, this is a localised and complex constraint which is not amenable to simple mapping. Impacts will have to be assessed on a site-by-site basis.

Additional Guidance

- 8.11 In terms of assessing impacts on nationally and internationally designated sites, SNH will provide pre-application advice as part of the EIA screening and scoping process. The Habitats Directive and associated Regulations will apply, and proposals which are likely to have a significant effect on qualifying interests will require an appropriate assessment.'
- 8.12 SNH and RSPB have produced indicative guidance on bird species distribution. The guidance produced by these agencies is designed to minimise the negative impacts of wind farms on the fourteen species of birds protected under Annex 1 of the European Birds Directive and four UK Biodiversity Action Plan species considered sensitive to wind farms. These maps are intended to offer an indicative guide to the likelihood of conflicts and are not a substitute for site specific Environmental Impact Assessments in relation to birds.
- 8.13 The RSPB have produced a Composite Sensitivity Map of Scotland for location of onshore wind farms with respect to a suite of sensitive bird species. The map shows high levels of sensitivity around the Slamannan Plateau and around the Firth of Forth. The map can be viewed on the RSPB website.
- 8.14 Falkirk Council's SPG on 'Biodiversity and Development' sets out details of how biodiversity conservation should be incorporated into development, and provides checklists for different development types including wind energy development. It provides an initial site audit which is a useful starting point for an initial desk based study for all types of wind energy.
- 8.15 The Falkirk Biodiversity Action Plan provides further information on protected and priority species and habitats. Reference to these documents should be made at the scoping and assessment stages.
- 8.16 The timing of ecological surveys should be factored into the project planning of the proposal. Timeous surveys will be required to provide information on bird usage of the site, whether for breeding, feeding, roosting or on migration or other important bird movements, as this factor will be considered at the planning application stage. Studies will be required to determine the impact on flora and fauna affected by both on and off site aspects of proposals.
- 8.17 SNH have also produced a guidance document 'Assessing the impact of smallscale wind energy proposals on the natural heritage (March 2012). This applies to proposals of three turbines of less and includes guidance on conducting a basic landscape assessment, assessing impacts on habitats and protected species, and an overview of how construction impacts can be minimised.

9. LANDSCAPE AND VISUAL IMPACTS

Background

- 9.1 Wind turbines can have significant landscape and visual impacts by virtue of their form and scale. Responses to wind turbines vary to some they may seem to threaten their surroundings, while others may view wind energy as making an important contribution to addressing climate change and securing a sustainable source of electricity. However, there is widespread acknowledgement that wind energy developments can adversely affect certain landscapes and views which are of importance to the character of an area. There are also accepted methodologies for assessing landscape and visual effects in a structured and objective way.
- 9.2 **Landscape impacts** are changes in the fabric, character, and quality of the landscape as a result of a development. This can include effects upon the overall patterns of elements that give rise to landscape character and regional and local distinctiveness such as designated landscapes and landscapes of conservation or historic importance.
- 9.3 **Visual impacts** relate solely to changes in available views of the landscape, and the effect of those changes on people. This includes the overall impact on visual amenity, be it degradation or enhancement.
- 9.4 **Cumulative effects** are expressed as follows:
 - <u>'In combination'</u> (two or more windfarms seen by the observer from the same viewpoint in the same field of view);
 - <u>Successive</u> (two or more wind farms seen by the same observer from the same viewpoint but only by turning to look in a different direction); and
 - <u>Sequential</u> (two or more wind farms seen by an observer whilst travelling along a route, when no more than one may usually be seen at the same time). Repeated views of wind farms can give travellers along a route the impression that they are travelling through a 'wind farm landscape'.

Landscape Capacity Study

- 9.5 To provide a basis for the landscape section of this SPG a Landscape Capacity Study (LCS) was undertaken. The methodology for the study is summarised in Figure 2.
- 9.6 The turbine typologies included in the study are based on a range of turbine groupings and height scenarios as shown in Figure 3.
- 9.7 Due to the sheer range of turbine sizes available on the market, and the number of turbines suitable for different schemes, the study undertakes an assessment of what developments could be accommodated in terms of number of turbines and the height of turbines proposed as above.

Figure 2: Methodology for Landscape Capacity Study

| Review of Landscape Character Areas (LCA) | |
|---|--|
| Identify range of turbine typologies | |
| Assess the landscape sensitivity of each LCA to a | |
| range of turbine typologies | |
| Identify landmark features and views. Identify | |
| visual sensitivity of landscape. | |
| Assess potential of each LCA to accommodate a | |
| range of typologies | |
| Identify broad strategic zones for wind energy of | |
| around 20MW | |
| Produce Development Management Guidance for | |
| all LCAs. | |

Figure 3: Turbine Typologies

| No. of Turbines | Height of turbines |
|-----------------|--------------------|
| Single Turbine | 20-50m |
| 2-5 Turbines | 51-70m |
| 6-9 Turbines | 71-90m |
| 10-15 Turbines | 91-130m |
| 15+ Turbines | 130m+ |

Spatial Assessment

Landscape Sensitivity

9.8 The LCS assessed the capacity of each of the 16 landscape character units to accept the different wind farm typologies, assigning to them capacities ranging from Low to High, based on the landscape sensitivity assessment. This is shown on Map 2D and Figure 4.

Visual Sensitivity

- 9.9 The visual sensitivity assessment as part of the LCS considers views and visibility within the landscape character areas, and to/from the wider area which could potentially impact on the setting of each character area and how they are experienced. In considering visual sensitivity, the LCS identified whether there are:
 - Highly sensitive views from 'iconic' viewpoints, requiring protection;
 - Sensitive views from 'important' viewpoints or other key viewpoints;
 - Key views from sensitive routes;
 - Prominent ridgelines that are important to intervisibility;
 - Views of landscape/seascape features that are important to the setting and context of the landscape character areas; and
 - Views from prominent areas which have a strong visual relationship with the Antonine Wall World Heritage Site [WHS], or views from the WHS to prominent areas where development could affect the authenticity, integrity or significance of the setting of the WHS.

- 9.10 The following key areas of visual sensitivity have been identified:
 - <u>Antonine Wall World Heritage Site and Buffer Zone</u>. The study highlights that wind energy development would be inappropriate within the buffer zone which extends into several landscape character areas located close to the Wall, and in the more distant areas identified in the study. The Antonine Wall WHS and Buffer Zone is identified as an area of significant protection within Part 1: Spatial Framework.
 - <u>Important Ridgelines</u>. The most prominent ridges, identified as potentially having a significant effect on intervisibility between character areas and which could have an important bearing on the visibility of wind turbines, are shown in Map 2F.

Iconic, Important and Key Views

- 9.11 These are identified in Map 5, and listed in Appendix 3:
 - **Iconic** viewpoints are considered to be so significant that they should be protected without imposing unreasonable constraints on wind energy developments.
 - **Important** viewpoints are not considered 'iconic' because they do not meet all of the criteria used to define iconic viewpoints. These are nevertheless important in the local Falkirk context.
 - **Key** viewpoints identified did not meet the criteria for iconic of important viewpoints and are not shown on Map 5 or defined by viewcones. However, the visual impact on these key views should be taken into consideration when considering proposed wind energy developments in Falkirk.

Cumulative Issues

- 9.12 This LCS has taken into account operational turbines within the study area, in assessing existing 'baseline' character, whether an area has reached or is approaching landscape capacity or whether there is the potential for wind energy development.
- 9.13 Falkirk has few turbines constructed and operational to date, but a key LCUs where cumulative landscape and visual issues have been arising has been within the 4(ii) Carron Glen, 1(i) Kilsyth/Denny Hills and 2(i) Denny Hills fringe. These issues are primarily arising with operational and consented development at Earlsburn, Earlsburn Extension and Craigengelt. There continues to be pressure for wind energy development across the Carron Valley. Accordingly, the study has identified these areas as having lower capacity. The Council may also undertake a review of areas at risk of approaching cumulative capacity in the future and update this SPG accordingly. Further guidance is given in the Development Management Guidance in Appendix 3.

9.14 Areas of Great Landscape Value

Three Areas of Great Landscape Value (AGLV) are currently designated by Falkirk Council:

- The Avon Valley/Slamannan Plateau: the plateau is characterised by its open nature. The River Avon valley contains an attractive rolling landscape of field units, hedgerows and tree belts.
- The eastern end of the Touch/Campsie/Gargunnock Hills: rugged landform distinctive natural and manmade features together with a pattern of vegetation interact to create a landscape of value and character.
- South of Bo'ness.

AGLVs are a locally landscape designation and are identified as an area of potential constraint within Part 1: Spatial Framework for wind energy development of 20MW and above. <u>All proposals which are within or close to the boundary of the AGLV will be required to undertake an assessment of the effects of the proposal on the AGLV.</u>

Tourism/Recreation Interests

9.15 Map 2E and Appendix 4 identify sensitive routes and key viewpoints in the Falkirk Area. The impact on key tourism destinations and countryside access routes/facilities will be a material consideration as part of any planning application. The LCS identifies a large visual view cone from the Falkirk Wheel, which is one of Falkirk's key tourist attractions offering extensive views, within which the cumulative impacts of existing windfarms are becoming apparent. Landscape and Visual Impact Assessments should take into consideration potential visual impacts from important views from Core Paths, from the coast, and other tourist trails throughout the region such as the proposed John Muir Trail.

Overall Landscape Capacity

- 9.16 There were 3 LCA's assessed as having moderate-high capacity where it was considered appropriate that landscape character can change as a result of wind energy development, creating new character and possibly the perception of a 'wind farm landscape'. This is where there are relatively few potential landscape-related constraints or where landscape character and visual amenity is already affected by existing development.
- 9.17 Combining the results of the landscape and visual sensitivity assessments, Figure 4 below indicates the level of overall level of landscape constraint and capacity in the area. It sets out the main considerations as to where wind energy development would be inappropriate and where it could be potentially accommodated. Figure 4 should be read in conjunction with the Development Management Guidance located within Appendix 2. This sets out guidance on the appropriate scale and design of wind turbines within each LCU.

| Landscape Character Areas | Potential Capacity (Table H) | Landscape Objective | Main Considerations | | |
|----------------------------------|------------------------------------|------------------------|---|--|--|
| 1 Lowlar | 1 Lowland Hills: | | | | |
| 1(i) Kilsyth / Denny Hills | Low- Moderate | Protection | Wind Energy Development (WED) inappropriate where distant views or setting of the Antonine Wall affected WED inappropriate within visual cones from 'important' viewpoints at | | |

Figure 4: Potential Capacity of Landscape Character Units

| Landscape Character Areas | Potential Capacity (Table H) | Landscape Objective | Main Considerations |
|---------------------------------|------------------------------------|-----------------------------|--|
| | | | character & visual amenity affected Avoid prominent ridges Cumulative effects with Craigengelt and Earlsburn windfarms WED inappropriate where landscape setting with Kilsyth Hills/Campsie Fells and Touch Hills affected |
| | | Accommodation | WED may be appropriate within visual cone from 'important' viewpoint at Falkirk Wheel where character & visual amenity not affected WED may be appropriate where landscape setting with Kilsyth Hills/Campsie Fells and Touch Hills not affected |
| 2 Lowlar | nd Hill Fringes: | | |
| 2(i) Denny Hills Fringe | Low- Moderate | Protection | WED inappropriate where distant views or setting of the Antonine Wall affected WED inappropriate within visual cone from 'important' viewpoint at Falkirk Wheel where character & visual amenity affected WED inappropriate where views from sensitive routes affected Avoid prominent ridges Cumulative effects with Greendykeside wind turbines WED inappropriate where landscape setting with Touch Hills, Firth of Forth and Ochil's affected |
| | | Accommodation | WED may be appropriate within visual cone from 'important' viewpoint at Falkirk Wheel where character & visual amenity not affected WED may be appropriate where landscape setting with Touch Hills, Firth of Forth and Ochils not affected WED may be appropriate where it relates to the open_gently rolling landform |
| 2(ii) Touch Hills Fringe | Low- Moderate | Protection | WED inappropriate within visual cone from 'important' viewpoint at Falkirk Wheel where character & visual amenity affected Avoid prominent ridges WED may be appropriate within visual |
| | | | cone from 'important' viewpoint at Falkirk Wheel where character & visual amenity not affected WED may be appropriate where it relates to urban fringe character |
| 3 Lowlar | nd Plateaux: | | |
| 3(I) Slamannan Plateau | Moderate - High | Protection Accommodation | WED inappropriate within visual cone from 'important' viewpoints at Cairnpapple & Blawhorn Moss where character & visual amenity affected WED may be appropriate within visual cones from 'important' viewpoints at |
| | | , Ghànge | Cairnpapple&Blawhorn Moss where character & visual amenity not affected Landscape change due to WED may be |

| Landscape Character | Potential Capacity (Table H) | Landscape Objective | Main Considerations |
|---|------------------------------------|---|--|
| Areas | | | appropriate within larger scale, more |
| 3(ii) Darnrig / Gardrum Plateau Moorland | Moderate- High | Protection Accommodation / Change | Cumulative effects with Greendykeside wind turbines Protection of important habitats Landscape change due to WED may be appropriate within large scale, open, |
| 3(iii) Castlecary / Shieldhill Plateau Farmland | Low- Moderate | Protection | WED inappropriate where views or setting of the Antonine Wall affected WED inappropriate where views from sensitive routes and urban edge affected Avoid prominent ridges WED inappropriate where landscape setting with rising plateau to south affected |
| | | Accommodation | landscape setting with rising plateau to south not affected |
| 4 Lowlar | d River Valleys | 3: | |
| 4(i) Avon Valley | Low- Moderate | Protection | WED inappropriate within visual cones from 'important' viewpoints at Cockleroy, Cairnpapple& Avon Aqueduct where character & visual amenity affected Avoid prominent ridges WED inappropriate where key landscape characteristics affected |
| | | Accommodation | WED may be appropriate within visual cones from 'important' viewpoints at Cockleroy, Cairnpapple& Avon Aqueduct where character & visual amenity not affected |
| 4(ii) Carron Glen | Low | Protection | Cumulative effects with Craigengelt and Earlsburn wind farms WED inappropriate where views from sensitive routes affected Avoid prominent ridges Most WED likely to be inappropriate since key landscape characteristics affected |
| 4(iii) Bonny Water | Moderate | Protection | WED inappropriate where views or setting of the Antonine Wall affected WED inappropriate where views from sensitive routes affected |
| | | Accommodation | WED may be appropriate where it relates to urban fringe character |
| 4(iv) Lower Carron / Bonny Water | Moderate | Protection | WED inappropriate where views or setting of the Antonine Wall affected WED inappropriate within visual cone from 'important' viewpoint at Falkirk Wheel where character & visual amenity affected |
| | | Accommodation | WED may be appropriate within visual cone from 'important' viewpoint at Falkirk Wheel where character & visual amenity not affected WED may be appropriate where it relates to urban fringe character |
| 4(v) | Moderate | Protection | WED inappropriate where views or |

| Landscape | Potential | Landscape | Main Considerations |
|---|-------------------|---------------------------|--|
| Areas | (Table H) | Objective | |
| Falkirk – | | | setting of the Antonine Wall affected |
| Grangemout h Urban Eringo | | Accommodation | WED may be appropriate where it relates to urban fringe character |
| 5 Rolling | Farmlands: | | |
| 5(i) | Low- | Protection | WED inappropriate where views or |
| Manuel Farmlands | Moderate | | setting of the Antonine Wall affected WED inappropriate within visual cone from 'important' viewpoint at Cockleroy where character & visual amenity affected WED inappropriate where views from sensitive routes affected Avoid prominent ridges |
| | | Accommodation | WED may be appropriate within visual cone from 'important' viewpoint at Cockleroy where character & visual amenity not affected |
| 6 Coasta | I Margins: | | |
| 6(i) Bo'ness Coastal Hills | Low- Moderate | Protection | WED inappropriate within visual cone from 'iconic' viewpoint at Blackness Castle WED inappropriate within visual cones from 'important' viewpoints at House of Binns Tower &Cockleroy where character & visual amenity affected WED inappropriate where views from sensitive routes affected Avoid prominent ridges Cumulative effects with Muirhouse wind |
| | | Accommodation | WED may be appropriate within visual cones from 'important' viewpoints at House of Binns Tower &Cockleroy where character & visual amenity not affected |
| 6(ii) Grangemout h / Kinneil Flats | Moderate- High | Accommodation / Change | Landscape change due to WED may be appropriate WED may be appropriate where it relates to urban fringe character |
| 6(iii) Skinflats | Moderate | Protection | WED inappropriate within visual cone from 'important' viewpoint at Airth Castle where character & visual amenity affected WED inappropriate where views from sensitive routes of the backdrop of the Ochils contrasting with the Forth would be affected WED may be appropriate within visual cone from 'important' viewpoint at Airth Castle where character & visual amenity |
| | | | not affected |
| of Forth | Moderate | Protection | WED inappropriate within visual cones from 'important' viewpoints at Falkirk Wheel &Airth Castle where character & visual amenity affected WED inappropriate where views from sensitive routes of the backdrop of the Ochils contrasting with the Forth would be affected WED may be appropriate within visual |

| Landscape Character Areas | Potential Capacity (Table H) | Landscape Objective | Main Considerations |
|---|------------------------------------|------------------------|---|
| | | | cones from 'important' viewpoints at Falkirk Wheel & Airth Castle where character & visual amenity not affected |
| 'WED' refers to Wind Energy Development | | | |

Additional Guidance

Landscape Capacity Study

- 9.18 The Landscape Capacity Study for Wind Energy Development in the Falkirk Council Area should be read alongside this Spatial Framework and SPG when working up the baseline information for a wind energy proposal. This document provides further details of the methodology used to arrive at the overall conclusions of the study and the areas of landscape and visual sensitivity.
- 9.19 Detailed Development Management Guidance for each Landscape Character Area is set out in Appendix 2 and this is applicable to all wind energy developments.

Relevant SNH Guidance

- 9.20 'Strategic Locational Guidance for Onshore Wind Farms in respect of the Natural Heritage' sets out a number of principles which should guide the location of wind turbines so as to minimise effects on the natural heritage, including landscape. There is strategic mapping which accompanies this document which covered landscape, ecology and geology.
- 9.21 Key SNH guidance specifically for landscape issues is as follows:
 - Visual representation of wind farms (2006)
 - Visual Assessment of Windfarms Best Practice (2002)
 - Siting and designing windfarms in the landscape (2009)
 - Siting and design of small scale wind turbines of between 15 and 50 metres in height (2012).
 - Assessing the cumulative impact of onshore wind energy developments (2012)

10. GREEN BELT

Background

10.1 Green belt is designated around settlements to manage urban growth, to protect the landscape setting and identity of settlements, and to protect and give access to open space within and around towns and cities. There is the potential for wind energy development to conflict with these objectives, and the SPP suggests that green belts are areas requiring significant protection.

Relevant Policies

10.2 The relevant green belt policies can be found in Appendix 8.

Spatial Assessment

Map 2G shows the location of the green belt within the Falkirk area. It comprises 10.3 a series of green wedges separating the main communities. Its purpose is specifically to maintain the visual separation between communities, to protect the landscape setting of communities, and to safeguard countryside for recreational use. For the purposes of the Spatial Framework in part 1 of this document, the Green Belt is identified as an Area of Significant Protection. This is consistent with the SPP. It may be possible to accommodate smaller typologies of wind energy development without prejudicing these objectives. In particular, it is unlikely that wind turbines will compromise the visual separation between communities, which is their primary function. However, the relevant green belt policy criteria will need to be applied and so green belt should be regarded as significant constraint. In practice, most of these areas lie in close proximity to communities or in landscape character areas with lower capacity, and these other constraints may dictate in the location of proposals in green belt areas.

11. SOILS

Background

- 11.1 Wind energy developments on deep peat can have significant impacts on the environment including:
 - Habitat loss due to changes to hydrology caused by installing turbines.
 - The loss of sensitive species and habitats, some of which are protected species or form qualifying interests to nationally designated sites.
 - The release of carbon, which significantly reduces the carbon saving benefits of wind energy development.

Relevant Policies

11.2 There are no specific Structure or Local Plan policies relating to rare soils or development affecting peatlands, other than the ecological sites and biodiversity policies listed in Appendix 1.

Spatial Assessment

- 11.3 Parts of the Falkirk area contain areas of deep peat, and areas of intermediate peat bog. Whilst Map 2H shows the broad locations of peat soil, assessment must be undertaken on a case-by-case basis as peat soils have an interdependent relationship with the surrounding area, habitats and the water environment.
- 11.4 Lowland raised bogs are identified as a national priority habitat and intermediate raised bogs are identified as a locally important habitat.
- 11.5 Most typologies of turbine development within deep-peat areas will have some impact on the environment. For proposals close to deep peat areas, or within intermediate peat bog, the impacts require closer assessment and an additional level of supporting information to enable Falkirk Council and statutory consultees to assess the impacts of the proposal. Areas of deep peat identified as SSSIs area identified in Part 1: Spatial framework as Areas of Significant Protection for Wind Energy Development. For all proposals, an assessment will be required on a case-by-case basis dependent on proximity to areas of peat.
- 11.6 It should be noted that there are also a number of other rare soils which are found in the Falkirk area and impacts on these soils should be assessed on a case-by case-basis and are not mapped spatially. These rare soils could include rendzinas, magnesian and calcareous soils types.

Additional Guidance

11.7 The National Peat Resources Inventory (NPRI) is a geo-database of lowland peatland information. There are a large number of sites within the Falkirk Council area identified within the inventory including Dunmore Moss and Letham Moss. Map 8 shows area areas of peat within the Falkirk Council area.

- 11.8 'Calculating Carbon Savings from Wind Farms on Scottish Peat Lands A New Approach' (Scottish Government, 2008) provides a method to determine potential carbon losses and savings associated with wind farm developments on peat land taking into account peat removal, drainage, habitat improvement and site restoration. This provides a useful methodology for establishing the overall carbon benefits from any proposal.
- 11.9 SEPA, in partnership with Scottish Renewables, have produced '*Guidance on the Assessment of Peat Volumes, Reuse of Excavated Peat and the Minimisation of Waste' (2012)* which provides further useful information for developers. SEPA also have their own position statement 'Developments on Peat.'

12. THE WATER ENVIRONMENT

Background

12.1 Wind energy can have a significant impact on the water environment and many of these impacts can occur during the construction phase. Impacts can include wetland degradation and habitat loss or disturbance, pollution of water courses and groundwater, and a potential increase in flood risk, including through loss of wetland/bogs.

<u>Wetlands</u>

- 12.2 Wetlands can be internationally and nationally important because of their ecological value and their key role in the water environment. Key functions include:
 - Reducing risk of flooding by attenuation
 - Protecting surface and ground water from diffuse pollution
 - Reducing climate change by storing carbon in organic soils
 - Supporting a range of wetland dependent habitats

Water Quality

- 12.3 Falkirk Council, as well as SEPA, have a duty to ensure that wind energy proposals and their associated development do not have an adverse impact on water courses and the water environment. Wind energy development can result in unacceptable impacts on watercourses and water quality including drinking water. Examples of impacts could include:
 - Direct construction impacts through engineering works.
 - Culverting of water courses
 - Hydrological/ drainage impacts.

Flooding

12.4 Scottish Planning Policy sets out a 'risk framework', within which the level of risk is related to the type of land use. The risk framework provides a basis for planning decision making relating to flood risk and divides flood risk into three categories – little or no risk, low to medium risk, and medium to high risk and

outlines an appropriate planning response. For areas within a less than 1:200 year flood risk, infrastructure development including wind turbines will normally be considered appropriate. For areas with a flood risk greater than 1:200, infrastructure such as wind turbines and their associated infrastructure may be appropriate subject to further flood risk assessment.

12.5 The main issue as regards flooding is in relation to increasing the risk of flooding elsewhere, and removing or damaging natural compensatory storage mechanisms such as bogs. Damage to turbines and ancillary infrastructure are likely to be mitigated by appropriate construction techniques.

Relevant Policies

12.6 In addition to general ecological policies, the Structure and Local Plans contain policies on watercourses and flooding . These are replicated in Appendix 1.

Spatial Assessment

Wetlands

- 12.7 SEPA are currently producing an indicative wetlands inventory which will provide valuable future information for wind turbine developments.
- 12.8 The Falkirk Indicative Habitat Network study (2009) and the Forest Enterprise Integrated Habitat Network study (2010) identify areas of wetland habitat within the Falkirk Council. These are shown on Map 3.
- 12.9 The Falkirk Indicative Habitat Network study highlights eight broad priority enhancement areas for wetland habitat at:
 - Carron Estuary
 - Darnrig Moss
 - Larbert
 - Fannyside Lochs
 - Kilsyth Bonnybridge
 - Crossburn
 - Greenhill
 - Blawhorn Moss.
- 12.10 Some of these areas are identified as national designations and are therefore identified as an area of significant protection within Part 1: Spatial Framework for developments of 20MW and above. Locally designated sites are identified as an area of constraint for the purposes of the Spatial Framework.
- 12.11 The Firth of Forth SPA is also an important wetland habitat for birds and is identified as an area of significant protection for the purposes of the Spatial Framework.

Drinking Water Catchments and Private Supplies

12.12 The areas within Falkirk Council which into feed the Carron Valley Reservoir are identified in Map 2C and impacts should be identified on a site-by-site basis by

identifying public water abstraction close to any proposal. This would be a likely component of any Environmental Statement for EIA applications. Drinking water catchments are not considered to be a significant spatial constraint.

12.13 There are currently eight known private water supplies in the area. All of these private water supplies are fed by either groundwater or groundwater springs. Falkirk Council will provide details of the location of these on request. SEPA will also provide further guidance.

Flooding

12.14 The areas which are at risk from coastal and river flooding are identified on Map 2G. All development within areas of potential flood risk will be assessed against the risk framework.

Additional Guidance

- 12.15 SEPA protects from significant damage those wetlands that derive their water from groundwater and surface water. Activities that might impact on wetland sites protected for nature conservation are primarily dealt with by Scottish Natural Heritage. Both organisations have guidance documents relating to impacts on wetlands, and the wider water environment. Links can be found in the bibliography in Appendix 5.
- 12.16 In particular, the SNH Guidance Document "Good Practice During Wind Farm Construction " produced in 2010 provides guidance on minimisation of impacts to sensitive receptors such as watercourses and wetland habitats during the construction and management of wind energy projects.
- 12.17 Guidance on development on areas of flood risk is set out in Scottish Planning Policy and PAN 69. Falkirk Council has also produced Supplementary Planning Guidance on Flooding and Drainage.

13. BUILT AND CULTURAL HERITAGE

Background

- 13.1 The Falkirk Council Area contains a number of international, national and local historic environment designations including:
 - The Frontiers of the Roman Empire (Antonine Wall) World Heritage Site and associated Buffer Zone
 - Over 350 Listed Buildings
 - 9 Conservation Areas
 - Around 100 Scheduled Ancient Monuments
 - Archaeological sites on the Sites and Monuments Record (of regional and local importance)
 - 3 sites within the Inventory of Historic Gardens and Designed Landscapes
 - Non-inventory garden and designed landscapes of local importance
 - Sites within the Inventory of Historic Battlefields

- 13.2 Wind energy development can affect the historic environment through direct impacts such as archaeological disturbance, and indirect impacts in terms of effects on the visual and landscape setting of historic sites. Turbines can result in visual dominance by virtue of their vertical scale. Intervisibility between historic sites is also a key issue as certain archaeological or historic landscape features were intended to be seen from other historic sites, and wider vantage points. Cross-border impacts relating to cultural heritage views, vistas and intervisibility are also a crucial issue.
- 13.3 The direct physical impacts of wind energy development can have a significant effect on sites of archaeological significance. The foundations of a 1MW to 2MW machine can comprise concrete foundations of up to 16m diameter and 3-4m in depth. There will be further direct impacts from anemometer masts, substations, ancillary buildings, access roads/tracks, cabling and connection to the grid, and construction works.

Relevant Policies

- 13.4 Falkirk Council Structure Plan Policy ENV.5 (Built Environment and Heritage) is relevant. The key relevant policies within the Falkirk Council Local Plan are:
 - EQ12 Conservation Areas
 - EQ13 Areas of Townscape Value
 - EQ14 Listed Buildings
 - EQ16 Sites of Archaeological Interest
 - EQ17 Antonine Wall
 - EQ18 Historic Gardens and Designed Landscapes
- 13.5 These policies are replicated in full in Appendix 1.

Spatial Assessment

Antonine Wall World Heritage Site (WHS) and Buffer Zone

13.6 The LCS recognises that landscape is a fundamental part of what makes the Antonine Wall WHS so significant and contributes to how it is experienced, understood and appreciated. Accordingly, the Antonine Wall and it's associated Buffer Zone is identified as an area of significant protection as set out in Part 1: Spatial Framework. Whilst Policy EQ17 advises that development within the buffer zone would not be permitted unless it can be demonstrated that there would be not impact on the Wall and it's setting, the nature of wind energy development in terms of its visual dominance would mean that virtually no proposals would be in accordance with this policy. The Antonine Wall World Heritage Site and the Buffer Zone is shown on Map 2E.

Listed Buildings, Conservation Areas, Scheduled Ancient Monuments, Historic Gardens & Designed Landscapes, and Battlefield Sites

13.7 The LCS identified some historic environment sites as Landmark Features with associated sensitive viewcones, and others as key viewpoints. There are of course many more which will potentially fall within areas of visual sensitivity when assessing a wind energy proposal. Map 2I shows the conservation areas

and broad distribution of listed buildings and scheduled ancient monuments. The direct footprint of listed buildings and scheduled ancient monuments are considered to be areas of significant protection for the purposes of the Spatial Framework, and listed buildings and their setting should be safeguarded in terms of developments below 20MW. The LCS highlights a number of built heritage features and sensitive viewcones and key viewpoints will require to be assessed through a Landscape and Visual Impact Assessment. There will be other built and cultural heritage features not identified in the LCS, but which nonetheless are of local/regional importance. This should be identified at the scoping stage for any proposal.

- 13.8 There are a number of sites within the Falkirk Council area which are included within the Inventory of Gardens and Designed Landscapes (See MAP 2I) include Dunmore Pineapple, Dunmore Park and Callendar Park. There are also a number of other designed landscapes which are not as yet included in the inventory but which are of significant local importance.
- 13.9 There are 3 Battlefield sites within the Falkirk Council area. These are shown on Map 2I. Battlefield sites are identified as Areas of Potential Constraint for the purposes of the Spatial Framework. Parts of the battlefield sites have been lost or disturbed by built development over the years and are subject to a wide range of land-uses, including new housing and infrastructure. Specific impacts for all other proposals should be addressed on a case-by-case basis through the planning application process.

Additional Guidance

Built and Cultural Heritage Assessment

13.10 For larger typologies of wind energy development, or other proposals which are likely to have a significant impact on built and cultural heritage, Historic Scotland recommends that historic environment features should be assessed in a specific cultural heritage study rather than an LVA, although where relevant they could also be included *additionally* (not instead of) in the LVA for specific landscape and scenic value.

Antonine Wall

- 13.11 The Frontiers of the Roman Empire (Antonine Wall) World Heritage Site SPG identifies adverse impacts on the Wall as those which could affect the following criteria:
 - The authenticity and integrity of the setting, e.g.:
 - Changes to the prominence/dominance of the WHS in the landscape;
 - Obstruction of views to and from the WHS;
 - Changes in the overall preservation of the landscape setting.
 - The **significance** of the setting, e.g.:
 - How the function and meaning of the WHS relates to the landscape;
 - How the WHS is understood and can be appreciated in the landscape;
 - Relationships between components of the WHS and related sites.
 - The character of the landscape in which the WHS sits, including the contribution the WHS makes to wider landscape character.

- The quality of the wider landscape.
- 13.12 The SPG provides further guidance on proposals which could potentially affect the Wall and its setting. Historic Scotland will also provide further guidance during the scoping process.

Listed Buildings, Conservation Areas, Scheduled Ancient Monuments, Historic Gardens & Designed Landscapes, and Battlefield Sites

- 13.13 Views from a Conservation Area identified from a ZTV should be taken into account as part of the Landscape and Visual Impact Assessment and built and cultural heritage study. Boundaries of Conservation Areas can be found in the Falkirk Council Local Plan proposals map.
- 13.14 The Forth and Clyde and Union Canals (See MAP 2I) are designated Scheduled Ancient Monuments. Whilst their setting is important, they also form important areas for tourism and recreation. Impacts that need to be addressed as part of Landscape and Visual Impact Assessment include any direct impacts on the canals and their setting as well as key viewpoints from the canal.
- 13.15 Designed landscapes have important vistas and sight-lines, and the topography of the surrounding landscape often contributes to the setting of the designed landscape and associated structures. Whilst many of these designed landscapes have limited outward views, wind energy development may impact upon these designations and will be require to be assessed further as part of a planning application.

Archaeology

13.16 In order to assess direct impacts on archaeology, developers should undertake an initial desk-based study and further assessment may be required as part of the EIA or planning application. The Council's archaeologist and Historic Scotland will be able to provide specific advice on a case-by-case basis at the scoping stage.

Battlefields

13.17 Further guidance on Battlefields can be found in Historic Scotland's Battlefields guidance note. Early discussion with Historic Scotland are recommended.

14. AVIATION

Background

14.1 Due to their height, wind turbines can have an effect on aviation interests. Rotating wind turbine blades may have an impact on certain aviation operations, particularly those involving radar. Aviation constraints are a constantly evolving field with a wide range of mitigation options emerging. However, wind energy development will not be permitted in locations where the impact (cumulative or on an individual basis) will adversely affect aviation safety and operations.