

Cardiff Council & Levett-Therivel Sustainability Consultants

**Sustainability Appraisal and Strategic Environmental
Assessment of the Cardiff Local Development Plan**

**Final Sustainability Appraisal Report of the Cardiff
Local Development Plan**

January 2016

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1. Introduction and Key Outcomes

Introduction

- 1.1 This Sustainability Appraisal (SA) Report forms part of the Council's documents for the Cardiff Local Development Plan (LDP) revised to reflect the May 2015, October 2015 and January 2016 Matters Arising Changes following the public Examination. The purpose of sustainability appraisal is to identify the LDP's likely significant economic, environmental and social effects, and to suggest measures to minimise any negative effects and maximise the positive ones. Sustainability appraisal helps to foster a more inclusive and transparent process of producing a LDP, and helps to ensure that the LDP is integrated with other policies.
- 1.2 Section 121 of the Government of Wales Act 1998 and section 79 of the Government of Wales Act 2006 place a duty on the National Assembly to promote sustainable development. Section 39 of the Planning and Compulsory Purchase Act¹ requires that the body producing a LDP (in this case Cardiff Council) must contribute to achieving sustainable development. In October 2006 Cardiff Council adopted its Sustainable Development Policy Statement which states that, "sustainable development is a guiding principle for all of the Council's activities ... [including] strategy and policy development".
- 1.3 This report:
- Summarises and updates key aspects of the previously published Scoping Report;
 - Assesses the vision, objectives, strategic options, candidate sites and key policies for the Cardiff LDP (with reference to the detailed policies when necessary), and the cumulative effects of the LDP;
 - Where the LDP would have significant negative impacts, identifies possible methods to mitigate adverse impacts;
 - Proposes a process of monitoring the LDP's actual impacts; and
 - Provides appendices providing more detailed information on various aspects of this report.

How this sustainability appraisal was undertaken including difficulties faced

- 1.4 The Council has undertaken its own sustainability appraisal (integrating Strategic Environmental Assessment) of its LDP and has retained Levett – Therivel Sustainability Consultants to ensure quality, and to provide technical assistance at key stages of the process. Much of the SA was carried out by the sustainability appraisal team – the Council's sustainability officers and the consultants – with the results being passed to, and responded to, by the Council's planning team. Several appraisal workshops were attended by

¹ www.legislation.gov.uk/ukpga/2004/5/contents

officers from other Council departments. The last stages, updating between the October 2012 Preferred Strategy and the August 2013 Deposit LDP, and then to take account of the May 2015, October 2015 and January 2016 Matters Arising Changes following the public Examination, were largely carried out as a desk study by the consultants, with input from the Council's officers.

- 1.5 Some difficulties were faced in carrying out the SA. First, the LDP has gone through several versions, and many policies are based on ones in the 2009 version which was subsequently withdrawn: care had to be taken to ensure that each round of appraisal was consistent with earlier ones while reflecting changes in context including information on employment, the housing market, and flood risk as well as changes to the plan itself. Changes in order and numbering, drafting 'churn', repetition and wordiness, have added to the difficulty keeping track of material and ensuring consistency. (For clarity, this report uses the latest policy names and numbers even when referring to earlier versions which used different ones. Paragraph 8.1 should resolve any uncertainties about references.)
- 1.6 Second, the back-and-forth nature of the appraisal, with SA comments being actively considered and acted upon by the planning officers (a very good thing which has helped to ensure that the SA findings really have informed the LDP), also made it difficult to ensure consistency.
- 1.7 These two factors together mean that the process of evolution of plan policies, and of appraisal of them, has often been complex and convoluted. As the process has gone on, increasing care has been needed to show the 'audit trail' leading to the current position without confusing and cluttering the assessment of it. The current round of documents give priority to presenting the clearest possible assessment of the LDP as it now stands at the end of the process. To this end, detailed accounts of earlier rounds of comments, suggestions and changes that are now superseded have been minimised in the main report. They are of course all still available in the public domain, either as appendices or in earlier appraisal documents.
- 1.8 Third, the appraisal criteria for individual candidate sites agreed between the SA and the planning teams took into account measures that developers might take to reduce any identified negative impacts. This approach is not consistent with the remainder of the SA appraisal process, which does not assume any mitigation measures, and accounts for discrepancies between the site pro formas (which include mitigation measures) and the SA appraisals (which do not).
- 1.9 Finally, in many cases assumptions had to be made about the type of development that would take place in response to the LDP (for instance the ratio of housing v. employment development) and the type and efficacy of measures to reduce negative impacts. Inevitably uncertainty will remain until detailed planning proposals are put forward by developers.

Significant effects of the LDP

- 1.10 Overall the LDP would have significant benefits in providing the housing and employment land that Cardiff's current and future residents will need. It will help to improve access to good quality jobs, services and infrastructure for Cardiff's residents, although it is unlikely to fully redress the imbalance between the 'southern arc' of deprivation and other areas of the city. Better housing, access to open space, and walking and cycling facilities should make residents' health and wellbeing better than it would be without the LDP. The new development may draw in people who currently live or work in the Valleys, and so have indirect impacts on neighbouring authorities.
- 1.11 The sheer volume of development which the LDP has to provide for will inevitably result in increased total air pollution, greenhouse gas emissions, use of natural resources and waste because of increased traffic, houses and employment. The LDP includes many enlightened policies to reduce these impacts. If these are fully, thoroughly and promptly implemented they could substantially reduce per capita impacts. Changes following the public Examination included welcome strengthenings of some of these. However many are still framed in terms of 'encouraging', 'supporting' or 'investigating' rather than 'requiring' specific actions, so their effectiveness is uncertain.
- 1.12 The LDP provides for development of several major Greenfield sites amounting to about 902 hectares. The largest of these are located far from Cardiff city centre, so will increase transport impacts unless sustainable transport provision is made before occupants move in; and several would affect areas that are designated for their landscape or biodiversity importance. Even with the mitigation measures contained in the policies biodiversity and landscape quality are likely to decrease significantly. Any significant development of strategic Site H (South of St Mellons Business Park) is particularly problematic.

Changes made to the LDP in response to the Sustainability Appraisal

- 1.13 The planning team have been open and responsive to the SA process, and the SA has resulted in many changes to the LDP which have helped to improve its sustainability:
- Rewording of several LDP sub-objectives and one headline objective, including division of one sub-objective into three sub-objectives to more adequately cover waste issues; and greater emphasis on healthy food choices (see Table 5.2);
 - Stronger and more systematic consideration of sustainability issues in the process of sifting and choosing between potential candidate development sites by the planning team;
 - Removal of a key policy that duplicated another one;

- Greater emphasis to reducing the need to travel by car, making facilities accessible by walking and cycling, ensuring good public transport before remote greenfield sites are occupied, and resilience to climate change (Table 8.2);
- Reference to industrial and domestic sources of air pollution as well as transport pollution, and promotion of remediation of contaminated land (Table 8.3).

1.14 Matters Arising Changes have now made some further improvements which the SA had recommended, notably tightening of the requirements for sustainable transport infrastructure, for delivery of the 50-50 modal split target and for consideration of renewable energy in major developments, and removal of repetition. However they have also weakened the long term environmental protection by replacing the proposed Green Belt with a Green Wedge.

2. Appraisal Methodology

Legislative Requirements

- 2.1 Section 62(6) of the Planning and Compulsory Purchase Act 2004 requires the Council to appraise the sustainability of the LDP and prepare a report of the findings as an integral part of the process of plan preparation. The Welsh Government Local Development Plan Manual² defines sustainability appraisal as a: “tool for appraising policies to ensure they reflect sustainable development objectives (i.e. social, environmental and economic factors)”. Sustainability appraisal helps to demonstrate that the LDP is sound by ensuring that it reflects sustainable development objectives, and contributes to the reasoned justification of policies.
- 2.2 Welsh Government guidance indicates that sustainability appraisal must include the requirements of the Strategic Environmental Assessment (SEA) Regulations³. The SEA Regulations transpose into Welsh law the requirements of the European Union Directive 2001/42/EC (the SEA Directive) which requires formal environmental assessment during production of certain plans and programmes (including LDPs) which are likely to have significant effects on the environment. In preparing its LDP, the Council must comply with the SEA Regulations.

Stages of Appraisal

- 2.3 This SA report updates and builds on a Scoping Report⁴ which the Council produced in October 2010. The Scoping Report reviewed the policy context for the LDP and described the economic, social and environmental issues affecting Cardiff. It also proposed a Sustainability Appraisal Framework of Objectives which is used in this report to assess the impacts of the LDP policies. Figure 2.1 shows the stages of the Scoping Report.
- 2.4 This report then considers the impacts of the LDP vision and objectives, strategic options, candidate sites, and key and detailed policies. Figure 2.2 shows the steps followed for this report. Steps B3 – B5 were carried out iteratively responding to, and helping inform, successive versions of the Plan. This report is substantially based on the one published in October 2012 with the LDP Preferred Strategy.
- 2.5 Table 2.1 shows how this report and the Scoping Report together meet the requirements of the SEA Regulations. The legal requirements for Sustainability Appraisal and Strategic Environmental Assessment of the Cardiff LDP are fulfilled by the Scoping Report and this report, which have been prepared in

² wales.gov.uk/docs/desh/publications/060707ldpmanualen.pdf

³ Assessment of Plans and Programmes (Wales) Regulations 2004, www.legislation.gov.uk/wsi/2004/1656/contents/made

⁴ Available at www.cardiff.gov.uk/content.asp?nav=2%2C2870%2C3139%2C3154%2C5845%2C6201

accordance with the LDP Manual and the Practical Guide to Strategic Environmental Assessment Directive⁵ (ODPM et al 2005).

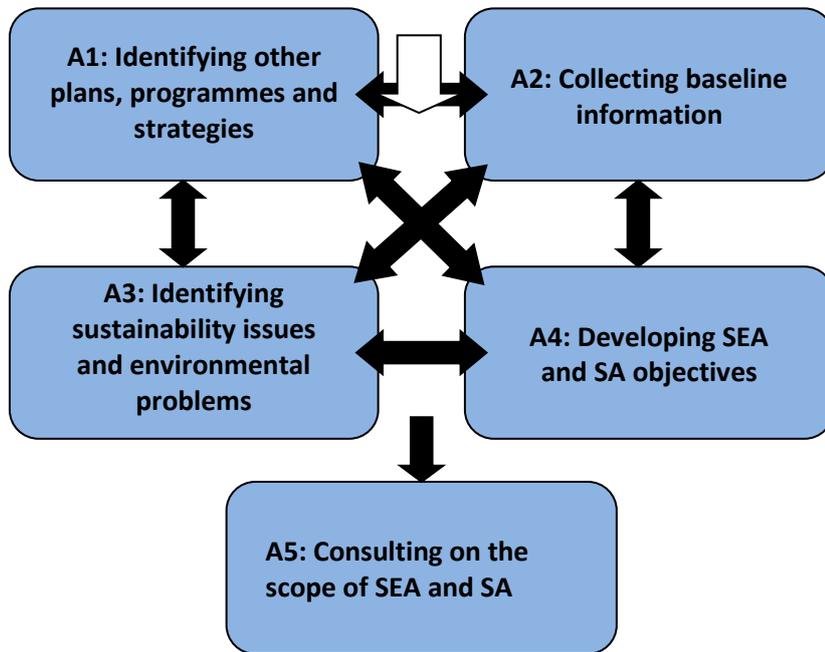


Figure 2.1 Scoping stages

⁵ www.communities.gov.uk/documents/planningandbuilding/pdf/practicalguidesea.pdf

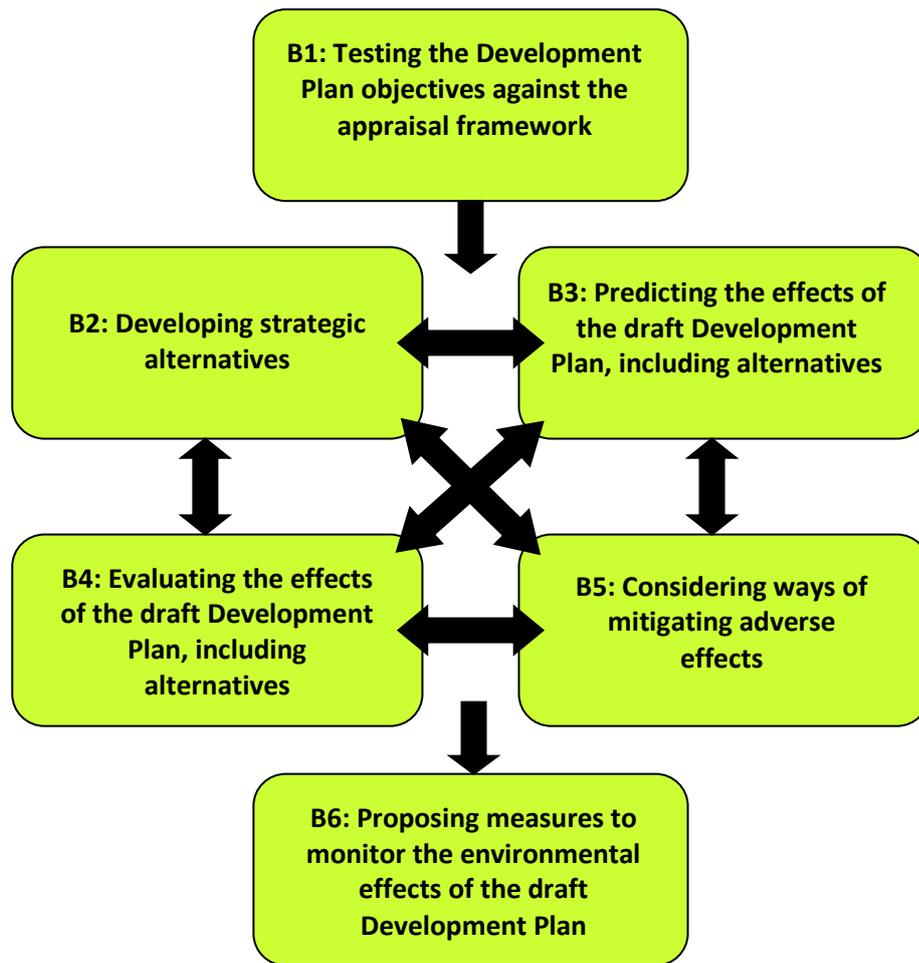


Figure 2.2 Appraisal and mitigation stages

Table 2.1 ENVIRONMENTAL REPORT REQUIREMENTS

Stages of Environmental Report	Where covered
1. An outline of the contents and main objectives of the plan or programme, and of its relationship with other relevant plans and programmes.	Chapter 3
2. The relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan or programme.	Chapter 4, Appendix B
3. The environmental characteristics of areas likely to be significantly affected.	Chapter 4, Appendix B
4. Any existing environmental problems which are relevant to the plan or programme including, in particular, those relating to any areas of a particular environmental importance, such as areas designated pursuant to Council Directive 79/409/EEC on the conservation of wild birds and the Habitats Directive.	Chapter 4, Appendix B
5. The environmental protection objectives, established at international, Community or Member State level, which are relevant to the plan or programme and the way those objectives and any environmental considerations have been taken into account during its preparation.	Chapter 4, Appendix A
6. The likely significant effects on the environment, including short, medium and long-term effects, permanent and temporary effects, positive and negative effects, and secondary, cumulative and synergistic effects, on issues including (a) biodiversity; (b) population; (c) human health; (d) fauna; (e) flora; (f) soil; (g) water; (h) air; (i) climatic factors; (j) material assets; (k) cultural heritage, including architectural and archaeological heritage; (l) landscape; and (m) the inter-relationship between the issues referred to in sub-paragraphs (a) to (l).	Chapter 5 (LDP vision and objectives) Chapter 6 (LDP options) Chapter 7 (candidate sites) Chapter 8 (key and detailed policies) Chapter 9 (overall impacts of the LDP)
7. The measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the plan or programme.	
8. An outline of the reasons for selecting the alternatives dealt with, and a description of how the assessment was undertaken including any difficulties encountered in compiling the required information.	Chapter 6 (LDP options) Chapter 7 (candidate sites) The site pro formas give more detailed information on the impacts of each candidate site. The LDP gives more details on the reasons for the choice of preferred options.
9. A description of the measures envisaged concerning monitoring in accordance with regulation 17.	Chapter 10
10. A non-technical summary of the information provided under paragraphs 1 to 9.	Separate non-technical summary

3. The Local Development Plan

3.1 The LDP sets out:

- the key trends and issues that have informed the Plan, which were identified through preparation of the SA/SEA Scoping Report and a review of social, economic and environmental information;
- the national, regional and local policy context;
- the Council’s vision for future development of Cardiff with seven desired strategic outcomes, and its objectives for delivering sustainable development and addressing the key trends and issues identified;
- the strategic growth options that the Council has considered in determining its Preferred Strategy;
- the strategic sites and alternatives that the Council has considered;
- the overall Strategy to deliver the Plan vision and objectives; and
- key and detailed policies for implementing the Strategy.

LDP vision and outcomes

3.2 The 10 year Integrated Partnership Strategy, *Cardiff: What Matters (2010 – 2020)*, combines the Community Strategy (which provided the vision for the previous withdrawn LDP), Children & Young People’s Plan; Health Social Care & Wellbeing Strategy and the Community Safety Strategic Assessment programmes into one consolidated document. This Strategy provides an overarching strategic framework and the Vision for the LDP.

3.3 That vision is “By 2020... Cardiff will be a world class European capital city with an exceptional quality of life and at the heart of a thriving region”. The Vision will be realised through seven outcomes, shown at Figure 3.1.

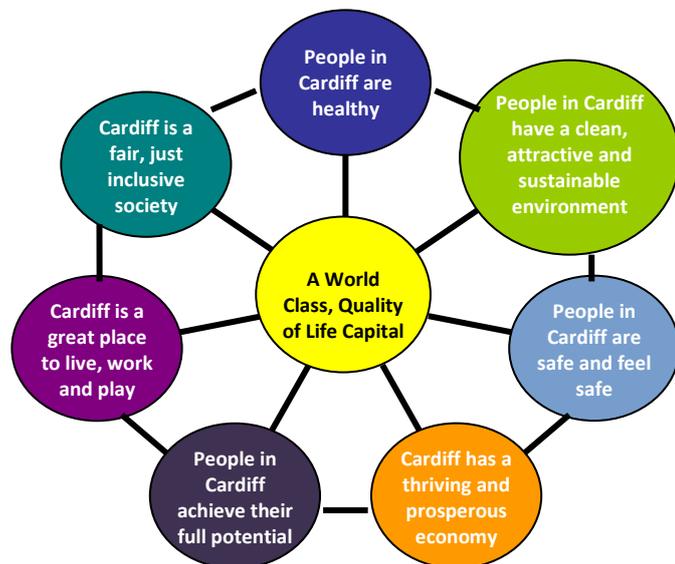


Figure 3.1 LDP vision and outcomes

LDP objectives

3.4 The LDP's objectives are:

1. To respond to evidenced economic needs and provide the necessary infrastructure to deliver development

- a. To effectively respond to Cardiff's role as capital city for Wales, seat of the National Government and centre of the city-region in terms of providing a range and choice of economic opportunities that will drive the prosperity of the region
- b. To maximise the economic potential of the city centre of Cardiff as a major financial and service sector opportunity that builds upon its position next to a transport hub of national and regional significance and is readily accessible from all areas within the city and well connected to other UK cities
- c. To maintain and enhance the vitality, attractiveness and viability of the city centre as a major retail and cultural destination and as a place to work, visit and live
- d. To continue the successful regeneration of the Cardiff Bay area, maximising opportunities for quality commercial buildings and further development, particularly water and river frontage developments that can provide attractive and distinctive environments
- e. To promote clusters of specialist sectors and research & development expertise including the following key sectors: ICT, energy and environment, advanced materials and manufacturing, creative industries, life sciences, financial and professional services
- f. To ensure a range and choice of employment land and business premises at sustainable locations across the city is provided to assist economic competitiveness, encourage entrepreneurship, promote the growth of indigenous businesses of all types and size and attract inward investment
- g. To assist the promotion of Cardiff as a major tourist destination including the provision of the development of a variety of high quality tourist facilities and visitor accommodation
- h. To create a physical and economic environment that develops, attracts and retains skilled workers, businesses and entrepreneurs to Cardiff together with maximising links with Universities and supporting indigenous skills and enterprises
- i. To quantify critical strategic infrastructure required to realise development aspirations and set out clear mechanisms for delivery including sustainable transport solutions for strategic sites
- j. To establish Cardiff as a sustainable travel city by reducing the need to travel, increasing the use of sustainable travel modes and networks (particularly walking and cycling), decreasing private car use and improving the city's key transport hub based at the adjacent central bus and train stations
- k. To protect existing mineral resources and ensure an adequate supply of limestone aggregates in the north west of the city for the construction industry and to promote their efficient and appropriate usage, including the use of recycled aggregates where possible
- l. To support sustainable collection and recycling methods for Municipal Waste by maintaining and improving an integrated network of facilities in Cardiff
- m. To lead and participate in securing regional facilities for the sustainable treatment and disposal of Municipal Waste in accordance with the Regional Waste Plan and in a manner that follows the waste hierarchy which seeks to maximise the reduction of waste in the first place and thereafter reusing, recovering and recycling options before the disposal of waste material is considered
- n. To facilitate an integrated network of commercial and industrial sustainable waste management facilities consistent with the needs of the south east Wales area and in a

manner that follows the waste hierarchy which seeks to maximise the reduction of waste in the first place and thereafter reusing, recovering and recycling options before the disposal of waste material is considered

2. To respond to evidenced social needs

- a. To provide new homes required to support the economic progression of the city and to respond to population change, continued in-migration and evidenced demand for affordable and family housing so that social needs can be addressed
- b. To provide a range and choice of new homes of different tenure, type and location that meets specific needs such as the provision of affordable housing, family accommodation, housing for the elderly, the disabled and students and pitches for the gypsy and traveller community
- c. To maximise the use of the existing building stock through refurbishment, retro-fitting and empty homes initiatives
- d. To bring about changes to Cardiff's environment and neighbourhoods that help to tackle health inequalities, promote good health and enable healthier lifestyles to be led by the city's population in line with Cardiff's status as a World Health Organisation, 'Healthy City'
- e. To bring about changes to Cardiff's environment that create a safer city and reduce the likelihood, fear and consequences of crime
- f. To create an environment that is made more accessible to all groups in society so that the employment opportunities, facilities and services of the city can be more readily used and enjoyed by all
- g. To maximise the multi-functional role played by Cardiff's parks, open spaces and allotments together with improving their accessibility for the whole community
- h. To recognise, support and enhance the key role played by existing District, Local and Neighbourhood Centres as accessible local hubs providing community services, local shops, healthy food choices, businesses, employment and access to public transport
- i. To support the regeneration of local neighbourhoods including reducing inequalities, particularly areas experiencing high levels of deprivation, areas vulnerable to decline and areas with opportunities for change
- j. To ensure that the necessary education and training facilities are provided and are accessible to all: to build strong futures for children, provide a diverse range of learning opportunities for all and assist economic progress through the development of required skills
- k. To develop new cultural, leisure and sporting facilities to meet needs and enhance Cardiff's role as a premier cultural and sporting destination
- l. To ensure that the necessary community and cultural facilities (community centres, shops with healthy food choices, youth facilities, child care, faith buildings, health centres etc) are provided that are accessible to all, especially in areas that are deprived
- m. To address rising unemployment and provide accessible local job opportunities, particularly in areas of greatest need
- n. To promote social inclusion equality of opportunity and access for all

3. To deliver economic and social needs in a co-ordinated way that respects Cardiff's environment and responds to the challenges of climate change

- a. To mitigate the effects of climate change through reducing energy demand and increasing the supply of renewable energy
- b. To ensure that Cardiff adapts to the full anticipated impacts of climate change and that new development and infrastructure is designed to be resilient to possible consequences

- c. To protect, manage and enhance Cardiff's natural environmental assets, including:
 - The parks, open spaces and allotments in the city that are highly valued by local communities and an important component of Cardiff's quality of life;
 - The strategically important river valleys of the Ely, Taff, Nant Fawr and Rhymney that link the city to the countryside and provide a valuable recreational, biodiversity and amenity resource;
 - Cardiff's countryside, particularly its areas of high landscape value and the coast that provide an important setting to the urban area, provide an agricultural resource and opportunity for recreation;
 - The city's biodiversity, its internationally, nationally and locally designated sites, wildlife habitats and features that contain important species and networks that link together areas of value;
 - Natural resources including geodiversity, the best soils, water and air quality including the reduction of pollution; and
 - The role that vegetation plays in combating climate change by providing shading, cooling and carbon sinks
- d. To conserve and enhance Cardiff's built and historic assets that define distinctive character and reflect its past development including:
 - The city's 27 Conservation Areas;
 - Its Listed Buildings and Ancient Monuments;
 - Registered Historic Landscapes and areas of archaeological importance; and
 - Other valued public places and spaces, including parks and amenity spaces, that provide local distinctiveness
- e. In identifying new sites to meet economic/social needs, to follow a sequence of firstly maximising the contribution of brownfield sites, then identifying greenfield sites that are considered to represent the most appropriate and sustainable locations to accommodate new development
- f. To have full regard to flood risk when considering the acceptability of development proposals and considering mitigation and adaptation measures
- g. To maximise opportunities to create a cleaner and more attractive environment that enhances the quality of life and helps Cardiff to become a world-class European capital city

4. To create sustainable neighbourhoods that form part of a sustainable city

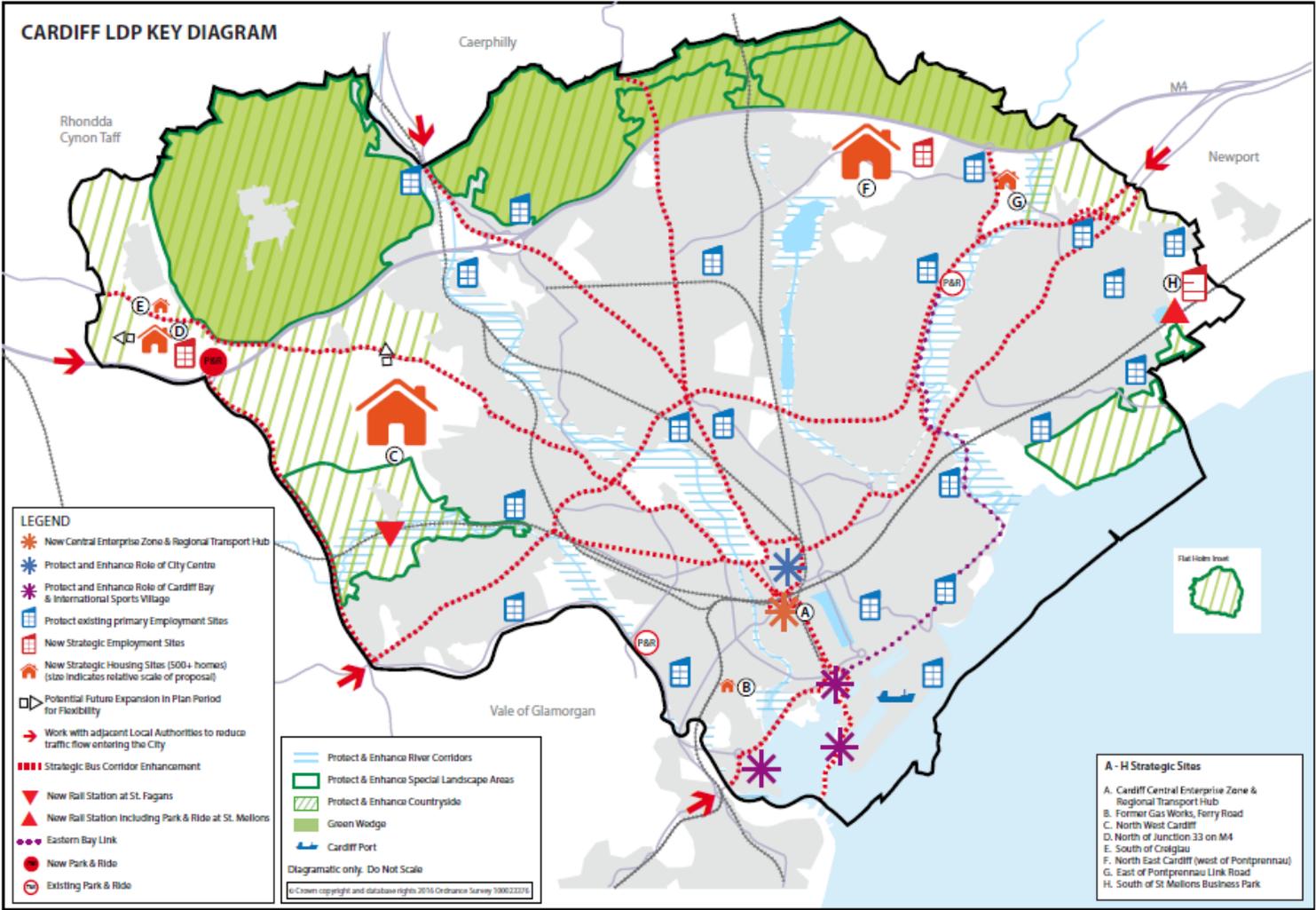
- a. To ensure that all new development areas (whether greenfield or brownfield) create sustainable neighbourhoods that follow the following principles:
 1. Minimise energy demand and maximise renewable solutions- to deliver more energy-efficient neighbourhoods that utilise existing best practice and embrace new renewable technologies and concepts;
 2. Minimise car travel, maximise sustainable transport use and decrease air pollution by creating accessible, permeable and legible places, preventing predominantly car-based developments and focusing new development in accessible locations which are linked to the strategic cycle network and can be served mainly by effective networks of sustainable transport- walking and cycling and fast and frequent public transport around and beyond the city;
 3. Maximise recycling- to optimise the overall value of waste as a resource, to effectively plan for how new developments can sort and store waste for collection for onward productive use and minimise material needing treatment and final landfill;

4. Minimise water usage and maximise sustainable drainage- to carefully manage the consumption and drainage of water to avoid unnecessary wastage and minimise rapid run-off. To seek opportunities to maximise the positive amenity and biodiversity benefits that sustainable drainage solutions can offer;
 5. Maximise the early provision of a full range of social facilities and community infrastructure- to provide the full range of necessary facilities that are accessible to all members of society and can be reached within a 15 minute walk. To include the range of social, health, leisure, education necessary for the scale of development proposed and also taking into account other needs within the wider locality;
 6. Maximise the additional benefits that new communities can bring to adjoining or surrounding existing communities and minimise any potential negative impacts- to carefully identify positive contributions that can be made and involve local communities in this process;
 7. Maximise the diversity of land uses within new development areas- to create more balanced communities offering non-car based options to fully participate in community life. To ensure a range and choice of housing tenures together with local employment opportunities and the full range of community infrastructure;
 8. Maximise the contribution of networks of multi-functional and connected open spaces to strategically design networks of open space that are rich in biodiversity and provide safe routes between key locations to encourage healthier lifestyles through promoting walking and cycling. To further encourage healthy lifestyles by providing allotments together with the wider promotion of healthy eating;
 9. Maximise the principles of good design- to create places that look good, are of an appropriate and efficient density, fully respect their local context and are successfully integrated with adjoining areas. To design buildings that are resilient and can easily adapt to changing future needs. To design clean and attractive areas where people feel safe and have a sense of ownership; and
 10. Maximise community involvement in the planning, design and future management/maintenance of new neighbourhoods. To use the master planning process to establish robust design principles but to also recognise the need to allow some flexibility and managed capacity for change, particularly in larger development areas.
- b. To take opportunities to apply the above principles to existing neighbourhoods in order to create a more sustainable city

LDP key diagram

- 3.5 The LDP key diagram is at Figure 3.2. The LDP is also supported by a range of technical papers, of which this Sustainability Appraisal is one.

Figure 3.2 LDP key diagram



4. Sustainability Context, Baseline and Objectives

4.1 This section summaries and updates the main findings of the Scoping Report (see Figure 2.1), and says how the LDP has taken these findings into account.

Identifying other plans, programmes and strategies (Task A1)

“an outline of the contents, main objectives of the plan and *relationship with other relevant plans and programmes*”
(SEA Directive Annex I(a))

“*the environmental protection objectives, established at international, Community or Member State level, which are relevant to the plan and the way those objectives and any environmental considerations have been taken into account during its preparation*”
(SEA Directive Annex I(e))

4.2 The Scoping Report's analysis of policies, plans, programmes and strategies relevant to the LDP included:

- an explanation of the methodology used;
- a list of the documents reviewed; and
- how the LDP accords with the guidance and regulations.

4.3 Since the Scoping Report was published in 2010, the following significant policy changes have occurred:

- **Planning Policy Wales** (Edition 5, November 2012) consolidates previous changes and gives strong and detailed emphasis to climate change (both reduction and adaptation);
- **Technical Advice Note 22: Sustainable Buildings** (Welsh Assembly Government 2010) provides guidance and advice on sustainable buildings, standards of assessment and design solutions, including for low carbon buildings;
- **One Wales: One Planet** (2011), Welsh Government Discussion Paper, signals the government's intention to legislate to give more impetus and leverage to accelerate progress toward sustainable development;
- **Consultation on a Sustainable Development Bill** (consultation on a White Paper with implementation proposals closed in March 2013) would make sustainable development the central organising principle of the Welsh Government and most public bodies in Wales;
- **National Strategy for Flood and Coastal Erosion Risk Management in Wales** (Welsh Government November 2011) sets out the framework for “Risk Management Authorities” to allow them to deliver their flood and coastal risk management functions;
- **Energy Wales: A Low Carbon Transition** (Welsh Government 2012) states the Welsh Government’s commitment to ‘create a sustainable, low carbon economy for Wales’ featuring low carbon energy and energy efficiency;
- **City Regions Final Report** (Welsh Government, May 2012) recommends recognising a South East Wales (ie Cardiff centred) city region, with an over-arching city region strategic planning tier;

- **Cardiff: What Matters 2010:2020** combines four previous strategies into one with clear quality of life and environmental outcome goals;
- **Cardiff Municipal Waste Management Strategy 2011 – 16** describes how waste will be collected and processed to meet ambitious targets for reuse, recycling and composting.

4.4 **Appendix A** shows the full, updated policy analysis. Table 4.1 summarises, by topic, the key aims of the policy documents reviewed, how the LDP could assist in delivering these aims, and to what extent these considerations have been taken into account during its preparation.

Collecting baseline information (Task A2)

“The relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan”

“the environmental characteristics of areas likely to be significantly affected”

“The relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan”

(SEA Directive Annex I(b and c))

4.5 Section 3 of the Scoping Report sets out how baseline information about Cardiff was collected, and a list of the indicators that will be used to monitor change over time. This has been updated in **Appendix B**. The main changes between October 2010 and August 2012 were:

- The recession has dampened house prices more than earnings, making housing more affordable than a few years ago (measured by the ratio of average earnings to average house price);
- Two of Cardiff’s four Air Quality Management Areas have improved enough to be discontinued, but a new third one had to be added in 2010;
- Traffic in Cardiff is continuing to decline gently;
- Domestic energy use is slowly decreasing;
- Greenhouse gas emissions are therefore probably slowly declining too, though post-2010 direct data is not available;
- Almost all new housing has been on brownfield land;
- The city’s population and number of households continues to grow;
- Domestic waste reuse, recycling and composting performance has continued to improve strongly: Cardiff has now overtaken the Wales average.

4.6 Between October 2012 and August 2013 the Council commissioned further research which indicated population growth and housing demand was likely to be lower than previously estimated. The research and its implications for the LDP are explained at 4.12-4.26 in the Deposit LDP and paras 6.12-6.15 in this report.

Table 4.1 Key messages of policy review

SA/SEA topic	Policy aims and how the LDP might support them	Considerations included in the LDP
<p>Access and equality</p>	<p>Policy aims:</p> <ul style="list-style-type: none"> ● Ensure that everyone has access to good quality housing sufficient for their needs, employment, shopping, education, training, health, community, leisure and sports facilities and open and green space. ● Secure a safer and more accessible environment for everyone. ● Promote social inclusion and equality of opportunity. <p>How the LDP might assist in delivering policy aims:</p> <ul style="list-style-type: none"> ● Foster improvements to transport facilities and services which maintain or improve accessibility to services and facilities, secure employment, economic and environmental objectives, and improve safety and amenity. ● Promote mixed use developments. ● Ensure new development is located and designed to provide attractive, accessible, safe, secure and sustainable environments for everyone including people with special access requirements and those who do not have access to a private car. ● Promote and safeguard opportunities for improved public transport and measures to assist pedestrians and cyclists. 	<p>Objectives</p> <p>The LDP contains objectives under ‘Respond to evidenced social needs’ including objectives on:</p> <ul style="list-style-type: none"> ● Social and affordable housing ● Creating an environment and services that are accessible to all ● Maximising early provision of full range of social facilities and community infrastructure...within a 15 minute walk ● Maximising access to parks and open spaces ● Ensuring accessibility of necessary educational facilities for all ● Creating a safer city <p>Policies</p> <p>KP1 aims to ensure sufficient housing is built. KP2 and H1 designate sites. The masterplanning principles (KP4) and their application to strategic sites (KP2) aim to maximise accessibility to services and facilities, and provide alternatives to car travel.</p> <p>KP5 promotes sustainable design including attractive, accessible, safe, secure and sustainable environments.</p> <p>KP6 aims to provide social infrastructure for new development</p> <p>KP13 supports sustainable neighbourhoods and aims to secure social provision in new development</p> <p>The housing policies H2, H4, H5 and H6 govern conversions to and from residential use.</p> <p>H3 sets targets for affordable housing.</p> <p>H7 makes provision for gypsies and travellers.</p> <p>R1 to R8 aim to provide accessible retail at appropriate levels including neighbourhood and local centres</p> <p>C1 seeks provision of community facilities in new development</p> <p>C7 seeks provision of schools to meet needs</p>

SA/SEA topic	Policy aims and how the LDP might support them	Considerations included in the LDP
Air Quality	<p>Policy aims:</p> <ul style="list-style-type: none"> • Take account of the effects of development upon air quality and vice versa, and meet mandatory standards for air quality. <p>How the LDP might assist in delivering policy aims:</p> <ul style="list-style-type: none"> • Include policies on the location of potentially polluting developments, make provision for types of development that may cause pollution and separate incompatible land uses. • Locate development so as to minimise travel demand, particularly by cars and other motor vehicles, and where it is accessible by a range of forms of travel/transport, including walking, cycling, use of public transport and alternatives to movement of freight by road. 	<p>Objectives</p> <p>The LDP aims:</p> <ul style="list-style-type: none"> • To protect, manage and enhance Cardiff's natural environmental assets, including: -...Natural resources including geodiversity, the best soils, water and air quality including the reduction of pollution; • To decrease air pollution....by preventing predominantly car-based developments and focusing on accessibility of locations to sustainable transport networks. <p>Policies</p> <p>KP5 promotes sustainable design including minimising emissions.</p> <p>The transport policies KP8 and T1-T9 aim to provide alternatives to car travel</p> <p>EN13 opposes development that would cause unacceptable pollution.</p>
Biodiversity, flora and fauna	<p>Policy aims:</p> <p>Protect and enhance biodiversity, natural habitats and wild fauna and flora, including:</p> <ul style="list-style-type: none"> • International, national and local designated sites; and • Protected species and species and habitat types identified as priorities for biological conservation. <p>How the LDP might assist in delivering policy aims:</p> <ul style="list-style-type: none"> • Include detailed policies for the conservation and, where appropriate, enhancement of international, national and local designated sites, reflecting their relative significance. • Undertake Appropriate Assessment in accordance with the requirements of the Habitats Directive (1.7) to assess the implications of the plan for European sites (including any in neighbouring authorities) whose integrity may be adversely affected by the plan. • Provide for the conservation and, where appropriate, enhancement of biodiversity outside statutorily designated sites, in particular identifying opportunities to conserve important local habitats and species, and to safeguard and manage landscape features of major importance for nature conservation. 	<p>Objectives</p> <p>The LDP also includes objectives:</p> <ul style="list-style-type: none"> • To protect city's natural environmental assets, including local, national and internationally important nature sites • To provide, manage and enhance networks that link areas of value <p>Policies</p> <p>KP3a, KP3b and EN1 aim to protect the countryside from non essential development.</p> <p>EN5 protects locally designated sites of nature conservation importance.</p> <p>EN6 protects ecological networks and features of importance for biodiversity</p> <p>EN7 protects priority habitats and species</p> <p>EN8 protects trees, woodlands and hedgerows</p>

SA/SEA topic	Policy aims and how the LDP might support them	Considerations included in the LDP
Climate change	<p>Policy aims:</p> <ul style="list-style-type: none"> ● Reduce greenhouse gas emissions by 3% per year except for heavy industry and power generation, with overall reductions of at least 40% by 2020 ● Plan for and respond to climate changes already underway ● Minimise the risk to people and property from flooding <p>How the LDP might assist in delivering policy aims:</p> <ul style="list-style-type: none"> ● Promote energy efficiency and renewable methods of energy production ● Promote other measures that mitigate the causes of climate change (e.g. the protection/enhancement of carbon sinks) ● Ensure that the location and design of new development has regard to the potential risk, causes and consequences of flooding ● Ensure that existing communities, infrastructure and other assets (including those alongside new developments) are considered with regard to potential risk, causes and consequences of flooding. ● Consider additional flood risk assessments, mapping and related responsibilities that are emerging as the result of recent legislation ● Locate and design development so as to minimise travel demand, particular by motor vehicles, and promote accessibility by a range of forms of transport ● Promote mixed use development ● Promote opportunities to benefit from climate change, e.g. tourism-related development, outdoor recreation 	<p>Objectives</p> <p>The LDP has objectives:</p> <ul style="list-style-type: none"> ● To mitigate and adapt to the causes and consequences of climate change through reduced energy demand and increasing the supply of renewable energy ● To have full regard to flood risk <p>Policies</p> <p>KP3a and KP3b aim to keep development within settlement boundaries , reducing the need for travel.</p> <p>The masterplans for strategic sites (KP2) seek to provide sustainable transport options for the new greenfield sites.</p> <p>KP5 promotes sustainable design including minimising emissions.</p> <p>The transport policies KP8 and T1-T9 aim to provide alternatives to car travel</p> <p>KP15 says development should ‘take into account’ reducing carbon emissions, promoting energy efficiency and renewables, adaptation and avoidance of unnecessary flood risk.</p> <p>EN12 promotes renewable energy and low carbon approaches.</p> <p>EN14 opposes development with unacceptable flood risk, or that would increase flood risk.</p>

SA/SEA topic	Policy aims and how the LDP might support them	Considerations included in the LDP
<p>Cultural Heritage & the Historic Environment</p>	<p>Policy aims:</p> <ul style="list-style-type: none"> ● Protect the historic environment and cultural heritage and foster local diversity. ● Strengthen Wales’ cultural identity and have regard to the needs of the Welsh language. ● Enhance Cardiff’s status as a centre of cultural excellence, particularly for the arts, sport and leisure, and realise its potential to become a world-class European Capital City, delivering for Wales as the cultural driver of an internationally competitive city region. <p>How the LDP might assist in delivering policy aims:</p> <ul style="list-style-type: none"> ● Include policies for the protection and enhancement of sites of archaeological interest and their settings, listed buildings, conservation areas and historic parks and gardens, identifying the factors to be taken into account in assessing planning applications. ● Promote development for cultural purposes. ● Promote good design that respects Cardiff’s local distinctiveness. 	<p>Objectives</p> <p>The LDP aims:</p> <ul style="list-style-type: none"> ● To conserve and enhance Cardiff’s built and historic assets that define distinctive character and reflect its past development including: <ul style="list-style-type: none"> ➢ The city’s 27 Conservation Areas; ➢ Its Listed Buildings and Ancient Monuments; ➢ Registered Historic Landscapes and areas of archaeological importance; and ➢ Other valued public places and spaces, including parks and amenity spaces, that provide local distinctiveness ● To develop new cultural, leisure and sporting facilities...to enhance Cardiff’s role as a premier cultural and sporting destination <p>Policies</p> <p>KP17 aims to protect the city’s built heritage. EN9 conserves the historic environment.</p>
<p>Economy</p>	<p>Policy aims</p> <ul style="list-style-type: none"> ● Promote Cardiff’s role as a world-class Capital City and the economic and cultural driver for Wales by developing a diverse, competitive, high added value economy ● Enhance employment opportunities for all ● Ensure that development for enterprise and employment uses is in line with sustainability principles and respects the environment ● Secure accessible, efficient and competitive retail provision and support town centres <p>How the LDP might assist in delivering policy aims:</p> <ul style="list-style-type: none"> ● Ensure that there is a sufficient range and choice of land allocated for economic development and employment purposes in accessible locations ● Improve access to employment opportunities particularly for deprived communities ● Support the vitality, attractiveness and viability of centres, and regeneration of deprived areas ● Allocate sites for new retail, leisure and other uses best located in town centres where there is assessed need, using the sequential approach 	<p>Objectives</p> <p>The LDP includes a suite of objectives under “Respond to evidenced economic needs” aimed at meeting the economic needs of the city and helping to stimulate greater economic activity. Individual objectives aim:</p> <ul style="list-style-type: none"> ● To maximise the economic potential of the city centre ● To create a physical and economic environment that develops, attracts and retains skilled workers ● To ensure adequate infrastructure is in place to support sustainable economic development. <p>Policies</p> <p>KP1 and KP9 aim to provide for enough new jobs. The strategic sites in KP2 aim to provide land for economic needs, including supporting continued regeneration of the Bay area KP10 supports development in the Central and Bay Business Areas EC1-5 aim to keep land for economic uses as appropriate</p>

SA/SEA topic	Policy aims and how the LDP might support them	Considerations included in the LDP
Health & Well-Being	<p>Policy aims</p> <ul style="list-style-type: none"> ● Improve health and well-being, and tackle poverty and health inequalities ● Increase participation in sport and physical activity ● Provide adequate, attractive, multi-use open space to support the above aims ● Ensure that everyone has good quality housing sufficient for their needs, and good access to employment, the full range of services and facilities, and open space ● Improve quality of life and enable social progress for everyone <p>How the LDP might assist in delivering policy aims:</p> <ul style="list-style-type: none"> ● Ensure new development is located and designed to provide attractive, accessible, safe and sustainable environments ● Help to implement the standards set in TAN16 (open space) and Cardiff allotments strategy ● Promote walking, cycling and public transport ● Promote access to and enjoyment of the countryside, coastline and river valleys ● Ensure that new development has regard to the potential causes, risks and consequences of flooding, contaminated land, odour, air and water pollution, and noise 	<p>Objectives</p> <p>The Preferred strategy includes objectives:</p> <ul style="list-style-type: none"> ● To regenerate local neighbourhoods ● To reduce deprivation and inequalities and provide open space for recreation ● To ensure the provision of housing and health care ● To tackle health inequalities and promote good health <p>Policies</p> <p>The masterplanning principles (KP4) and their application to strategic sites (KP2) aim to maximise accessibility to services and facilities, and provide alternatives to car travel.</p> <p>KP5 promotes sustainable design including attractive, accessible, safe, secure and sustainable environments.</p> <p>KP6 aims to provide social infrastructure for new development.</p> <p>KP13 supports sustainable neighbourhoods and aims to secure social provision in new development</p> <p>KP14 aims to reduce health inequalities and promote healthy living including active travel.</p> <p>EN13 opposes development that would cause unacceptable pollution.</p> <p>C3 promotes safe environments.</p> <p>C4 protects open space and C5 seeks new provision.</p> <p>C4 defines levels of provision for children’s play in new developments.</p>

SA/SEA topic	Policy aims and how the LDP might support them	Considerations included in the LDP
Landscape	<p>Policy aims</p> <ul style="list-style-type: none"> • Protect and enhance the landscape, including the countryside, the undeveloped coast, river valleys and other green spaces. <p>How the LDP might assist in delivering policy aims:</p> <ul style="list-style-type: none"> • Include policies to protect the countryside, undeveloped coast and river valleys from inappropriate development • Include policies to protect the quality and character of the landscape and townscape, and provide guidance on design, access, density, off-street parking and open space provision • Avoid development of greenfield sites where possible and appropriate, by giving preference to the re-use of suitable previously developed land • Promote good design and public art 	<p>Objectives</p> <p>The Preferred strategy has objectives:</p> <ul style="list-style-type: none"> • To conserve and enhance historic landscapes and Cardiff's 4 Strategically Important River Valleys • To protect, manage and enhance Cardiff's countryside, particularly its areas of high landscape value and the coast <p>Policies</p> <p>KP16, EN3 and EN4 aim to protect the city's landscape assets. EN1 aims to protect the countryside from inessential development.</p>

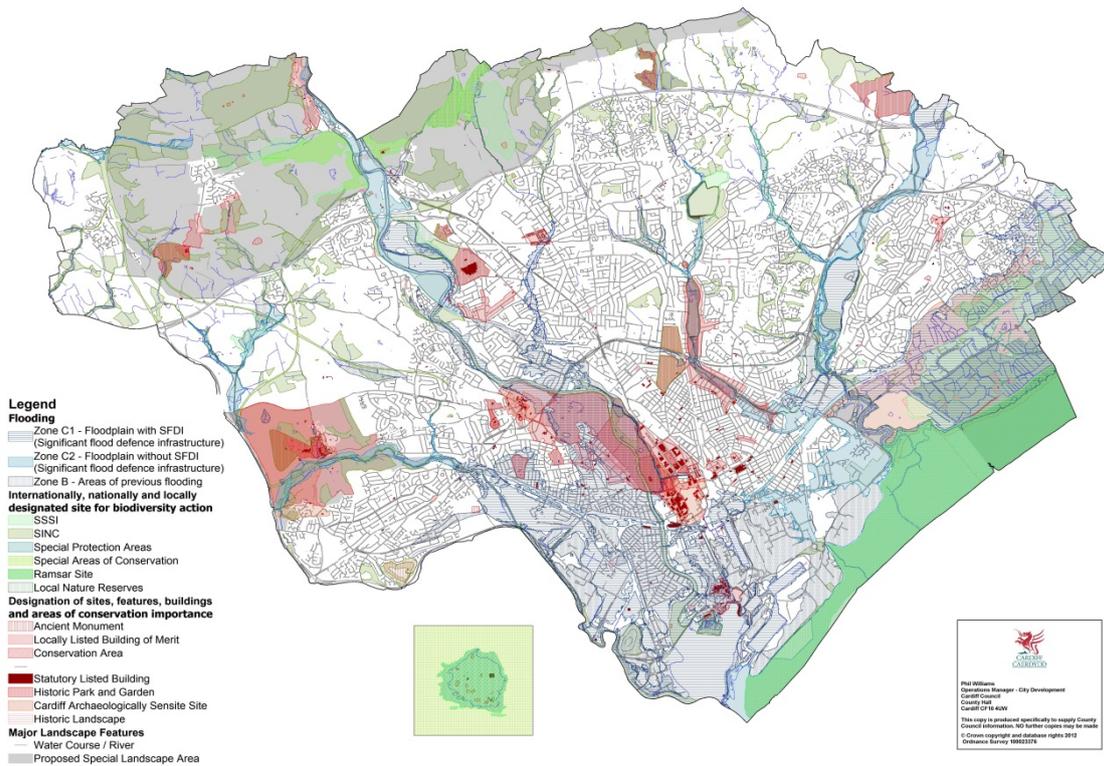
SA/SEA topic	Policy aims and how the LDP might support them	Considerations included in the LDP
Natural resources	<p>Policy aims</p> <ul style="list-style-type: none"> ● Minimise the use of non-renewable resources and, where necessary, use them efficiently, and encourage the use of renewal resources ● Conserve and, where possible, enhance the countryside and its resources, including the best and most versatile agricultural land ● Promote urban regeneration and the re-use of previously developed land ● Promote increased efficiency and demand management of water resources ● Minimise adverse impacts on water quality, the ecology of rivers and on groundwater ● Safeguard mineral resources from sterilisation and encourage their efficient and appropriate <p>How the LDP might assist in delivering policy aims:</p> <ul style="list-style-type: none"> ● Avoid development of greenfield sites where possible and appropriate, by giving preference to the re-use of suitable previously developed land ● Give considerable weight to protecting the best and most versatile agricultural land ● Plan new development in discussions with water and wastewater companies and the Environment Agency Wales, to ensure that water resources are adequate and water quality is maintained ● Promote energy efficiency, energy conservation, and the production of renewable energy ● Safeguard mineral resources from sterilisation, provide minerals in line with Cardiff's minerals apportionment, and encourage efficient and appropriate use of minerals and the re-use and recycling of suitable materials encourage efficient and appropriate use of minerals and the re-use and recycling of suitable materials ● Promote and facilitate the re-use and re-cycling of waste 	<p>Objectives</p> <p>The Preferred Strategy includes objectives:</p> <ul style="list-style-type: none"> ● To conserve, manage and enhance Cardiff's natural resources including geodiversity, the best soils, water and air quality ● To protect existing mineral resources <p>Policies</p> <p>KP18 aims to protect Cardiff's natural resources. EN10 promotes sustainable water management. EN11 protects water resources</p> <p>The minerals policies M1-M8 define how mineral reserves should be maintained for the future.</p>

SA/SEA topic	Policy aims and how the LDP might support them	Considerations included in the LDP
Population	<p>Policy aims</p> <ul style="list-style-type: none"> ● Provide for an adequate and continuous supply of land, available and suitable for development to meet society’s needs – including homes, infrastructure, investment and jobs - in a way that is consistent with sustainability objectives. ● Ensure that everyone has good quality housing sufficient for their needs and access to employment, shopping, education, training, health, community, leisure and sports facilities and open and green space. <p>How the LDP might assist in delivering policy aims:</p> <ul style="list-style-type: none"> ● Identify requirements for market and affordable housing, taking into account household projections ● Allocate land for housing, favouring the re-use of previously developed land and buildings within settlements before settlement extensions and new development around settlements with good public transport links ● Include policies for affordable and special needs housing (including Gypsies and Travellers) where there is identified need ● Indicate where developer contributions and/or community infrastructure levies will be expected towards infrastructure, facilities (including open space) and affordable housing 	<p>Objectives</p> <p>The Preferred Strategy includes objectives on housing and employment needs to provide for anticipated trends in population growth.</p> <p>Policies</p> <p>The policies listed under ‘access and equality’ and ‘economy’ constitute the LDP’s response to projected population growth.</p>
Waste	<p>Policy aims</p> <ul style="list-style-type: none"> ● Promote the waste hierarchy: reduce, reuse, recycle, recover energy and only then landfill ● Meet targets set by European and national legislation ● Manage waste without endangering human health and the environment <p>How the LDP might assist in delivering policy aims:</p> <ul style="list-style-type: none"> ● Ensure that waste management infrastructure is adequate to accommodate proposed development while minimising adverse impacts on health, the environment and communities ● Identify sites for waste management facilities or areas where such facilities may be suitable ● Incorporate adequate and effective waste management facilities in new developments 	<p>Objectives</p> <p>The LDP includes objectives to:</p> <ul style="list-style-type: none"> ● Support the waste hierarchy ● Support sustainable collection and recycling methods ● Ensure the provision of waste facilities ● Promote resource efficiency in new developments and neighbourhood regeneration projects ● Facilitate an integrated network of waste management with the needs of south east Wales <p>Policies</p> <p>KP12 supports sustainable waste treatment facilities following the waste hierarchy. Sustainable waste collection will be supported in all new developments, as will waste minimisation and the provision of facilities that use recycled or composted products.</p> <p>W1 specifies provision for waste management facilities.</p> <p>W2 calls for provision for waste handling in development.</p>

4.7 **Appendix B** shows how the indicators perform when compared to local, regional or national targets. Alternatively, where comparators are not available, historical trends are used to show how an indicator is performing. An explanation is also given of the quality of the data: for example an indicator that uses good quality local data will carry more weight than an indicator that uses national data as a proxy source.

4.8 Figure 4.1 summarises the key constraints to development in Cardiff.

Figure 4.1 Constraints to development



Identifying sustainability issues and environmental problems (Task A3)

Any existing environmental problems which are relevant to the plan including, in particular, those relating to any areas of a particular environmental importance, such as areas designated pursuant to Directives 79/409/EEC and 92/43/EEC (SEA Directive Annex I(d))

4.9 Section 4 of the Scoping Report set out the key issues affecting Cardiff and the methodology used to identify them. Table 4.2 summarises the main sustainability issues affecting Cardiff. Some of the key problems are in the 'southern arc' of deprivation: Figure 4.2 shows the Index of Multiple Deprivation 2011, and Cardiff's 'southern arc' of deprivation.

Figure 4.2 Index of Multiple Deprivation 2011 and 'southern arc' of deprivation

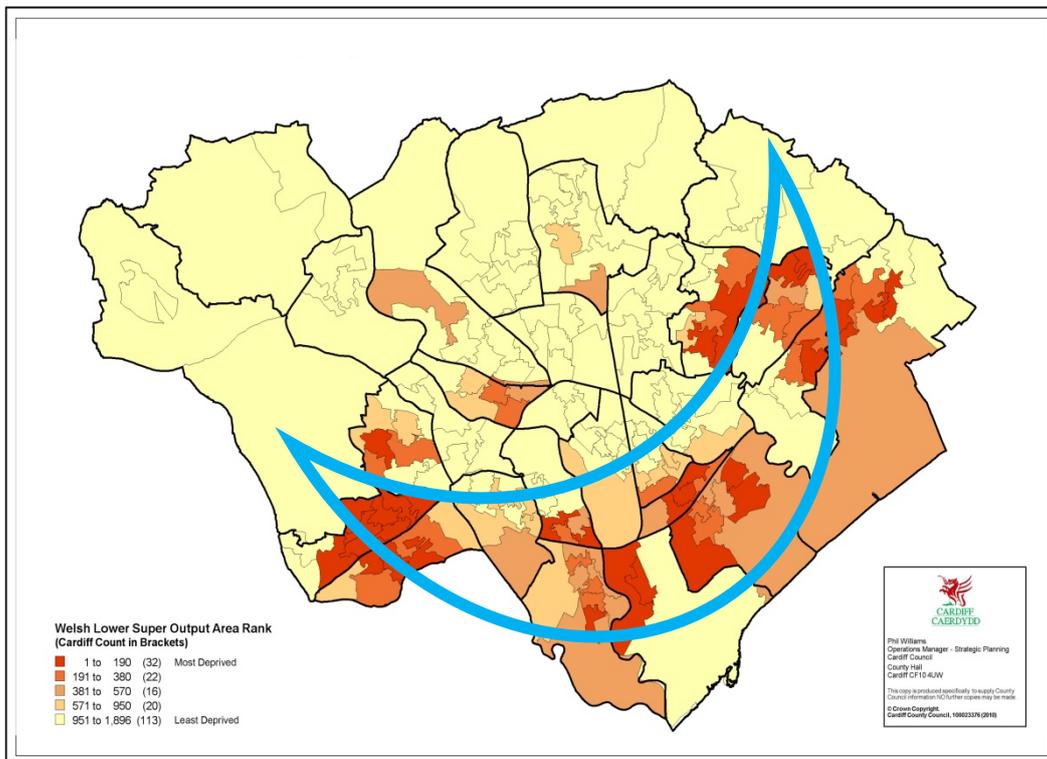


Table 4.2 Sustainability issues affecting Cardiff

1. Access and equality
<ul style="list-style-type: none"> • Cardiff contains some of the most deprived areas in Wales - geographically there is a concentration of deprivation in the 'southern arc' although hotspots exist elsewhere. • The cost of housing - particularly family housing - is excluding those on low incomes from entering the housing market. • Cardiff has a significant number of homeless people. • At a city-wide scale Cardiff has good levels of access for key services (GPs, schools, libraries, leisure centres etc). However access deficiencies exist at the local level. • The educational, training and skill base of Cardiff's population varies significantly.
2. Air quality
<ul style="list-style-type: none"> • There are currently three air quality management areas in Cardiff based on nitrogen oxide levels. There were four in 2006, this went down to two and then a third AQMA was designated in December 2010. • Levels of other air pollutants are within current standards.
3. Biodiversity, flora and fauna
<ul style="list-style-type: none"> • Cardiff has a wide range of sites designated for their biodiversity value including the Severn Estuary and Cardiff Beech Woods European sites. The Great Crested Newt, Otter, Dormouse and Bats are European protected species which are known to exist in Cardiff. • Targets have been set for maintaining and enhancing the range, size/population, and condition of many vulnerable habitats and species. • Cardiff's biodiversity resource is vulnerable to new developments and land management practices which could result in habitat loss and fragmentation.
4. Climate change
<ul style="list-style-type: none"> • Carbon dioxide emissions are now reducing after decades of continuing growth, although the reduction is probably largely due to the economic recession and to importing rather than making more goods. The Welsh Government (WG) has set challenging new greenhouse gas emission targets. • Traffic flows into and within the city centre are decreasing, but those outside the city centre are increasing. Cardiff is a major attractor of in-commuters from other parts of South East Wales. Traffic management is a consistently high priority for Cardiff's residents, based on the Ask Cardiff surveys. • Energy use in buildings is responsible for about one-third of Cardiff's greenhouse gas emissions. WG policies will require buildings to become more energy efficient. • Cardiff is subject to a significant threat of flooding due to its low lying nature. The Wentloog levels, Taff at Morganstown, Taff/Ely area, North East Cardiff and the Bay area to Pengam Green are at particular risk of flooding. • Little renewable energy is currently being produced in Cardiff.
5. Cultural heritage and the historic environment
<ul style="list-style-type: none"> • Cardiff contains a wide range of areas, buildings and monuments with historic value designated at both a statutory national and local level. • In 2010, slightly over 3% of listed buildings were not in a favourable condition. • Cardiff's cultural and historic attractions, including important historic landscape areas, attract large numbers of visitors each year and perform an important national / regional role. Cardiff should promote and facilitate a wider range of cultural and sporting facilities for economic and

quality of life reasons.

6. Economy

- Attracting and retaining jobs is a consistently high concern for Cardiff's residents.
- Commuting patterns into Cardiff demonstrate the city's importance to the regional economy and the Wales Spatial Plan acknowledges that maintaining Cardiff's performance is vital for the economic well-being of the region and Wales as a whole.
- Cardiff experienced strong jobs growth and growth in Gross Value Added in the decade to 2008, significantly higher than the Welsh and UK average. Employment has since dropped as a result of the economic recession, and Cardiff struggles to match its employment growth with a growth in pay.
- Cardiff's workforce is polarised between the more highly qualified and low or unskilled workers; there are significant concentrations of unemployment in parts of the city. The Community Strategy emphasises the need to support small businesses and local enterprise.
- Significant areas of employment land have changed to other uses (notably housing) in recent decades as a result of changing employment patterns and market conditions.
- Innovative solutions to Cardiff's congestion and parking problems are needed - e.g. rapid transit or light rail, park and ride, improved parking enforcement – as well as improved access to Cardiff International Airport.
- Various policies promote high value, low carbon jobs for Cardiff; links between the universities and businesses; and support for the creative industry.

7. Health and well-being

- Community safety is the top issue raised in successive Ask Cardiff surveys. Crime levels in Cardiff have remained broadly steady over time.
- The health of Cardiff's population is generally slightly better than the Welsh average but getting slightly worse over time.
- Over half of Cardiff's adults are clinically overweight or obese, less than a third meet recommended physical activity guidelines (the worst of the Welsh authorities), and this is worsening over time.
- There has been a steady decline in traffic accidents.
- Life expectancy and crime levels vary sharply across the city, with the worst wards being in the 'southern arc' of deprivation. There is a more than 10 year difference between the best and the worst wards in terms of life expectancy.

8. Landscape

- Cardiff's setting is very distinctive with the ridge to the north (the Garth, Caerphilly Mountain and Graig Llanishen), Leckwith escarpment to the west, low-lying Gwent Levels to the east, Severn Estuary to the South, and three river valleys running through the City.
- The Cardiff Landscape Study has proposed five areas as Special Landscape Areas.
- More than two-thirds of Cardiff's area is within easy walking distance to natural green spaces, but only two out of Cardiff's 29 wards meet the nationally recommended open space targets. The most central wards fare the worst. Open spaces are important because they improve people's mental and physical health, encourage physical activity, are attractive, support biodiversity, act as a carbon sink, and can help to adapt to climate change.
- Cardiff's landscape qualities are vulnerable to insensitive new development and land management practices.

9. Natural resources

- In recent years almost all new housing has been built on brownfield land. Much has been apartments, relatively little family housing.
- Cardiff's industrial past has left a legacy of many potentially contaminated sites. These are being remediated as they are redeveloped.
- Good quality agricultural land is known to exist within Cardiff but no survey has been undertaken using the latest agricultural land classification.
- Cardiff's allotments are important for people's health and food security, but they are already oversubscribed, and many more will be needed.
- Cardiff has significant, good quality mineral reserves (mainly limestone) which are an important source of aggregates for the region; however dredging from the Estuary has potential erosion impacts.
- Water quality in the rivers Taff, Ely and Rhymney is improving, but is far from achieving the requirements of the Water Framework Directive. The groundwater around Taff Gorge / Creigiau area is vulnerable.
- Abstraction from the Rivers Usk and Wye is a concern, and this will be exacerbated by population growth and climate change.

10. Population

- Cardiff's population has increased steadily over the past 20 years (by about 400 people per year) but much more rapidly since 2001 (about 2,400 per year). Welsh Government projections indicate that the number of households in Cardiff will increase by more than 32% between 2006 and 2026, from 132,108 to 174,471 households. This is driven partly by immigration, and partly by a decline in married couples and an increase in one person households, lone parents and cohabiting couples.
- Research commissioned by the Council in early 2013 suggests that growth may be slower than previously projected. However, providing an appropriate range and choice of housing for this population growth in a sustainable way (including services and infrastructure) remains the key sustainability issue raised by Cardiff's planners.
- Cardiff has a higher proportion of young adults and ethnic minorities, and a lower proportion of older age groups, compared to the national average.

11. Waste

- Street cleaning, litter and recycling are consistently high priorities for Cardiff's residents, based on the Ask Cardiff survey.
- Construction/demolition waste is the largest contributor to the waste stream, followed by commercial/industrial and municipal (household) waste. Municipal waste production has dropped sharply in the last five years, and the proportion of that waste that is recycled and composted grew from 3% to 49% between 2001 and 2012.

Developing SEA and SA objectives (Task A4)

“the environmental protection objectives, established at international, Community or Member State level, which are relevant to the plan or programme and the way those objectives and any environmental considerations have been taken into account during its preparation”

(SEA Directive Annex I(e))

4.10 Section 5 of the Scoping Report sets out the sustainability appraisal framework and the methodology used to develop it. The framework consists of 11 objectives and related sub-objectives and indicators. The sub-objectives provide further information on how to interpret the headline objectives and are designed to guide the assessment. The indicators will show changes on the ground once the LDP is implemented. Table 4.3 shows the sustainability objectives, sub-objectives and indicators.

Consulting on the scope of SEA and SA (Task A5)

4.11 Consultation on the Scoping Report took place from 1 November to 6 December 2010. Comments were received from 14 consultees - a variety of stakeholders, statutory consultees and individuals. **Appendix C** shows the full list of comments. The consultees mostly suggested minor amendments to the Scoping Report and associated appendices (mainly additions to the policy review or baseline data); or else their comments were directed at the LDP rather than at the SA. Amendments to the SA were made where appropriate. Where, instead, the comments related to LDP issues, then these were noted and passed onto the LDP Team for consideration as part of the preparation of the LDP.

Table 4.3 Sustainability appraisal framework for Cardiff

Sustainability objective	Sub Objective: Will the LDP strategic option, objective, strategy, policy or allocation...	Indicators
1. Help deliver equality of opportunity and access for all	1.a Address existing imbalances of inequality, deprivation and exclusion 1.b Improve access to education, life-long learning and training opportunities 1.c Improve accessibility to affordable housing and employment opportunities, particularly for disadvantaged sections of society 1.d Improve access to community facilities and services 1.e Secure a more accessible environment	1.1 Number and percentage of Cardiff's lower super output areas in the most deprived 10% lower super output areas for Wales 1.2 Average house price compared to average annual salary 1.3 Number and percent of domestic units that are provided for affordable housing per year 1.4 The number of homelessness presentations received by Cardiff Council per 1000 households annually 1.5 Percentage of population of a working age qualified to NVQ level 4+ or equivalent
2. Maintain and improve air quality	2.a Reduce the need to travel through the location and design of new development, provision of public transport infrastructure and promotion of cycling and walking 2.b Avoid locating new development where air quality could negatively impact upon peoples' health	2.1 Number of air quality management areas
3. Protect and enhance biodiversity, flora and fauna	3.a Maintain and achieve favourable condition of international and national sites of nature conservation importance (SACs, SPAs and SSSIs) 3.b Maintain extent and enhance the quality of locally designated sites (LNRs and SNCIs) and LBAP priority habitats 3.c Protect and enhance protected species and LBAP priority species 3.d Maintain and enhance connectivity of corridors of semi-natural habitats 3.e Provide opportunities for people to experience wildlife and habitats	3.1 Number and extent (in hectares) of designated sites of importance (SACs, SPAs, SSSIs, LNRs and SNCIs) 3.2 Area (in hectares) of ancient woodland cover 3.3 Total extent (in hectares) of LBAP priority habitats 3.4 Percentage of features of internationally and nationally designated sites in favourable condition (SACs, SPAs, SSSIs)

Sustainability objective	Sub Objective: Will the LDP strategic option, objective, strategy, policy or allocation...	Indicators
4 Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	4.a Support energy conservation and energy efficient design 4.b Promote renewable energy generation 4.c Promote efficient land use patterns that minimise the need to travel 4.d Promote sustainable modes of transport and integrated transport systems 4.e Ensure that a precautionary approach is applied, and ensure that the location and design of new development manages the potential risks and consequences of flooding down to an acceptable level. 4.f Promote sustainable drainage systems in new development 4.g Reduce vulnerability of the built environment to the effects of climate change	4.1 Annual emissions of greenhouse gases by end use and sector 4.2 Cardiff's ecological footprint 4.3 Traffic growth: traffic volumes entering the County and city centre 4.4 Traffic volumes (billion vehicle Km) 4.5 Mode of travel to the city centre for all purposes 4.6 Average household energy consumption (kWh) 4.7 Percentage of major developments that generate a percentage of their energy from renewable sources 4.8 Number of properties at risk from river and coastal flooding 4.9 Percentage of new development with sustainable urban drainage systems (SUDS) 4.10 Number of new housing units approved in C1 and C2 flood risk areas
5. Protect and enhance historic and cultural heritage	5.a Protect and enhance historic and cultural assets including scheduled ancient monuments, listed buildings, historic parks and gardens, historic landscapes and conservation areas 5.b Encourage access to the historic and cultural heritage 5.c Support local character and distinctiveness through good design	5.1 Number of paid attendances for cultural venues in Cardiff 5.2 Percentage of conservation areas with an appraisal undertaken in the last 10 years 5.3 Percentage of listed buildings 'at risk'

Sustainability objective	Sub Objective: Will the LDP strategic option, objective, strategy, policy or allocation...	Indicators
6. Help deliver the growth of a sustainable and diversified economy	6.a Increase the number and range of employment opportunities 6.b Support and enhance the role of Cardiff as the economic driver of South East Wales city region 6.c Provide good quality employment opportunities accessible to all sections of the population by a variety of travel modes 6.d Promote and support city and local centres, local employment opportunities and mixed use development 6.e Support the regeneration of deprived areas 6.f Promote and support the rural economy	6.1 UK Competitiveness Index 6.2 Number of jobs in Cardiff 6.3 Gross Value Added (GVA) per head of local population 6.4 Full time gross median pay (£/week) 6.5 Percent of residents working age population in employment 6.6 The percentage of unemployed people claiming benefits who have been out of work for over a year 6.7 Proportion of residents on Jobseeker's Allowance 6.8 Amount of land (in hectares) available for employment
7. Improve health and well-being	7.a Promote healthy living and reduce health inequalities 7.b Encourage and facilitate walking and cycling 7.c Improve access to open space, the countryside and other opportunities for physical activity 7.d Improve environmental quality by minimising adverse impacts on health and wellbeing from pollution, flooding and waste management disposal 7.e Promote good design that minimises adverse impacts on health and wellbeing from crime and road traffic accidents	7.1 Prevalence of key illnesses 7.2 Gap between wards with the highest and lowest life expectancy 7.3 Percent of adults who are overweight or obese 7.4 Adults who reported meeting physical activity guidelines in the past week 7.5 No. people killed or seriously injured in traffic accidents 7.6 Notifiable offences
8. Protect and enhance the landscape	8.a Protect and enhance the landscape including the countryside, areas of landscape value, river valleys, greenspaces and the undeveloped coastline 8.b Protect and enhance geologically important sites 8.c Promote access to areas of landscape value 8.d Promote high quality design in keeping with its landscape context	8.1 Length of coast with formal public access 8.2 Area (in hectares) of landscape protected by local landscape designations (Green Belt, special landscape area and conservation areas) 8.3 Achievement of recreational open space requirements 8.4 Area of Cardiff within 400m of accessible natural green space

Sustainability objective	Sub Objective: Will the LDP strategic option, objective, strategy, policy or allocation...	Indicators
9. Use natural resources efficiently and safeguard their quality	9.a Re-use derelict and other previously developed land 9.b Remediate contaminated land 9.c Safeguard soil quality including the best and most versatile agricultural land, and protect and enhance allotments 9.d Safeguard mineral resources and encourage their efficient and appropriate use 9.e Conserve water resources and increase water efficiency 9.f Improve the water quality of rivers, lakes, groundwaters and coastal areas	9.1 Percent of housing on previously developed land 9.2 Number and area (in hectares) of potentially contaminated sites 9.3 Area (in hectares) of grades 1, 2 and 3a agricultural land 9.4 Number and area of allotments, number of plots 9.5 Landbank (in years) of mineral reserves 9.6 Percent of river lengths achieving good ecological status or potential 9.7 Total non-tidal water abstractions 9.8 Percentage of Cardiff's rivers achieving Good General Quality Assessments
10. Respond to demographic changes in a sustainable way	10.a Meet the need of Cardiff's population for homes, jobs and community facilities	10.1 Total population size 10.2 Number of households and average household size
11. Minimise waste, increase re-use and recycling	11.a Promote resource efficiency and the use of secondary and recycled materials 11.b Promote waste reduction, re-use, recycling and recovery	11.1 Commercial and industrial waste arising per year 11.2 Construction and demolition waste arising per annum 11.3 Municipal waste arising per year 11.4 Number of planning applications with site waste management plans 11.5 The percentage of municipal waste composted or recycled 11.6 Number of bring sites and large household recycling centres

5. Appraisal of the Vision and Objectives

“the likely significant effects on the environment, including on issues such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors”

(SEA Directive Annex I(f))

“the measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the plan or programme”

(SEA Directive Annex I(g))

- 5.1 This is the first of four chapters which appraise, respectively, the sustainability impacts of the LDP vision and objectives, strategic options considered for the LDP, individual candidate sites for development, and key and detailed policies. The SA framework of Table 4.3 was used as the basis for each appraisal. For the strategic options and candidate sites, the appraisal helped to inform the decision of which options to choose. For the vision, objectives, and key and detailed policies, the appraisal helped to fine-tune each element of the LDP.
- 5.2 The Local Development Plan Manual states that the purpose of the appraisal at this stage is to predict the likely economic, environmental and social effects of the options being considered. The Practical Guide to the Strategic Environmental Assessment Directive states that “predictions do not have to be expressed in quantitative terms ... quantification is not always practicable, and qualitative predictions can be equally valid and appropriate”.
- 5.3 This chapter discusses the appraisal of the LDP Vision and Objectives - which were shown at Chapter 3.

Sustainability Appraisal of the LDP vision

- 5.4 The appraisal of the LDP vision showed that the vision would primarily have positive impacts. It highlighted a number of issues that were not explicitly addressed through the LDP vision. Features such as landscape could also be strengthened to improve the sustainability of the vision. The detailed assessment of the LDP vision can be found in **Appendix D**.

Appraisal of the LDP Objectives

- 5.5 Table 5.1 summarises the results of the appraisal of the LDP objectives, and **Appendix D** shows the full appraisal. The LDP objectives mostly have positive sustainability effects. However in some cases, although per capita impacts are likely to reduce, overall impacts are likely to worsen as a result of Cardiff's increasing population.
- 5.6 Rewording was suggested for several sub-objectives and one headline objective. For instance, it was suggested that Sub-Objective 1.12 should be divided into three separate objectives to more adequately cover waste issues;

and that provision of healthy food choices should be stressed more. Most of these changes were subsequently made, as shown in Table 5.2. Where proposed changes were not implemented, reasons for this have been documented in the final column of Table 5.2.

Table 5.1 Summary appraisal findings for the LDP objectives

SA Objective	LDP Objectives
1.Help deliver equality of opportunity and access for all	✓ The LDP Objectives aim to provide affordable housing and access to education, employment, facilities and services, and promote social inclusion, equality of opportunity and access for all. Location of development is key for achieving sustainable transport solutions and networks.
2.Maintain and improve air quality	✓ / ? – per capita, ? / ✗ – city wide The LDP Objectives help to improve air quality through the provision of sustainable transport solutions, and by aiming to reduce the need to travel. However, whilst per person emissions may reduce as a result of the LDP, it is a plan for the growth of Cardiff and therefore it is unlikely that, overall, the city’s emissions to air will decrease.
3.Protect and enhance biodiversity, flora and fauna	✓ The LDP Objectives aim to protect and enhance biodiversity not only at designated sites but also in areas without designation or of unknown biodiversity value.
4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	✓ - per capita, ✗ - city wide The LDP Objectives assist and support in reducing carbon emissions by reducing the need to travel, encouraging a modal shift in transport, aiming to provide sustainable transport solutions and aiming to adapt to and mitigate the effects of climate change, including flooding. However although carbon emissions per person may reduce as a result of the LDP, this is a plan for the city’s growth and as such it is unlikely that the city’s overall carbon emissions will decrease.
5. Protect and enhance historic and cultural heritage	✓ The LDP Objectives help to protect and enhance historic assets, to ensure that new development is respectful to existing character, and to provide accessible cultural facilities for all communities.
6. Help deliver the growth of a sustainable and diversified economy	✓ The LDP Objectives help to provide a range of employment land, promote specialist sectors to support economic diversity, and provide good transport links. Location of development will be key to delivering sustainable economic growth.
7. Improve health and well-being	✓ The LDP Objectives assist in the promotion of more healthy lifestyles by increasing the provision of cycle and walk ways, aiming to protect public open spaces such as parks, and including healthier food choices as part of community centres and facilities.
8. Protect and enhance the landscape	✓ The LDP Objectives help to protect Cardiff’s distinctive landscape features, both designated and undesignated. They also aim to safeguard geodiversity and important geological sites.
9. Use natural resources	✓/? The LDP Objectives aim to protect Cardiff’s mineral supply, protect and

SA Objective	LDP Objectives
efficiently and safeguard their quality	enhance water and soil quality, increase water efficiency and promote good design with resource efficiency. However, there may be issues with sustainably sourcing appropriate building materials for development.
10. Respond to demographic changes in a sustainable way	✓ The LDP Objectives aim to meet the needs of Cardiff's growing population both socially and economically. However, whilst per person resource use and emissions are expected to decrease over the plan period, their absolute levels will probably increase as a result of growth of the city and its population.
11. Minimise waste, increase re-use and recycling	✓ - per capita, ✗ - city wide The LDP Objectives aim to minimise waste, maximise recycling and reuse and promote good design, which may reduce the waste generated by developments. However, whilst the LDP will help to reduce the amount of waste from development and per capita, the total waste arisings will probably increase over the plan period in Cardiff as a result of growth.

Table 5.2 Changes resulting from appraisal of LDP objectives

Original LDP Strategic Objectives and Sub-Objectives	Change proposed by SA team	Response to proposed change
1. To respond to evidenced economic needs and provide the necessary infrastructure to deliver development	Reword: 'to deliver sustainable and accessible...'	Change rejected as suggested additional wording duplicates other sections and is considered superfluous.
1.2 To maximise the economic potential of the city centre of Cardiff as a major financial and service sector opportunity that builds upon its position next to a transport hub of national and regional significance and is readily accessible from all areas within the city	Reword: 'and well connected to other UK cities'.	1.2 changed to ' <u>and well connected to other UK cities.</u>
1.10 To establish Cardiff as a sustainable travel city by increasing the use of sustainable travel modes (particularly walking and cycling), decreasing private car use and improving the city's key transport hub based at the adjacent central bus and train stations	Reword: 'by reducing the need to travel... sustainable travel modes and networks...'	1.10 To establish Cardiff as a sustainable travel city by <u>reducing the need to travel</u> , increasing the use of sustainable travel modes <u>and networks</u> (particularly walking and cycling)...
1.12 To support the reduction of waste together with reducing the need to transport waste through providing an integrated network of waste management facilities consistent with the needs of the South East Wales area and the waste hierarchy	Suggest 1.12 is divided into 3 separate waste objectives.	<p>1.12 To support sustainable collection and recycling methods for Municipal Waste by maintaining and improving an integrated network of facilities in Cardiff</p> <p>1.13 To lead and participate in securing regional facilities for the sustainable treatment and disposal of Municipal Waste in accordance with/ in line with the Regional Waste Plans and the waste hierarchy which seeks to maximise the reduction of waste in the first place and thereafter reusing, recovering and recycling options before the disposal of water material is considered.</p> <p>1.14 To facilitate an integrated network of</p>

Original LDP Strategic Objectives and Sub-Objectives	Change proposed by SA team	Response to proposed change
		commercial and industrial sustainable waste management facilities consistent with the needs of the south east Wales area and in a manner that follows the waste hierarchy which seeks to maximise the reduction of waste in the first place and thereafter reusing, recovering and recycling options before the disposal of waste material is considered.
2.6 To create an environment that is made more accessible to all groups in society so that the facilities and services of the city can be more readily used and enjoyed by all	Reword: 'so that the employment opportunities...'	2.6 To create an environment that is made more accessible to all groups in society so that the <u>employment opportunities</u> ,...
2.8 To recognise, support and enhance the key role played by existing District, Local and Neighbourhood Centres as accessible local hubs providing community services, local shops, businesses, employment and access to public transport	Reword: added 'healthy food choices...'	2.8 ... accessible local hubs providing community services, local shops, <u>healthy food choices</u> ,...
2.10 To ensure that the necessary education and training facilities are provided and are accessible to all: to build strong futures for children, provide a diverse range of youth/adult learning opportunities and assist economic progress through the development of required skills	Reword: Remove 'youth/adult', add 'opportunities <u>for all</u> '.	2.10 ...provide a diverse range of youth/adult learning opportunities <u>for all</u> and assist economic progress through the development of required skills
2.12 To ensure that the necessary community facilities (community centres, youth facilities, child care, faith buildings, health centres etc) are provided that are accessible to all	Reword: Add 'and cultural facilities', 'shops with health food choices' and 'especially in areas that are deprived'.	2.12 To ensure that the necessary community <u>and cultural</u> facilities (community centres, <u>shops with healthy food choices</u> , youth facilities, child care, faith buildings, health centres etc) are provided that are accessible to all, <u>especially in areas that are deprived</u>
3.1 To mitigate the effects of climate change through reducing energy consumption and increasing the supply of renewable energy	Reword: Remove 'consumption' and replace with 'demand'	3.1 To mitigate the effects of climate change through reducing energy consumption <u>demand</u> and increasing the supply of renewable energy
3.3 To protect, manage and enhance Cardiff's natural environmental assets, including:...	Reword: 4 th bullet point 'networks that...'	<ul style="list-style-type: none"> The city's biodiversity, its internationally, nationally and locally designated sites, wildlife habitats

Original LDP Strategic Objectives and Sub-Objectives	Change proposed by SA team	Response to proposed change
<ul style="list-style-type: none"> The city's biodiversity, its internationally, nationally and locally designated sites, wildlife habitats and features that contain important species and link together areas of value; and Natural resources including geodiversity, the best soils, water and air quality including the reduction of pollution 	<p>Add 6th bullet point 'The role that vegetation plays in combating climate change by providing shading, cooling and carbon sinks'.</p>	<p>and features that contain important species and <u>networks that</u> link together areas of value; and</p> <ul style="list-style-type: none"> Natural resources including geodiversity, the best soils, water and air quality including the reduction of pollution <u>The role that vegetation plays in combating climate change by providing shading, cooling and carbon sinks.</u>
<p>3.4 To conserve and enhance Cardiff's built and historic assets that help give a distinctive character to the city and reflect its past development including:</p> <ul style="list-style-type: none"> The city's 27 Conservation Areas; Its Listed Buildings and Ancient Monuments; Registered Historic Landscapes and areas of archaeological importance; and Other valued public places and spaces that provide local distinctiveness and are well used by the community 	<p>Reword: main objective 'define Cardiff's distinctive character...'</p> <p>Reword: 4th bullet point 'including parks and amenity', remove 'and are well used by the community'.</p>	<p>3.4 To conserve and enhance Cardiff's built and historic assets that help give a define Cardiff's distinctive character to the city and reflect its past development including:</p> <ul style="list-style-type: none"> The city's 27 Conservation Areas; Its Listed Buildings and Ancient Monuments; Registered Historic Landscapes and areas of archaeological importance; and Other valued public places, <u>including parks and amenity</u> spaces that provide local distinctiveness and are well used by the community
<p>4.1.2. Minimise car use and maximise sustainable transport solutions to create accessible, permeable and legible places- to avoid creating predominantly car-based developments in remote or inappropriate locations by focusing new development in accessible locations. To encourage greater use of sustainable modes of transport- walking, cycling (ideally linked to the strategic cycle network) and via fast and frequent public transport that provides an effective network around and beyond the city;</p>	<p>Reword: Added 'and decrease air pollution'.</p> <p>Remove 'ideally linked to the strategic cycle network'</p> <p>Suggest that objective is strengthened to "prevent" car based developments.</p>	<p>4.1.2. Minimise car use <u>travel</u>, and maximise sustainable transport solutions-use and decrease air pollution by <u>to</u> creating accessible, permeable, and legible places, preventing to avoid creating predominantly car-based developments in remote or inappropriate locations <u>by and</u> focusing new development in accessible locations <u>which are</u> To encourage greater use of sustainable modes of transport- walking, cycling (linked to the strategic cycle network <u>and can be served mainly by effective networks of sustainable transport – walking cycling and</u> via fast and frequent public transport that</p>

Original LDP Strategic Objectives and Sub-Objectives	Change proposed by SA team	Response to proposed change
		provides an effective network around and beyond the city;
4.1.3. Minimise waste and maximise recycling- to minimise waste at the outset but to recognise the value of waste as a resource and effectively plan for how it can be collected and productively used;	Suggested alternative: '4.1.3. To effectively plan for how business and neighbourhoods can sort and store for collection for onward productive use; to Minimise waste to landfill and maximise recycling whilst seeking to optimise the overall value of waste as a resource and ensure proper provision for new developments is made through developer proposals'	4.1.3. To maximise recycling- to minimise waste at the outset <u>optimise</u> but to recognise the overall value of waste as a resource and to effectively plan for how it can be collected and productively used <u>new developments can sort and store waste for collection for onward productive use and minimise material needing treatment and final landfill.</u>

6. Appraisal of Strategic Options

“the likely significant effects on the environment, including on issues such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors”

(SEA Directive Annex I(f))

“an outline of the reasons for selecting the alternatives dealt with, and a description of how the assessment was undertaken including any difficulties (such as technical deficiencies or lack of know-how) encountered in compiling the required information”

(SEA Directive Annex I(h))

- 6.1 This section discusses the sustainability impacts of the strategic options considered for the 2012 LDP Preferred Strategy: levels of housing and jobs growth, and broad spatial options for housing delivery. The impacts of individual candidate sites for development are discussed at Chapter 7.
- 6.2 The SEA Directive requires an environmental report to describe and evaluate the environmental impacts of the plan 'and reasonable alternatives taking into account the objectives and the geographical scope of the plan' (Article 5.1), and to include 'an outline of the reasons for selecting the alternatives dealt with' (Annex I(h)). The Welsh Assembly Government's LDP Manual explains that:
- “The purpose of this task is to predict the social, environmental and economic effects of the options being considered in the LDP preparation process. The main technique is to predict both positive and negative effects of each option on the environmental baseline and objectives set out in the SA framework. The performance of each option can then be compared, taking account where necessary of the “business as usual” scenario, i.e. how sustainability would change under the current development plan”* (Sec. 6.4.1).

Options considered

- 6.3 A range of options had already been considered and appraised during the development of the (now withdrawn) 2009 version of the LDP: whether or not to include an International Business Park in the LDP; different scales of housing and jobs growth; whether new growth should be accommodated in one large Greenfield site, several smaller Greenfield sites, or only on previously developed land; and whether or not to include a Green Technology Park in the LDP.
- 6.4 The economic and political situation in 2013 is different from that in 2009, so many of these options are no longer relevant. In particular, development on only brownfield sites is no longer felt to be a reasonable option. However these early options and their appraisals informed the options considered for this LDP.

Options for growth

6.5 Cardiff's population is growing, due to both natural population increase and immigration. Demographic changes such as divorce and people living longer means that household size is decreasing, so more homes will be needed to accommodate these additional households. A 'zero growth' option is thus not reasonable. The LDP team considered a range of options of future homes and jobs growth in Cardiff, shown at Table 6.1.

Table 6.1 Options for growth

Option	Housing/ employment growth	New dwelling requirement per annum	Evidence
A High	About 54,400 new homes and 55,000 new jobs	2,720 (2006-2026) 2,976 (April 2010 – 2026)	Based on the Welsh Government's 2008 population and household projection figures.
B Medium	About 45,400 new homes and 40,000 new jobs	2,270 (2006 – 2026) 2,214 (April 2010 – 2026)	Based on the Welsh Government's 2008 population and household projection figures recalculated using local robust data.
C Low	About 36,500 new homes and 26,000 new jobs	1,825 (2006 – 2026) 1,858 (April 2010 – 2026)	Based on long term net migration rates and housing completion rates over the last 8 years.

Spatial options for delivery

6.6 Different spatial options were considered to deliver the level of growth set out in the plan. Developers' responses to a call for candidate sites helped to indicate the broad range of potential development areas, namely:

- Dispersed brownfield sites;
- Greenfield sites west of Pentreban;
- Greenfield sites south of Creigiau/ north of Junction 33;
- Greenfield site north of M4 at Thornhill;
- Greenfield sites west and east of Pontprennau;
- Greenfield sites around Old St Mellons village;
- Greenfield sites in the east- largely employment uses; and
- Dispersed smaller greenfield sites.

6.7 Given the scale of development being considered in growth Options A, B and C, it is inevitable that more than one of these areas is likely to contain sites allocated for development. Therefore, the potential 'in combination' effects of several candidate sites together, and of enlarged or reduced candidate site areas, were also considered.

Appraisal methodology

6.8 Initial appraisal workshops were held in June 2011 to evaluate the LDP strategic options, and the appraisals were later refined by the SA team. The appraisals were undertaken using the SA framework of Table 4.3. For each option, the appraisers considered what the issues and opportunities were, and possibilities for improving the sustainability of the option. The appraisals of options for delivering growth later helped in developing the LDP Preferred Strategy by identifying key sustainability issues for different areas of the City before detailed site assessments began.

Appraisal results

Options for growth

6.9 **Appendix E** shows the appraisal of the different options for growth, and Table 6.2 summarises these findings.

Table 6.2 Summary appraisal findings for the options for growth

SA objective	1. Equality	2. Air quality	3. Biodiversity	4. Climate change	5. Heritage	6. Economy	7. Health and wellbeing	8. Landscape	9. Natural resources	10. Demographic change	11. Waste
A. High growth: total	✓✓	xx	xx	xx	x	✓✓	✓x	xx	✓?	✓x	xx
per capita				✓?							✓?
B. Med. growth: total	✓	x	x	x	x	✓	✓x	x	✓x?	✓	x
per capita				✓?							✓?
C. Low growth: total	x?	x?	x?	x	x?	✓?	✓x?	x?	✓?	?	x
per capita				✓?							✓?

6.10 Option A would provide the greatest social and economic benefits to the city whilst having the most detrimental impacts on the natural and historic environment. Conversely Option C would provide fewer social and economic benefits whilst preserving more of Cardiff's natural environment resources. The impacts of Option B are between those of Options A and C.

6.11 More specifically issues and opportunities include:

- Options A and B could help to address existing socio-economic issues within the city, including the need for affordable homes and accessible community and health care facilities, by providing new large coherent developments and a high number of employment opportunities. The level of growth provided under Option C is less likely to deliver these kinds of social and economic benefits. It may not be able to deliver new developments that support the necessary population thresholds to provide new community and health facilities.

- Options A and B, and to a lesser extent Option C have the potential for significant negative environmental effects. Option A would require the majority of the development land available in the city, leaving little residual land for mitigation measures: this would lead to significant and widespread loss of habitats and severe disruption of habitat connectivity across the city. The lower scale of development under Options B and C could provide opportunities to integrate the landscape into new developments whilst Option A is likely to have unavoidable significant negative impacts on Cardiff's landscape setting.
- All three options have the potential to have negative impacts to the city's air quality due to increased transport and economic activity. This effect could be mitigated by providing mixed use, self-contained developments that reduce the need to travel and incorporate sustainable transport solutions. The impact of Option C on air quality is harder to predict: whilst the effect on air quality would be lower than for Options A or B, the reduced provision of housing could lead to an increase in commuting e.g. from the Valleys by car.
- Over the plan period, for any of the options, citywide greenhouse gas emissions and waste arisings are likely to increase: all the options support a significant growth of the population, and thus consumption, waste and other activities such as transport. There is potential under all of the options to decrease the per capita emissions through the design of new developments e.g. integrating sustainable transport and waste (reuse: recycling: reduction) solutions. Options A and B would involve development on large Greenfield sites, which currently provide important carbon sinks for the City. Their loss would exacerbate the carbon emissions arising from growth. Additionally green spaces help to reduce the impacts of climate change by providing land drainage and reducing the urban heat island effect.
- All of the options have the potential to impact negatively on historic and cultural assets and local character. This is particularly true for Option A where the level of growth is high and almost all of the available land in Cardiff would be developed. These impacts could be mitigated by ensuring that design of new developments is sympathetic to local character and distinctiveness, and that the cultural and historic assets are protected.
- Cardiff needs to be able to respond, sustainably, to future demographic changes. Option C provides a level of growth that is consistent with the last 8 years of demographic change in the city based on local data. Beyond the LDP's plan period (20 years) there would be sufficient development land remaining in the city for further growth if this trend in population increase continues. Under Option A almost all of the available development land would be filled within the plan period and it is uncertain how future demographic changes could be accommodated beyond the plan period. Option B provides housing and employment but leaves some residual development land beyond the plan period.

- 6.12 Option B formed the basis of the October 2012 Preferred Strategy. However Policy KP1 of the Deposit LDP reduces the dwellings figure to 41,100, roughly midway between Options B and C. (The jobs figure remains 40,000 as in Option B). The reasons for this are explained in detail in paras 4.12 to 4.26 of the Deposit LDP. The decisive point is that more recent modelling of the kind that informed the earlier choice of Option B, using more up to date information, indicates that both migration and household formation rates now appear likely to be lower than previously projected.
- 6.13 However, given the uncertainties, KP1 also includes provision to deliver an additional 4,000 homes (ie back to almost Option B) later in the plan period if monitoring indicates this is necessary.
- 6.14 This new option has not been formally appraised. Given that it lies between two options, B and C, which were appraised, that their scores were similar, and that the revised population modelling means that the new option should perform as well as B did previously on the two criteria (1 equality and 10 population) where it might have been expected to do worse, this is not a problem.
- 6.15 The roughly 10% reduction in housing was not accompanied by any pro rata reduction in the areas of land allocated for development. (An apparent small reduction in area was due to two brownfield sites included in earlier drafts of the LDP being removed because they have planning permission and development is already proceeding.) This means that, if and when the extra 4000 dwellings are needed, they will need additional sites: ie that the same quantum of development would now be around 10% less dense and take around 10% more greenfield land than was envisaged in the Preferred Strategy. When the appraisal queried this, the LDP team responded that their more detailed masterplanning had revealed that community facilities, open space and environmental protection were going to require more land than had previously been estimated, so the reduction in density was going to be needed to comply with other LDP objectives and policies anyway.
- 6.16 Following the public Examination, the housing provision was reviewed. Several different adjustments and updates together resulted in a small increase in the total, to 41,415. It was also made more explicit how the additional 4000 dwellings could potentially be accommodated by faster building out of one strategic site and extensions to two others which have been appraised. These changes do not warrant any change in the overall appraisal.

Spatial options for delivery

- 6.17 **Appendix E** shows the appraisal of the different spatial options for delivery, and Table 6.3 summarises these findings.

Table 6.3 Summary appraisal findings for the spatial options for delivery

SA objective	1. Equality	2. Air quality	3. Biodiversity	4. Climate change	5. Heritage	6. Economy	7. Health and wellbeing	8. Landscape	9. Natural resources	10. Demographic change	11. Waste
Dispersed brownfield sites	Too varied and diffuse to effectively appraise at the strategic level										
Greenfield sites west of Pentrebane	✓ xx	x?	x	✓x	x?	✓	✓?	x/ xx?	x	✓✓	x
South of Creigiau / north of Junction 33	x	x/ xx	xx	✓x	?	✓✓	✓?	xx	x	✓✓	x
Greenfield sites west and east of Pontprennau	✓x	x?	x	x	?	✓✓	✓?	x/ xx?	x	✓✓	x
Greenfield site north of M4 at Thornhill	x	x/ xx	x	x	x	0	✓x	xx	x	✓	x
Greenfield sites around Old St Mellons Village	x	x/ xx	x?	x?	0	0	✓x	0	x	✓?	x
Greenfield sites in the east	✓	x?	xx	xx	x	✓✓	x?	xx	x	✓	x
Dispersed Greenfield sites	Too varied and diffuse to effectively appraise at the strategic level										

- 6.18 All the large Greenfield sites would have negative impacts on biodiversity and landscape because they would take up large areas of greenfield land. Air quality would worsen under all of the options because they would increase the use of cars: North of Junction 33, North of the M4 at Thornhill, and sites at Old St Mellons would have particularly negative impacts due to their location in less central locations poorly served by public transport. All new development sites will use natural resources and generate waste, but these are negative impacts of the overall level of development which will not in general differ significantly between locations.
- 6.19 All the large Greenfield sites would respond to demographic change by providing needed housing and employment land. Several would also provide health benefits in the form of improved access to open space, encouragement for walking and cycling, and/or improved health facilities.
- 6.20 The sites' impacts on heritage, equality and climatic factors depends on whether the sites include any aspects of cultural/heritage importance, whether they are located near the 'southern arc' of deprivation, whether they would provide facilities for existing communities, and whether they have the potential to provide renewable energy. Several include areas that are prone to flooding.

6.21 Having considered these points, the planning team’s main reasons for including or not including the main strategic sites in the LDP are:

Dispersed brownfield sites	Generally have few constraints and are considered acceptable in principle . Most of the sites have been taken forward, providing for 27,615 homes – about 65% of the overall housing provision.
Greenfield sites west of Pentreban	Included: Some environmental constraints with protected species on site and close to a Site of Special Scientific Interest, no flood risk implications, a large site with the potential to bring forward a comprehensive range of supporting social and community facilities. Suitable mitigation measures will need to be identified.
Greenfield sites south of Creigiau / north of Junction 33	Included: Contains several Sites of Importance for Nature Conservation, no flood risk implications, a strategically important and visible location in a well used transport corridor adjacent to a proposed Special Landscape Area, can help to deliver wider transport strategy (provision of Park & Ride/Share facility, new rapid transport bus corridor etc.)
Greenfield sites west and east of Pontprennau	Included: Contains several Sites of Importance for Nature Conservation, some flood risk implications, no strategic landscape importance, possibility of integrating existing natural features (stream, woodlands, hedgerows) into any new development, a large site with the potential to bring forward a comprehensive range of supporting social and community facilities, including a primary school for Pontprennau and public open space.
Greenfield site north of M4 at Thornhill	Not included: Crosses a well defined urban edge (the M4), forms part of the strategically important green countryside backdrop to Cardiff, has some biodiversity and landscape importance, relatively isolated from existing community facilities and without the critical mass necessary to effectively deliver on-site provision.
Greenfield sites around Old St Mellons Village	Not included: A relatively isolated area with no notable existing social/community facilities and served by narrow lanes. Additional development would be highly car-based. The disjointed nature of submissions mitigates against a comprehensive approach to dealing with these limitations.
Greenfield sites in the east	Included: Significant environmental constraints: most of the area is a Site of Special Scientific Interest, the adjoining estuary is an internationally important site for birds, it is a Historic Landscape and Archaeologically Sensitive Area, the site meets the criteria for Special Landscape Area status, and flood risk is a major concern. Suitable mitigation measures will need to be identified.

Dispersed Greenfield sites	Generally cause concern because of their isolated and piecemeal nature. More information on these sites can be found at the 2012 LDP Preferred Strategy Background Technical Paper No. 8.
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7. Appraisal of Candidate Sites for Development

“the likely significant effects on the environment, including on issues such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors”

(SEA Directive Annex I(f))

“an outline of the reasons for selecting the alternatives dealt with, and a description of how the assessment was undertaken including any difficulties (such as technical deficiencies or lack of know-how) encountered in compiling the required information”

(SEA Directive Annex I(h))

- 7.1 This section discusses how the specific candidate sites that were proposed for development in Cardiff were identified and appraised.
- 7.2 In determining where housing and employment growth could be directed spatially, the planning team considered the existing land bank of housing and employment land, scheduled completions, windfall sites and information received from landowners and developers on potential candidate sites. This resulted in 112 possible development sites.
- 7.3 Various combinations of sites were also considered:
- North west transport corridor- Candidate sites south of Creigiau, north of Junction 33 of the M4, sites to west of Fairwater and Radyr
 - North east- Several candidate sites located between Lisvane and Pontprennau plus the site located east of the Pentwyn Link Road
 - St Mellons Village- A collection of relatively small candidate sites in a well-defined area around the fringes of St Mellons Village which collectively cover about 57 hectares
 - Land north of Junction 33 of M4 / south of Creigiau
 - Land south of St Mellons Business Park.
- 7.4 The following enlarged sites were also appraised:
- North west Cardiff submission extended slightly to the west up to Croft Y Genau Road
 - North west Cardiff extended north towards M4
 - North west Cardiff extension to the west
 - Land north of Junction 33
 - Cardiff Central Enterprise Zone – Since the candidate sites were submitted, the Welsh Government have designated the Cardiff Central Enterprise Zone in April 2012. This covers a much larger geographical area than the 3 small candidate sites previously submitted.

Appraisal methodology

- 7.5 A modified approach was taken to the appraisal of individual candidate development sites. It is not possible, at the plan-making stage, to know

precisely what kind of development will go on each site, for instance what combination of housing, employment and infrastructure a developer will propose when they make a planning application; or what site layout and development design they will propose. For other aspects of sustainability, like waste management, the choice of development sites will not affect the impact. As a result these topics were not assessed for individual sites. On the other hand, detailed information is available on some other sustainability topics: for instance, whether they are near sites of nature conservation importance or in areas of flood risk.

- 7.6 To ensure full integration between the plan-making and SA processes, one joint planning/SA pro forma was agreed by the SA and planning teams, and was filled in by the planning team for each candidate development site. The pro forma takes into account the feasibility and applicability of potential mitigation measures. **Appendix F** shows the SA criteria used in the pro formas, and these are summarised at Table 7.1 .

Table 7.1 Appraisal criteria used for candidate sites: links to the site pro forma

SA Objective	Corresponding factor in the candidate site pro forma
1. Help deliver equality of opportunity and access for all	C1: Transport context: is the site near a train station or bus stop, is it easily accessible by foot or cycling etc. D2: Community facilities: is a good range of community facilities near the site, reducing the need to travel
2. Maintain and improve air quality	F1: Air quality: is the site in an Air Quality Management Area, does it pose concerns about air quality etc.
3. Protect and enhance biodiversity, flora and fauna	A1: Biodiversity/geology: is the site on or near any nature conservation designations, have protected species been found on the site etc.
4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	B1: Existing flood risk: does the site lie in the floodplain E3: Scope for renewable energy solutions
5. Protect and enhance historic and cultural heritage	A3: Historic, cultural and built environment: is the site on or near any historic designations, could it affect the cultural heritage etc.
6. Help deliver the growth of a sustainable and diversified economy	Not applicable for assessment at location level
7. Improve health and well-being	F2: Health and wellbeing : could development at the site affect the health of existing or future residents etc.
8. Protect and enhance the landscape	A2: Landscape: is the site on or near any landscape designations or would it otherwise affect the townscape or landscape
9. Use natural resources efficiently and safeguard their quality	A4: Natural resources: is the site on high quality agricultural land, are mineral resources on the site etc. A5: Contaminated land: does the site offer the potential to clear up contaminated land
10. Respond to demographic changes in a sustainable way	Not applicable for assessment at location level

SA Objective	Corresponding factor in the candidate site pro forma
11. Minimise waste, increase re-use and recycling	

- 7.7 After the planning team filled in the pro formas, the SA team checked the pro formas for consistency and logic, and discussed any concerns with the planning team. The main problem identified was that the planners' assumptions about potential mitigation measures meant that almost none of the candidate sites were found to have biodiversity or landscape impacts, even when they were on Greenfield land or designated nature conservation sites. This led to the planners revising many of the pro formas in response to the SA, including:
- Changing many of the planners' neutral impacts on biodiversity or landscape to negative impacts. In the absence of certainty that mitigation measures would be implemented and be successful, a more precautionary approach was felt to be more appropriate;
 - Changing some of the planners' positive impacts on health to neutral impacts because of concerns about the air pollution generated by traffic from the site;
 - Changing some of the planners' neutral impacts on equality of opportunity to positive impacts because of the site's proximity to existing services and public transport.
- 7.8 In other cases, this review by the SA team led the planning team to more clearly explain in the pro forma the reasons for deciding that the site would have specific impacts.
- 7.9 Table 7.2 shows the results of the candidate site appraisal process for both individual sites and combinations/extensions of sites, and also shows whether the site is included in the plan or not. More information on the choice of preferred candidate sites is available in the Preferred Strategy , and in the pro formas at the 2012 LDP Preferred Strategy Background Technical Paper 8 / Appendix 3.

Table 7.2 Summary appraisal findings for the LDP candidate sites

SA objective	1. Help deliver equality of opportunity and access for all	2. Maintain and improve air quality	3. Protect and enhance biodiversity, flora and fauna	4. reduce and adapt to emissions of greenhouse gases	5. Protect and enhance historic and cultural heritage	7. Improve health and well-being	8. Protect and enhance the landscape	9. Use natural resources efficiently	Planning conclusions
Equivalent to pro forma criterion...	C1 D2	F1	A1	B1 E3*	A3	F2	A2	A4 A5	
1. Land at Wentloog Levels									J
2. St. Mellons Business Park									X
3. Land at Pill Du Farm									X
4. Energlyn, Ty Draw Road									G
5. Land rear of Fairmeadow									✓
6. Land at Cefn Mably Road									G
7. Land at Tregyrnog House									X
8. Land W of Clos y Cwarra									X
9. Land of Sunnybank Farm									G
10. The Dutch Garden Centre									X
11. Land east of Graig Road									G
12. Parc Ty Glas/Malvern Dr									X
13. Land to rear of Brynteg									X
14. Land to NW of Druidstone									X
15. Druidstone Rd, OSM									X
16. Land at Ely Bridge									B
17. Ely Bridge Farm									✓
18. Queen Alexandra Head									✓
19. Pengam Green									X
20. Queens Gate Car Park									✓
21. Land at Areas 9-12									X
22. Trowbridge Mawr									X
23. Land Crickhowell									PP
24. Land east of Cypress Drive									J
25. Land at Cefn Garw Quarry									X
26. Land Ty Isaf Farm House									X
27. Land at Pwll Coch Uchaf									X
28. Land North of Ty Isaf									X
29. Land NW of Druidstone									X
30. Pwll Coch Druidstone									X
31. Land at Brindley Road									✓
32. Land at Michaelston Road									PP
33. Llanishen Reservoir									X
34. Llanishen Reservoir									X
35. Rookwood Hospital									✓
36. Former Lansdowne H-I									✓
37. Greenhill School									X
38. Land off Tyr Winch Road									X
39. Whitchurch Hospital Site 1									PP
40. Whitchurch Hospital Site 2									PP
41. Whitchurch Hospital Site 3									PP
42. Whitchurch Hospital Site 4									✓
43. Land to E of Brook House									X
44. Land at Bridge Road									X
45. Government Offices									✓
46. Land N of Junction 33									E
47. Goitre Fach Farm									D
48. Church Farm									H
49. Blooms Garden Centre									X
50. Land at Briwnant									X
51. Land at Mill Road									✓
52. Land at Paper Mill Road									X
53. Cardiff Gate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
54. Taffs Well Quarry	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
55. Land at Trowbridge Road									PP
56. Former St Johns College									✓

SA objective	1. Help deliver equality of opportunity and access for all	2. Maintain and improve air quality	3. Protect and enhance biodiversity, flora and fauna	4. Reduce and adapt to emissions of greenhouse gases	5. Protect and enhance historic and cultural heritage	7. Improve health and well-being	8. Protect and enhance the landscape	9. Use natural resources efficiently	Planning conclusions
57. Land at Hannah Street									PP
58. Rear of Moorland Road									✓
59. Goitre Farm, St Mellons									X
60. Roath Basin South									I
61. Land S of Central Station									A
62. Land rear of Clive Street									✓
63. Former Cwm Farm									✓
64. Former Cwm Farm									X
65. Land at former Cwm Farm									X
66. Land at Church House Frm									G
67. Land at Maerdy Farm									G
68. Land at Llwyn y Pia Farm									G
69. Land at Tynewydd									X
70. Central Square									A
71. Wales Millennium Centre									✓
72. Land E&W of Church Rd									H
73. Graving Docks									X
74. Wentloog Industrial Park E									X
75. Land east of GH Farm									X
76. Land S of Wentloog Ave									X
77. Gas Works, Ferry Road									C
78. Fruit Market, B&Q									PP
79. Land at Ty Draw Road									G
80. Land at Bridge Road									X
81. Land at Began/Bridge rd.									X
82. Land West of Cardiff									D
83. JR Freeman Factory									PP
84. Malthouse Frm NE Cardiff									G
85. Land off Llwyn y Pia Road									G
86. North East Cardiff									G
87. North East Cardiff									G
88. North East Cardiff (part)									G
89. North East Cardiff (part)									G
90. North East Cardiff (part)									G
91. Land at Pwll Coch									X
92. Greenhill School									X
93. Greenhill School									X
94. UWIC, Colchester Avenue	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	PP
95. Howard Gardens									X
96. Land Llandaff Campus									X
97. Plas Gwyn RC/BBC									X
98. Land at Church Rd									H
99. Dan y Garth (a)									✓
100. Dan y Garth (b)									✓
101. Dumballs Road									A
102. Land south of Creigiau									F
103. Mill Farm, St Mellons Rd									G
104. Land off Druidstone Rd									X
105. Land off Druidstone Rd (2)									X
106. Cardiff Parkway									J
107. Land at Gelynis Farm									X
108. Electrocoin Automatics									✓
109. Land at Bridge Road									X
110. Land NE of Cefn Eurwg									X
111. Land NW of Great House F									X
112. NE Cardiff									G
Site combinations:									
North West Transport Corridor									
North East Cardiff									
St Mellons Village									

SA objective	1. Help deliver equality of opportunity and access for all	2. Maintain and improve air quality	3. Protect and enhance biodiversity, flora and fauna	4. reduce and adapt to emissions of greenhouse gases	5. Protect and enhance historic and cultural heritage	7. Improve health and well-being	8. Protect and enhance the landscape	9. Use natural resources efficiently	Planning conclusions
North of J33 / South of Creigiau	Red	Green	Orange	Yellow	Yellow	Green	Orange	Orange	Green
South of St Mellons Business P	Yellow	Yellow	Red	Red	Orange	Yellow	Orange	Yellow	Yellow
Enlarged sites:									
NW Cardiff to Croft Y G	Orange	Green	Orange	Yellow	Yellow	Green	Orange	Orange	Yellow
NW Cardiff N toward M4	Orange	Green	Orange	Yellow	Yellow	Green	Orange	Orange	Yellow
NW Cardiff to the west	Orange	Green	Orange	Yellow	Yellow	Green	Orange	Orange	Yellow
Land N of J33 extended	Red	Green	Orange	Yellow	Yellow	Yellow	Orange	Orange	Green
Cardiff Central Enterprise Zone	Green	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow

* All E3 are unknown so they are not recorded here

Appraisal findings						
very positive	positive	neutral	un-known	data not yet available	negative	very negative

Planning conclusions			
site accords with LDP V&O*	site included as a strategic site**	site not included	planning permission granted for site

* Site considered suitable for inclusion in Deposit LDP

**Letter corresponds to Policy 2 numbering

8. Appraisal of Key and Detailed Policies

“the likely significant effects on the environment, including on issues such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors”

(SEA Directive Annex I(f))

“the measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the plan or programme”

(SEA Directive Annex I(g))

8.1 This section discusses the main sustainability impacts of the LDP’s policies. The following list shows the key and detailed policies of the LDP with the Matters Arising Changes (with additions since the Deposit plan underlined and deletions crossed through).

KEY POLICIES

KP1: LEVEL OF GROWTH

KP2: STRATEGIC SITES

KP2 (A): CARDIFF CENTRAL ENTERPRISE ZONE AND REGIONAL TRANSPORT HUB

KP2 (B): FORMER GAS WORKS, FERRY ROAD

KP2 (C): NORTH WEST CARDIFF

KP2 (D & E): NORTH OF JUNCTION 33 ON M4 AND SOUTH OF CREIGIAU

KP2 (F): NORTH EAST CARDIFF (WEST OF PONTPRENNAU)

KP2 (G): EAST OF PONTPRENNAU LINK ROAD

KP2 (H): SOUTH OF ST MELLONS BUSINESS PARK

KP3 (A): GREEN BELT WEDGE

KP3 (B): SETTLEMENT BOUNDARIES

KP4: MASTERPLANNING APPROACH

KP5: GOOD QUALITY AND SUSTAINABLE DESIGN

KP6: NEW INFRASTRUCTURE

KP7: PLANNING OBLIGATIONS

KP8: SUSTAINABLE TRANSPORT

KP9: RESPONDING TO EVIDENCED ECONOMIC NEEDS

KP10: CENTRAL AND BAY BUSINESS AREAS

KP11: ~~MINERALS AND~~ CRUSHED ROCK AGGREGATES AND OTHER MINERALS

KP12: WASTE

KP13: RESPONDING TO EVIDENCED SOCIAL NEEDS

KP14: HEALTHY LIVING

KP15: CLIMATE CHANGE

KP16: GREEN INFRASTRUCTURE

KP17: BUILT HERITAGE

KP18: NATURAL RESOURCES

DETAILED POLICIES

HOUSING

H1: NON-STRATEGIC HOUSING SITES

H2: CONVERSION TO RESIDENTIAL USE
H3: AFFORDABLE HOUSING
H4: CHANGE OF USE OF RESIDENTIAL LAND OR PROPERTIES
H5: SUB-DIVISION OR CONVERSION OF RESIDENTIAL PROPERTIES
H6: CHANGE OF USE OR REDEVELOPMENT TO RESIDENTIAL USE
~~H7: ALLOCATION POLICY FOR GYPSY AND TRAVELLER SITE(S)~~
H87: SITES FOR GYPSY AND TRAVELLER CARAVANS

ECONOMY

EC1: EXISTING EMPLOYMENT LAND
EC2: PROVISION OF COMPLEMENTARY FACILITIES FOR EMPLOYEES IN BUSINESS, INDUSTRIAL AND WAREHOUSING DEVELOPMENTS
EC3: ALTERNATIVE USE OF EMPLOYMENT LAND AND PREMISES
EC4: PROTECTING OFFICES IN THE CENTRAL AND BAY BUSINESS AREAS
EC5: HOTEL DEVELOPMENT
EC6: NON-STRATEGIC EMPLOYMENT SITE
EC7: EMPLOYMENT PROPOSALS ON LAND NOT IDENTIFIED FOR EMPLOYMENT USE

ENVIRONMENT

Countryside Protection

EN1: COUNTRYSIDE PROTECTION
EN2: CONVERSION, EXTENSION AND REPLACEMENT BUILDINGS IN THE COUNTRYSIDE

The Natural Environment

EN3: LANDSCAPE PROTECTION
EN4: RIVER ~~VALLEYS~~ CORRIDORS
EN5: ~~LOCAL NATURE RESERVES AND NON-STATUTORY SITES OF NATURE CONSERVATION AND GEOLOGICAL IMPORTANCE~~ DESIGNATED SITES
EN6: ECOLOGICAL NETWORKS AND FEATURES OF IMPORTANCE FOR BIODIVERSITY
EN7: PRIORITY HABITATS AND SPECIES
EN8: TREES, WOODLANDS AND HEDGEROWS

The Historic Environment

EN9: CONSERVATION OF THE HISTORIC ENVIRONMENT

Natural Resources

EN10: WATER SENSITIVE DESIGN
EN11: PROTECTION OF WATER RESOURCES

Renewable Energy

EN12: RENEWABLE ENERGY AND LOW CARBON TECHNOLOGIES

Pollution

EN13: AIR, NOISE, LIGHT POLLUTION AND ~~CONTAMINATED LAND~~ CONTAMINATION

Flood Risk

EN14: FLOOD RISK

TRANSPORT

T1: WALKING AND CYCLING
T2: STRATEGIC RAPID TRANSIT & BUS CORRIDORS
T3: TRANSPORT INTERCHANGES
T4: CENTRAL TRANSPORT HUB
T5: MANAGING TRANSPORT IMPACTS
T6: IMPACT ON TRANSPORT NETWORKS AND SERVICES
T7: STRATEGIC TRANSPORTATION INFRASTRUCTURE
T8: STRATEGIC RECREATIONAL ROUTES
T9 CARDIFF CITY REGION 'METRO' NETWORK

RETAIL

~~R1: RETAIL PROVISION WITHIN STRATEGIC SITES~~
R1 RETAIL HIERARCHY
R2: DEVELOPMENT IN THE CENTRAL SHOPPING AREA
R3: PROTECTED SHOPPING FRONTAGES
~~R54 DISTRICT CENTRES~~
R65 LOCAL CENTRES
R46 RETAIL DEVELOPMENT (OUT OF CENTRE)
~~R7 FOOD AND DRINK USES~~
R7 RETAIL PROVISION WITHIN STRATEGIC SITES
~~R8 PROTECTION OF LOCAL SHOPPING PARADES~~
R8 FOOD AND DRINK USES

COMMUNITY

C1: COMMUNITY FACILITIES
C2: PROTECTION OF EXISTING COMMUNITY FACILITIES
~~C2-3: COMMUNITY SAFETY/CREATING SAFE ENVIRONMENTS~~
~~C34: PROTECTION OF OPEN SPACE~~
C45: PROVISION FOR OPEN SPACE, OUTDOOR RECREATION, CHILDREN'S PLAY AND SPORT
~~C5: PROVISION FOR ALLOTMENTS AND COMMUNITY GROWING~~
~~C6: PROVISION FOR CHILDREN'S PLAY~~
~~C7-6: HEALTH~~
~~C8: PLANNING FOR SCHOOLS~~
~~C9: NEW EDUCATIONAL FACILITIES~~
~~C10: HEALTH EMPLOYMENT NON-STRATEGIC ALLOCATION~~
C7 PLANNING FOR SCHOOLS

MINERALS

M1: MINERAL LIMESTONE RESERVES AND RESOURCES
M2: PREFERRED ORDER OF MINERAL RESOURCE RELEASE
M3: QUARRY CLOSURES AND EXTENSION LIMITS

- M4: MINERALS BUFFER ZONES
M5: RESTORATION AND AFTER - USE OF MINERAL WORKINGS
M6: ~~DREDGED AGGREGATE LANDING AND DISTRIBUTION FACILITIES SAND WHARF PROTECTION AREAS~~
M7: ~~SAFEGUARDING OF SAND AND GRAVEL RESOURCE~~
M8: ~~SAFEGUARDING OF COAL RESOURCES~~
M9: ~~SAFEGUARDING OF LIMESTONE RESOURCES~~
M7: ~~SAFEGUARDING OF SAND AND GRAVEL, COAL AND LIMESTONE RESOURCES~~
M8: ~~AREAS WHERE COAL WORKING WILL NOT BE ACCEPTABLE~~

WASTE

- ~~W1: LAND FOR WASTE MANAGEMENT~~
~~W2: SITES FOR WASTE MANAGEMENT FACILITIES~~
~~W3: PROVISION FOR WASTE MANAGEMENT FACILITIES IN DEVELOPMENT~~

8.2 All the key and detailed policies were appraised in August 2013 using the SA framework of Table 4.3. For the many policies repeated from the Preferred Strategy with only minor changes, the appraisals already done in June and July 2012 were reviewed and tweaked as necessary. Appraisals of new policies in the Matters Arising Changes were added in May 2015, and the earlier appraisals revised or deleted as necessary. Further minor changes were made to take account of the further Matters Arising Changes in October 2015 and January 2016. The results for the key policies are summarised in Table 8.1. The full appraisals for all policies are in **Appendix G**. Table 8.1a summarises the impacts of the strategic sites in Key Policy 2.

Table 8.1 Summary appraisal findings for the LDP key policies

SA objective	1. Equality	2. Air quality	3. Biodiversity	4. Climate change	5. Heritage	6. Economy	7. Health and wellbeing	8. Landscape	9. Natural resources	10. Demographic change	11. Waste
KP1: Level Of Growth	✓	✗	✗	✓✗	✗	✓	✓✗	✗	✓✗	✓	✓✗
KP2: Strategic Sites	✓✗	✗	✗	✗	✗	✓✓	✓	✗	✓✗	✓✓	✗
KP3(a), KP3(b) Green Wedge, settlement boundary	0	✓	✓	✓	0	?	✓	✓✓	✓	?	0
KP4: Masterplanning Approach	✓	✓	✓	✓	✓	✓	✓✓	✓	✓	0	✓
KP5: High Quality and Sustainable Design	✓	?	✓	✓✓	✓	✓	✓	✓	✓	✓	✓
KP6 New infrastructure, KP7 planning obls	? ✓	? ✓	? ✓	? ✓	? ✓	? ✓	? ✓	? ✓	? ✓	? ✓	? ✓
KP8: Sustainable Transport	✓	✓	0	✓	0	✓	✓	0	0	✓	0
KP10: Central and Bay Business Areas	✓	✓	✗	✓	0	✓	✓	✓	✓	✓	0
KP11: Crushed Rock Aggregates and Other Minerals	0	✗	?	?	0	✓	✗	✗	✓	✓	✓
KP12: Waste	0	?	0	✓	0	✓	✓?	0	✓	✓	✓✓
KP13: Responding to evidenced social needs	✓✓	✓	0	✓	✓	✓	✓	0	0	✓	0
KP14: Healthy Living	✓	0	?	?	0	?	✓✓	?	0	✓	0
KP15: Climate Change	0	?	?	✓✓	0	0	0	0	✓?	0	0
KP16: Green Infrastructure	0	✓	✓✓	✓	✓	?	✓	✓	✓	0	0
KP17: Built Heritage	0	0	✓	0	✓✓	? ✓	✓	✓	0	0	0
KP18: Natural Resources	0	✓	✓	✓	0	✓	✓	✓	✓✓	0	0

Table 8.1a. Summary appraisal of KP2 sites policies (see Figure 3.2)

SA objective		1. Equality	2. Air quality	3. Biodiversity	4. Climate change	5. Heritage	6. Economy	7. Health and wellbeing	8. Landscape	9. Natural resources	10. Demographic change	11. Waste
Strategic Sites	Size (ha)											
A. Cardiff Central Enterprise Zone and Regional Trans Hub	13	✓✓	✓x	?	✓x	0	✓✓	✓	✓	✓	✓	x
B. Former gas works, Ferry Road	12	✓✓	✓x	?	x?	0?	0	✓	✓x	✓	✓	x
C. North West Cardiff	346	✓x x	x?	x	✓x	x?	✓	✓?	x/ xx ?	x	✓✓	x
D. & E. North of J33 on M4 and South of Craigiau	139	x	x/ xx	xx	✓x	?	✓	✓?	xx	x	✓✓	x
F. North East Cardiff (West of Pontprennau)	240	✓x	x?	x	x	?	✓✓	✓?	x/ xx ?	x	✓✓	x
G. East of Pontprennau Link road	81	✓x	x?	x	x	x?	0	✓x	x/ xx ?	x	✓✓	x
H. South of St. Mellons business park	99	✓	x?	xx	xx	xx	✓	x?	xx	x	✓	x

8.3 Overall, the appraisal found that the LDP policies would have mostly positive or neutral impacts. The impacts were particularly positive with regard to social and economic issues such as equality, economic growth and response to demographic change. The main negative effects would be caused by the policies that promote housing and economic growth and specific development locations, notably Policies KP1 and KP2. Together these would have significant impacts on air quality, biodiversity, the historic and cultural heritage, the landscape and waste production. The LDP's overall impacts are discussed in more detail at Chapter 9.

8.4 A range of changes to key policies were suggested as a result of the appraisal. The planning team put in place most of these changes in the 2012 Preferred Strategy, although some changes were not made for planning reasons. Table 8.2 summarises the suggested changes and shows how they were taken into account. (For ease of reference, policy numbers have been changed to refer to where the relevant material now appears.) As a result of these changes, the LDP policies have become less repetitive, give greater emphasis to reducing the need to travel by car and making facilities accessible by walking and cycling, have increased emphasis on resilience to climate change, and focus more on remediating contaminated land.

8.5 The planning team made two major changes between the Preferred Strategy and Deposit Plans. The first was the 10% reduction in housing provision. This

was a direct response to a downward revision in projected population growth, so the revised policy scores the same against the social and economic objectives as the previous one did. Since the same land will be allocated for development (for the reasons explained at 6.15), the scores against environmental objectives are also unchanged. Further detailed review of housing projections in spring 2015 resulted in a 1% upward adjustment of the provision as a Matters Arising Change.

- 8.6 The second change was the addition of Key Policies KP3a and KP3b designating a green belt and restricting development outside existing settlements. These policies improve the LDP's performance against environmental objectives, with a very small social and economic penalty from restricting development.
- 8.7 A number of smaller changes were also made. Many made no difference to the appraisal. Some, in response to appraisal recommendations, improved the LDP's sustainability performance. A few weakened it.
- 8.8 Further changes were made after the public Examination. These are summarised in Appendix I. Many of these were concerned with clarifying drafting, improving alignment with guidance, updating references or rearranging material, and will make no significant difference to the Plan's sustainability impacts. Some will improve the Plan's impacts, notably by providing more explicitness and certainty over requirements for sustainable transport infrastructure, development densities, meeting the 50:50 modal split target, considering renewable energy opportunities in major developments, and preventing loss of needed community facilities. However very few of these were significant enough to require changes in policy appraisal scores.
- 8.9 Two changes had significant negative effects. The most important was the replacement of the Green Belt policy KP3a with one for Green Wedge. The boundaries and level of protection are unchanged. The change matters because of the loss of permanence. Planning Policy Wales says: 'the boundaries of Green Belts should be altered only in exceptional circumstances and land within a Green Belt should be protected for a longer period than the current development plan period' (para 4.8.5). In contrast, 'Green Wedge policies should be reviewed as part of the development plan review process.' (para 4.8.12.) This means that the Green Wedge would have to be re-argued at each LDP review. It could even be rolled back during the Plan period if, for example, annual monitoring revealed a serious shortfall in housing construction and developers blamed lack of attractive sites.
- 8.10 This creates the possibility of a perverse incentive on developers to hold back from progressing the kinds of development the Plan seeks to encourage (such as brownfield regeneration) in the hope of using underperformance as an argument for rolling back the Green Wedge policy to allow further greenfield development. The change from Green Belt to Green Wedge therefore

potentially weakens the Council's ability to deliver the spatial strategy which underpins the Plan, and which performs well against the SA/SEA objectives.

- 8.11 The second significant negative change is the deletion of a former policy on provision of allotments and community gardens which scored very positively on a number of environmental and social criteria.

Table 8.2 Changes resulting from the appraisal of LDP key policies

LDP Key Policy	Change proposed by SA team	Response to proposed change
<p>KP2. In addition to a wide range of brownfield site commitments, the following Strategic Sites (500 homes or more) and/or significant employment/mixed use sites are proposed:...</p>	<p>Provide more detail about individual sites in Policy KP2 - e.g. number of affordable homes sought, precise infrastructure to be provided etc. – to ensure that policy is implemented as expected.</p>	<p>Suggested changes rejected. Policy wording unchanged.</p> <p>The role of the LDP Preferred Strategy is to set a strategic framework to inform more detailed work at the master and infrastructure planning stages. At this stage it would be difficult to set out the number of jobs, affordable housing, etc without being too prescriptive. General principles covering these issues are set out in other policies notably KP13 which includes a target for affordable housing on new housing developments (30% on Greenfield sites and 20% on brownfield sites, with a total of 6973 affordable homes built by 2026) and Policy KP14 which sets out principles of sustainable neighbourhoods including the provision of a full range of accessible social, health, leisure and education facilities and community infrastructure for the new communities proposed in the LDP.</p>

LDP Key Policy	Change proposed by SA team	Response to proposed change
	<p>Ensure that the Habitats Regulations Assessment has appraised the impacts of the individual strategic development sites in Policy 2, and has confirmed that these can be developed without significant 'in combination' impact on the integrity of any SPA, SAC or Ramsar site.</p> <p>In particular, development of the land south of St. Mellons Business Park is currently expected to involve land raising, which could have significant impacts on water quality and hydrology of the Severn Estuary SPA/ SAC/ Ramsar site.</p>	<p>The HRA has appraised all of the Key Policies, Strategic Options, Spatial Options and Vision Outcomes within the LDP, and performed a test of likely significance (TOLS) both alone and in-combination.</p> <p>This site has been assessed in the HRA, and because of its distance from the foreshore, we do not believe that development thereon is likely to have a significant effect upon the Severn Estuary designations. The soil recycling facility south of Wentloog Avenue involves spreading large amounts of soil over fields of a similar area to this Candidate Site, but despite concerns over water quality in the SSSI, CCW have not raised any issues over the effects on water quality in the estuary itself.</p>
<p>KP2C. North West Cardiff – comprehensive development including approximately 7,500 homes, employment and other associated uses;</p>	<p>Include in the LDP description that the disused railway line will be safeguarded, including wide green buffers to allow for a wildlife corridor, walking/cycling trail, and possible future reinstatement of the railway line.</p>	<p>Not appropriate at this stage to include specific details about the site in the key policy. These issues can be considered in the more detailed master planning and infrastructure planning stages.</p>

LDP Key Policy	Change proposed by SA team	Response to proposed change
	<p>Include in the LDP description that a segregated rapid bus lane towards the city centre is expected to be in place before the first house on any part of the site is moved into. If this does not happen, then people who move into the homes in the early stages of development will become used to travelling in their cars. Also there might otherwise be the temptation to develop parts of the site – with different planning applications for different parts of the site - without these essential pieces of infrastructure being delivered.</p>	<p>Policy KP8 on Sustainable Transport amended to include statement that ‘Development in Cardiff will be integrated with transport infrastructure and services in order to: ... (i) Achieve the target of a 50:50 modal split between journeys by car and journeys by walking, cycling and public transport’ and proposed sustainable transport infrastructure and service provision in individual masterplans. Commitment added to the site specific principles to ‘ensure frequent public transport provision is in place prior to residential occupation of the site’.</p>
<p>KP2D. North of Junction 33 on M4 – mixed use of approximately 2,000 homes, employment and other associated community uses and a strategic Park and Ride site;</p> <p>KP2E. South of Creigiau – housing-based scheme of approximately 750 homes with associated community uses;</p>	<p>Include in the LDP description that a segregated bus route or tram/railway line to the city centre via North West Cardiff is expected to be in place before the first house on any part of the site is moved into. This may mean that this site cannot be developed until North West Cardiff is developed. If this does not happen, then people who move into the homes in the early stages of development will become used to travelling in their cars. Also there might otherwise be the temptation to develop parts of the site – with different planning applications for different parts of the site - without this essential piece of infrastructure being delivered.</p>	<p>Policy KP8 on Sustainable Transport amended to include statement that ‘Development in Cardiff will be integrated with transport infrastructure and services in order to: ... (i) Achieve the target of a 50:50 modal split between journeys by car and journeys by walking, cycling and public transport’ and proposed sustainable transport infrastructure and service provision in individual masterplans. Commitment added to the site specific principles to ‘ensure frequent public transport provision is in place prior to residential occupation of the site’.</p>

LDP Key Policy	Change proposed by SA team	Response to proposed change
	<p>Include in the LDP description that the Park and Ride site is expected to be in place early in the project development, for the same reasons as the segregated bus/tram route</p>	<p>Policy KP8 on Sustainable Transport amended to include statement that 'Development in Cardiff will be integrated with transport infrastructure and services in order to: ... (i) Achieve the target of a 50:50 modal split between journeys by car and journeys by walking, cycling and public transport' and proposed sustainable transport infrastructure and service provision in individual masterplans. Commitment added to the site specific principles to 'ensure frequent public transport provision is in place prior to residential occupation of the site'.</p>
<p>KP2H. South of St Mellons business park</p>	<p>From an environmental perspective, this is a very poor site and it is recommended that it is avoided. Its only real benefit is that it will provide land for the kinds of jobs that would not easily be accommodated in the city centre, and that these may be accessible for residents of Trowbridge and Rumney. From a transport perspective, it would be more sustainable to provide several smaller employment sites scattered across the city.</p>	<p>Although significant mitigation measures are required on this site in order to bring it into use i.e. site raising, flood prevention measures, transport, it is considered feasible due to the strategic nature of the site. It will provide a significant number and range of jobs which is one of the key objectives of the LDP.</p>
<p>3.* Cardiff Central Enterprise Zone</p> <p>A Central Enterprise Zone and Regional Transport Hub is proposed in Cardiff city centre in order to fulfil Cardiff's role as economic driver of the city-region, provide major employment opportunities focused on financial and business services and maximise the advantages of its location adjacent to the Central Station and Cardiff Bus Station.</p>	<p>Remove this policy as it duplicates Policy KP2A.</p>	<p>Policy removed, and all subsequent policies renumbered</p>
<p>KP9. There will be a strong presumption in favour</p>	<p>...retaining and encouraging the</p>	<p>Suggested changes rejected. Policy wording unchanged</p>

LDP Key Policy	Change proposed by SA team	Response to proposed change
of retaining and encouraging the intensification and refurbishment of existing industrial and warehousing land....	intensification and refurbishment... recommended to be replaced by ...retention, enhancement, and efficient use.	
KP13.Encouraging the provision of a full range of accessible social, health, leisure and education facilities and community infrastructure for both existing and new communities;	Meaning of 'accessible' expanded to that are 'accessible to all and by walking and cycling' and moved to end of point.	Agree policy amended.
KP14. Cardiff will be a made a healthier place to live by seeking to reduce health inequalities, encouraging healthier lifestyles and providing accessible and usable green spaces including allotments. In particular Cardiff...	Add: ...usable green spaces including allotments , and providing accessible health facilities	Agree policy amended.
KP8. Through their location and design reduce car use and dependency by enabling residents to access employment, shopping, medical, educational and other essential services and community facilities by sustainable travel modes;	Add: reduce the need to travel, and.... after Through their location and design....	KP8 says 'Development in Cardiff will be integrated with transport infrastructure and services in order to: ... (ii) Reduce travel demand and dependence on the car'. The key sustainability aim of reducing the <i>need</i> to travel remains as objective 1(j), but there is now no policy or supporting text explicitly directed to achieving it.
17.* Travel Plans will include practical and deliverable measures designed to stimulate the use of sustainable travel choices by residents or users of a development. Including, although not restricted to:	Add: and neighbouring communities afterusers of a development.	Suggested changes rejected. Policy wording unchanged. Now no reference to travel plans in any policy text, only in supporting text (para 5.245 of Deposit LDP).
19 (vii)* Car parking and servicing. Car parking will be minimised in line with improvements to access by sustainable transport, in particular, reducing long stay parking for commuters;	Add: (whilst still providing for disabled users);	No reference to minimising car parking anywhere now. Supporting text states that parking and servicing will be provided in accordance with the Councils adopted standards.
KP5(ix) Promoting the efficient use of land;	Add: 'and where appropriate the remediation of contaminated land;'	Agree policy amended.

LDP Key Policy	Change proposed by SA team	Response to proposed change
KP5(x) Ensuring no undue effect on the amenity of neighbouring properties;...	Add: 'and connecting positively to surrounding communities;'	Agree policy amended.

*Numbers retained from 2012 Preferred Strategy because there is no corresponding material in the Deposit LDP

8.12 In addition to reviewing policies, the sustainability appraisal identified some gaps where the Deposit Draft policies did not fully cover the SA objectives. These are shown at Table 8.3, along with the planning team's response to the SA comments. Some of these have now been overtaken by the Matters Arising Changes summarised in Appendix I.

Table 8.3. Changes resulting from the appraisal of gaps in the LDP policies

Comments on gaps in the LDP policies	LDP response
<p>Air quality / climate change: The LDP notes that 45% of air pollution is from industry, 30% is from domestic sources and 25% is from road. However by far the greatest focus has been on pollution from cars. Does the LDP need to say something about emissions from homes and industry, e.g. sustainable home standards?</p>	<p>Policy KP18 on Natural Resources changed to: "<u>(iii) Minimising air pollution from industrial, domestic and road transportation sources and managing air quality.</u>"</p> <p>Policy KP5(vii) on Good Quality and Sustainable Design changed to: "Achieving a resource efficient and climate-responsive design that provides sustainable water and waste management solutions, minimises water usage and maximises sustainable drainage <u>and minimises emissions from transport, homes and industry;</u>"</p>
<p>Renewable energy: Overall the LDP says little on the subject of renewables. This may be because the Council is conducting a Renewable Energy Assessment. Should/can the LDP be more proactive here? Can the LDP identify development sites where renewables would be expected to be provided? Can the LDP identify sites especially for renewables?</p>	<p>Criterion (iv) of policy KP15 states that the LDP will seek to increase the supply of renewable energy and criterion (vi) of Policy KP5 states that the LDP will seek to maximise renewable solutions. This is supported by policy EN12 on renewable energy and low carbon technologies</p>
<p>Biodiversity and landscape: The LDP explicitly states that brownfield sites will not be sufficient so greenfield will have to be used. Given this and a general shortage of discussion on biodiversity in the LDP, biodiversity and the landscape are generally not well treated in the plan</p> <p>Should there be greater consideration of biodiversity protection, specification of what biodiversity enhancement would be provided at each strategic housing site, offsetting of biodiversity impacts where these are unavoidable, creation and designation of new biodiversity sites etc?</p>	<p>Policy KP5 on good quality and sustainable design changed to: "<u>(x) Ensuring no undue effect on the amenity of neighbouring properties and connecting positively to surrounding communities</u>".</p> <p>In terms of biodiversity the Natural Environment section of the LDP emphasises the strategic importance of protecting Cardiff's natural environmental assets – including its countryside, landscape and biodiversity. This is supported by Policies EN3-8. These principles have been applied in the detailed master planning to protect biodiversity interests of the strategic sites.</p> <p>Given this, it is considered the plan addresses biodiversity issues adequately and the necessary hooks are in place to enable this issue to be picked up in more detail as the LDP progresses.</p>

<p>Contaminated land The LDP does not promote the remediation of contaminated land</p>	<p>Policy KP5 on good quality and sustainable design changed to: "(ix) Promoting the efficient use of land <u>and where appropriate achieving the remediation of contaminated land;</u>"</p>
<p>Housing density The LDP says little about housing density. It refers to 'appropriate and efficient density' (Objective 4.9), notes that efficient use of land is desirable, and states that developers should 'respond to the local character and context...' (including density) in their development proposals. However it gives no indication of what typical density would be expected, or what the high and low ranges would be. This could encourage low density development, particularly on the outlying Greenfield sites.</p>	<p>Policy KP5 includes: (ix) Promoting the efficient use of land, developing at highest practicable densities.</p> <p>General Masterplanning Principle 2 sets out a high level aspiration to focus high density development along public transport corridors and in neighbourhood centres with lower densities provided elsewhere to deliver an overall range and choice to meet different needs.</p> <p>The Masterplanning General Principles have informed the Site Specific principles and Schematic Frameworks for the strategic sites and will be used by the Council through the planning and design process to work with developers to design detailed masterplans. This work will include identifying appropriate densities across the strategic sites.</p>

9. Overall Effects and Mitigation

“the likely significant effects on the environment, including on issues such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors”

(SEA Directive Annex I(f))

“the measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the plan or programme”

(SEA Directive Annex I(g))

- 9.1 The Local Development Plan Manual states that a sustainability appraisal should include an evaluation of the significance of the predicted effects including “the probability, duration, frequency and reversibility ... [and] secondary, cumulative and synergistic effects”. The Practical Guide to the Strategic Environmental Assessment (Office of the Deputy Prime Minister et al 2005) states that the nature of the effects should be assessed.

Impact prediction and evaluation

- 9.2 The LDP was evaluated to establish what its probable effects would be on the indicators identified in the Scoping Report, including
- short-term impacts (0-5 years), expected to be mostly related to construction of new developments
 - medium term impacts (6-10 years)
 - long term impacts (11-20 years), expected to be mostly related to operation of new developments.
- 9.3 Table 9.1 brings together the previous appraisals of Chapters 5-8 to show what the overall/cumulative impacts of the LDP would be. Table 9.2 goes into further detail on the overall impacts of the LDP (the final row of Table 9.1), with a particular emphasis on the impacts of the proposed strategic development sites.
- 9.4 Overall the LDP would have significant benefits in providing the housing and employment land that Cardiff's current and future residents will need. It will help to improve access to good quality jobs, services and infrastructure for Cardiff's residents, although it is unlikely to fully redress the imbalance between the 'southern arc' of deprivation and other areas of the city. Residents' health should improve in response to better housing, access to open space, and walking and cycling facilities. The new development may draw in people who currently live or work in the Valleys, and so have indirect impacts on neighbouring authorities.

Table 9.1 Overall sustainability impacts of the LDP

SA objective		1. Equality	2. Air quality	3. Biodiversity	4. Climate change	5. Heritage	6. Economy	7. Health and wellbeing	8. Landscape	9. Natural resources	10. Demographic change	11. Waste
Vision		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Objectives		✓	✓x	✓	✓x	✓	✓	✓	✓	✓	✓	✓x
Key Policies												
KP1: Level Of Growth		✓	x	x	✓x	x	✓	✓x	x	✓x	✓	✓x
KP2: Strategic Sites *		✓x	x	x	x	x	✓✓	✓	x	✓x	✓✓	x
KP3(a), KP3(b) Green Wedge, settlement boundary		0	✓	✓	✓	0	?	✓	✓✓	✓	?	0
KP4: Masterplanning Approach		✓	✓	✓	✓	✓	✓	✓✓	✓	✓	0	✓
KP5: High Quality and Sustainable Design		✓	?	✓	✓✓	✓	✓	✓	✓	✓	✓	✓
KP6 New infrastructure, KP7 planning obls		? ✓	? ✓	? ✓	? ✓	? ✓	? ✓	? ✓	? ✓	? ✓	? ✓	? ✓
KP8: Sustainable Transport		✓	✓	0	✓	0	✓	✓	0	0	✓	0
KP10: Central and Bay Business Areas		✓	✓	x	✓	0	✓	✓	✓	✓	✓	0
KP11: Crushed Rock Aggregates and Other Minerals		0	x	?	?	0	✓	x	x	✓	✓	✓
KP12: Waste		0	?	0	✓	0	✓	✓?	0	✓	✓	✓✓
KP13: Responding to evidenced social needs		✓✓	✓	0	✓	✓	✓	✓	0	0	✓	0
KP14: Healthy Living		✓	0	?	?	0	?	✓✓	?	0	✓	0
KP15: Climate Change		0	?	?	✓✓	0	0	0	0	✓?	0	0
KP16: Green Infrastructure		0	✓	✓✓	✓	✓	?	✓	✓	✓	0	0
KP17: Built Heritage		0	0	✓	0	✓✓	? ✓	✓	✓	0	0	0
KP18: Natural Resources		0	✓	✓	✓	0	✓	✓	✓	✓✓	0	0
Strategic Sites	Size (ha)											
A. Cardiff Central Enterprise Zone and Regional Trans Hub	13	✓✓	✓x	?	✓x	0	✓✓	✓	✓	✓	✓	x
B. Former gas works, Ferry Road	12	✓✓	✓x	?	x?	0?	0	✓	✓x	✓	✓	x
C. North West Cardiff	346	✓x x	x?	x	✓x	x?	✓	✓?	x/ xx ?	x	✓✓	x
D. & E. North of J33 on M4 and South of Craigiau	139	x	x/ xx	xx	✓x	?	✓	✓?	xx	x	✓✓	x
F. North East Cardiff (West of Pontprennau)	240	✓x	x?	x	x	?	✓✓	✓?	x/ xx ?	x	✓✓	x
G. East of Pontprennau Link Road	81	✓x	x?	x	x	x?	0	✓x	x/ xx ?	x	✓✓	x
H. South of St. Mellons business park	99	✓	x?	xx	xx	xx	✓	x?	xx	x	✓	x
Cumulative impacts		✓	x	xx	x	0?	✓✓	✓	x	✓x	✓✓	x

Table 9.2 Overall sustainability impacts of the LDP: short, medium and long term impacts

SA Objective	Overall impacts			
	S	M	L	
1. Help deliver equality of opportunity and access for all	✓ ?	✓ ?	✓ ✗	<p>Policy KP1 aims to deliver about 40,000 new jobs and 41,415 new dwellings, and Policy KP2 supports this by identifying strategic sites to deliver this growth. Policy KP13 supports the delivery of affordable housing, and promotes sustainable neighbourhoods. The proposed sites together would provide substantial additional housing and employment land.</p> <p>However several of the strategic sites are out of the existing urban area and only a few would support regeneration of the 'southern arc' of deprivation. The large strategic sites would have poor public transport accessibility unless and until substantial new investments were made. The addition to the site specific principles of the requirement to 'ensure frequent public transport provision is in place prior to residential occupation of the site' will help.</p> <p>Inequalities are likely to increase over time as the residents of outlying Greenfield sites drive through existing more deprived areas to access the city centre.</p>
2. Maintain and improve air quality	✗ ?	✗ ?	✗ ?	<p>Policy KP18 on Natural Resources aims to minimise air pollution and manage air quality. Policy KP8 amplified by policies T1-T8 aspires to reduce travel demand and car dependence, support the delivery of high quality public transport, deliver improved bus corridors and Park and Ride/ Share schemes, and support walking and cycling. T9 seeks to work towards developing a new 'metro' network.</p> <p>However the scale of growth envisaged for Cardiff will inevitably lead to more air pollution from traffic, homes and businesses. The largest strategic sites are on the edge of Cardiff, far from the city centre, and likely to be heavily car dependent. Where these sites provide for both housing and employment, the need to travel may be reduced if residents both live and work in the same area. Stronger commitments in the MACS to ensure sustainable transport infrastructure is in place early in development and to deliver a 50:50 modal split are welcome.</p>

SA Objective	Overall impacts			
3. Protect and enhance biodiversity, flora and fauna	*	**	**	<p>Policy KP16 on Green Infrastructure aims to protect and enhance Cardiff's areas of biodiversity, including designated sites. However the scale of development being proposed, and the amount of development that is expected to be on Greenfield sites, means that Cardiff's biodiversity will be significantly negatively affected by the LDP.</p> <p>Strategic site H would be 99 hectares entirely in a Site of Special Scientific Interest (SSSI). Several strategic sites would affect Sites of Importance for Nature Conservation (SINCs), though satisfactory mitigation is expected to be possible for most of these:</p> <ul style="list-style-type: none"> • Site C would affect one SINC • Sites D and E would affect 8 SINCs and are adjacent to a river SSSI • Site F would affect 9 small SINCS, is adjacent to two SSSIs, and a river valley runs through the middle of the site. <p>Several sites also include protected species such as bats and dormice.</p> <p>Site H would have by far the most significant impacts.</p>
4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	* ?	* ?	* ?	<p>Policy KP15 aims to reduce greenhouse gas emissions and adapt to climate change, including flooding. Policies T1-T9 on transport aim to support a modal change from car use to walking, cycling and public transport.</p> <p>However the scale of growth envisaged for Cardiff will inevitably lead to more greenhouse gas emissions from traffic, homes and businesses. The largest strategic sites are on the edge of Cardiff, far from the city centre, and likely to be heavily car dependent. Where these sites provide for both housing and employment, the need to travel may be reduced if residents both live and work in the area. However the aspiration for a 50:50 modal split is unlikely to be achieved unless the LDP requires specified sustainable transport infrastructure and services to be in place before the sites are occupied. The addition to the site specific principles of the requirement to 'ensure frequent public transport provision is in place prior to residential occupation of the site' will help.</p> <p>Of the strategic sites,</p> <ul style="list-style-type: none"> • Most of Site A is in flood risk zone C1 (served by significant infrastructure) • Part of Site B is in zone C1 • Some of Site F is in zone C2 (not served by significant infrastructure) • All of site H is in zone C1: the initial suggestion is that development would require land raising and improvements to the sea wall to respond to this.

SA Objective	Overall impacts			
5. Protect and enhance historic and cultural heritage	0?	0?	x ?	<p>Policy KP17 on Built Heritage aims to protect and enhance Cardiff's heritage assets. Most of the proposed development sites will have no effect on the historic and cultural heritage, provided that harm to the setting of nearby historic buildings is avoided through good design. Of the strategic sites:</p> <ul style="list-style-type: none"> • Site B would affect one Grade II listed building • Site C would affect two Grade II listed buildings and St. Fagans conservation area • Sites D&E contain one Grade II listed building • Site F contains one Grade I and one Grade II listed building • Site G contains three Grade II and II* listed buildings plus other historic records • Site H is located within an archaeologically sensitive site and most of it is in a registered Landscape of Outstanding Historic Interest <p>It would probably not be possible to mitigate the historic/ cultural impacts of Site H.</p>
6. Help deliver the growth of a sustainable and diversified economy	✓	✓ ✓?	✓✓	<p>Policy KP1 aims to deliver about 40,000 new jobs. Policy KP9 promotes new employment sites and protects existing ones. Policy KP10 supports economic development in the city centre and Bay Business Area.</p> <p>Cumulatively, the proposed development sites will diversify and support the city's economy. Some strategic sites outside the existing urban area may undermine the vitality and viability of the city centre, although where both housing and employment land are provided on the same site this could help to provide for a diversified economy.</p>
7. Improve health and well-being	?	✓ ?	✓ x ?	<p>Policy KP13 supports the provision of affordable housing, which would help to improve health, and encourages the provision of adequate community facilities and infrastructure, including health facilities. Policy KP14 supports healthy living by seeking to reduce health inequalities and provide accessible green spaces. Policy T1 supports walking and cycling. Policy T8 safeguards strategic recreational routes. Some of the proposed development sites will support regeneration, and new community facilities are proposed as parts of the 'package' for some larger sites which currently lack them. One of the non-strategic sites, site 18, could also provide additional community facilities for its area.</p> <p>Development sites outside the urban area are likely to increase car dependency, with health disbenefits. Several of the strategic sites have longer term flood risks (see 4.), and increasing air pollution would have a negative impact on people's health (see 2.).</p>

SA Objective	Overall impacts			
8. Protect and enhance the landscape	✓ x	x	x x	<p>Policy KP16 on Green Infrastructure aims to protect and enhance the natural heritage, and Policy KP18 on Natural Resources aims to protect the city's natural resources: both will also have landscape benefits. Policy EN3 aims to protect five Special Landscape Areas. Policy KP5 on High Quality and Sustainable Design will help to ensure that new development protects and enhances the landscape.</p> <p>Many of the proposed development sites have been previously developed, and their development would have a neutral or positive effect on the landscape.</p> <p>Regeneration of the Cardiff Central Enterprise Zone (strategic site A) would be particularly beneficial. However most of the area of proposed development is Greenfield, which would have significant negative landscape impacts. Overall, the preferred strategy would lead to the development of more than 900 hectares of Greenfield land.</p> <p>Strategic sites D, E and H are adjacent to a potential Special Landscape Area, and site H has been identified as a high quality landscape by a study undertaken in 2008. Site H is adjacent to the Newport Green Belt, and most of the site is in a registered Landscape of Outstanding Historic Interest.</p>
9. Use natural resources efficiently and safeguard their quality	✓ x	✓ x	✓ x	<p>Policy KP11 aims to promote the efficient use of minerals, and Policy 25 aims to protect natural resources in the city by protecting agricultural land, water resources, and air and water quality, and remediating contaminated land.</p> <p>Of the strategic sites:</p> <ul style="list-style-type: none"> • Sites A and B have been previously developed, and their re-use would make efficient use of land. • Site C may include contaminated land and Site G includes two areas of landfill: redevelopment of these sites would help to clean up this contamination. • Sites C, D, E, F and H are Greenfield sites with no record of contamination, and in several cases significant amounts of high quality agricultural land would be lost. • Water quality at the Severn Estuary SPA/SAC/Ramsar site and in the historic reens of the Wentloog Levels could be significantly affected by development at Site H. Mitigation of these impacts would be difficult if the site was built on raised land. Sites B, D,E and F have rivers running through/adjacent to them: careful mitigation will be needed to maintain river quality.

SA Objective	Overall impacts			
10. Respond to demographic changes in a sustainable way	✓	✓✓	✓✓?	<p>Policy KP1 is for the delivery of about 40,000 new jobs and 41,415 new dwellings, and Policy KP2 supports this by identifying strategic sites to deliver this growth. The sites would help respond to clear existing demand for housing and employment sites, including identified demand for Greenfield sites.</p> <p>Supporting text to KP1 explains how the additional 10% flexibility allowance could, if required, be accommodated on one of the strategic sites and extensions to two others.</p> <p>The significant growth proposed for Cardiff could affect development of the Valleys, since it could draw people away from the Valleys to take up work or housing in Cardiff.</p>
11. Minimise waste, increase re-use and recycling	✗ ?	✗ ?	✗	<p>Policy KP12 on waste aims to reduce the generation of waste and provide adequate waste management facilities. This is amplified by the waste policies W1 and W2. However the LDP generally says relatively little about reducing waste, or promoting reuse and recycling. The scale of growth proposed in the LDP would lead to the generation of considerably more waste than at present, during both construction and operation.</p>

9.5 Environmentally, the LDP would have some significant negative impacts. The sheer volume of development which the LDP has to provide for will inevitably result in increased total air pollution, greenhouse gas emissions, use of natural resources and waste because of increased traffic, houses and employment. The LDP includes many enlightened policies to reduce these impacts. If these are fully, thoroughly and promptly implemented they could substantially reduce per capita impacts. Some of the Matters Arising Changes provide welcome strengthenings in commitments to implementation but their effectiveness is still uncertain.

9.6 The LDP provides for development of several major Greenfield sites amounting to about 902 hectares. The largest of these are located far from Cardiff city centre, so will increase transport impacts even if sustainable transport provision is made before occupants move in; and several would affect areas that are designated for their landscape or biodiversity importance, and even with the mitigation measures contained in the policies biodiversity and landscape quality are likely to decrease significantly.

9.7 Strategic Site H is particularly problematic. It comprises 99 hectares fully in a Site of Special Scientific Interest, archaeologically sensitive site, and Landscape of Outstanding Historic Interest (national level designations). It is susceptible to flooding, and so the initial proposal is to raise the land and make improvements to the sea wall to protect the development from flooding. However this would affect the hydrology and water quality of the historic reens (ditches) in the area. The reens

drain to the Severn Estuary SPA/SAC/Ramsar sites, and so water quality problems in the reens could affect the integrity of those sites.

Mitigation measures

9.8 Measures previously suggested to avoid or reduce the impact of individual LDP policies or proposed development sites are listed at Tables 5.2, 8.2 and 8.3. Table 9.3 proposes measures to avoid or reduce additional plan-wide impacts of the LDP. It also makes suggestions for how to improve the benefits of the LDP.

Table 9.3. Changes proposed to the LDP in response to cumulative/overall impacts

Significant overall / cumulative impacts of the LDP	Suggestions for avoiding or minimising negative impacts or enhancing positive ones	LDP response
Existing deprivation and inequalities unlikely to be significantly reduced by the LDP	Give greater emphasis to providing housing and employment sites in the 'southern arc' of deprivation, and improving community facilities and green areas there.	Policy KP13 of the Plan relating to sustainable neighbourhoods seeks to support the regeneration of deprived communities within the city and enhance communities through better equality of access to services. 65% of the need for new dwellings over the Plan period will be met from brownfield sites. Many of these sites are in the existing landbank and are located in the "southern arc of deprivation" where development will aid the regeneration. The LDP also protects existing employment land located within this area with resultant community benefits.
The LDP could attract people from the Valleys to live and work in Cardiff	Consult with local authorities in the Valleys to help minimise any negative impacts on Valley communities	Surrounding Local Authorities have been consulted on the preparation of the plan from the first stages of development. During a regional collaborative exercise at Preferred Strategy stage there was support from these authorities for the level of growth proposed in the LDP. The findings of this collaborative work are set out in the Supporting Document No. 17.
Air pollution and greenhouse gas emissions likely to increase due to remoteness of large Greenfield sites and their expected car dependence	Provide employment sites in many smaller rather than a few larger clusters, to prevent them becoming 'trip attractors'	The LDP provides for a range of both large and small employment sites and seeks to protect existing employment sites within the city to ensure a good spread across the city of employment opportunities.
	Include requirement for relevant sustainable transport infrastructure and services to be implemented before any development is occupied in strategic site masterplans	LDP Policies KP4 and KP6 require sustainable transport infrastructure and services to be delivered in a timely manner to meet the needs of existing and planned communities, and the strategic site policies under KP2 now specify infrastructure to be provided before or at the start of development.

Significant overall / cumulative impacts of the LDP	Suggestions for avoiding or minimising negative impacts or enhancing positive ones	LDP response
Significant impacts on biodiversity from development on Greenfield sites, particularly Strategic site H	Remove Strategic site H from the plan	See response below.
	Include a policy in the LDP requiring strategic sites to have no net biodiversity loss – this will require them to provide biodiversity benefits (perhaps off site) to offset any biodiversity losses	<p>The need to protect and enhance biodiversity and landscape features is identified in Masterplanning General Principle 9 and Policies KP4 (9) KP16, EN1, EN5, EN6 and EN7 of the LDP.</p> <p>The Masterplanning General Principles have informed the Site Specific Principles and Schematic Frameworks for the strategic sites which also recognise the need to protect and enhance biodiversity. These will be used by the Council through the planning and design process to work with developers to design detailed masterplans.</p> <p>In addition Masterplanning General Principle 8 promotes strategic green connected open spaces which will aim to protect areas of biodiversity value and provide connectivity to enable movement of wild species. Again this principle has informed the site specific Principles and Schematic frameworks which identify such features.</p>

Significant landscape and historical impacts from development on some of the Greenfield sites, particularly Strategic site H	Remove Strategic site H from the plan	The Site Specific Principles on page 57 of the Masterplanning Framework which forms a Supporting Document to the LDP state that the Wentloog Levels Landscape of Outstanding Historic Interest and Archaeologically Sensitive area will be protected. In order to ensure this it is important that the development of the site is undertaken in a sensitive manner to minimise harm. These principles will be used by the Council through the planning and design process to work with developers to design detailed masterplans.
Cumulative impact on water resources is unclear	Confirm with Dŵr Cymru that water provision and wastewater treatment infrastructure will be adequate for the amount of development being proposed	Dwr Cymru have been consulted on the preparation of the LDP from the early stages of development and have not raised any significant issues relating to capacity.
Other possibilities	Consider developing mini-	Given the non-strategic sites which are

for improving benefits or reducing impacts	masterplans for the non strategic sites where these sites are near to each other and could jointly provide benefits or reduce costs in a way that they could not do individually.	allocated in the Deposit Plan are not directly adjacent each other this approach is not considered appropriate.
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10. Next Steps

- 10.1 This chapter discusses what happens next: post-adoption explanation of how the SA influenced the LDP, and monitoring of the LDP's significant effects.

Post adoption 'SEA statement'

- 10.2 Once the LDP is adopted, Cardiff Council will publish an 'SEA statement' which explains how the sustainability appraisal influenced the LDP. Publication of such an SEA statement is required by the SEA Directive (Article 9.1b). Most of that information is already available in this SA report, but the SEA statement will also include information on how further rounds of SA, and consultation comments on this report and any further SA rounds, were taken into account by the planning team.

Monitoring

"a description of the measures envisaged concerning monitoring" (SEA Directive Annex I(i))

- 10.3 Once a plan is adopted, the SEA Regulations require local authorities to "monitor the significant environmental effects of the implementation of each plan or programme with the purpose of identifying unforeseen adverse effects at an early stage and being able to undertake appropriate remedial action" (Reg. 17), and the environmental report should describe how this might be carried out.
- 10.4 Much monitoring is already carried out in Cardiff for other purposes, for instance traffic counts for transport planning, and reviews of landscape and nature conservation designations as an input to national level monitoring. **Appendix B** shows the current situation in Cardiff, based on existing monitoring data.
- 10.5 The SA process has identified a range of significant environmental effects, as well as underlying assumptions of the LDP which, if they do not work out in practice, could lead to adverse effects. Table 10.1 proposes a framework to monitor these impacts. It shows:
- monitoring indicators that aim to measure likely effects of the LDP identified in the SA;
 - who would monitor the indicators and how frequently;
 - targets (positive) that the LDP will try to achieve;
 - information about why the indicator has been proposed.
- 10.6 Most of the data is already being collected through existing monitoring systems. The previous proposals have been tweaked to use indicators that will be reported as part of the LDP's own monitoring for the sake of efficiency and consistency: these are identified by their 'monitoring reference' in chapter 6 of the LDP below. However the overlap is only partial. LDP monitoring concentrates on the *implementation of policies* (for example, whether planning permissions are granted

that would damage designated sites) while SA monitoring is primarily concerned with *outcomes* (for example the condition of designated sites.) Some new monitoring is proposed here that would measure specific aspects of the LDP that are important for the sustainability of future development in Cardiff.

Table 10.1. SA monitoring framework

SA objective	1. Indicator	2. Who monitors	3. Target	4. Reason for monitoring
1. Help deliver equality of opportunity and access for all	The percentage of population in the 100 most deprived wards in Wales	<i>Contextual</i>	Reduction	Cardiff has more deprived areas than the Welsh average. The LDP aims to help redress this.
	The number of net additional affordable dwellings built	<i>OB2 SO3</i>	6,646 net affordable units over the remaining Plan period (representing an average of 22.8% of total housing provision)	Provision of affordable housing is an ongoing problem in Cardiff, with more than 10,000 applicants on the council housing register and more than 300 households in temporary accommodation in mid-2010
	Total number of Gypsy and Traveller pitches for residential accommodation	<i>OB2 SO10</i>	Net increase	Identified as being a problem by the Equalities Impact Assessment
2. Maintain and improve air quality	NO2 levels	Cardiff Council Pollution Control	40µg/m ³	Many areas of the city already exceed legal standards
3. Protect and enhance biodiversity, flora and fauna	Number and extent of designated sites of importance (SACs, SPAs, SSSIs, Ramsars, LNRs and SINCs, ancient woodland)	Cardiff Council / CCW	No loss of area	Many of the development sites proposed in the LDP are adjacent to or include designated biodiversity sites, or include LBAP priority habitats. These should be protected as part of development of the sites
	Condition of SSSIs	CCW	No reduction in condition	
	Extent of Local Biodiversity Action Plan priority habitats	Cardiff Local Biodiv. Action Plan	No reduction in extent	
4. Reduce emissions of greenhouse gases	Traffic volumes (vehicle-km)	Welsh Government		The LDP aims to reduce travel demand, particularly by car, in part by improving the balance between

SA objective	1. Indicator	2. Who monitors	3. Target	4. Reason for monitoring
that cause climate change and adapt to its effects	% of people walking, cycling, travelling by bus and train for each journey purpose	<i>OB1 EC15-18</i>		homes and jobs in Cardiff, and in part by providing jobs and services where people can reach them by non-car modes
	No. residents working in Cardiff, no. people commuting out of Cardiff, no. people commuting into Cardiff	Welsh Government		
	Modal split	<i>OB1 EC14</i>	'at least 50% of all trips on Cardiff's transport network ... made by sustainable modes by the end of the Plan period in 2026'	Several of the large Greenfield sites proposed in the LDP – notably west of Pentreban, north of J33, and west and east of Pontprennau – are in relatively inaccessible locations and can only be sustainable if a high proportion of journeys can be made by modes other than car. This is unlikely to be achieved unless relevant transport infrastructure is delivered in advance of people moving into the development.
	Delivery of transport infrastructure as part of key strategic sites	Cardiff Council Transport Policy Team	As per the LDP and site masterplans	
	Permissions granted for highly vulnerable development in C1 and C2 flood risk areas	<i>OB3 EN1 and EN2</i>	0	
5. Protect and enhance historic and cultural heritage	Number of listed buildings, conservation areas, etc.	Cardiff Council Conservation Team	No reduction	Several of the development sites proposed in the LDP could affect the historic and cultural heritage
6. Help deliver the growth of a sustainable and diversified economy	Net job creation over the remaining Plan period	<i>OB1 EC9</i>	40,000 net additional jobs over plan period, 20,900 between 2006 and 2015	A key expected outcome of the LDP is delivery of 40,000 new jobs

SA objective	1. Indicator	2. Who monitors	3. Target	4. Reason for monitoring
7. Improve health and well-being	Delivery of community infrastructure as part of key development sites	Part of <i>OB4 SN12</i>		Provision of new community facilities – many of which can also improve the well-being of existing communities – is expected to be a key benefit of new development.
	% of journeys made by walking/cycling	Parts of <i>OB1 EC15-18</i>	Increase	Physical activity is a key component of good health. Several LDP policies aim to increase the proportion of Cardiff residents who walk and cycle.
	Percentage of population in the 100 most deprived wards in Wales in the 10% most deprived wards in Wales for physical environment	Local Government Data Unit	Reduction	People's physical environment, and their ease of access to recreational open space, are key contributors to health and well-being
8. Protect and enhance the landscape	Achievement of functional open space requirements	<i>OB3 EN13</i>	2.43ha per 1000 population	
	Special Landscape Areas	Cardiff Council Planning Policy Team	Five SLAs designated by plan adoption	Policy EN3 is for the designation of five SLAs
9. Use natural resources efficiently and safeguard their quality	Percent of housing on previously developed land	Cardiff Council Housing Monitoring	60%	Development on previously developed land is generally more sustainable than development on Greenfield land.
	Average density of new development	Cardiff Council Planning Policy Team		Although very high density development may not be appropriate for many locations, low density development is not a good use of land and tends to increase car use.
	Area of contaminated land cleared up	Cardiff Council Pollution Control	>0	A significant benefit of several of the proposed development sites is that they would lead to the remediation of contaminated land.

SA objective	1. Indicator	2. Who monitors	3. Target	4. Reason for monitoring
10. Respond to demographic changes in a sustainable way	Total population	Cardiff Council Planning Policy Team	n/a	The LDP aims to respond to changes in the population. If actual population levels are significantly different from those assumed for the LDP, then parts of the LDP may need to be reconsidered.
	No. homes in Cardiff	Cardiff Council Planning Policy Team	45,400 net additional homes by 2026	A key expected outcome of the LDP is delivery of 41,100 new homes
11. Minimise waste, increase re-use and recycling	Waste reduction rate	<i>Contextual</i>	Reduction per household	The scale of growth envisioned by the LDP would have significant impacts on overall waste generated. Reducing the amount of waste generated per household will help to reduce the impacts associated with managing this waste.

Cardiff Council & Levett-Therivel Sustainability Consultants

**Sustainability Appraisal and Strategic Environmental Assessment of
the Cardiff Local Development Plan**

Non Technical Summary

**Final Sustainability Appraisal Report of the Cardiff Local
Development Plan**

January 2016

Introduction

This Sustainability Appraisal (SA) Report tests how sustainable the Cardiff Local Development Plan (LDP) is. SA of LDPs is required by the Planning and Compulsory Purchase Act 2004 and the European Strategic Environmental Assessment (SEA) Directive. SA identifies the LDP's likely significant economic, environmental and social effects, and aims to minimise any negative effects and maximise positive ones.

Cardiff Council carried out the SA with the help of consultants. The SA findings were taken into account by the planning team, who changed parts of the LDP in response to the SA. The planning team also attended several SA workshops.

Figure 1 shows the SA process. A Scoping Report of October 2010 reviewed background policies and baseline information, and described the economic, social and environmental issues affecting Cardiff. It set up an appraisal framework which was then used to assess different alternatives to the LDP and parts of the LDP. Where the LDP would have negative impacts, suggestions were made for reducing them. The process was repeated several times as the LDP was developed.

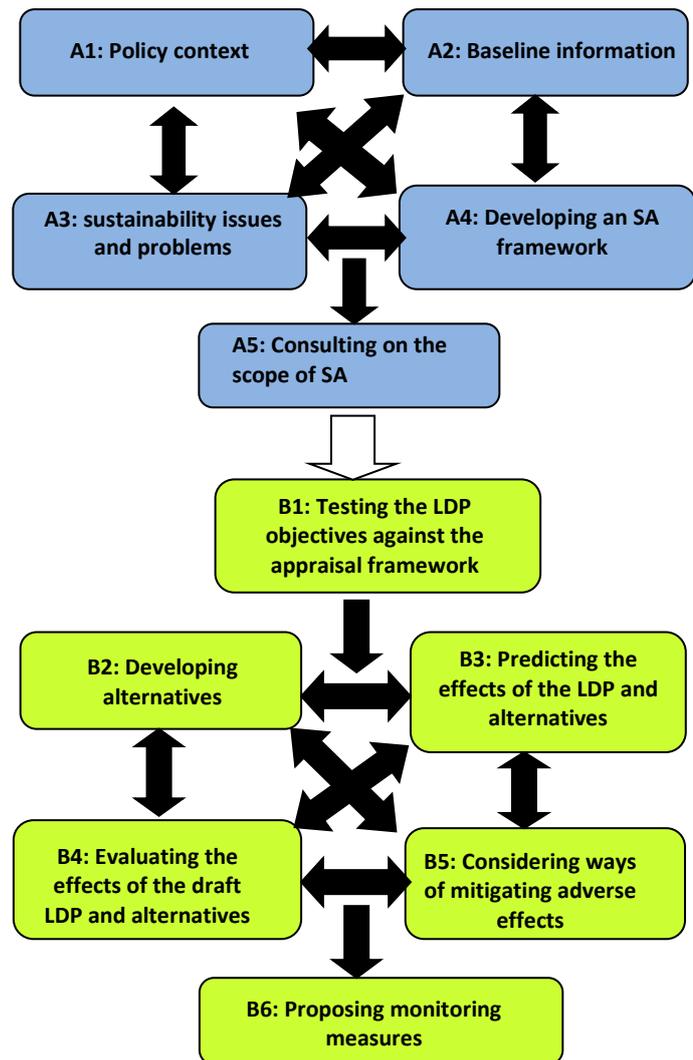


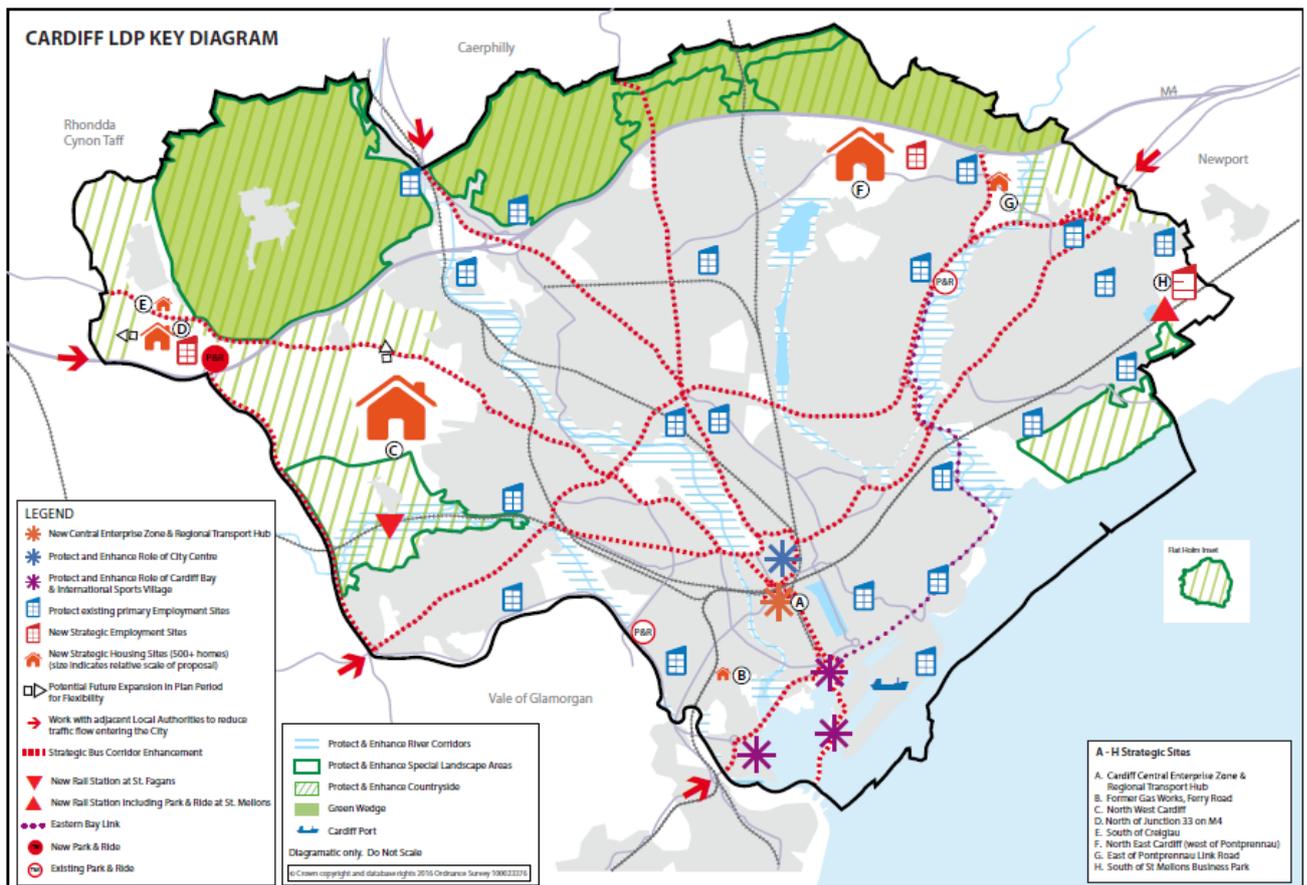
Figure 1. The sustainability appraisal process

The Local Development Plan

The LDP sets out:

- the key trends, issues and policies that have informed it;
- the Council’s vision and objectives for future development of Cardiff;
- the growth options and sites that the Council has considered for development;
- the kinds, amounts and locations of development that will be provided for over the plan period, including a Key Diagram (Figure 2);
- Policies setting out detailed standards and requirements for how development will be done, supporting infrastructure provided, and the environment protected.

Figure 2. LDP key diagram



A1. Policy context

Many policies and plans, from the international to the local level, influence Cardiff's LDP. These include the recent Planning Policy Wales 2012 edition; consultation on a Sustainable Development Bill for Wales; and National Strategy for Flood and Coastal Erosion Risk Management in Wales. Key messages from this policy context are that the LDP should:

1. Access and equality	<ul style="list-style-type: none"> • Ensure that everyone has access to good quality housing, jobs, services and facilities. • Secure a safer and more accessible environment for everyone. • Promote social inclusion and equality of opportunity.
2. Air quality	<ul style="list-style-type: none"> • Take account of the effects of development on air quality and vice versa, and meet air quality standards.
3. Biodiversity, flora & fauna	<ul style="list-style-type: none"> • Protect and enhance biodiversity, natural habitats and wild fauna and flora.
4. Climate change	<ul style="list-style-type: none"> • Reduce greenhouse gas emissions by 3%, with overall reductions of at least 40% by 2020. • Plan for and respond to climate changes, including flooding.
5. Cultural and historic	<ul style="list-style-type: none"> • Protect the historic environment and cultural heritage. • Strengthen Wales' cultural identity including the Welsh language. • Enhance Cardiff's status as a centre of cultural excellence.
6. Economy	<ul style="list-style-type: none"> • Promote Cardiff's role as a world-class Capital City by developing a diverse, competitive, high added value economy. • Enhance employment opportunities for all. • Ensure that employment development respects the environment. • Secure good retail provision and support town centres.
7. Health and well-being	<ul style="list-style-type: none"> • Improve health and well-being, and tackle poverty and inequality. • Increase participation in sport and physical activity. • Improve quality of life and enable social progress for everyone.
8. Landscape	<ul style="list-style-type: none"> • Protect and enhance the landscape, including the countryside, the undeveloped coast, river valleys and other green spaces.
9. Natural resources	<ul style="list-style-type: none"> • Minimise the use of non-renewable resources, use resources efficiently, and encourage the use of renewable resources. • Protect the countryside and good quality agricultural land. • Re-use previously developed land. • Reduce the need for water resources and use water efficiently. • Minimise impacts on water quality, river ecology and groundwater. • Safeguard mineral resources and encourage their efficient use.
10. Population	<ul style="list-style-type: none"> • Provide an adequate supply of land to meet society's needs. • Ensure that everyone has good quality housing and access to jobs, facilities and services.
11. Waste	<ul style="list-style-type: none"> • Promote the waste hierarchy: reduce, reuse, recycle, recover energy and only then landfill. • Manage waste without harming human health or the environment.

A2. Baseline information

Much information about Cardiff's economic, social and environmental condition was collected as part of the SA. Figure 3 shows the main constraints to development in Cardiff: environmental, landscape and historic designations and areas of flooding. Figure 4 shows, in darker shades, Cardiff's 'southern arc' of more deprived wards.

Figure 3. Constraints to development

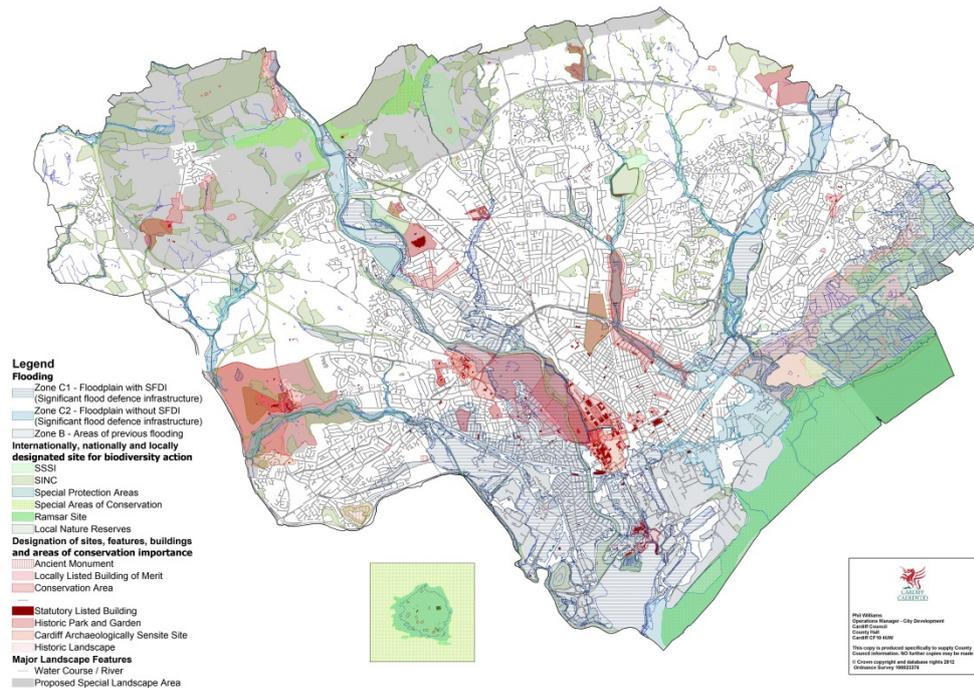
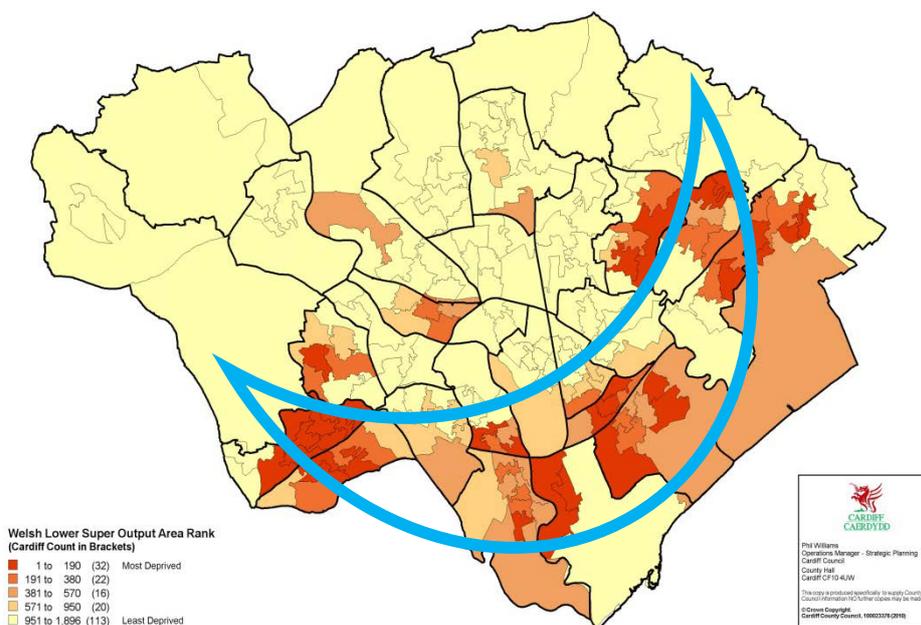


Figure 4. Index of Multiple Deprivation 2011



A3. Sustainability issues and problems

The main economic, environmental and social issues affecting Cardiff are:

1. Access and equality	Cardiff contains some of the most deprived areas in Wales and a significant number of homeless people. The cost of housing - particularly family housing - is excluding those on low incomes from entering the housing market.
2. Air quality	Cardiff has three air quality management areas. Levels of other air pollutants are within current standards.
3. Biodiversity, flora and fauna	Cardiff has many sites designated for their biodiversity. Cardiff's biodiversity is vulnerable to habitat loss and fragmentation through new development.
4. Climate change	Carbon dioxide emissions are going down after decades of growth, although this is probably largely due to the economic recession and to importing rather than making more goods. Traffic flows into and within the city centre are going down, but those outside the city centre are increasing. Many people commute into Cardiff from other parts of South East Wales. Energy use in buildings causes about one-third of Cardiff's carbon dioxide emissions. Much of Cardiff is low-lying and at risk of flooding. Little renewable energy is being produced in Cardiff.
5. Cultural and historic	Cardiff contains many buildings and monuments with historic value. About 3% of listed buildings are not in a favourable condition.
6. Economy	Cardiff is important to the regional economy. Jobs in Cardiff grew rapidly in the decade to 2008. Employment has since dropped as a result of the recession, and Cardiff struggles to match its employment growth with a growth in pay. Much employment land has recently changed to housing.
7. Health and well-being	Cardiff's population is healthier than the Welsh average but over half of Cardiff's adults are overweight, and less than a third are active enough. Life expectancy and crime levels vary sharply across the city: residents of the best wards live on average 10 years longer than those of the worst wards.
8. Landscape	Five areas have been proposed as Special Landscape Areas. More than two-thirds of Cardiff's area is within easy walking distance to natural green spaces, but only two of Cardiff's 29 wards meet national open space targets.
9. Natural resources	Recently almost all new housing has been built on previously developed (brownfield) land. Much has been apartments with relatively little family housing. Cardiff's industrial past has left many potentially contaminated sites. Cardiff provides minerals (aggregates) for the region. Water quality in Cardiff's rivers is improving, but is far from achieving the requirements of the Water Framework Directive. Over-

	abstraction of water from Cardiff's rivers is a concern.
10. Population	Cardiff's population has increased steadily over the past 20 years, and the number of households in Cardiff is expected to rise from 132,108 in 2006 to 174,471 in 2026. Providing a good choice of housing (and associated services and infrastructure) for this population growth will be a challenge.
11. Waste	The largest source of waste in Cardiff is construction/demolition, followed by commercial/industrial and then household waste. Household waste has dropped sharply in the last five years, and the proportion of waste that is recycled and composted grew from 3% to 49% between 2001 and 2012.

A4. SA framework

An 'SA framework' was developed to help identify the impacts of various parts of the LDP. The framework is basically a series of questions about the LDP's sustainability. The main questions are:

Does the LDP (or a particular part of the LDP):
1. Help deliver equality of opportunity and access for all?
2. Maintain and improve air quality?
3. Protect and enhance biodiversity, flora and fauna?
4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects?
5. Protect and enhance historic and cultural heritage?
6. Help deliver the growth of a sustainable and diversified economy?
7. Improve health and well-being?
8. Protect and enhance the landscape?
9. Use natural resources efficiently and safeguard their quality?
10. Respond to demographic changes in a sustainable way?
11. Minimise waste, increase re-use and recycling?

A5. Consultation on the Scoping Report

A Scoping Report with this information was sent out for consultation in November 2010. Fourteen comments were received on the report. The report was then changed to take these comments into account, and was updated again in August 2012.

B1. Testing the LDP objectives against the SA framework

The LDP vision and objectives were tested against the SA framework and broadly found to have positive impacts. Some suggestions were made to further improve the objectives. The planning team made most of the suggested changes.

B2. Developing alternatives

Several strategic alternatives were considered for the LDP, and their impacts were identified using the SA framework.

Different levels of future growth

- High growth: about 54,400 new homes and 55,000 new jobs
- Medium growth: about 45,400 new homes and 40,000 new jobs
- Low: about 36,500 new homes and 26,000 new jobs

No growth was not considered reasonable because Cardiff's population is expected to rise, and the number of households is expected to rise even faster due to people living longer, divorcing etc. The medium growth option was preferred because it would provide the best balance of social and economic benefits versus environmental costs. In the light of further population modelling which predicted lower growth than before, this was revised down to 41,415 new homes though with flexibility to go back up to 45,415 towards the end of the plan period if needed.

Different broad locations for housing and employment development

- Dispersed brownfield sites;
- Greenfield sites west of Pentrebanne;
- Greenfield sites south of Creigiau/ north of Junction 33;
- Greenfield site north of M4 at Thornhill;
- Greenfield sites west and east of Pontprennau;
- Greenfield sites around Old St Mellons village;
- Greenfield sites in the east- largely employment uses; and
- Dispersed smaller greenfield sites.

Of these, north of M4 at Thornhill and Old St Mellons were not included in the Preferred Strategy because they are in relatively isolated locations, would not provide adequate services, and be mostly car-based. North of M4 would also have significant landscape impacts.

Different specific sites for development

Based on information received from landowners and developers, and planners' expert knowledge, a total of 112 sites were considered, plus different combinations of these sites. A pro forma was prepared for each site to show its size, constraints and opportunities, and whether (and why) it is included in the Preferred Strategy or not.

B3./B4. Predicting and evaluating the impacts of the alternatives and draft LDP

The impacts of all the alternatives and of each policy were appraised using the SA framework. Table 1 shows what the overall impacts of the LDP would be, and Table 2 provides further details on these.

Overall the LDP would have significant benefits in providing the housing and employment land that Cardiff's current and future residents will need. It will help to improve access to good quality jobs, services and infrastructure for Cardiff's residents, although it is unlikely to fully redress the imbalance between the 'southern arc' of deprivation and other areas of the city. Residents' health should improve in response to better housing, access to open space, and walking and cycling facilities. The new development may draw in people who currently live or work in the Valleys, and so have indirect impacts on neighbouring authorities.

Table 1. Overall sustainability impacts of the LDP

SA objective		1. Equality	2. Air quality	3. Biodiversity	4. Climate change	5. Heritage	6. Economy	7. Health and wellbeing	8. Landscape	9. Natural resources	10. Demographic change	11. Waste
Vision		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Objectives		✓	✓x	✓	✓x	✓	✓	✓	✓	✓	✓	✓x
Key Policies												
KP1: Level Of Growth		✓	x	x	✓x	x	✓	✓x	x	✓x	✓	✓x
KP2: Strategic Sites *		✓x	x	x	x	x	✓✓	✓	x	✓x	✓✓	x
KP3(a), KP3(b) Green Wedge, settlement boundary		0	✓	✓	✓	0	?	✓	✓✓	✓	?	0
KP4: Masterplanning Approach		✓	✓	✓	✓	✓	✓	✓✓	✓	✓	0	✓
KP5: High Quality and Sustainable Design		✓	?	✓	✓✓	✓	✓	✓	✓	✓	✓	✓
KP6 New infrastructure, KP7 planning obls		? ✓	? ✓	? ✓	? ✓	? ✓	? ✓	? ✓	? ✓	? ✓	? ✓	? ✓
KP8: Sustainable Transport		✓	✓	0	✓	0	✓	✓	0	0	✓	0
KP10: Central and Bay Business Areas		✓	✓	x	✓	0	✓	✓	✓	✓	✓	0
KP11: Crushed Rock Aggregates and Other Minerals		0	x	?	?	0	✓	x	x	✓	✓	✓
KP12: Waste		0	?	0	✓	0	✓	✓?	0	✓	✓	✓✓
KP13: Responding to evidenced social needs		✓✓	✓	0	✓	✓	✓	✓	0	0	✓	0
KP14: Healthy Living		✓	0	?	?	0	?	✓✓	?	0	✓	0
KP15: Climate Change		0	?	?	✓✓	0	0	0	0	✓?	0	0
KP16: Green Infrastructure		0	✓	✓✓	✓	✓	?	✓	✓	✓	0	0
KP17: Built Heritage		0	0	✓	0	✓✓	? ✓	✓	✓	0	0	0
KP18: Natural Resources		0	✓	✓	✓	0	✓	✓	✓	✓✓	0	0
Strategic Sites	Size (ha)											
A. Cardiff Central Enterprise Zone and Regional Trans Hub	13	✓✓	✓x	?	✓x	0	✓✓	✓	✓	✓	✓	x
B. Former gas works, Ferry Road	12	✓✓	✓x	?	x?	0?	0	✓	✓x	✓	✓	x
C. North West Cardiff	346	✓x x	x?	x	✓x	x?	✓	✓?	x/ xx ?	x	✓✓	x
D. & E. North of J33 on M4 and South of Craigiau	139	x	x/ xx	xx	✓x	?	✓	✓?	xx	x	✓✓	x
F. North East Cardiff (West of Pontprennau)	240	✓x	x?	x	x	?	✓✓	✓?	x/ xx ?	x	✓✓	x
G. East of Pontprennau Link Road	81	✓x	x?	x	x	x?	0	✓x	x/ xx ?	x	✓✓	x
H. South of St. Mellons business park	99	✓	x?	xx	xx	xx	✓	x?	xx	x	✓	x
Cumulative impacts		✓	x	xx	x	0?	✓✓	✓	x	✓x	✓✓	x

Environmentally, the LDP would have some significant negative impacts. The sheer volume of development which the LDP has to provide for will inevitably result in increased total air pollution, greenhouse gas emissions, use of natural resources and waste because of increased traffic, houses and employment. The LDP includes many enlightened policies to reduce these impacts. If these are fully, thoroughly and promptly implemented they could substantially reduce per capita impacts. Some of the Matters Arising Changes provide welcome strengthenings in commitments to implementation, but their effectiveness is still uncertain, and the downgrading of the former Green Belt policy to Green Wedge may in the longer term weaken the Council’s ability to push development to more sustainable brownfield sites within the city.

The LDP provides for development of several major Greenfield sites amounting to about 902 hectares. The largest of these are located far from Cardiff city centre, so will increase transport impacts even if sustainable transport provision is made before occupants move in; and several would affect areas that are designated for their landscape or biodiversity importance, and even with the mitigation measures contained in the policies biodiversity and landscape quality are likely to decrease significantly.

Strategic Site H is particularly problematic. It comprises 99 hectares fully in a Site of Special Scientific Interest, archaeologically sensitive site, and Landscape of Outstanding Historic Interest (national level designations). It is susceptible to flooding, and so the initial proposal is to raise the land and make improvements to the sea wall to protect the development from flooding. However this would affect the hydrology and water quality of the historic reens (ditches) in the area. The reens drain to the Severn Estuary SPA/SAC/Ramsar sites, and so water quality problems in the reens could affect the integrity of those sites.

Table 2. Overall sustainability impacts of the LDP

SA objective	Overall impact of LDP	
1. Help deliver equality of opportunity and access for all	✓	The LDP aims to deliver about 40,000 new jobs and 41,415 new dwellings, supports the delivery of affordable housing, and promotes sustainable neighbourhoods. The proposed sites together would provide much new housing and employment land. However several of the strategic sites are out of the existing urban area and only a few would support regeneration of the 'southern arc' of deprivation. Inequalities are likely to increase over time as the residents of outlying Greenfield sites drive through, and use the services of, existing more deprived areas.
2. Maintain and improve air quality	✗	The LDP aims to minimise air pollution; promote walking, cycling and public transport; and aspires for less than half of journeys from new developments to be by car. However the scale of growth envisaged for Cardiff will inevitably lead to more air pollution from traffic, homes and businesses. The large strategic development sites are on the edge of Cardiff, far from the city centre, and likely to be heavily car dependent.

3. Protect and enhance biodiversity, flora and fauna	xx	The LDP aims to protect and enhance Cardiff's areas of biodiversity. However the scale of development being proposed, including more than 900 hectares of Greenfield sites, means that Cardiff's biodiversity will be significantly negatively affected by the LDP. Strategic site H would be 99 hectares entirely in a Site of Special Scientific Interest, and is by far the most problematic site. Several other strategic sites would affect Sites of Importance for Nature Conservation.
4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	x	The LDP aims to reduce greenhouse gas emissions and adapt to climate change, including flooding. Its transport policies support a change from car use to walking, cycling and public transport. However the scale of growth envisaged for Cardiff will inevitably lead to more greenhouse gas emissions from traffic, homes and businesses. The largest strategic sites are on the edge of Cardiff, far from the city centre, and likely to be heavily car dependent even if the sustainable transport infrastructure and services planned are delivered. Parts of strategic sites B and F are in flood risk zones, as is all of site H.
5. Protect and enhance historic and cultural heritage	0?	The LDP aims to protect and enhance Cardiff's heritage assets. Most of the proposed development sites will have little or significant effect on the historic and cultural heritage: about a dozen listed buildings would be affected, and Site H is in the Wentloog Levels Archaeologically Sensitive Area and Landscape of Outstanding Historic Interest.
6. Help deliver the growth of a sustainable and diversified economy	✓✓	The LDP aims to deliver about 40,000 new jobs, promote new employment sites, and protect existing ones. The proposed development sites will diversify and support the city's economy. Some strategic sites outside the existing urban area may undermine the vitality and viability of the city centre, although where both housing and employment land are provided on the same site this could help to make the economy more sustainable.
7. Improve health and well-being	✓	The LDP supports the provision of affordable housing, good community facilities, green spaces, and routes for walking and cycling. All of these would help to improve health. Some of the proposed development sites will help to regenerate existing communities, and new community facilities are proposed as parts of the 'package' for some larger sites which currently lack them. Several of the strategic sites have longer term flood risks, and increasing car use and air pollution would harm people's health.
8. Protect and enhance the landscape	x	The LDP aims to protect and enhance the natural heritage, designate new Special Landscape Areas, and promote high quality and sustainable design. Some of the proposed development sites have been previously developed, and would have a neutral or positive effect on the landscape. Regeneration of the Cardiff Central Enterprise Zone (strategic site A) would be particularly beneficial. However most of the area of proposed development – more than 900 hectares - is Greenfield, which would have significant negative landscape impacts. Site H is in a Landscape of Outstanding Historic Interest (Wentloog Levels).

9. Use natural resources efficiently and safeguard their quality	✓*	The LDP aims to promote the efficient use of minerals, remediate contaminated land, and protect agricultural land, water resources, and air and water quality. Where proposed development sites are on previously developed land or include contaminated land, their redevelopment would have a positive effect. Sites C, D, E, F, and H are Greenfield sites with no record of contamination, and several include high quality agricultural land. Water quality could be significantly affected by development at Sites B, D, F and H.
10. Respond to demographic changes in a sustainable way	✓✓	The LDP aims to deliver about 40,000 new jobs and 41,415 new dwellings. This would help respond to clear existing demand for housing and employment sites, including identified demand for Greenfield sites. The significant growth proposed for Cardiff could draw people away from the Valleys to take up work or housing in Cardiff.
11. Minimise waste, increase re-use and recycling	*	The LDP aims to reduce the production of waste and provide adequate waste management facilities. However it says relatively little about reducing waste, or promoting reuse and recycling. The scale of growth proposed in the LDP would lead to considerably more waste being produced than at present, during both construction and operation.

B5. Considering ways of mitigating adverse effects

The appraisal process resulted in many suggestions for reducing the negative impacts of the LDP and enhancing its benefits. Most of these suggestions led to changes in the LDP, including:

- Rewording of LDP objectives, to better cover waste issues and give more emphasis to healthy food choices;
- Stronger and more systematic consideration of sustainability issues in the process of sifting and choosing between potential candidate development sites by the planning team;
- Removal of a key policy that duplicated another one;
- Greater emphasis to reducing the need to travel by car, making facilities accessible by walking and cycling, ensuring good public transport before remote greenfield sites are occupied, and resilience to climate change;
- Reference to industrial and domestic sources of air pollution as well as transport pollution, and promotion of remediation of contaminated land.

B6. Proposing monitoring measures

Once the LDP is adopted, its actual impacts will be monitored to make sure that unexpected effects are identified and dealt with. Much monitoring is already carried out in Cardiff for other purposes, for instance traffic counts for transport planning. This can also be used to monitor the effects of the LDP. However some new monitoring is proposed here that would measure important sustainability aspects of the LDP.

Next steps

Once the LDP is adopted, Cardiff Council will publish an 'SEA statement' which explains how the sustainability appraisal influenced the LDP.

Cardiff Council & Levett-Therivel Sustainability Consultants

**Sustainability Appraisal and Strategic Environmental Assessment of
the Cardiff Local Development Plan**

Appendix A: Policy Review

**Final Sustainability Appraisal Report of the Cardiff Local
Development Plan**

January 2016

Appendix A. Policy Review

This appendix contains the reviews of all plans, policies, programmes and strategies listed in Table 2.1 of the Scoping Report. It should be read together with the updated Scoping Report (and Appendix 2) and the Initial Sustainability Appraisal Report.

An earlier version of this Appendix, covering nearly 100 policies, plans and programmes, was produced in 2006. This was comprehensively updated in autumn 2010 and again in August 2012 with focused updates in August 2013. It was also rationalised by removing redundant and less relevant policies, plans and programmes, so as to focus on those policies that are most significant and recent. It is thus not an exhaustive review of all potentially relevant policy documents, but rather a sufficient, 'fit for purpose' review which sets out the main 'policy landscape' within which the LDP is being prepared. The Council will keep the policy landscape under review and up date as and when necessary.

General / overarching PPPs	Implications for the LDP
UK	
<p>Planning Act 2008 Introduces a new process for deciding planning permission for nationally significant infrastructure projects, and power for planning authorities to charge a Community Infrastructure Levy (CIL) on most types of new development.</p>	<p>LDP team should contribute to Infrastructure Planning Commission consultations to seek to secure decisions consistent with LDP aims</p> <p>Consider whether charging a CIL could help achieve LDP objectives</p>
<p>Community Infrastructure Levy Regulations 2011 Provide for the imposition of a CIL.</p>	<p>LDP team should consider whether and how CIL can be used to help fund and deliver infrastructure in Cardiff.</p> <p>Additionally, an infrastructure delivery plan will need to be developed in tandem with the LDP to ensure that infrastructure is delivered appropriately and sustainably throughout the plan period and to ensure that CIL and S106 funding can be directed and fully utilised.</p>
Wales	
<p>One Wales: One Planet, a new Sustainable Development Scheme for Wales (Welsh Assembly Government 2009) Sets out WAG's vision of a sustainable Wales:</p> <ul style="list-style-type: none"> • Sustainable development will be the central organising principle of the WAG • Within a generation, Wales should only use its fair share of the earth's resources • Wales should have healthy, functioning ecosystems that are biologically diverse and productive and managed sustainably • Wales should have a resilient and sustainable economy that is able to develop whilst stabilising, then reducing, its use of natural resources and reducing its contribution to climate change • Wales should have safe, sustainable, attractive communities in which people live 	<p>The LDP can assist sustainable development objectives through a wide range of measures identified alongside policy documents dealing with specific topics/issues</p>

General / overarching PPPs	Implications for the LDP
<p>and work, have access to services, and enjoy good health and can play their full roles as citizens</p> <ul style="list-style-type: none"> Wales should be just and bilingual. All citizens should be empowered to determine their own lives, shape their communities and achieve their full potential 	
<p>A Sustainable Wales: Better Choices for a Better Future: Consultation on proposals for a Sustainable Development Bill (Welsh Government December 2012) builds on earlier consultations to propose ‘a stronger duty that requires specified public service organisations [including local authorities] to embed sustainable development as their central organising principle’, with supporting measures</p>	<p>Indicates continuing commitment to sustainable development and proposes further strengthening of local authorities’ powers and duties to promote it.</p>
<p>Natural Resource Management Programme (Welsh Government 2013)</p> <p>The programme will include:</p> <ul style="list-style-type: none"> Natural resource management policy, including the setting of national priorities the Environment Bill embedding the ecosystem approach, including associated demonstration projects which will showcase the benefits this approach can bring, and from which we can learn about how and when the approach can be used working with Natural Resources Wales and coordinating performance management arrangements communications, engagement and knowledge sharing. 	<p>The ecosystem approach systematically identifies the benefits from the environment that matter for human wellbeing, and what needs to be done to maintain or compensate for them.</p> <p>It offers a basis for setting constraints and conditions for development, including offsetting and compensation, to ensure no net loss of public benefits.</p> <p>It is potentially a powerful tool for making operational the LDP’s environmental aims. Masterplanning of one or more of Cardiff’s strategic sites could make an interesting demonstration project, and the results of this programme should inform the later stages of development of all of them.</p>
<p>Wales Spatial Plan 2008 Update (Welsh Assembly Government 2008)</p> <p>The National Vision is: <i>"We will sustain our communities by tackling the challenge presented by population and economic change. We will grow in ways which will increase Wales' competitiveness while assisting less well-off areas to catch up on general prosperity levels and reducing negative environmental impacts. We will enhance the natural and built environment and we will sustain our distinctive identity"</i>.</p> <p>Subsections of the plan involve:</p> <ul style="list-style-type: none"> building sustainable communities promoting a sustainable economy 	<p>LDPs must have regard to the Wales Spatial Plan. For Cardiff, the plan priorities are:</p> <ul style="list-style-type: none"> The area will function as a networked city region, on a scale to realise its international potential, its national role and to reduce inequalities A fully integrated high quality transport system is necessary for this to happen. Over the 20 year horizon of the Wales Spatial Plan, all the Area’s key settlements should be linked to Cardiff or Newport by suitable high capacity public transport The success of the Area relies on Cardiff developing its capital functions, together with strong and distinctive roles of other towns and cities

General / overarching PPPs	Implications for the LDP
<ul style="list-style-type: none"> • valuing our environment • achieving sustainable accessibility • respecting distinctiveness <p>The Plan also includes a distinct vision for each area of Wales. The vision for the Capital Region which includes Cardiff is for "<i>An innovative skilled area offering a high quality of life – international yet distinctly Welsh. It will compete internationally by increasing its global visibility through stronger links between the Valleys and the coast and with the UK and Europe, helping to spread prosperity within the area and benefiting other parts of Wales.</i>"</p>	<p>It sets as measures of success for the Capital region:</p> <ul style="list-style-type: none"> • A working city region that can adapt creatively to economic change and innovate to improve • A learning city region that grows talent, provides lifelong opportunities and attracts talent from elsewhere • A connected city region that aids accessibility for goods and people and encourages sustainable transport choices • A living city region that provides a high quality natural and built environment complemented by high quality green space, promoting healthy, strong communities and a strong civic culture. Achieving a networked environment region will be a key part of this • A lively city region that provides a “buzz” in culture, tourism, shopping and leisure • A low-carbon city region that reduces its resource use, energy and travel footprint and greenhouse gas emissions • A well-governed city region with community involvement and strategic national engagement
<p>Planning Policy Wales (Welsh Assembly Government 2011)</p> <p>Replaces Planning Policy Wales 2002 and previous Ministerial Interim Planning Policy Statements. Sets out WAG’s land use planning policies and how these can help achieve its goals for:</p> <ul style="list-style-type: none"> • Planning for sustainability • Conserving and improving natural heritage and the coast • Conserving the historic environment • Supporting the economy • Transport • Housing • Planning for retailing and town centres • Tourism, sport and recreation • Infrastructure and services • Minimising and managing environmental risks and pollution <p>Gives strong and detailed emphasis to climate change (reduction and adaptation)</p>	<p>States that every local planning authority in Wales must prepare an LDP, which will set the structure for a plan-led planning system</p> <p>The LDP can assist sustainable development objectives through a wide range of measures identified alongside policy documents dealing with specific topics/issues</p>
<p>Environment Strategy for Wales (Welsh Assembly Government 2006)</p> <p>Sets out the Welsh Government’s long-term strategy for the environment of Wales and sets the strategic direction until 2026. The Vision is “By 2026, we want to see our distinctive Welsh environment thriving and contributing to the economic and social wellbeing and health of all</p>	<p>Through this strategy the Welsh Government are committed to tackling climate change, conserving and enhancing biodiversity, land, resources and heritage, and the built environment through policy. Additionally there are priorities that direct implications for the community strategy, which the LDP must have regard for.</p>

General / overarching PPPs	Implications for the LDP
of the people of Wales”	The statutory consultees, the Wales Local Government Association and many other organisations are committed to progressing this strategy through its action plans.
Cardiff	
<p>Cardiff Integrated Partnership Strategy: What Matters 2010:2020 The 10 Year Strategy: Cardiff’s What Matters Strategy (2010 – 2020) combines the Community Strategy, Children & Young People’s Plan; Health Social Care & Wellbeing Strategy and the Community Safety Strategic Assessment programmes into one consolidated document. The vision of What Matters is “By 2020... Cardiff will be world class European capital city with an exceptional quality of life and at the heart of a thriving region”</p> <p>Under the vision there are 7 outcomes, these are:</p> <ul style="list-style-type: none"> • People in Cardiff are healthy; • People in Cardiff have a clean, attractive and sustainable environment; • People in Cardiff are safe and feel safe; • Cardiff has a thriving and prosperous economy; • People in Cardiff achieve their full potential; • Cardiff is a great place to live, work and play; and • Cardiff is a fair, just and inclusive society 	The LDP takes its vision and the basis for its strategic objectives from this document. The vision and direction of What Matters is central to the vision for Cardiff and is key material consideration for the LDP.
<p>Cardiff A Proud Capital: Cardiff Community Strategy 2007-2017 (Cardiff Council 2007) The vision is "To ensure that Cardiff is a world class European capital city with an exceptional 'quality of life' and at the heart of a competitive city region". Includes an economic, social and environmental vision, and 'Cardiff connections' about public services.</p>	<p>S62 of the Planning and Compulsory Purchase Act 2004 prescribes that LDPs must have regard to the Community Strategy for the area of the plan. Planning-related themes of the strategy include:</p> <ul style="list-style-type: none"> • Improvement and expansion of Cardiff's cultural and sporting offer • Enhanced collaboration between Cardiff and other local authorities to promote the regeneration of south-east Wales • Establishment of Cardiff as a hub for high growth, knowledge-intensive sectors • Development of Cardiff as a leading tourism, leisure and conference destination • Improved, sustainable transport
<p>Cardiff Council Sustainable Development Policy Statement and Action Programme 2009-2012(Cardiff Council 2009) States the Council’s commitment to sustainable development.</p>	Promotes a range of sustainable development priorities for Cardiff, including sustainable design, increased recycling and composting, carbon reduction and energy efficiency

Access and equality PPPs	Implications for the LDP
Wales and South East Wales	
<p>Wales Transport Strategy (ESG, 2008) Sets out the role that transport can play in delivering WAG's agenda of integrating transport with spatial planning, economic development, education, health, social services, environment and tourism. Main expected outcomes are:</p> <ul style="list-style-type: none"> • Improved access to a range of services and facilities • Encouragement of healthy lifestyles • Improvements in the safety of travel • Improved connectivity within Wales and internationally • Improved movement of freight and people • Reduced impacts on climate change, air quality, the local environment, heritage and biodiversity <p>It emphasises the importance of Cardiff International Airport, and public transport links to the airport.</p>	<p>In preparing the LDPs the Council should:</p> <ul style="list-style-type: none"> • Integrate with transport policy and traffic management; and have regard to road traffic reduction targets, air quality requirements and Local Transport Plan proposals • Foster improvements to transport facilities and services which maintain or improve accessibility to services and facilities, secure employment, economic and environmental objectives, and improve safety and amenity • Promote measures to facilitate public transport, walking and cycling, and movement of freight by rail and ship • Locate development, particularly major generators of travel demand, so as to minimise that demand, particular by cars and other motor vehicles, and where it is accessible by a range of forms of travel/transport • Promote mixed use developments • Promote good design that provides an environment that is accessible for everyone <p>As above</p>
<p>Technical Advice Note 18: Transport (Welsh Assembly Government 2007) Provides guidance on how land use planning can promote more sustainable travel demand and forms of transport.</p>	
<p>Wales: National Transport Plan (March 2010)</p> <p>The National Transport Plan sits alongside the regional transport plans in assisting the delivery of the Wales Transport Plans. The National Transport Plan concentrates on delivering transport integration across Wales and ensuring that provision is consistent including measures such as ticket integration, local guidance on speed limits, and the appropriate direction of new transport infrastructure.</p> <p>The National Transport Plan includes actions for Wales as a whole and specific actions for strategic transport connections.</p>	

Access and equality PPPs	Implications for the LDP
<p>South East Wales Regional Transport Plan (South East Wales Transport Alliance 2010) Replaces the Cardiff Local Transport Plan. Its priorities are to (in priority order):</p> <ol style="list-style-type: none"> 1. improve access for all to services, facilities and employment, particularly by walking, cycling and public transport 2. increase the proportions of trips undertaken by walking, cycling and public transport 3. minimise demand on the transport system 4. develop an efficient, safe and reliable transport system, with improved links between the 14 key settlements in South East Wales, and between South East Wales and elsewhere 5. encourage healthy and active lifestyles 6. reduce significantly the emission of greenhouse gases and the impact of the transport system on local communities 7. ensure developments are accessible by sustainable transport and make sustainable transport an integral component of regeneration schemes 8. make better use of the existing transport system 	
Cardiff	
<p>Cardiff Sustainable Travel City</p> <p>In March 2009 the Welsh Government designated Cardiff as Wales' first Sustainable Travel City (STC) and a pathfinder for a wider initiative.</p> <p>Initiatives to help make sustainable modes of travel easier to use include:</p> <ul style="list-style-type: none"> • improving bus access in the city centre • making St Mary Street more pedestrian friendly • improving links between the city centre and Cardiff Bay • expanding the Cycling Network • the Pont-y-Werin Bridge, linking Penarth to the International Sports Village • Bus Corridors and other infrastructure to support public transport • new Park and Ride/ Park and Share scheme • Civil Parking Enforcement (CPE) • a Smart City Hub which will help to keep the transport infrastructure in the city flowing. 	<p>The LDP should both support and exploit these measures.</p>

Air quality PPPs	Implications for the LDP
International	
<p>EC Directive 1966/62/EC on Ambient Air Quality and Management (as amended by Directives 1999/30/EC, 2000/69/EC and 2002/3/EC) Establishes mandatory standards for air quality and set limits and guide values for air pollutants.</p>	<p>Locational policies in LDPs should take account of the effects of development on air quality and vice versa. The LDP should include:</p> <ul style="list-style-type: none"> • Strategic policies on the location of potentially polluting developments and criteria by which applications for such developments should be determined • Realistic provision for the types of industry or facility that may be a potential source of pollution • Policies and proposals to ensure that incompatible uses of land are separated, in order to avoid potential conflict <p>The LDP can also contribute to maintaining and improving air quality by locating development so as to minimise travel demand, particularly by motor vehicles, and where it is accessible by a range of forms of travel/transport, including walking, cycling, public transport and alternatives to movement of freight by road.</p>
Wales	
<p>Air Quality Standard (Wales) Regulations 2010 Implements the European standards in Wales</p>	As above

Biodiversity, flora and fauna PPPs	Implications for the LDP
International	
<p>EC Directive 1992/43/EEC on Conservation of Natural Habitats and of Wild Fauna and Flora (Habitats Directive) Protects important habitats and species through the establishment of a European network of Natura 2000 sites. Establishes process of Appropriate Assessment for considering the impact of plans and projects on European sites.</p>	<p>Appropriate Assessment / Habitats Regulations Assessment must be undertaken during LDP preparation, to assess the implications of the plan for SPAs, SACs and Ramsar sites (including any in neighbouring authorities) whose integrity may be adversely affected by the plan. Appropriate assessments are also required for all projects that have the potential to affect site integrity.</p>
<p>EC Directive 1979/409/EEC on the Conservation of Wild Birds (Birds Directive) Protects Europe's wild birds including through the establishment of a European network of Special Protection Areas (SPAs).</p>	<p>In addition, the LDP should:</p> <ul style="list-style-type: none"> • Include detailed policies for the conservation and, where appropriate, enhancement of international, national and local designated sites, reflecting their relative significance • Provide criteria against which developments affecting the different types of designated site will be assessed • Identify the areas to which such policies apply
<p>Convention on Wetlands of International Importance especially as a Waterfowl Habitat (Ramsar Convention 1971 as amended) Requires signatories to designate and protect wetlands of international importance, to promote wetlands generally and to foster the wise use of wetland areas, in recognition of their importance as a habitat for waterfowl.</p>	
UK	

Biodiversity, flora and fauna PPPs	Implications for the LDP
<p>Conservation (Natural Habitats, &c) Regulations 1994 (amended 2007) Implements the Habitats Directive.</p>	As above
<p>Wildlife and Countryside Act 1981 (as amended by Schedule 9 of the Countryside and Rights of Way Act 2000) Places a duty on all public bodies, including local planning authorities to further the conservation and enhancement of the features by reason of which a Site of Special Scientific Interest is of special interest.</p>	<p>Policies and proposals in LDPs must be informed by international obligations and the Assembly's objectives for the conservation and improvement of the natural environment and biodiversity, including the proper protection of statutorily designated sites and species. The LDP should:</p> <ul style="list-style-type: none"> • Include detailed policies for the conservation and, where appropriate, enhancement of international, national and local designated sites, reflecting their relative significance • Provide criteria against which developments affecting the different types of designated site will be assessed
<p>Countryside and Rights of Way Act 2000 Places a duty on the National Assembly to take (or encourage others to take) reasonably practicable steps to further the conservation, restoration or enhancement of those species and habitat types identified by the Assembly as priorities for biological conservation.</p>	
<p>NERC Act (Natural Environment and Rural Communities Bill) 2006 Section 40(1) of the NERC Act places a duty upon public bodies, in carrying out their function, to regard the conservation of biodiversity. The key target for this act is Local Authorities.</p>	<p>DEFRA guidance on the biodiversity duty for local authorities sets out the importance of planning system for the conservation of biodiversity.</p> <p>The LDP should consider impacts on biodiversity and this will be achieved through the statutory requirement for SEA.</p>
Wales	
<p>Technical Advice Note 5: Nature Conservation and Planning (Welsh Assembly Government 2009) Provides advice about how the land use planning system should contribute to protecting and enhancing biodiversity and geological conservation. The planning system should:</p> <ul style="list-style-type: none"> • work to achieve nature conservation objectives through a partnership between local planning authorities, CCW, the Environment Agency Wales, voluntary organisations, developers, landowners and other key stakeholders • integrate nature conservation into all planning decisions, looking for development to deliver social, economic and environmental objectives together • ensure that the UK's international and national obligations for site, species and habitat protection are fully met in all planning decisions • look for development to provide a net benefit for biodiversity conservation with no significant loss of habitats or populations 	<p>The LDP should:</p> <ul style="list-style-type: none"> • Develop an ambitious vision that includes healthy, functioning ecosystems, a wealth of native wildlife and natural features, and the habitats and natural processes on which they will depend • Incorporate international and Welsh Assembly Government nature conservation objectives into its plan objectives • Have regard to other plans and strategies such as Shoreline, Estuary, Integrated Coastal Zone and River Basin Management Plans <p>The LDP should include policies that:</p> <ul style="list-style-type: none"> • Set out criteria against which development proposals will be tested for their compatibility with nature conservation objectives and/or sustainable development principles • Give local expression to the protection and, where possible, enhancement of species, habitats, and designated sites • Provide for the conservation, enhancement, management and, where appropriate, restoration of woodlands, veteran trees and other trees of nature conservation value;

Biodiversity, flora and fauna PPPs	Implications for the LDP
<p>of species, locally or nationally</p> <ul style="list-style-type: none"> • help to ensure that development does not damage, or restrict access to, or the study of, geological sites and features or impede the evolution of natural processes and systems especially on rivers and the coast • forge and strengthen links between the planning system and biodiversity action planning, particularly through LDP policies and the preparation of supplementary planning guidance • accommodate and reduce the effects of climate change by encouraging development that will reduce damaging emissions and energy consumption and that help habitats and species to respond to climate change 	<p>locally distinctive natural habitats; and networks of habitats including wildlife corridors</p> <ul style="list-style-type: none"> • Encourage the conservation and management of features of the landscape of major importance for wild flora and fauna • Draw attention to the requirement for appropriate assessment of projects likely to have a significant effect on an internationally designated site • Create strong links to national and local Biodiversity Action Plans and help to meet their targets by habitat creation and management • Address the implications of climate change, including potential effects of habitat change, the risks of coastal flooding and erosion and river basin flood management issues • Propose necessary new development in ways and at locations that are consistent with nature conservation objectives
South East Wales	
<p>Severn Estuary European Marine Site Management Scheme (Natural England, CCW, WAG 2009)</p> <p>A management scheme for the Severn Estuary SAC/SPA/Ramsar site aimed at ensuring that relevant authorities undertake their statutory duty to deliver the requirements of the Habitats Directive to conserve the species and habitats of the designated area.</p>	<p>Appropriate Assessment / Habitats Regulations Assessment for the LDP and projects that could affect the integrity of the Severn Estuary SAC/SPA/Ramsar site must take account of this management scheme</p>
Cardiff	
<p>Cardiff Local Biodiversity Action Plan (CCW, Cardiff Council, CBP, WAG 2008)</p> <p>Sets targets for many of the most important species and habitats in Cardiff: calcareous grassland, gardens and allotments, maritime cliffs and slopes, neutral grassland, ponds, reedbeds, purple moor grass and rush pasture, woodland, bats, chiding pink, dormouse, great crested newt, hawfinch, otter, pied flycatcher, reptiles, silver-washed fritillary, stag beetle, water vole, waxcap species. It promotes the maintenance of extent and distribution of habitats, and an improvement in their condition; and the maintenance of the range and population of species, and an improvement over time.</p>	<p>The LDP should:</p> <ul style="list-style-type: none"> • Support the achievement of LBAP targets • Provide for the conservation and, where appropriate, enhancement of biodiversity outside statutorily designated sites, in particular identifying opportunities to conserve important local habitats and species, and to safeguard and manage landscape features of major importance for nature conservation • Provide the opportunity for people to access biodiversity in Cardiff

Climate change PPPs	Implications for the LDP
UK	
<p>Climate Change Act 2008 Gives the UK government a statutory duty to reduce greenhouse gas emissions by 80% between 1990 and 2050, and by at least 34% by 2020. It also establishes a carbon budgeting system which caps emissions over five-year periods.</p>	<p>The LDP should play its part in delivering these targets by:</p> <ul style="list-style-type: none"> • Promoting renewable methods of energy production and their use in new development • Promoting energy efficiency and energy conservation in new development • Promoting other measures that mitigate the causes of climate change (e.g. the protection/enhancement of carbon sinks) • Ensuring that the location and design of new development has regard to the potential risk, causes and consequences of flooding • Locating and designing development so as to minimise travel demand, particular by cars and other motor vehicles, and where it is accessible by a range of forms of travel/transport • Promoting mixed use development
<p>Flood Risk Regulations (2009) The European draft Directive 2007/60/EC on the assessment of flood risks (the flood directive) is transposed in to UK, and Welsh, law through the Flood Risk Regulations (2009).</p> <p>These Regulations require that the competent authorities produces the following documents:</p> <ul style="list-style-type: none"> • Preliminary flood risk assessments (by December 2011) • Flood hazard maps (by December 2013) • Flood risk management plans (by December 2015). 	<p>The LDP team will need to refer to and consider the flood risks highlighted in these documents as they emerge.</p>
<p>Flood and Water Management Act (DEFRA 2010) The Flood and Water Management Act sets out specific provisions on:</p> <ul style="list-style-type: none"> • roles and responsibilities for flood and coastal erosion risk management • reservoir safety • flood resilience within properties • sustainable drainage systems • drought measures • development of a project based delivery approach for large infrastructure projects in the water sector 	<p>The LDP Should:</p> <ul style="list-style-type: none"> • consider flood and coastal erosion risk • consider flood risk to new developments and existing properties <p>The Flood and Water Management Acts places the responsibility upon responsible authorities (The Environment Agency and Local Authorities) to develop flood strategies.</p>

Wales	
<p>Climate Change Strategy for Wales (Welsh Assembly Government, 2010) Sets a greenhouse gas reduction target of 3% per year on all emissions except heavy industry and power generation, with overall reductions of at least 40% by 2020. Areas of focus will be:</p> <ul style="list-style-type: none"> • behaviour change • leading by example by WAG and the public sector • increased energy efficiency, making low carbon transport a reality, and building the skills needed to ensure that Wales can make the most of opportunities from a low carbon economy • ensuring that approaches to R&D, technology, innovation and skills help Wales gain maximum benefit from climate change related business and research • supporting adaptation • ensuring that land use planning promotes sustainable development and enables a move towards a low carbon economy 	<p>The LDP should:</p> <ul style="list-style-type: none"> • Ensure that buildings are energy efficient, resilient to climate change, and in sustainable locations • Support the development of renewable energy • Support local food production • Encourage low carbon and resource efficient businesses • Support public transport, walking and cycling
<p>National Strategy for Flood and Coastal Erosion Risk Management in Wales (Welsh Government November 2011) Sets out the framework for “Risk Management Authorities” to allow them to deliver their flood and coastal risk management functions (as prescribed by the Welsh Government). The strategy provides a set of overall strategic objectives/outcomes along with a more specific objectives and actions for the management of flood and coastal erosion risk management.</p> <p>Overarching objectives:</p> <ul style="list-style-type: none"> • reducing the consequences for individuals, communities, businesses and the environment from flooding and coastal erosion; • raising awareness of and engaging people in the response to flood and coastal erosion risk; • providing an effective and sustained response to flood and coastal erosion events; and • prioritising investment in the most at risk communities 	<p>The LDP should:</p> <ul style="list-style-type: none"> • “include adequate provisions in respect of flood and coastal erosion” • Include policies on effective land use management <p>- In line with the National Flood and Coastal Erosion Risk Management Objectives and Actions for the Development of LDPs and spatial planning.</p>

<p>A Low Carbon Revolution - The Welsh Assembly Government Energy Policy Statement (Welsh Assembly Government 2010) Acknowledges 'both a moral and a practical imperative to move rapidly to ... a low carbon economy' and proposes actions on (1) energy saving and energy efficiency, (2) resilient low carbon energy production, both centralised and localised, (3) exploiting economic opportunities.</p>	<p>The LDP should:</p> <ul style="list-style-type: none"> • help to support a step-change in the energy efficiency performance of all housing stock • progressively increase the standards for new-build housing towards zero-carbon aspirations • support small-scale renewable developments and other forms of local energy generation • support anaerobic digestion, biomass, and other larger renewable energy generation projects
<p>Technical Advice Note 8: Planning for Renewable Energy (Welsh Assembly Government 2005) Provides guidance on land use planning considerations relating to renewable energy provision and how LDPs can help achieve national targets for renewable energy generation.</p>	
<p>Energy Wales: A Low Carbon Transition (Welsh Government 2012) States the Welsh Government's commitment to 'create a sustainable, low carbon economy for Wales' featuring low carbon energy and energy efficiency, by, among other things, ensuring that planning and regulations are supportive, ensuring communities benefit, and supporting appropriate infrastructure.</p>	<p>Further confirms the need for the LDP to support energy efficiency and low carbon energy.</p>
<p>Technical Advice Note 15: Development and Flood Risk (Welsh Assembly Government 2004) Provides guidance on flood risk (including land at risk of flooding) and how such risk should be addressed and managed. Aims to reduce the risk to people and development from flooding in line with a precautionary framework.</p>	<p>The LDP should:</p> <ul style="list-style-type: none"> • Take a precautionary and strategic approach to flood risk, having regard to WAG guidance, the potential consequences of flooding and the extent and location of unobstructed floodplains • Ensure that the location and design of new development has regard to the potential risk, causes and consequences of flooding

Cultural / historic PPPs	Implications for the LDP
Wales	
<p>Welsh Office Circular 60/96 Planning and the Historic Environment: Archaeology (1996) Sets out advice on legislation and procedures relating to archaeological remains.</p>	<p>The LDP must take account of the need to conserve the historic environment. It should:</p> <ul style="list-style-type: none"> • Include policies for the protection and enhancement of sites of archaeological interest and their settings • Identify scheduled archaeological remains and, where appropriate, unscheduled remains of local importance
<p>Welsh Office Circular 61/96 Planning and the Historic Environment: Historic Buildings and Conservation Areas (1996) Sets out advice on legislation and procedures relating to historic buildings and conservation areas. (Likely to be updated and consolidated with Circular 60/96 in forthcoming Wales)</p>	<p>The LDP must take account of the need to conserve the historic environment, including:</p> <ul style="list-style-type: none"> • Policies for the preservation and enhancement of listed buildings and their settings, conservation areas and historic parks, gardens and landscapes, and the factors to be taken into account in assessing planning applications that

Cultural / historic PPPs	Implications for the LDP
Heritage Bill.)	<p>could affect these</p> <ul style="list-style-type: none"> Proposals for re-use or new development affecting historic areas and buildings Policies for demolition, alteration, extension or re-use of listed buildings and their curtilages Criteria to be applied to development proposals impinging upon listed buildings.
<p>Technical Advice Note 12: Design (Welsh Assembly Government 2009) Provides guidance about how 'Promoting sustainability through good design' may be facilitated through the planning system.</p>	<p>The LDP should promote and support the 5 aspects of good design:</p> <ul style="list-style-type: none"> Ensuring access for all Sustaining and enhancing local character Ensuring attractive, safe public space Environmental sustainability Providing sustainable means of travel <p>To do this it should</p> <ul style="list-style-type: none"> Include design policies, area wide and/or for specific places as appropriate Consider producing topic based, area based or site specific SPGs

Economy PPPs	Implications for the LDP
Wales	
<p>Economic Renewal: A New Direction (Welsh Assembly Government 2010) Sets out the Assembly's proposed strategy for moving Wales out of the recession and to future economic growth. The vision is of "a Welsh economy built upon the strengths and skills of its people and natural environment; recognised at home and abroad as confident, creative and ambitious; a great place to live and work". Its five priorities are to:</p> <ul style="list-style-type: none"> Invest in high quality and sustainable infrastructure Make Wales a more attractive place to do business Broaden and deepen the skills base Encourage innovation Target business support 	<p>The LDP can support economic development objectives by supporting:</p> <ul style="list-style-type: none"> the roll-out of Next Generation Broadband the planning and delivery of infrastructure low-waste low-carbon employment links between universities and businesses
<p>Technical Advice Note 4: Retailing and Town Centres (Welsh Assembly Government 1996) Provides detailed advice on the collection of retail information and assessment of retail and town centre development proposals.</p>	<p>The LDP should:</p> <ul style="list-style-type: none"> Identify and support the retail hierarchy of centres Support the vitality, attractiveness and viability of centres Allocate sites for new retail and leisure facilities and other uses best located in town centres where there is assessed need and using the sequential approach Include criteria for the assessment of proposals

Economy PPPs	Implications for the LDP
	on unallocated sites
<p>Technical Advice Note 13: Tourism (Welsh Assembly Government 1997) Provides guidance on how the planning system can encourage sustainable forms of tourism and maximise economic and employment benefits while improving and safeguarding the environmental interests of local communities.</p>	<p>The LDP should provide a strategic framework for tourism developments having regard to the tourism potential of the area and the need to limit the impact on the environment, conservation interests and local communities</p>
SE Wales	
<p>South East Wales Development Strategy (South East Wales Economic Forum 2005) An economic development framework for South East Wales mapping out a comprehensive approach to achieving the forum's vision for the region to become one of the most prosperous in Europe.</p>	<p>The LDP can support economic development objectives by:</p> <ul style="list-style-type: none"> • Ensuring that there is a sufficient range and choice of land allocated for economic development and employment purposes in accessible locations • Improving access to employment opportunities particularly for communities with high levels of economic inactivity, unemployment and deprivation • Supporting the vitality, attractiveness and viability of centres
<p>City Regions Final Report (Welsh Government, May 2012) Product of a task and finish group set up by WG; strongly recommends recognising a South East Wales (ie Cardiff centred) city region, with an over-arching city region strategic planning tier, and strengthened governance, transport, infrastructure and financing, to remedy underperformance of Wales' cities</p>	<p>If the recommendations are adopted, the Cardiff City LDP would need to form a subordinate tier contributing to wider city region objectives, and with stronger emphasis on cross boundary co-ordination.</p>
Cardiff	
<p>Competitive Cardiff, The Cardiff Economic Strategy 2007-2012 (Cardiff Council 2007) It vision is "To ensure that Cardiff, as an International Capital, is an inclusive, vibrant and thriving city in which to live and work, with a skilled creative workforce and a buoyant business environment".</p>	<p>The LDP can support these objectives by:</p> <ul style="list-style-type: none"> • Maintaining and improving the city's cultural, leisure and sporting facilities • Developing Cardiff's retail, conference and office offer • Providing a range of premises and facilities for different business sizes and types, including incubation and growth facilities • Protecting employment land • Focusing on high value added, knowledge based sectors, and the creative industries • Facilitating the roll-out of high speed broadband • Regenerating neighbourhoods • Improving Cardiff's accessibility through an integrated transport infrastructure and improved airport connectivity • Supporting links between the universities and businesses, and between businesses • Ensuring a match between skills supply and business provision

Economy PPPs	Implications for the LDP
<p>Central Cardiff Enterprise Zone was designated in 2012 to ‘attract and grow the financial and professional services sector’</p>	<p>The LDP can support the Enterprise Zone objectives by seeking to provide land, infrastructure and supporting services attractive to financial and professional services in the city centre.</p>

Health and wellbeing PPPs	Implications for the LDP
<p>Wales</p>	
<p>'Climbing Higher': The Welsh Assembly Government Strategy for Sport and Physical Activity (Welsh Assembly Government 2005) Sets targets that, by 2025,</p> <ul style="list-style-type: none"> • The percentage of people in Wales using the Welsh natural environment for outdoor activities will increase from 36% to 60% • 95% of people in Wales will have a footpath or cycle path within a 10 minute walk • No-one should live more than a 6 minute walk (300metres) from their nearest natural green space • All public sector employees and 75% of all other employees will have access to sport and physical activity facilities at, or within 10 minutes walk of the workplace <p>'Climbing Higher: Next Steps' (Welsh Assembly Government 2006) outlines investment priorities to deliver Climbing Higher.</p>	<p>The LDP should provide a framework for sport and recreation and set out a strategic approach to such development. It should:</p> <ul style="list-style-type: none"> • Promote active travel through land uses and coordinated infrastructure to make walking and cycling practicable, convenient and attractive wherever possible • Protect areas of open space that have recreation, amenity and/or conservation value • Identify standards of open space and recreational provision • Promote measures to assist walking and cycling <p>The LDP should support the achievement of the 'Climbing Higher' targets. This will have implication on open space and footpath/bridlepath provision.</p>
<p>Technical Advice Note 16: Sport Recreation and Open Space (Welsh Assembly Government 2009) Provides guidance on planning for sport, recreation and informal open spaces, as well as protecting existing facilities and open spaces. Includes guidance on developing Open Space Assessments and standards of provision and the links between health and well being, sport and recreational activity and sustainable development.</p>	<p>The LDP should provide a framework for sport and recreation and set out a strategic approach to such development. It should aim to:</p> <ul style="list-style-type: none"> • Provide the 'benchmark standard' of, per 1000 population: 1.2 ha of land for playing pitches; 1.6 ha of land for all outdoor sport; 0.25ha children's designated equipment playing space; 0.55ha for children's informal playing space; and 0.80 ha for children's playing space • Provide 'local areas' for play or informal recreation within 100 metres of homes; 'locally equipped or landscaped areas' within 400 metres; and 'neighbourhood equipped areas' within 1000 metres • Protect areas of open space that have recreation, amenity and/or conservation value
<p>Technical Advice Note 11: Noise (Welsh Assembly Government 1997) Provides advice on how the planning system can minimise the adverse impact of noise without placing unreasonable restrictions on development or unduly adding to the costs and administrative burdens of business.</p>	<p>Policies and proposals in LDPs should:</p> <ul style="list-style-type: none"> • Locate noise sensitive developments away from existing or planned sources of significant noise • Locate potentially noisy developments where noise will not be such an important consideration • Promote design that minimises or mitigates

Health and wellbeing PPPs	Implications for the LDP
	noise generation
Cardiff	
Cardiff Physical Activity and Health Strategy 2008 – 2011 (Cardiff Health Alliance 2008) Aims to improve the health of Cardiff's residents through physical activity. (Time expired but evidently not replaced or withdrawn)	Policies and proposals in LDPs should provide opportunities for physical activity, e.g. through green infrastructure and other opportunities for walking and cycling
Allotment strategy for Cardiff (Cardiff Council 2005) Sets a strategy for the improvement of Cardiff's allotments, and to ensure that there are enough allotments to meet local demand.	Policies and proposals in the LDPs should: <ul style="list-style-type: none"> • Safeguard existing allotments wherever possible • Aim to provide at minimum 15 allotment plots per 1000 households

Landscape PPPs	Implications for the LDP
International	
The European Landscape Convention (2004) Promotes the protection, management and planning of European landscape and organises European cooperation on landscape issues. The convention provides a set of guidelines to be transposed into national, regional and local regulations.	The LDP should: <ul style="list-style-type: none"> • consider landscape strategies • recognise the value of landscapes both ordinary and unique/ historical • assist in achieving landscape quality objectives.
Cardiff	
Countryside Strategy Review (Cardiff Council 2005) Sets out the Council's vision for Cardiff's countryside under five key themes: awareness of the countryside, access, biodiversity, landscape and supporting a working countryside.	The LDP can support the Strategy by: <ul style="list-style-type: none"> • Giving considerable weight to protecting the best and most versatile agricultural land • Avoiding development of greenfield sites by giving preference to the re-use of suitable previously developed land • Promoting conservation and enhancement of the countryside and strictly control development in the open countryside • Promoting farm diversification and sustainable rural development • Protecting biodiversity, and the quality and character of the landscape • Promoting access to and enjoyment of the countryside
River Taff Corridor Action Plan (Cardiff Council, CCW, WAG 2007)	The LDP can support the action plans by: <ul style="list-style-type: none"> • Supporting the enhancement, extension and maintenance of the Taff Trail, Rhymney Trail
River Ely Corridor Action Plan (Cardiff Council, CCW, WAG 2006)	

Landscape PPPs	Implications for the LDP
<p>River Rhymney and Nant Fawr Corridor Action Plan (Cardiff Council, CCW, WAG 2009)</p>	<p>and the Nant Fawr Corridor and networks</p> <ul style="list-style-type: none"> • Providing access to all to the river corridors, maximising the use of open spaces, and maximising the range of activities • Managing and enhancing the landscape and biodiversity in the river corridors and gorges • Ensuring that new and existing developments enhance and do not harm the qualities of the valley • Maximising the tourism potential of the Taff Corridor • Maximising the afteruse value of the Lamby Way landfill site

Natural resources PPPs	Implications for the LDP
<p>International</p>	
<p>EC Water Framework Directive (2000/86/EEC) Establishes a strategic framework for managing surface water and groundwater. The core aims are to:</p> <ul style="list-style-type: none"> • Prevent deterioration of aquatic ecosystems • Protect, enhance and restore polluted waters • Comply with water related standards and objectives for environmentally protected areas • Progressively reduce pollution from priority substances • Prevent or limit input of pollutants to groundwater 	<p>See Severn River Basin Management Plan below</p>
<p>EC Directive 1991/271/EEC on Urban Waste Water Treatment (as amended by EC Directive 1998/15/EEC) Protects the environment from the adverse effects of discharges of urban waste water and of waste water from industrial sectors of agro-food industry. Sets standards for wastewater collection and treatment.</p>	<ul style="list-style-type: none"> • Locational policies to take account of the effects of development on water quality and seek improvements • Planners should discuss wastewater treatment arrangements with sewerage authorities and the Environment Agency Wales • Location and design policies should also promote Sustainable Urban Drainage Systems
<p>Wales</p>	
<p>Technical Advice Note 14: Coastal Planning (Welsh Assembly Government 1998) Provides guidance on:</p> <ul style="list-style-type: none"> • Planning the coastal zone • Recreation • Heritage coasts and non statutory coastal groupings • Shoreline management plans 	<p>The LDP must have regard to:</p> <ul style="list-style-type: none"> • Other plans and policies with implications for the coastal area • Existing policies for coast protection and defence and Shoreline Management Plans • Coastal and marine designations <p>The LDP should:</p> <ul style="list-style-type: none"> • Include specific policies for coastal areas • Show locations suitable/unsuitable for

Natural resources PPPs	Implications for the LDP
	<p>development and relevant designations on the Proposals Map</p> <ul style="list-style-type: none"> Promote conservation and enhancement of the undeveloped coast
<p>Technical Advice Note 22: Sustainable Buildings (Welsh Assembly Government 2010) TAN22 provides guidance and advice on:</p> <ul style="list-style-type: none"> Sustainable buildings and standards of assessment The design solutions that may be used to meet these standards Further design guidance on delivering low carbon buildings 	<p>This technical advice note has guidance for LDPs, highlighting the potential opportunities for local authorities to impose specific local requirements for strategic sites identified.</p> <p>The LDP should:</p> <ul style="list-style-type: none"> Encourage high sustainable building standards Promote the delivery of low carbon buildings Identify areas that are most suitable for development with high sustainability standards.
<p>Minerals Planning Policy Wales (Welsh Assembly Government 2001) Provides land use guidance on mineral extraction and related development – includes all minerals and substances in, on or under land extracted either by underground or surface working.</p>	<p>The LDP should:</p> <ul style="list-style-type: none"> Provide for aggregate needs in accordance with the agreed regional apportionment Encourage efficient and appropriate use of minerals and the re-use and recycling of suitable materials Safeguard mineral resources from sterilisation Limit the impact of mineral extraction on the environment and interest of conservation importance Promote high standard restoration and beneficial after-use
<p>Minerals Technical Advice Note 01: Aggregates (Welsh Assembly Government 2004) Provides detailed guidance to ensure that:</p> <ul style="list-style-type: none"> Aggregates supply is managed in a sustainable way so that the best balance between environmental, economic and social considerations is struck The environmental and amenity impacts of any necessary extraction are kept to a level that avoids causing demonstrable harm to interests of acknowledged importance. 	
<p>Water is Precious, Water for people and the environment: Water Resources Strategy for Wales (Environment Agency 2009) This document sets out the Environment Agency’s approach to the overall management of water resources in Wales.</p> <p>The strategy sets out a series of strategic actions for adapting to climate change, protecting the water environment (including conservation and water quality) and the management of water resources with regard to development and future demand.</p>	<p>The LDP should:</p> <ul style="list-style-type: none"> Take the strategy’s strategic actions into account Support water efficiency measure in new developments Consider how the water environment can cope with the additional demand placed upon it by proposed developments.
SE Wales	
<p>Severn River Basin Management Plan (Environment Agency 2009) Prepared under the Water Framework Directive, it describes the river basin district</p>	<p>The LDP should:</p> <ul style="list-style-type: none"> Include strong water efficiency policies Take the Management Plan’s objectives into

Natural resources PPPs	Implications for the LDP
(which includes Cardiff's rivers), pressures on it, and what actions will be taken to address the pressures. It sets out what improvements are possible by 2015 and how the actions will make a difference to the local water environment.	<p>account</p> <ul style="list-style-type: none"> • Reduce the physical impacts of urban development in artificial or heavily modified waters • Implement surface water management plans, increasing resilience to surface water flooding and ensuring water quality is considered on a catchment basis • Promote sustainable drainage • Include Water Cycle Studies in growth or high risk areas
<p>Severn Estuary Shoreline Management Plan (Severn Estuary Coastal Group with DEFRA and NAW 2000)</p> <p>Provides the basis for sustainable coastal defence policies in the Severn Estuary and sets objectives for the future management of the shoreline. A revised version of this plan is currently out for consultation</p>	<p>In preparing the LDP the Council must have regard to:</p> <ul style="list-style-type: none"> • Other plans and policies with implications for the coastal area • Existing policies for coast protection and defence and Shoreline Management Plans • Coastal and marine designations <p>The LDP should:</p> <ul style="list-style-type: none"> • Include specific policies for coastal areas; • Show locations suitable/unsuitable for development and relevant designations on the Proposals Map
Cardiff	
<p>Rhymney Catchment Abstraction Management Strategy (Environment Agency Wales 2006)</p> <p>Ebbw and Lwyd Catchment Abstraction Management Strategy (Environment Agency Wales 2006)</p> <p>Taff and Ely Catchment Abstraction Management Strategy (Environment Agency Wales 2006)</p> <p>Describes how much water is available within the catchments, areas where water resources are constrained, and the Environment Agency's proposed options for managing this water now and in the future.</p>	<p>The LDP should:</p> <ul style="list-style-type: none"> • Promote the efficient use of water • Include policies on the location of potentially polluting developments and criteria by which applications for such developments should be determined • Ensure that incompatible uses of land are separated, in order to avoid potential conflict <p>Locational policies in the LDP should take account of the effects of development upon water quality and vice versa. Location and design policies should also promote sustainable water provision and use in new developments including Sustainable Urban Drainage Systems.</p>

Population PPPs	Implications for the LDP
Wales	
<p>Better Homes for People in Wales: A National Housing Strategy for Wales (The National Assembly for Wales 2001)</p> <p>Provides a vision for the future of Welsh housing and a policy framework to facilitate action at the local level. Aims to provide:</p> <ul style="list-style-type: none"> • Homes that are in a good condition in safe neighbourhoods • Better housing services and a greater 	<p>The LDP should:</p> <ul style="list-style-type: none"> • Identify the requirement for market and affordable housing • Allocate land for housing, favouring the re-use of previously developed land and buildings within settlements before settlement extensions and new development around settlements with good public transport links

Population PPPs	Implications for the LDP
<p>choice for people over the types of housing and locations they live in</p>	<ul style="list-style-type: none"> • Provide guidance on design, access, density, off-street parking and open space provision • Include policies for affordable and special needs housing where there is identified need • Indicate where developer contributions will be expected towards infrastructure, community facilities and affordable housing
<p>Improving Lives and Communities – Homes in Wales (Welsh Assembly Government 2010) Aims to respond to existing housing problems, including demand outstripping supply, increasing demand for affordable housing, ageing population, and age and quality of the current social housing stock. Aims to:</p> <ul style="list-style-type: none"> • Provide more housing of the right type and offer more choice • Improve homes and communities, including the energy efficiency of new and existing homes • Improve housing-related services and support 	<p>The LDP should:</p> <ul style="list-style-type: none"> • Provide sufficient housing of the right type to meet people's needs • Provide sufficient affordable homes • Support energy efficiency of new and existing homes, and ensure that local authority and housing association homes meet the Welsh Housing Quality Standard
<p>Housing White Paper, “Homes for Wales”, Welsh Government, May 2011, outlines the key role of planning in increasing the supply of housing.</p>	
<p>Technical Advice Note 1: Joint Housing Land Availability Studies (Welsh Assembly Government 2006) Provides guidance on the preparation of Joint Housing Land Availability Studies, the purpose of which is to monitor the provision of market and affordable housing.</p>	<p>The LDP should:</p> <ul style="list-style-type: none"> • Identify the requirement for market and affordable housing • Ensure that there is land genuinely available to provide a 5 year supply of land for housing • Allocate land for housing, favouring the re-use of previously developed land and buildings within settlements before settlement extensions and new development around settlements with good public transport links
<p>Technical Advice Note 2: Planning and Affordable Housing (Welsh Assembly Government 2006) Aims to ensure the provision of enough affordable housing.</p>	<p>The LDP should:</p> <ul style="list-style-type: none"> • Be informed by a Local Housing Market Assessment • Include an affordable housing target, based on the need identified in the local housing market assessment • Indicate how the target will be achieved • Monitor the provision of affordable housing against the target and where necessary take action to ensure that the target is met
<p>Household Projections for Wales (2008-Based) (Welsh Assembly Government 2010) Suggests that the number of households in Cardiff will rise from 137,000 in 2008 to 179,000 in 2023.</p>	<p>The LDP should take these projections into consideration when planning for future housing numbers</p>
South East Wales	

Population PPPs	Implications for the LDP
<p>South East Wales Regional Housing Apportionment Memorandum of Understanding (SPWSPG 2007) Allocates 26,070 new houses to Cardiff to 2021 to implement the Wales Spatial Plan 2024.</p>	As above
Cardiff	
<p>Local Housing Strategy 2012-17 (Cardiff Council 2012) Sets out the key issues facing housing in Cardiff and outlines priorities for the strategy period. Highlights the importance of increasing the number of homes available to people who cannot afford a home of their own through the housing market.</p>	<p>The LDP Regulations (WAG 2005) prescribe that LDPs must have regard to the Local Housing Strategy. The LDP should help to:</p> <ul style="list-style-type: none"> • Increase the supply of quality affordable and sustainable homes, including through S106 obligations • Aim to meet the Welsh Housing Quality Standard by 2012 • Implement neighbourhood regeneration and environmental schemes • Improve energy efficiency of homes • Provide adequate homes for vulnerable groups, including Gypsies and Travellers, migrant workers and homeless people

Waste PPPs	Implications for the LDP
International	
<p>Waste Framework Directive (2008/98/EC) Requires member states to:</p> <ul style="list-style-type: none"> • Apply the waste hierarchy (reduce, reuse, recycle, recover) • Apply the proximity principle • Promote high quality recycling • Set up separate collections • Reuse and recycle 50% of household paper, metal, plastic and glass by 2020 • Recover 70% of construction and demolition waste by 2020 • Establish plans, programmes, targets and facilities for waste prevention and disposal 	<p>The LDP should help to meet the WFD targets by:</p> <ul style="list-style-type: none"> • Ensuring that infrastructure for waste management is adequate to accommodate proposed development while minimising adverse impacts on health, the environment and communities • Identifying sites for waste management facilities, including recycling and recovery, or areas where such facilities may be suitable • Incorporating adequate and effective waste management facilities in proposed new developments • Using S106 and planning conditions where appropriate to improve waste reduction, reuse and recycling during construction and operation of developments
<p>EC Landfill Directive 1999/31/EC Sets targets to reduce the amount and negative impacts of waste going to landfill and promoting recycling and recovery:</p> <ul style="list-style-type: none"> • By 2010 to reduce BMW to 75% of that produced in 1995 • By 2013 to reduce BMW to 50% of that produced in 1995 • By 2020 to reduce BMW to 35% of that produced in 1995 	The LDP should help to meet these challenging targets
Wales	
Towards Zero Waste: The Overarching Waste	The LDP should ensure that waste management

Waste PPPs	Implications for the LDP
<p>Strategy Document for Wales (Welsh Assembly Government 2010) Long-term framework that aims to set Wales on a path towards zero waste by 2050. Aims to reduce waste arisings across all sectors by around 1.5% per year.</p>	<p>infrastructure supports the strategy's proposals for more reuse and recycling of waste, anaerobic digestion and other forms of waste treatment</p>
<p>Technical Advice Note 21 Waste (Welsh Assembly Government 2001) Provides detailed guidance on how land use planning can assist sustainable waste management.</p>	<p>The LDP should:</p> <ul style="list-style-type: none"> • Take account of the waste hierarchy, proximity principle, regional self-sufficiency, best practical environmental option, and sustainable transport • Ensure that infrastructure for waste management is adequate to accommodate proposed development while minimising adverse impacts on health, the environment and communities • Identify sites for waste management facilities, including recycling and recovery, or areas where such facilities may be suitable • Incorporate adequate and effective waste management facilities in proposed major new developments • Promote reuse and recycling commitments from developers during construction
SE Wales	
<p>South East Wales Regional Waste Plan 1st Review (Consultation version) (Welsh Assembly Government with local authorities 2008) Identifies the facilities needed to treat and dispose of waste in South East Wales to 2013 and beyond, in order to:</p> <ul style="list-style-type: none"> • Achieve the Landfill Directive 2020 targets by 2013 principally through maximising recycling and composting • Achieve 50% 'front end' recycling and composting for municipal waste in 2013 • Ensure that targets for the management of other controlled waste streams are met 	<p>The plan identifies the need for additional waste management facilities on a sub-regional basis. Further discussions and consultation will be needed to identify local authority specific facilities. The LDP should help to provide these facilities once the plan is agreed.</p>
Cardiff	
<p>Cardiff Municipal Waste Management Strategy 2011 – 16 Outlines the changes planned for Cardiff's waste service over next 5 years. It details:</p> <ul style="list-style-type: none"> • How much waste is produced in Cardiff • What waste will be collected and when • How waste will be treated or recycled • How Cardiff's waste will be managed sustainably • How litter and other environmental 	<p>The Municipal Waste Management Strategy relies on the LDP to provide the policy framework to support the transition to more sustainable waste management methods. It also relies on the LDP to identify locations that are suitable for waste management facilities.</p> <p>The LDP should:</p> <ul style="list-style-type: none"> • Look to develop policy that facilitates and/or promotes the use of the waste hierarchy • Enable the infrastructure required for sustainable waste management

Waste PPPs	Implications for the LDP
issues such as fly tipping will be addressed	

Cardiff Council & Levett-Therivel Sustainability Consultants

**Sustainability Appraisal and Strategic Environmental Assessment of the Cardiff Local
Development Plan**

Appendix B: Baseline

Final Sustainability Appraisal Report of the Cardiff Local Development Plan

January 2016

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Preface

This Appendix was initially produced in 2007; it was updated in autumn 2010 and summer 2012, and should be read together with the updated Scoping Report and Initial Sustainability Appraisal Report. This appendix sets out the main environmental, social and economic issues that are or are likely to affect Cardiff over the life of the Plan. Section 4 of the Scoping Report summarises the issues that are covered in this appendix, which were identified through:

- Discussions with the planning team
- Workshop and meetings with key consultees, stakeholders and other interest groups
- Consultation on the 2007 Scoping Report
- Desk based research

Indicators

This appendix includes a set of indicators that are used to show change over time in the issues identified. Some of the indicators are of more direct relevance to the LDP while others are contextual and will be used to provide a more general picture of the conditions which the plan should take into account. The indicators are shown in table format under the relevant issue and topic headings. The key to the indicator table is as follows:

Local, Welsh or UK data: This is used to compare Cardiff's situation to that of Wales and the UK. It also highlights gaps (at any level).

UK data:

Target: Targets to achieve, based on the policy analysis of Appendix 1. These can be local targets or regional and national ones that Cardiff Council are obliged to work towards.

Trend:

↑	Indicator is moving towards a more sustainable position
↔	Indicator is staying roughly steady
↓	Indicator is moving towards a less sustainable position.
?	Indicator trend is unclear or cannot be assessed due to lack of data

Note that an indicator can be increasing (e.g. car use) but be going in a less sustainable direction.

Indicator status:

+	Indicator is equal to or better than target or equivalent regional/national/international performance. Alternatively (where comparators are not available) historical trends show that the situation is improving.
-	Indicator is below target or equivalent regional/national/international performance. Alternatively (where comparators are not available) historical trends show that the situation is getting worse
!	Indicator is significantly below target or equivalent regional/national/international performance and is a priority for action
?	Indicator status is unclear and cannot be assessed due to lack of data

Commentary:

A commentary on the data set. Includes reasons for gaps, any anomalies, what the trends suggest and why.

Data quality:

0	National data only; no data identified from public sources
1	Good quality local data, recent measurement and historical trend
2	Local data for recent period only (i.e. no trend), uses proxy data to derive local data or good quality regional data, recent measurement and historical trend
3	Regional data for recent period only (i.e. no trend)

Data source:

Web links, hard copy sources, Council officers etc

1. Access and equality

Introduction

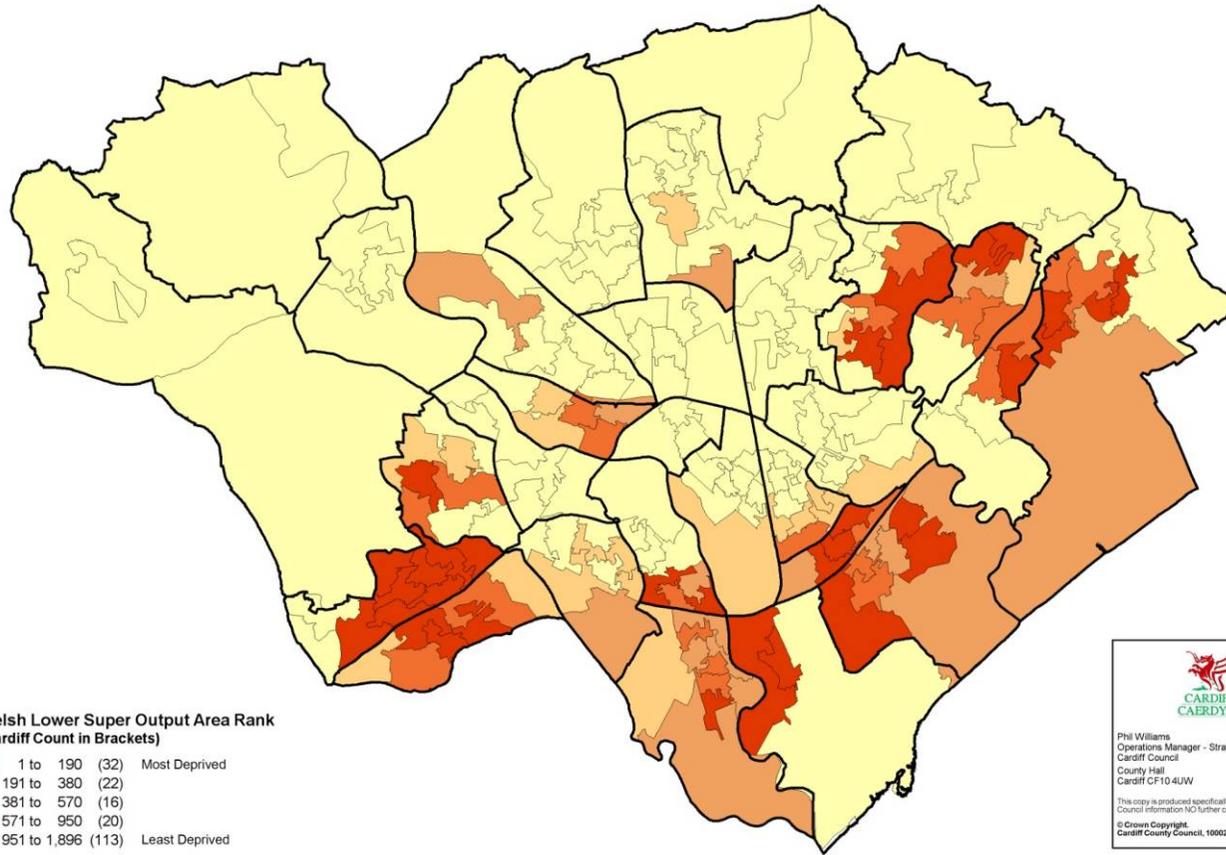
1.1 Over the last decade, Cardiff has experienced strong economic growth and increasing levels of prosperity, and major redevelopment has permeated the city. Yet this prosperity has not been evenly distributed. There are considerable variations within and between localities, with people in some parts of Cardiff experiencing deprivation that is amongst the worst in Wales.

Cardiff contains some of the most deprived areas in Wales - geographically there is a concentration of deprivation in the ‘southern arc’ although ‘hotspots’ exist elsewhere

1.2 The Welsh Index of Multiple Deprivation (WIMD) is a measure of the relative levels of deprivation in local areas of about 1500 people (called Lower Level Super Output Areas). 8 individual measures of deprivation are combined to make up the index covering income, employment, health, education, housing, access to services, environment and crime. In the most recent WIMD 2011, 21.2% (or 40 out of 190) of the 10% most deprived areas in Wales, are in Cardiff. This is higher than any other Welsh local authority except Blaenau Gwent (21.3%). However, fewer than 50% of Cardiff’s LSOAs (46.3%) are in the 50% most deprived, indicating that Cardiff has more prosperous as well as well as more deprived areas than average for Wales. Deprivation is concentrated mainly in the ‘southern arc’ of Cardiff (see Map 1.1) which includes Ely, Butetown, Splott, Riverside, Adamsdown, Caerau, Grangetown, Trowbridge, Rumney, Llanrumney, Pentwyn and Fairwater.

No.	Indicator	Cardiff data	Wales data	UK data	Target	Trend	Indicator status	Commentary	Data quality	Data sources
1.1	Number and percent of Cardiff’s lower super output areas in the 10% most deprived lower super output areas for Wales	40 out of 190 21%	190 out of 1896 10%	Not applicable	Decrease percent of LSOAs in most deprived 10%	↓ 33 in 2005	-		1	Local Govt. Data Unit, Welsh Index of Multiple Deprivation 2011

MAP 1.1: Welsh Index of multiple deprivation 2011




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1.3. When the WIMD was calculated, Cardiff accounted for 10.7% of the population of Wales, but accounted for more than 10.7% of the population living in the most deprived communities for all WIMD indicators except employment and access to services: see Figure 1.1. Cardiff had more than twice the expected share of population living in the most deprived communities in terms of education, housing and community safety.

1.4. Deprivation is not restricted to the southern arc of Cardiff. The disaggregated Index domains show that deprivation is spread across the city (see Maps 1.1, 1.2, 1.3, 6.1, 6.2, 7.1, 7.3).

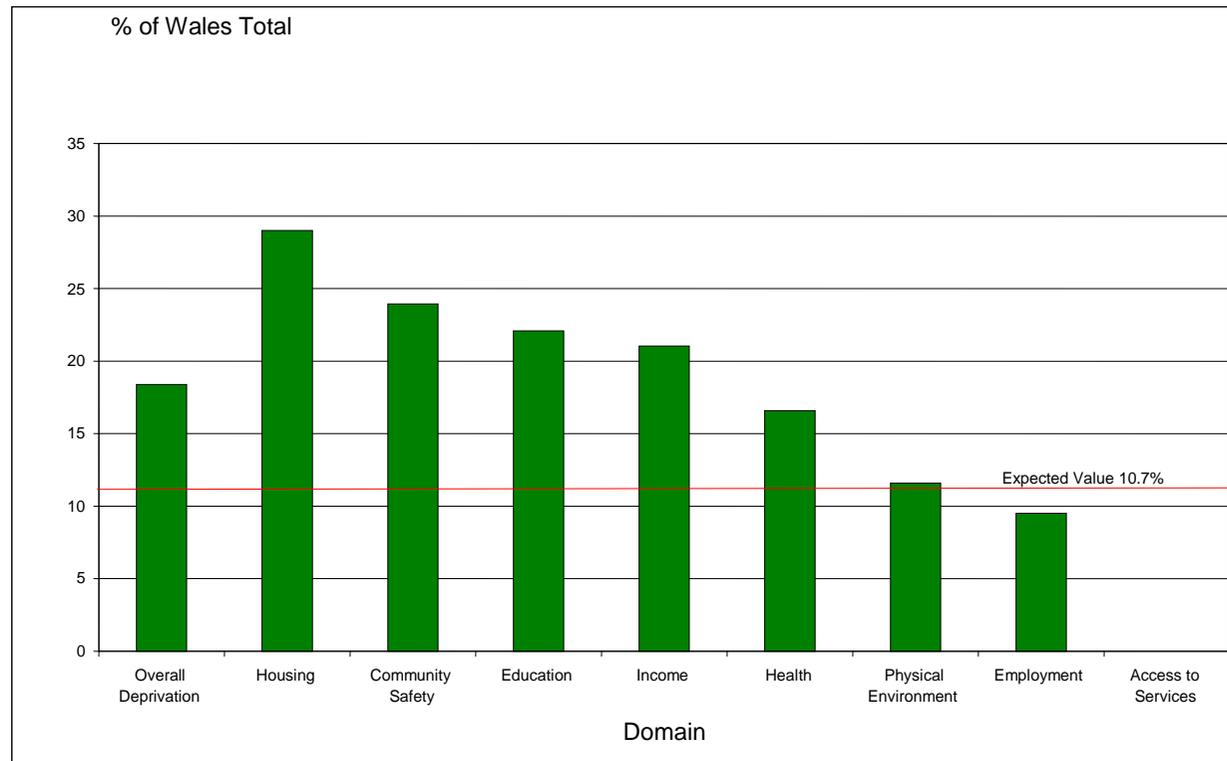


Figure 1.1. Cardiff residents living in the 10% most deprived communities in Wales as a percent of the Wales total in 10% most deprived (Cardiff Council, 2010, Joint Needs Assessment)

Lack of affordable housing units - particularly family housing – is excluding those on low income from entering the housing market

1.5. In May 2012, the average price of a house for Cardiff was slightly less than £145,000, down from £150,000 in 2006. The average annual salary in 2011 was £24,362. In 2012, the ratio of house price to annual salary was just under 6, down from 6.75:1 in 2006 and a little under the UK average.

1.6. Provision of enough affordable housing is an ongoing problem in Cardiff. In mid-2010, there were 10,491 applicants on the council housing register, of which 47% required family housing. For the financial year, 2009/10, 463 new domestic units (53% of the total) were available as affordable housing, far below the levels needed. However even this is an anomaly: for the previous decade, affordable housing comprised about 10% of all new housing.

No.	Indicator	Cardiff data	Wales data	UK data	Target	Trend	Indicator status	Commentary	Data quality	Data sources
1.2	Average house price compared to average salary	May 2012 house price £144,844 Annual salary 2011 £24,362 Ratio 5.95: 1	England and Wales House price £161,677 Annual salary £26,623 Ratio 6.07: 1		No target	↑ 6.75 in 2005, though will worsen if house prices rise again	-	The recession has dampened house prices more than earnings, making housing more affordable than a few years ago.	1	Land Registry (Res Prop Price Reports) ¹ Annual Survey of Hours and Earnings (ONS) ²
1.3	Number and percent of domestic units that are provided for affordable housing per year	127 or 22.7% (2011/12) 147 or 15.3% (2010/11) 303 or 35% (2009/10) 212 or 14% (2008/09)	Not available		352	↔ 202 in 2005/06 346 in 2006/07 194 in 2007/08	-	Several large Registered Social Landlord schemes were completed in 2009/10, as well as some 'credit crunch' windfalls and housing built with additional strategic capital funding from WAG.	1	Cardiff Council, housing monitoring 2009 Housing Strategy Officer, July 2012

¹ www.landregistry.gov.uk/data/assets/pdf_file/0005/13946/HPIReport120622.pdf, accessed 12/7/12

² www.ons.gov.uk/ons/rel/ashe/annual-survey-of-hours-and-earnings/2011-provisional-results--soc-2010-/2011-provisional-table-7.zip, accessed 12/7/12

No.	Indicator	Cardiff data	Wales data	UK data	Target	Trend	Indicator status	Commentary	Data quality	Data sources
						212 in 2008/09				

1.7. The quality of housing in Cardiff is very variable, with housing in the 'Southern arc of deprivation' being more likely to be overcrowded and without central heating than elsewhere in Cardiff (WIMD 2008).

Cardiff has a significant number of homeless people

1.8. Homeless people are especially vulnerable and there are a significant number of them living in Cardiff. A number of hostels and lodging houses are concentrated around the city centre. Cardiff also attracts a high number of young people who have left home, absconded from care, or are vulnerable in other ways. During 2008-09, Cardiff Council received 2,916 enquiries from homeless people or those at risk of homelessness, and accepted 618 households as being eligible for assistance. In April 2010, there were 361 households in temporary accommodation in Cardiff, waiting for a permanent home.

No.	Indicator	Cardiff data	Wales data	UK data	Target	Trend	Indicator status	Commentary	Data quality	Data sources
1.4	The number of homelessness presentations received by the local authority during the year per 1000 households.	2916 enquiries out of 137,000 households = 21.3 per 1000 people	Not available		8.5 (Cardiff Council)	↓ 10.3 in 2005/06 2418 inquiries in 2007/08 2916 in 2008/09	!	The increase in the number of enquiries reflects the impact of the wider economic climate on households and on their individual housing situations.	1	Cardiff Council Affordable Housing Delivery Statement 2007/08 – 2010/11

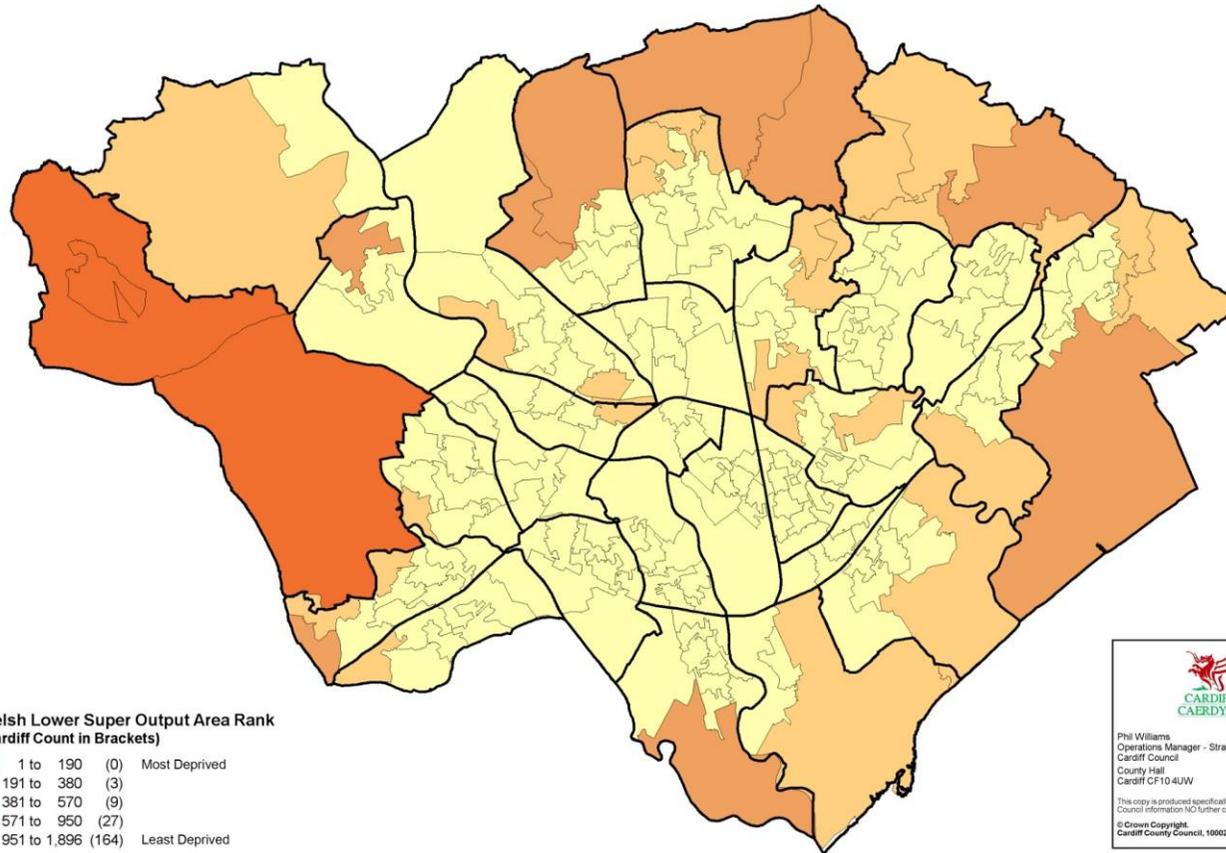
Cardiff has good access to services although deficiencies still exist at a local level

1.9. As would be expected for a compact city, the Welsh Index of Multiple Deprivation indicates that Cardiff has good access to services³. Nowhere in Cardiff is in the worst 10% for Wales in terms of access. However, the less central parts of Cardiff have comparatively poor access, notably Creigiau and St. Fagans, Lisvane, Rhiwbina, Pontprennau and Trowbridge (see Map 1.2).

1.10. The Needs Assessment also identified a number of vulnerable groups such as ethnic minority populations, the homeless and asylum seekers where access to services is restricted as a result of social and cultural issues (Cardiff Council and Local Health Board 2004).

³ The access to services index is comprised by calculating the average time it would take to access 8 key services (food shop, GP surgery, primary school, post office, public library, leisure centre, NHS dentist, secondary school, and a transport node)

MAP 1.2: Welsh Index of multiple deprivation 2011 - Access to services




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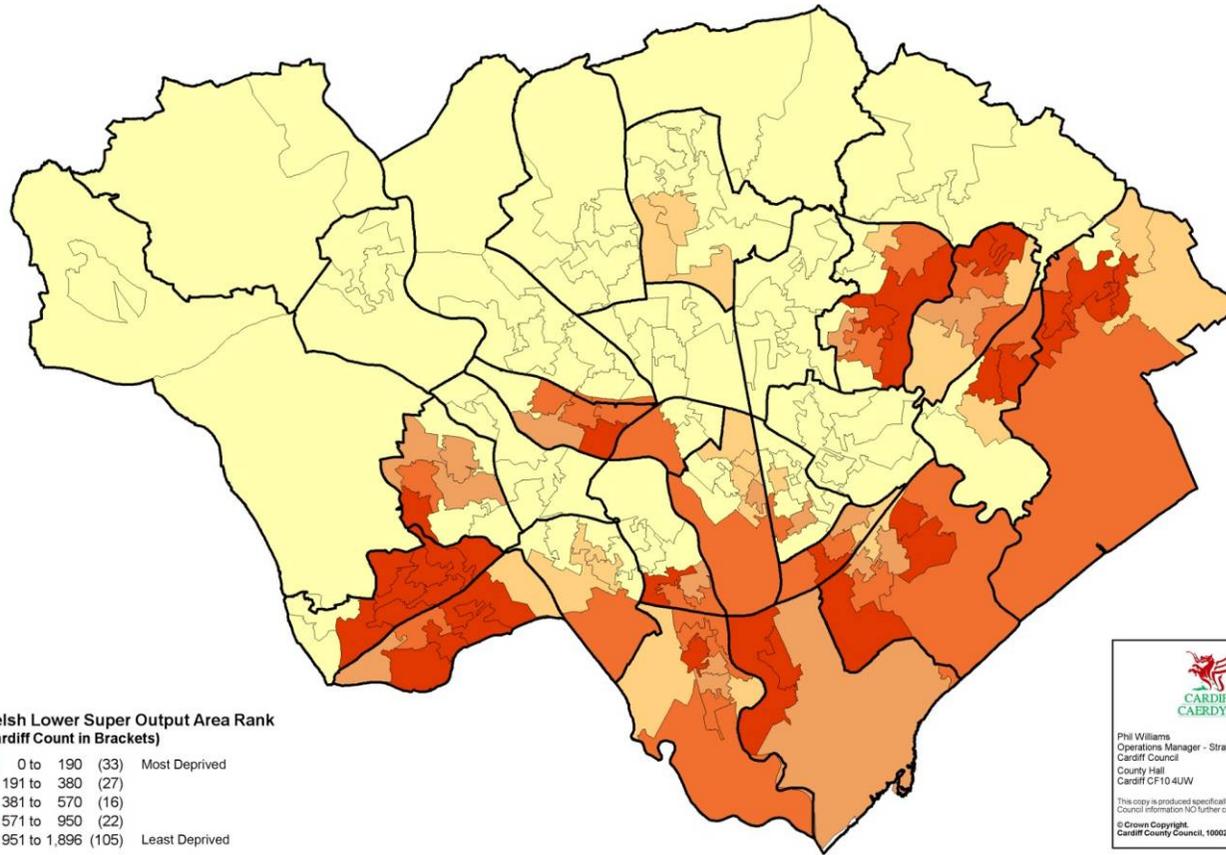
The educational, training and skill base of Cardiff's population is good overall but varies significantly across the County

1.11. Cardiff's population consistently outperforms the Wales and UK averages in terms of education and skills. This is partly determined by demographics, with Cardiff's relatively young population and the existence of several universities. However, Cardiff also has more than 20% of the 10% most deprived lower super output areas in Wales for education (Local Government Data Unit 2008). These are mostly concentrated in the south and east part of the city, as shown by Map 1.3. Low educational achievement and deprivation are linked⁴, creating a vicious cycle of poor attainment and low skilled employment opportunities.

No.	Indicator	Cardiff data	Wales data	UK data	Target	Trend	Indicator status	Commentary	Data quality	Data sources
1.5	Percent of population of working age qualified to NVQ level 4+ or equivalent	39.8% (2010)	28.4%(2010) (Wales)	31.3% (2010) (GB)	No target identified	↔ 34.0% in 2005	+		1	Local Area Labour Force Statistics (National Statistics - Nomis)

⁴ The Townsend index shows that as deprivation increases so educational attainment decreases. This correlation was demonstrated in the Cardiff Community Profile 2002. The data used to prove the correlation was old though there is no evidence to suggest that the relationship has changed.

MAP 1.3: Welsh Index of multiple deprivation 2011 - Education




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2. Air quality

Introduction

2.1. There is a direct link between air pollution and human health, Cardiff Council periodically reviews and assesses air quality for compliance with objectives set down in the Air Quality (Wales) Regulations 2000. The following pollutants have been reviewed and assessed:

- Benzene
- Lead
- Particulates
- 1,3 Butadiene
- Nitrogen dioxide (NO_x)
- Sulphur dioxide
- Carbon monoxide

Levels of benzene, 1, 3 butadiene, carbon monoxide, lead and sulphur dioxide are within current standards

2.2. The 2009 Air Quality Updating and Screening Assessment (Cardiff Council, 2009) concludes that there are no 'hotspots' for five of the seven pollutants. Particulate matter (PM₁₀), currently meets UK standards but there is doubt that provisional EU objectives would be achieved across the city.

Nitrogen oxides is the main cause of air pollution 'hot spots' in Cardiff

2.3 Table 2.1 shows monitored NO₂ levels at various locations in the city centre. Many of these exceed the legal threshold (40 µg/m³). Modelling showing predicted breaches led to four Air Quality Management Areas being declared: Newport Road, Philog and Cardiff West in 2000, and St Mary Street in 2002. The first two were revoked in 2007, and the area of the Cardiff West AQMA (renamed Ely Bridge) was reduced. An Air Quality Action Plan for St. Mary Street was adopted in early 2010. In December 2010 the Stephenson Court AQMA was declared due to

Year	2002	2003	2004	2005	2006	2007	2008	2009
Threshold (µg/m ³)	43	42	41	40	40	40	40	40
Frederick Street	31	36	30	34	30	32	29	31
Terminus building	48	60	48	55	-	-	-	-
St Mary Street	59	61	58	62	60	58	51	-
Westgate Street	41	43	45	49	48	48	39	48
High Street	71	74	73	66	68	70	69	50
Station Terrace	36	34	34	42	41	42	38	43
Havelock Street	-	-	-	-	-	41	31	33

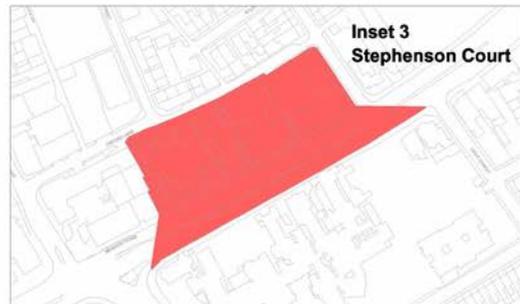
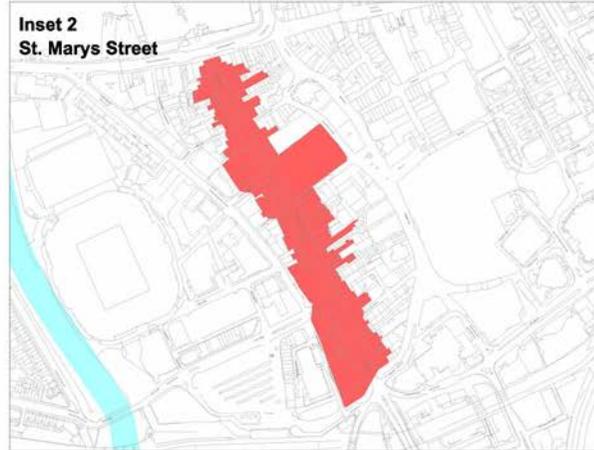
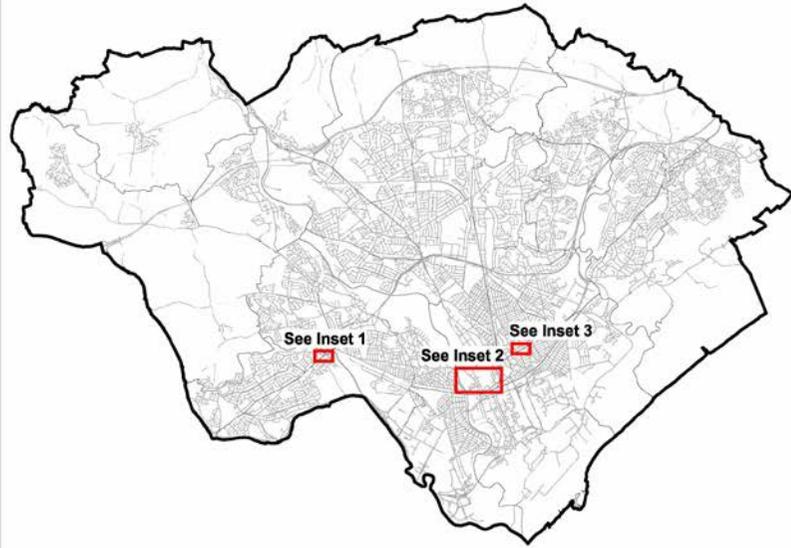
concentrations of nitrogen dioxide from road traffic exceeding the threshold. The existing and proposed AQMAs are shown on Map 2.1.

Westgate Street Flats	-	-	-	-	-	42	35	38
Sandringham Hotel	-	-	-	-	-	65	46	43

Table 2.1 City centre NO₂ concentrations(2010 LAQM Progress Report)

No.	Indicator	Cardiff data	Wales data	UK data	Target	Trend	Indicator status	Commentary	Data quality	Data sources
2.1	Number of air quality management areas (AQMA)	3	Not applicable		To be determined	↔ The number of AQMAs decreased from 4 to 2 in 2007, but a new AQMA was declared in December 2010	-	Surveys take place across the city at random locations and where air quality is predicted to be poor. Therefore AQMAs provide a good indication of city-wide air quality.	2	Cardiff Council (2009) 2009 Air Quality Updating and Screening Assessment Cardiff Council (2009) Detailed assessment, Stephenson Court, Newport Road

Map 2.1: Location of air quality management areas in Cardiff



Legend

-  Water Feature
-  Air Quality Management Area



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3. Biodiversity, flora and fauna

Introduction

3.1. Cardiff has a wide range of biodiversity interests which extend from Flat Holm Island in the Severn Estuary to the hills forming the northern edge of the city, a thousand feet above sea level. Habitats and species have developed in response to local conditions and represent Cardiff's biodiversity resource. Cardiff Council's Local Biodiversity Action Plan (LBAP) was prepared in 2005 and revised in 2008. It includes Action Plans for 19 habitats and species, developed in partnership with other organisations.

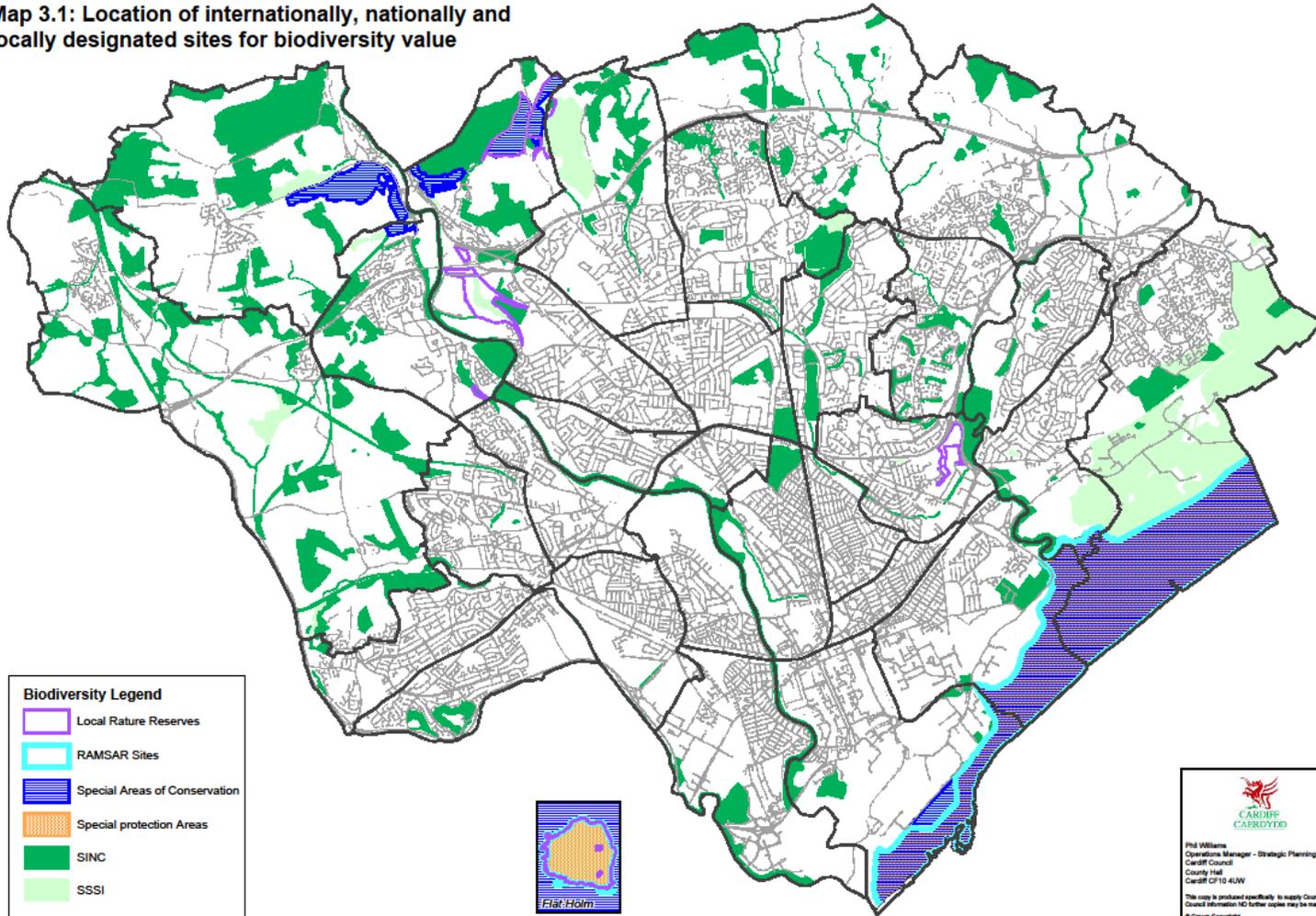
Cardiff has a wide range of sites designated for biodiversity, including two European Designated Sites (the Severn Estuary and Cardiff Beech Woods)

3.2. Map 3.1 shows the extent of designated sites in Cardiff. It reveals a good distribution across the city, including sites within the urban area and several strategically important corridors.

3.3 The Severn Estuary Special Area of Conservation (SAC), Special Protection Area (SPA) and Ramsar Site consists of intertidal mudflats, sandflats, saltmarsh, shingle and rocky shoreline. These habitats support internationally important populations of waterfowl. The estuary is also important for the run of migratory fish and has an immense tidal range. The Cardiff Beech Woods SAC is one of the largest concentrations of beech forests in Wales, and represents the habitat close to western limit of its past native range in both the UK and Europe.

3.4 There are 15 Sites of Special Scientific Interest (SSSIs) in Cardiff ranging from woodland, aquatic, marsh and grassland habitats to sites of geological interest. Five Local Nature Reserves provide good opportunities to access local wildlife and there are many additional Sites of Importance for Nature Conservation (SINCs). Since 2007, several new sites of nature conservation importance have been designated in Cardiff, an encouraging trend.

Map 3.1: Location of internationally, nationally and locally designated sites for biodiversity value



Biodiversity Legend

-  Local Nature Reserves
-  RAMSAR Sites
-  Special Areas of Conservation
-  Special protection Areas
-  SINC
-  SSSI



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No.	Indicator	Cardiff data	Wales data	UK data	Target	Trend	Indicator status	Commentary	Data quality	Data sources
3.1	Number and extent of designated sites of importance (SACs, SPAs, SSSIs, Ramsars, LNRs and SINCs)	SAC – 803.31 ha (2 sites) SPA – 701.5 ha (1) Ramsar – 696ha SSSI – 1470.4 ha (15) LNR – 150.31 ha SINC – 1581.5 ha	Not applicable		No net loss (Cardiff Council)	↑ Severn Estuary SAC and Blaen Bielly SSSI added since 2006; increase of SAC from 115ha, SSSI from 1461.7ha, SINC from 1391.3ha	+	Additionally, Nant Fawr is in the process of being designated as a new LNR (20.8ha)	1	Cardiff Council officers

The city hosts protected and rare species including the Great Crested Newt, Otter, Dormouse and Bat

3.5. European protected species occurring in Cardiff are the Great Crested Newt, Otter, Dormouse and Bats. Otters are now present on all three main rivers and have also extended to tributaries and other water bodies. Dormice require a woodland habitat and are known to primarily exist across the northern ridge and east of the city. All species of bats are protected and their distribution varies: some are widespread such as the Pipistrelle whilst others are localised.

3.6. UK protected species and habitats, as set out in the Wildlife and Countryside Act 1981 (as amended), are also present in Cardiff. Table 3.1 summarises the status of these species and habitats. Action plans have been established for Cardiff's lowland calcareous grassland, gardens and allotments, maritime cliff and slope, neutral grassland, ponds, reedbeds, purple moor grass and rush pasture, woodlands, bats, Chiding Pink, dormouse, Great Crested Newt, Hawfinch, otter, Pied Flycatcher, reptiles, Silver-Washed Fritillary, Stag Beetle, water vole, and waxcap mushrooms. All of the plans involve, at minimum, maintaining the current range and/or population of the species or habitat.

Table 3.1 UK Biodiversity Action Plan species in Cardiff (Cardiff Biodiversity Action Plan 2008)

Insects	
Date-Coloured Waxcap	Known from 1 site in Bute Park but not recorded since 2004
Garden Tiger	
Small Heath	
Small Blue	
Ghost Moth	
Grayling	Found on brownfield sites in the south but scarce
Wall	
Stag Beetle	Formerly known from a garden in Roath but grubs recently found at Forest Farm
White Letter Hairstreak	
Chalk Carpet	After an absence of 80 years has recently been found in the Taff Gorge
Cinnabar	
Birds	
Skylark	Resident, breeds in grassland throughout Cardiff
Tree Pipit	Passes through Cardiff on migration
Lesser Redpoll	Winter visitor, no longer breeding in the area
Common Linnet	Common resident, particularly in the bay area
Twite	Not recorded in Cardiff since 1989
Ringed Plover	Common winter/passage visitor along the coast
Hawfinch	Secretive and scarce species apparently confined to forestry above the M4. Cardiff is the stronghold of the species in the Glamorgan area
Common Cuckoo	Recorded in Spring but increasingly scarce. No longer breeds in Cardiff
Lesser Spotted Woodpecker	A secretive species, but breeding has been confirmed in recent years. Most reliability recorded in Bute Park but also present north of the M4
Yellowhammer	A scarce species, mainly found in the north and east particularly near the Caerphilly ridge. Breeding status unknown
Reed Bunting	Common resident breeder
Kestrel	Common resident breeder
Pied Flycatcher	Breeding restricted to Coed-y-Bedw
Black-headed Gull	Common winter visitor

Birds cont.	
Herring Gull	Abundant. Breeds on roofs in the city centre & several hundred pairs breed on Flat Holm
Bar-tailed Godwit	Spring and Autumn migrant on passage
Black-tailed Godwit	Spring and Autumn migrant on passage
Grasshopper Warbler	Last recorded in Cardiff in 2000
Amphibians and reptiles	
Slow-worm	Widespread but under-recorded
Common Toad	Widespread but under-recorded
Common Lizard	Widespread but under-recorded
Grass Snake	Widespread but under-recorded
Great Crested Newt	
Adder	
Habitats	
Wood pasture & parkland; upland oak woodland; lowland beech & yew woodland; wet woodland	Total 600 hectares (ha)
Hedgerows	unknown amount
Arable field margins	unknown amount
Coastal and floodplain grazing marsh	520 ha
Neutral grassland	291 ha semi-improved
Lowland meadows	4 ha
Calcareous grassland	1 ha
Acid grassland	6 ha
Purple moorgrass and rush pastures	12 ha
Rivers	unknown extent
Ponds	186 ponds
Maritime cliff and slope	2.64 ha coastal grassland; 1.1 ha hard cliff
Sebellaria alveolata reefs	unknown amount
Coastal saltmarsh	34 ha
Intertidal mudflats	unknown amount

Cardiff has many existing corridors and networks of mixed habitats providing good connectivity for species

3.7. The three main river valleys of the rivers Taff, Ely and Rhymney form strategically important corridors of open space containing a wide variety of habitats that run through the city from the countryside to the Severn Estuary. These provide valuable wildlife corridors and connectivity between habitats that are important for many species. Feeder tributaries and streams generally run from higher ground to the north and feed into the main rivers, providing a similar function. Features such as woodlands, hedgerows, marshlands, alder carrs and disused rail lines are common in the countryside surrounding the urban area. This patchwork of varied habitats provides a good resource for biodiversity. However Cardiff's woodland cover is fragmented, with few areas larger than 5 hectares. Management plans have been prepared for the three river valleys.

No.	Indicator	Cardiff data	Wales data	UK data	Target	Trend	Indicator status	Commentary	Data quality	Data sources
3.2	Area (in hectares) of ancient woodland cover	Total: 674.7 ha Semi-natural: 442.3 Planted: 232.4	Not applicable		No net loss (Cardiff Council)	↔	+	Includes semi-natural ancient woodland and planted ancient woodland. Most planted ancient woodland is being restored to semi-natural. Only detailed data from 2006 available.	2	Forestry Commission data on Council GIS
3.3	Total extent (in hectares) of Local Biodiversity Action Plan priority habitats	See Table 3.1	Not applicable		Broadly no net loss, and growth over time (varies by habitat)	?	+	At present there is no trend data. Trend data will become available in the future as surveys are carried out.	2	Cardiff Local Biodiversity Action Plan 2008

The condition of designated sites is a concern

3.8. Up to date information relating to the condition of all designated sites is not known. However, measures are in place to address this and ensure that any future changes in condition can be accurately monitored.

No.	Indicator	Cardiff data	Wales data	UK data	Target	Trend	Indicator status	Commentary	Data quality	Data sources
3.4	Percent of features of internationally and nationally designated sites in favourable condition (SACs, SPAs, SSSIs)	20% of all SAC, SPA & SSSI in favourable condition. However only about half of sites assessed, so figure is 41% of sites assessed.	Not applicable		UK / WAG target: 95% to be in favourable condition by 2015	?	?	35 features, of which the condition is known for only 17 (49%). Of these 9 are evidence based, 7 judgement based and 1 provisional assessment. Only data from 2006 available.	2	CCW, based on limited assessment only

Cardiff's biodiversity resource is vulnerable to new developments and land management practices which may result in habitat loss and fragmentation

3.9. As an expanding capital city, new developments within and outside the settlement boundary have the potential to harm Cardiff's biodiversity resource. Brownfield sites can contain significant biodiversity interest and it is important that these are recognised and protected where possible. Similarly, the river valleys and countryside are vulnerable to insensitive development and changing agricultural and land use practices.

4. Climate change

Introduction

4.1. Climate change is probably the greatest long-term challenge facing the human race, and is a serious and urgent issue. The climate is already beginning to change as a result of past greenhouse gas emissions and this trend shows no sign of abating. Publications by Nicholas Stern (2006) and Intergovernmental Panel on Climate Change (IPCC) (2007) highlight the urgent need to take action now. This section begins with causes of climate change – emissions of greenhouse gases - and continues with how Cardiff is dealing with climate change.

Cardiff's CO2 emissions per person are decreasing, particularly due to reductions in industrial and commercial emissions

4.2. Globally, greenhouse gas emissions have increased steadily since the industrial revolution. The Stern Report states that greenhouse gas concentrations in the atmosphere now stand at around 430ppm CO₂ equivalent, compared with only 280ppm before the Industrial Revolution. The stock is rising, driven by increasing emissions from human activities, such as energy generation, increased amounts of movement and land-use change. Emissions have been strongly correlated with GDP across time and countries, although this is now changing. UK emissions of the 'basket' of six greenhouse gases covered by the Kyoto Protocol decreased by 12% between 2006 and 2009, including an 8.6% drop between 2008 and 2009, some of which is probably due to the effects of the economic recession (DECC UK emission statistics, 2010).

4.3. Carbon dioxide (CO₂) accounts for most greenhouse gas emissions, and is the only gas measured on a local authority basis. In Cardiff, CO₂ emissions decreased by 22% between 2005 and 2009. About 44% of Cardiff's CO₂ emissions are generated by industry, 30% by domestic uses, and 25% by traffic.

No.	Indicator	Cardiff data	Wales data	UK data	Target	Trend	Indicator status	Commentary	Data quality	Data sources
4.1	Annual emissions of CO ₂ per person	6.8 tCO ₂ per capita in 2009 (2.9 industry and commercial, 1.9 domestic, 1.9 road	9.5 tCO ₂ per capita in 2009	7.4 tCO ₂ per capita in 2009	WAG target: 40% cut by 2020 (2000 baseline)	↓ down from 8.1 tCO ₂ in 2005	+ 22% reduction 2005 - 2009	Industrial and commercial emissions decreased particularly quickly, from 3.9 tCO ₂ in 2005 to 2.9 in 2009.	1	Per capita reduction in CO ₂ emissions in the local authority areas (DECC)

		transport)			Cardiff target: 26% cut by 2020 citywide per capita emissions (2005 baseline)		Much of this is probably due to the recession, and there is a long way to go	National statistics do not say how much of this was due just to shrinkage or relocation of industry. This data does not include other greenhouse gases, or CO2 emissions over which local authorities have no control (e.g. aviation and shipping)		
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4.4. Ecological footprinting is a tool to measure how much land area is required for an average citizen (of a geographically specific area) for everything they consume (products and resources) and produce (waste and emissions) per year. In 2001 Cardiff's ecological footprint was 5.59 gha⁵ per person. This means that, in 2001, Cardiff required more than 125 times its land area or 82% of the land area of Wales for the resources it consumed. If every person on the planet had the same lifestyle as someone from Cardiff almost three planet earths would be required to support their lifestyles. The breakdown of Cardiff's footprint shows that the biggest contributors are food and drink (24%), energy use (18%), passenger travel (18%) and the city's infrastructure and housing (16%) (Cardiff Council *et al* 2005). No similar analysis has been carried out since then.

No.	Indicator	Cardiff data	Wales / UK data	Target	Trend	Indicator status	Commentary	Data quality	Data sources
4.2	Cardiff's ecological footprint	5.59 gha per person in 2001, of which: Food and drink – 24% Energy use – 18% Passenger travel – 16% Infrastructure and housing - 16%	5.25 gha per person in 2001	Reduce growth in footprint	?	!	There are no plans at present to carry out another ecological foot print study of Cardiff. However, this does provide a	2	SDU, Cardiff Council; BRASS Research Centre (Cardiff University); and Stockholm

⁵ A footprint is expressed in global hectares (gha) of 'earthshare'. By dividing the bio-productive land and sea on the planet by the number of people who use it a total of a fair earthshare is calculated (1.89gha per person)

		Consumables and durables – 11% Other – 14%					contextual indicator.		Environment Institute
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Traffic flows in the city are decreasing, but outside the city it is increasing, contributing to increased greenhouse gas emissions and congestion

4.5. In Cardiff, traffic accounts for about 32% of CO2 emissions. Traffic on Cardiff's roads grew by 12% between 1997 and 2007, an average annual increase of 1.8%. While traffic volumes entering the City Centre have decreased by 18% since 1994, traffic crossing the County boundary and across the River Taff screenline have both increased over this period, by 37% and 13% respectively.

No.	Indicator	Cardiff data	Wales and UK data	Target	Trend	Indicator status	Commentary	Data quality	Data sources
4.3	Traffic growth: Traffic volumes entering the County and city centre	Observed two-way 12 hour Counts, 2009 (circa, in vehicles): City Centre Cordon 2009 - 129,100 County Cordon 2009 - 308,000 River Taff Screenline 2009 - 174,900 Cardiff Bay Cordon (new) 2007 - 51,500 2009 - 49,200	Not applicable	To be determined	City Centre Cordon ↑ down from 157,800 in 1994* County Cordon ↓ 225,200 in 1994* River Taff ↓ 154,500 in 1994* No 1994 figures for Cardiff Bay Cordon * 5 year rolling average	- !	Each cordon count is surveyed annually on a single weekday between 7.00am and 7.00pm. The counts may be affected by seasonal factors or local incidents and are thus only a snapshot of traffic conditions. For this reason, where possible flows are averaged across 5 years to give a more reliable rolling average	1	Road Traffic Reduction Act Cordon and Screenline annual traffic survey data Infrastructure, Cardiff Council LTP APR Monitoring
4.4	Traffic volumes (billion vehicle km)	2.81 in 2010	Not applicable, though Welsh trend is towards an increase over time		↔ up from 2.74 in 2000, but gently declining since	-	Traffic in Cardiff is declining gently though a little faster than the rest of Wales,		Transport Statistics Wales 2011

				2007		but there is still a long way to go.		
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4.6. Journeys into the city centre continue to change in favour of more sustainable modes of travel. The proportion of people choosing to travel into the city centre by car decreased by around 7% between 1994 and 2006, while the proportion of those travelling on foot, by bicycle, bus and rail all increased over the same period. Local Transport Services grants in Cardiff increased by over 37% in cash terms between 2004-05 and 2011-12, from £566,000 to £778,010 (Transport Statistics Wales).

No.	Indicator	Cardiff data	Wales /UK data	Target	Trend	Indicator status	Commentary	Data quality	Data sources																														
4.5	Mode of travel to the city centre for all purposes	All trips into the City Centre (all purposes in %) <table border="1"> <tr> <td></td> <td>1994</td> <td>2006</td> </tr> <tr> <td>Car/Van</td> <td>50.1</td> <td>43.4</td> </tr> <tr> <td>Bus</td> <td>23.8</td> <td>25.0</td> </tr> <tr> <td>Train</td> <td>11.3</td> <td>12.3</td> </tr> <tr> <td>Walk</td> <td>11.4</td> <td>15.3</td> </tr> <tr> <td>Bicycle</td> <td>1.1</td> <td>1.1</td> </tr> <tr> <td>Park & Ride</td> <td>1.0</td> <td>0.7</td> </tr> <tr> <td>Coach</td> <td>0.6</td> <td>1.8</td> </tr> <tr> <td>Motorcycle</td> <td>0.5</td> <td>0.2</td> </tr> <tr> <td>Taxi</td> <td>0.1</td> <td>0.2</td> </tr> </table>		1994	2006	Car/Van	50.1	43.4	Bus	23.8	25.0	Train	11.3	12.3	Walk	11.4	15.3	Bicycle	1.1	1.1	Park & Ride	1.0	0.7	Coach	0.6	1.8	Motorcycle	0.5	0.2	Taxi	0.1	0.2	Not applicable	To be determined	Statistically significant changes: ↑ car/van, bus, train, walk, bicycle Statistically insignificant changes to: Park & ride coach, taxi, motorcycle	+	The trend arrows show the change since 1994 only for those values where there is 95% confidence that a significant change has occurred for a given mode (based on analysis of confidence intervals). There were more than 1000 responses to the 1994 survey, and around 570 for the 2006 survey.	1	City Centre Users Survey Infrastructure, Cardiff Council LTP APR Monitoring
	1994	2006																																					
Car/Van	50.1	43.4																																					
Bus	23.8	25.0																																					
Train	11.3	12.3																																					
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Motorcycle	0.5	0.2																																					
Taxi	0.1	0.2																																					

4.7. Over 70,000 of people who work in Cardiff live outside the city's boundaries: see Table 4.1. Most of the in-commuting is from the local areas of Rhondda Cynon Taff, the Vale of Glamorgan and Caerphilly. 65% (almost two-thirds) of Cardiff residents travel to work by car, but 20% walk or work from home, 9% take the bus and 3% cycle– see Figure 4.1.

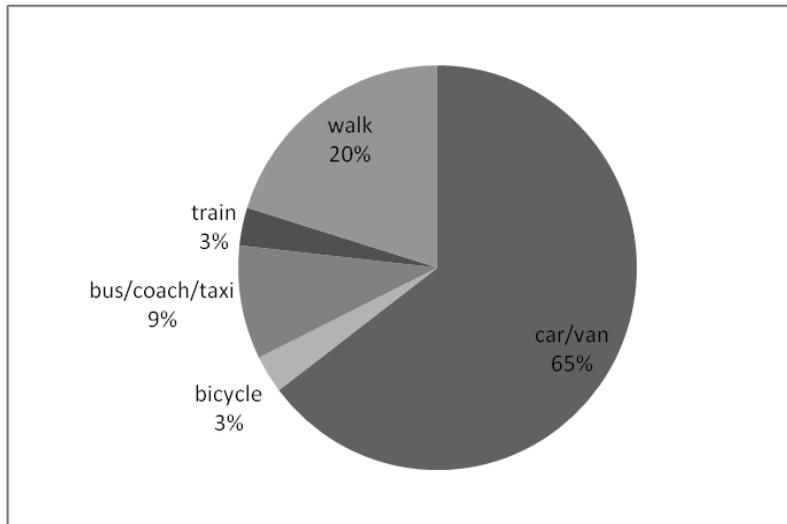


Figure 4.1 Travel to work in Cardiff (Statistics on Commuting in Wales, 2010)

Year	No. working residents	No. people working in Cardiff	No. residents working in Cardiff	No. people commuting out of Cardiff	No. people commuting into Cardiff
2001	131,500	176,200	107,300	24,200	68,900
2002	136,300	184,800	113,300	22,900	71,500
2003	141,000	185,200	114,600	26,500	70,600
2004	146,300	193,300	119,800	26,500	73,500
2005	143,300	188,600	115,900	27,400	72,700
2006	144,600	197,500	119,800	24,800	77,700
2007	147,700	196,200	122,300	25,400	74,000
2008	153,200	197,000	126,100	27,100	70,900
2010	152,900	198,400	124,200	28,800	74,200

Table 4.1 People working and commuting in Cardiff (Cardiff Today - Key Economic Statistics, 2010 edition; Statistics on Commuting in Wales 2010)

Domestic energy use is responsible for almost one third of Cardiff's CO2 emissions

4.8. Cardiff's domestic energy use is slightly lower than the Welsh average, and comparable with that of other large UK cities: see Figure 4.2

4.2. Cardiff's footprint analysis indicates that existing housing stock is responsible for 98.7% of the ecological impact of the total for housing.

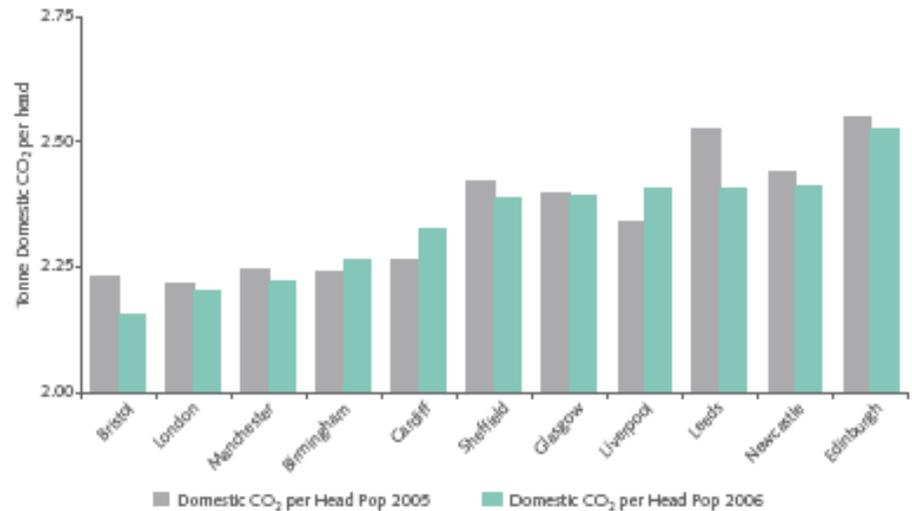


Figure 4.2 Domestic energy use in major UK cities
(GVA Grimley, 2009, *Cities, Commerce and Carbon*)

No.	Indicator	Cardiff data	Wales data	UK data	Target	Trend	Indicator status	Commentary	Data quality	Data sources
4.6	Average household energy consumption (kWh)	Electricity: 3840 Gas: 14,210.7 (2010)	4066 14,674.0 (2010)	GB: 4370 15,156.4 (2010)	Reduce	↑ 3796 18,094 (2005)	+	Cardiff's energy use is slightly better than the Welsh average and reducing over time	1	DECC Sub-national energy consumption statistics
4.7	Percent of major developments that generate some of their energy from renewable sources	Current data gap. Feasibility of this indicator to be investigated			Increase	Current data gap		Building regulations require developers to submit target energy use and CO2 emissions for their building(s). This can be used to calculate a percent of the demand to be met by renewables.	Current data gap	Part L2A revision of the building regulations

Flooding poses a particular threat to Cardiff due to its coastal location, low lying areas and rivers

4.9. The following risks are associated with climate change (Welsh Local Government Association (2008) Changing Climate: Changing Places):

- Increased risk of flooding and erosion
- Increased pressure on drainage systems
- Drier soils and subsidence
- Significant habitat and species changes and loss
- Water quality issues in rivers and lakes
- Greater incidence of drought and problems with water supply
- Lower air quality
- Acidification of the sea
- Health issues in the summer
- Reduced energy demand in winter but increased demand in summer
- Increased prevalence of insect and water borne diseases
- Vulnerability of transport, waste and energy infrastructure
- Increase in demand for, and cost of, water
- Increased insurance costs and decreased property values
- Increased risk of forest and heathland fires
- Changes in the landscape
- Increased tourism due to warmer weather

4.10. Secondary effects of flooding include subsidence, spreading of contaminants, increased insurance premiums and damage to the image of Cardiff. The Cardiff area is likely to be subject to greater increases in temperature as a result of climate change than most of the rest of the UK (UKCIP 2009).

4.11. Flood risk is potentially the most serious of the problems associated with climate change, due to Cardiff’s unique geography and distinctive location. Map 4.1 shows areas of Cardiff at risk of flooding. A more detailed flood risk consequences report of late 2009 focused on nine areas of Cardiff (Table 4.2).

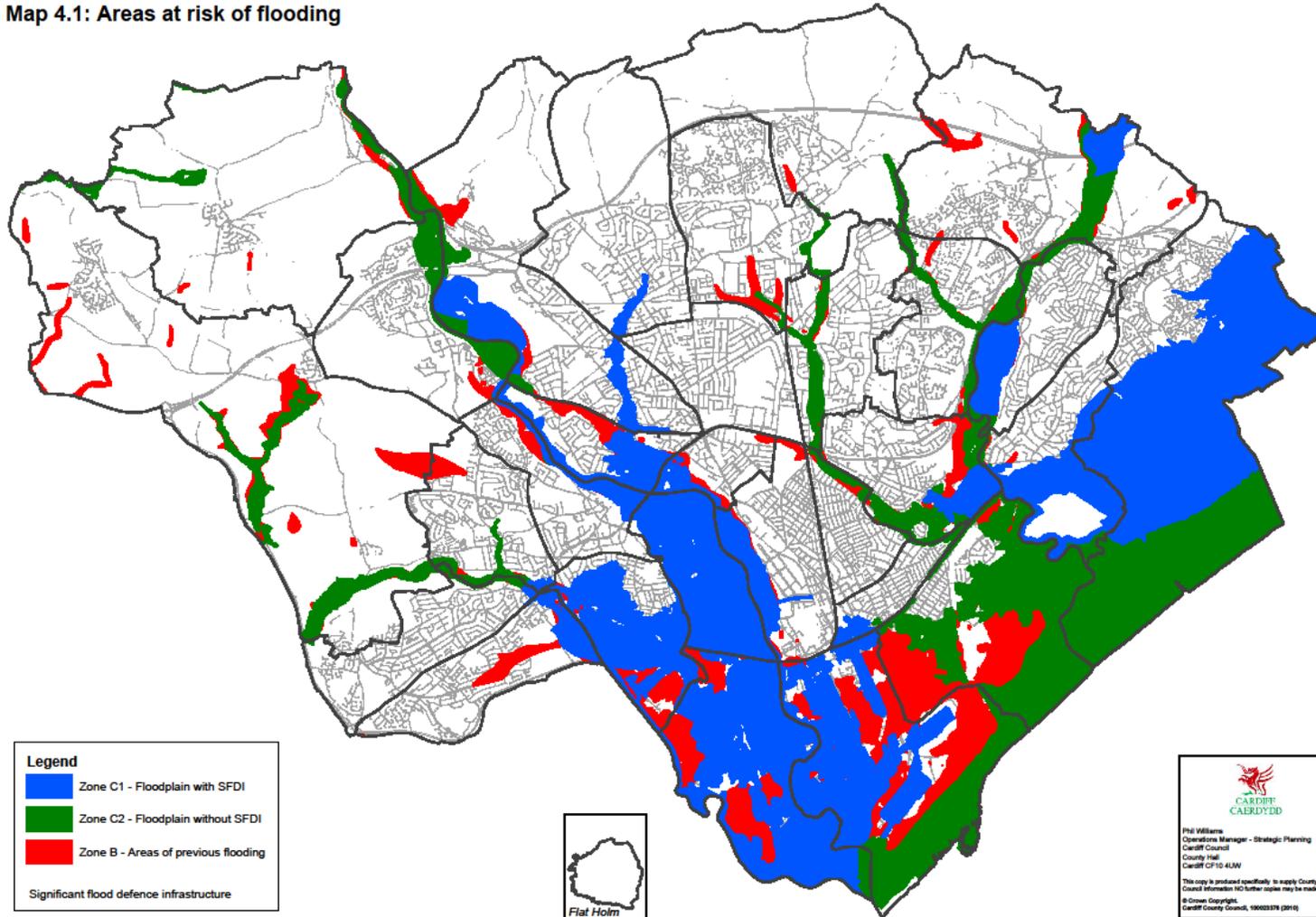
Key:

Wentloog tidal	Briwnant & Tongwnlais	Area of Junction 33, M4 Motorway
Rhymney North Pontprennau	Taff at Morganstown	Taff/Ely 2d modelled area
NE Cardiff – Roath Brook & Nant Glandulais	Cardiff West	Bay Area to Pengam Green

High risk
Medium risk
Low risk
Risk varies from low to high

Table 4.2 Flood risk in selected areas (Atkins (2009) Cardiff Strategic Flood Consequences Assessment)

Map 4.1: Areas at risk of flooding



4.12 The following factors also affect flood risk in Cardiff:

- The completion of the Barrage enclosing Cardiff Bay has provided protection against tidal inundation for Cardiff Bay. During storm surges the sluices for regulating the water level within the Bay must be kept closed creating a “tidal lock”. During times of tidal lock the water level in the Bay will steadily increase as both the Rivers Taff and Ely discharge into it. With sea levels predicted to increase as climate change occurs, the time the bay experiences tidal lock will grow, increasing the likelihood that the Taff and Ely will start to back up. This could have major implications for the Bay and development along the lower stretches of the Taff and Ely, particularly during times when the rivers are transporting large volumes of water as a result of heavy rainfall
- Wentloog is at risk from inundation due to its low lying nature, predicted sea level rise, and some areas where coastal defences are at risk of overtopping. This will place the mud flats and sea wall under increasing pressure particularly during storm surges due to the tidal nature of the Severn Estuary. Several sites in the Wentloog area have extant planning permission.
- The lower reaches of the River Rymney are at particular risk of flooding during the storm surges when the level of the estuary can rise dramatically, combined with predicted sea level rises and the increased flow volumes of the Rymney.

No.	Indicator	Cardiff data		Wales data	UK data	Target	Trend	Indicator status	Commentary	Data quality	Data sources	
4.8	Number of properties at risk from river and coastal flooding	About 1000 households at 'significant' risk (> 1 in 75 chance each year) of flooding, 4000 more at 'moderate' risk (> 1 in	No trend data is currently available but this data will be collected over the plan period.						?		Figures estimated from bar chart – actual numbers not available on the web	Flooding in Wales: a national assessment of flood risk, Environment Agency Wales, 2009

		200) and about 28000 'slight' risk								
4.9	Percent of new development with Sustainable Urban Drainage Systems (SUDS)		Current data gap. Feasibility of this indicator to be investigated				?	Cardiff Council has no data on this indicator.	Current data gap	
4.10	Number of new housing units approved in C1 and C2 flood risk areas	No data currently available					?	Data will be included and collected in future monitoring reports.	1	Planning Policy Team – Cardiff Council

5. Cultural heritage and the historic environment

Introduction

5.1. The city as seen and experienced today reflects a wealth of influences as it developed from a small community on the banks of the River Taff. Evidence still exists from Roman times and other key stages in the city's development. Most notably, the era of mining in the South Wales Valleys saw an unprecedented boom for Cardiff in terms of its economic and physical growth. Cardiff performed a vital role both as a port and commercial centre. The Victorian and Edwardian legacy in terms of street patterns and buildings is still clearly evident and provides a very distinctive character to large areas of the city. A range of formal designations have been used to help identify and protect the most important features of Cardiff's historic and architectural heritage. Whilst Cardiff continues to develop, it is important that its rich cultural, historic and architectural legacy is fully understood, protected and managed.

The City's cultural and historic attractions perform an important national and regional role, attracting large numbers of visitors each year

5.2. In 2010/11, St. David's Hall, New Theatre and Cardiff Castle each had more than 200,000 paid visitors. This reflects the importance nationally and regional of Cardiff's cultural and historic attractions.

No.	Indicator	Cardiff data	Wales data	UK data	Target	Trend	Indicator status	Commentary	Data quality	Data sources
5.1	Number of paid attendances for cultural venues in Cardiff	Attendance in 2010/11: St. David's Hall (not including conferences): 235,950 New Theatre: 230,971 Cardiff Castle: 212, 804	Not applicable		400,000 (Cardiff Council)	↔ Attendance in 2009/10: St. David's Hall: 224,038 New Theatre: 239,350 Cardiff	+	Trend information will become available over the life of the plan as more data collected.	2	Managers of St. David's Hall, New Theatre and Cardiff Castle

					Castle: 234,224				
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Cardiff contains a wide range of areas, buildings and monuments designated for historic value befitting of its Capital City status

5.3. There are 28 Scheduled Ancient Monuments in Cardiff. Archaeological remains provide important, often irreplaceable, information about the past. Their investigation and, where appropriate, preservation is important in its own right and can provide an invaluable educational and tourism resource. Four archaeologically sensitive areas have been identified in Cardiff. They represent the most likely areas where the effect of development on the archaeological resource may be an issue during the determination of a planning application. They are:

- The City Centre
- St Fagans/Michaelstone-super-Ely
- The Wentloog Levels
- Llandaff

5.4. Cadw has listed 855 buildings or structures in Cardiff as being of Special Architectural or Historic Interest. Cardiff also has 27 conservation areas (covering 811.7ha in total) designated for their special historic or architectural interest. They vary greatly in size and character and range from the villages of St Fagans and old St Mellons, to the more recent Victorian and Edwardian suburbs which developed during Cardiff's 'boom years.'

No.	Indicator	Cardiff data	Wales data	UK data	Target	Trend	Indicator status	Commentary	Data quality	Data sources
5.2	Percent of conservation areas with an area appraisal undertaken in the last 10 years	27 appraisals have been completed since 2005 (August 2012)	Not applicable		100% (Cardiff Council)	↑ (9 undertaken by March 2007)	+	A management plan is being prepared for the last conservation area	1	Conservation Team, Cardiff Council;

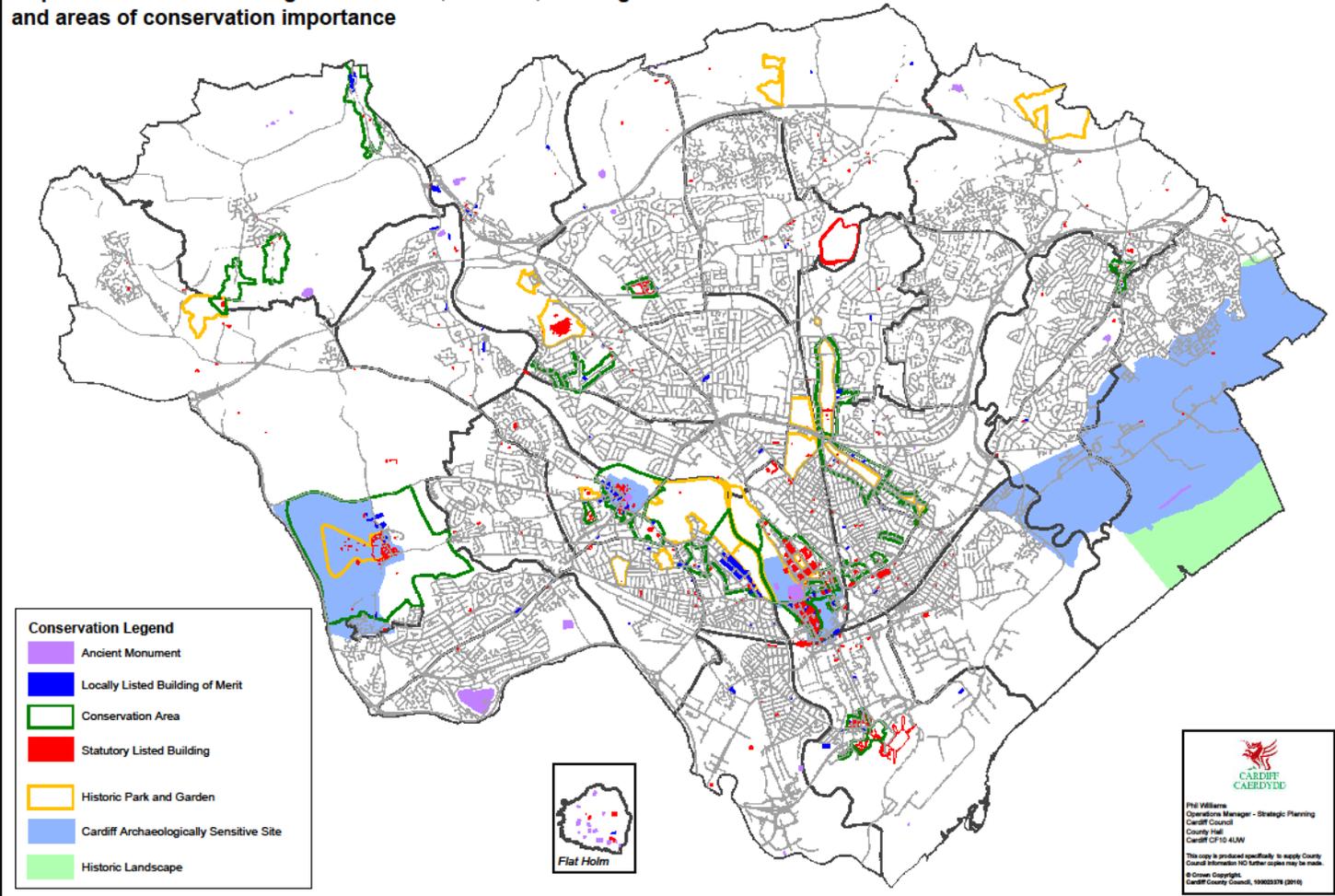
5.5. Cardiff has 15 Historic Parks and Gardens that cover 468 hectares. They are widely spread and of contrasting character. Some of the larger historic parks reach from the city centre to the outer suburbs. Cardiff's heritage extends well beyond those identified in statutory protections. All of the city's historic built fabric helps define the character of the city and the diverse cultural backgrounds of its residents and visitors. Map 5.1 shows the extent of designated sites, features, buildings and areas.

Some designated buildings/features are not in a favourable condition

5.6. In 2009, 29 of Cardiff's listed buildings were at risk (Cardiff Council 2010). This represents 3.4% of the current listed building stock in Cardiff. Three buildings have been taken off the 'at risk' list since 2006.

No.	Indicator	Cardiff data	Wales data	UK data	Target	Trend	Indicator status	Commentary	Data quality	Data sources
5.3	Percent of listed buildings at risk	29 buildings, 3.4% of the total (November 2009)	Not available		0% (Cardiff Council)	↑ (32 buildings, 3.75% of the total, at risk in March 2006)	-		1	Buildings at risk register, Conservation Team, Cardiff Council

Map 5.1: Location and designation of sites, features, buildings and areas of conservation importance



6. Economy

Introduction

6.1. Cardiff has undergone major changes over the last century with the decline of the coal industry, the increasing dominance of the service sector, and devolution combining to shape the city into what it is today.

Cardiff is the key economic driver for south-east Wales

6.2. Today, Cardiff is the main driver of the South Wales economy. Cardiff's population is more than 346,000⁶, more than 45% of whom are in employment. Cardiff employs more than 200,000 people, of whom about 70,900 (40%) commute into Cardiff for work. Overall, about one-third of the South East Wales workforce work in Cardiff (see Table 4.1). It is one of the UK's more competitive cities, and well ahead of the Welsh average. However the city struggles to convert this into outcomes for citizens, such as increased earnings; the recession has affected Cardiff like elsewhere; and the economic benefits of the last decade have not been felt universally across the city.

No.	Indicator	Cardiff data	Wales data	UK data	Target	Trend	Indicator status	Commentary	Data quality	Data sources
6.1	UK competitiveness Index	100.2 in 2010 (130th out of 379 local areas)	83.9 in 2010 (lowest of the UK regions)	100	No target identified	↔ 100.9 in 2006; 99.9 in 2009	+	The UK Competitive Index brings together a range of economic indicators. Cardiff performs much better than the Welsh average.	1	UK Competitiveness Index 2010

⁶ 2011 census, www.statswales.wales.gov.uk/TableViewer/tableView.aspx?ReportId=40221

Cardiff has strong economic growth (reduced by the recession) and relatively high employment

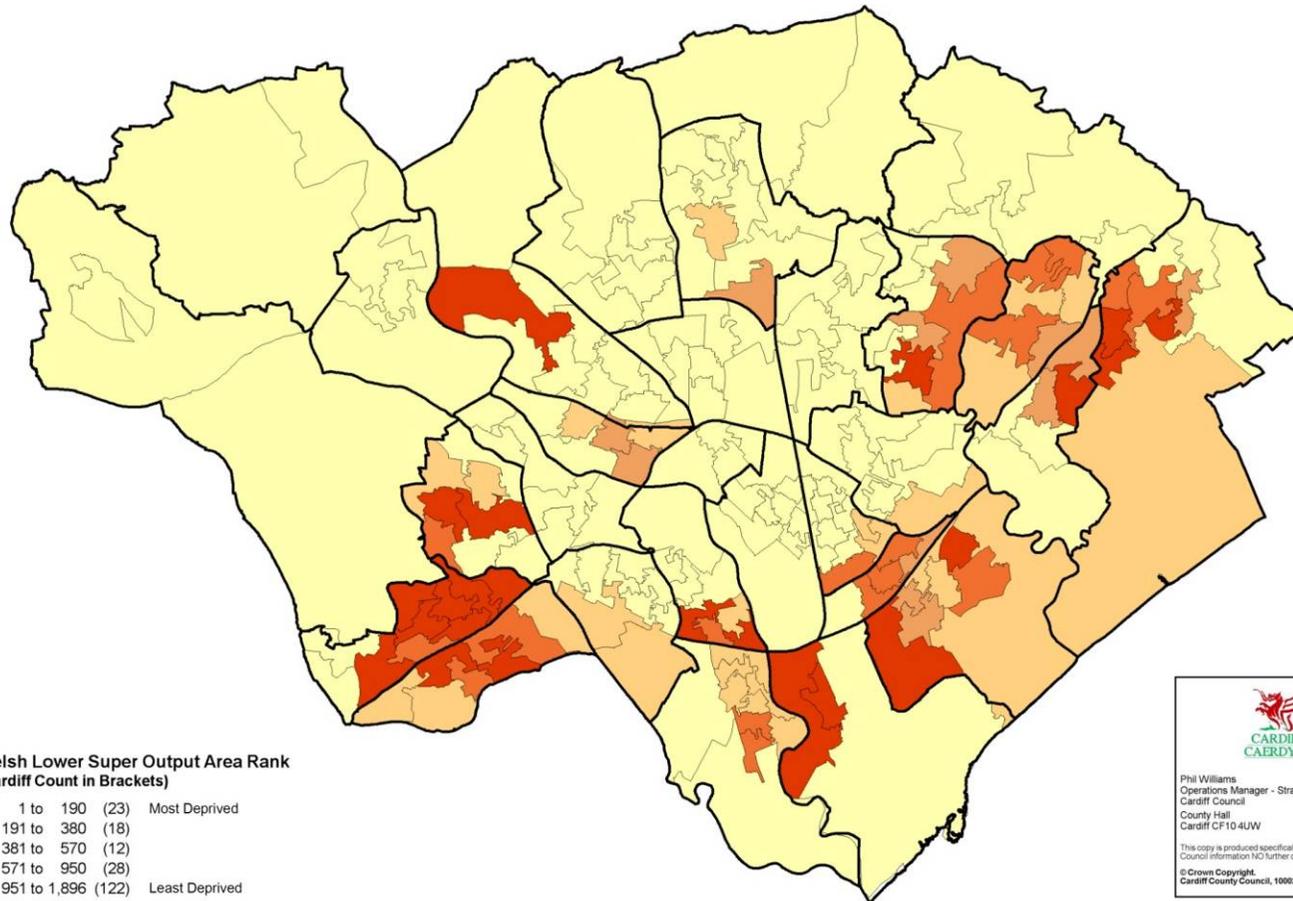
6.3. Cardiff experienced strong growth in employment and Gross Value Added in the decade to 2007. Although the number of jobs has since fallen, Cardiff is still significantly outperforming the Welsh and UK average. In 2009, Cardiff generated 17% of the Welsh Gross Value Added, at over £22,000 per person. Average salaries are slightly above the UK average although significantly above the Welsh average. Employment levels have fallen since the recession, and currently (autumn 2010) stand between the UK and Welsh averages.

No.	Indicator	Cardiff data	Wales data	UK data	Target	Trend	Indicator status	Commentary	Data quality	Data sources
6.2	Number of jobs in Cardiff	Full time jobs 2008: 132,300 (17% increase since 2000) Part time jobs 2008: 58,600 (6% increase since 2000)	8% increase in FT, 13% increase in PT jobs since 2000	5% increase in FT, 8% increase in PT jobs since 2000	No target identified	↑ FT : 113,100 in 2000; 129,300 in 2005; 136,400 in 2007 PT : 55,200 in 2000; 65,700 in 2005; 56,500 in 2008 6% since 2000	+	Cardiff performs well when compared to Wales and the UK.	1	Nomis Labour Market Profile: Cardiff, August 2012
6.3	Gross Value Added (GVA) per head of local population	£22,234 (2008) £21,195 (Cardiff and the Vale, 2007)	£15,222 (2008) £14,853 (2007) 12,629 (2003)	£21,103 (2008) £20,430 (2007) 17,043 (2003)	No target identified	↑ £16,501 (Cardiff and the Vale, 2003)	+	Cardiff's GVA grew by 28% between 2003 and 2007, compared with 17% for Wales and 20% for the UK. Data is for Cardiff and Vale of Glamorgan.	1	Office of National Statistics, Regional GVA, Dec. 2009

No.	Indicator	Cardiff data	Wales data	UK data	Target	Trend	Indicator status	Commentary	Data quality	Data sources
6.4	Full time gross median pay (£/week)	£506.40	£460.00	£503.10		↑ £347.60 in 2000 (46% increase to 2010)	+	Compares with 29.1% increase for Wales, 27.8% for UK	1	Nomis Labour Market Profile 2010
6.5	Percent of residents working age population in employment	65.4% (2011-12)	66.7% (2011-2012) 66.8% (2009-10)	70.2% (GB, 2011-12)	No target identified	↓ 70.5% in 2004	-	Recent figures are indicative of the current economic recession.	1	Nomis Labour Market Profile 2010

6.4. Maps 6.1 and 6.2 show areas of high and low employment and income in Cardiff. Again, these are generally concentrated in the 'southern arc of deprivation', particularly Ely, Butetown, Caerau, Grangetown, Splott, Llanrumney, Pentwyn, Rumney and Trowbridge.

MAP 6.1: Welsh Index of multiple deprivation 2011 - Employment



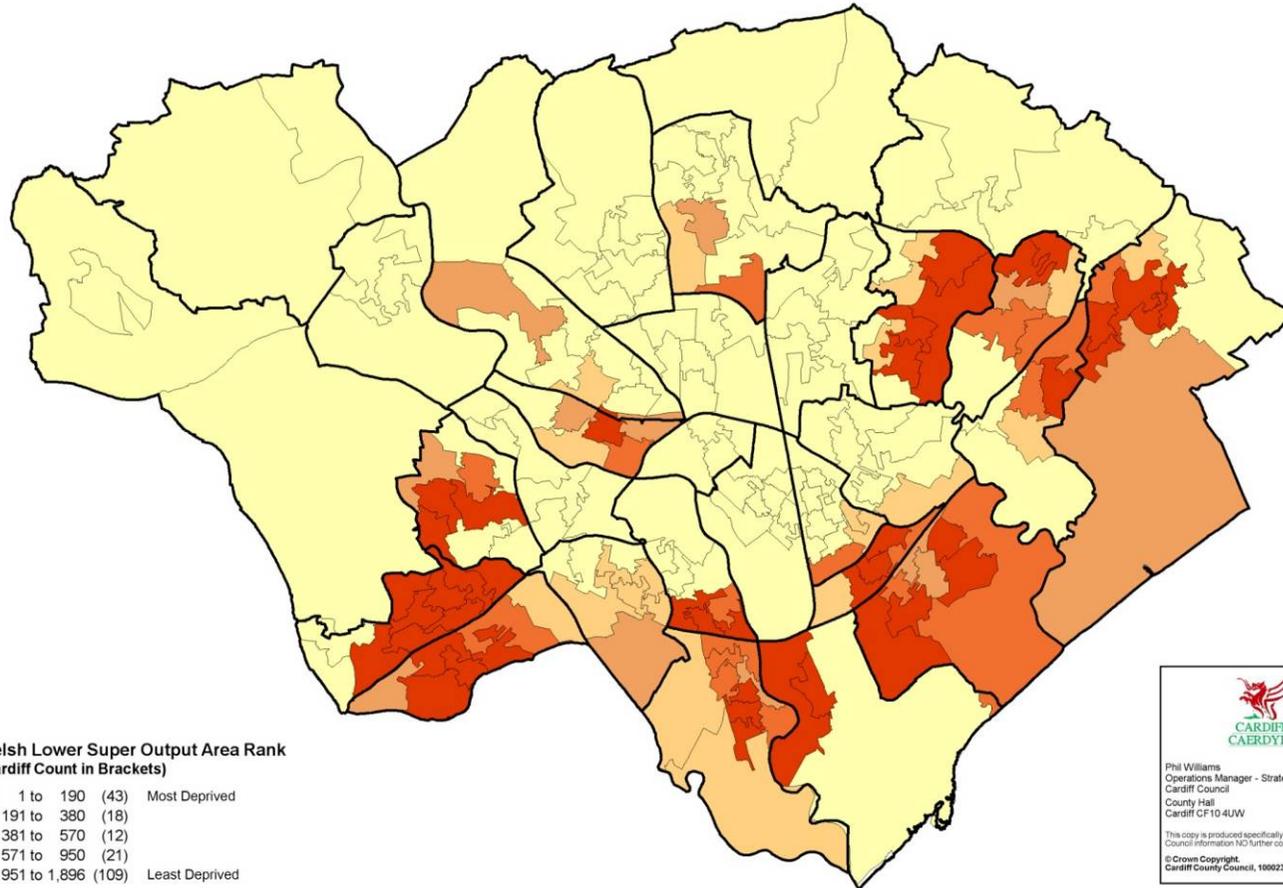

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MAP 6.2: Welsh Index of multiple deprivation 2011 - Income




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Manufacturing industries are in decline, and service sector industries and private sector employment are growing

6.5 Table 6.1 shows that key sectors in the city include financial and business services, and public administration, health and education. The service industry accounts for almost 90% of the jobs in the city, and almost one in three Cardiff residents work in the public sector. Finance, IT and other business activities increased by more than 60% between 1998 and 2008, and account for one quarter of the employment in Cardiff. Manufacturing jobs in Cardiff have declined rapidly from over 20% thirty years ago, and are low compared to the Welsh and Great Britain average (Nomis, 2010; Cardiff Council Economic Needs Assessment, 2010).

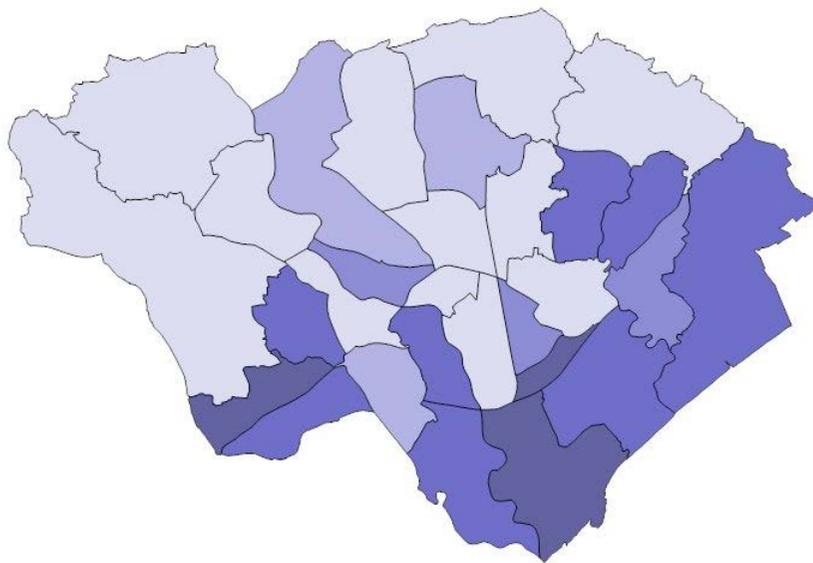
	Cardiff (employee jobs)	Cardiff (%)	Wales (%)	Great Britain (%)
Manufacturing	11,200	5.9	13.7	10.2
Construction	11,400	6.0	5.2	4.8
Services	167,800	87.9	79.1	83.5
Distribution, hotels & restaurants	39,000	20.4	23.0	23.4
Transport & communications	9,300	4.9	4.3	5.8
Finance, IT, other business activities	48,700	25.5	14.1	22.0
Public admin, education & health	59,000	30.9	32.9	27.0
Other services	11,800	6.2	4.8	5.3
Tourism-related	15,700	8.2	8.6	8.2

Table 6.1 Jobs in Cardiff, 2008 (Nomis, 2010)

The workforce is polarised between qualified graduates and low skilled workforce

6.6. Cardiff has the most skilled workforce in the region, with almost 40% educated to a degree level or above. Cardiff has three higher education institutions, Cardiff University, the University of Wales Institute Cardiff and the Welsh College of Music and Drama, providing about 4,000 new graduates each year.

6.7. However areas of the city are still experience significant deprivation and low educational achievement, as is shown at Maps 1.3 and 1.4. 17.2% of unemployed people claiming benefits have been unemployed for more than a year. The 'southern arc of deprivation' has a particularly high proportion of Job Seekers Allowance claimants (Map 6.3): in May the claimant rate in Butetown stood at 8.4%, seven and a half times the claimant rate of 1.1% in Lisvane. More significantly, the number of young people aged 18-24 claiming benefits for over 6 months has increased rapidly since the start of the recession (Figure 6.1) (Cardiff Economic Needs Assessment, 2010; Nomis, 2010).



Map 6.3 Claimant proportion by ward Darker = higher proportion (January 2010) (Cardiff Trends 2010)

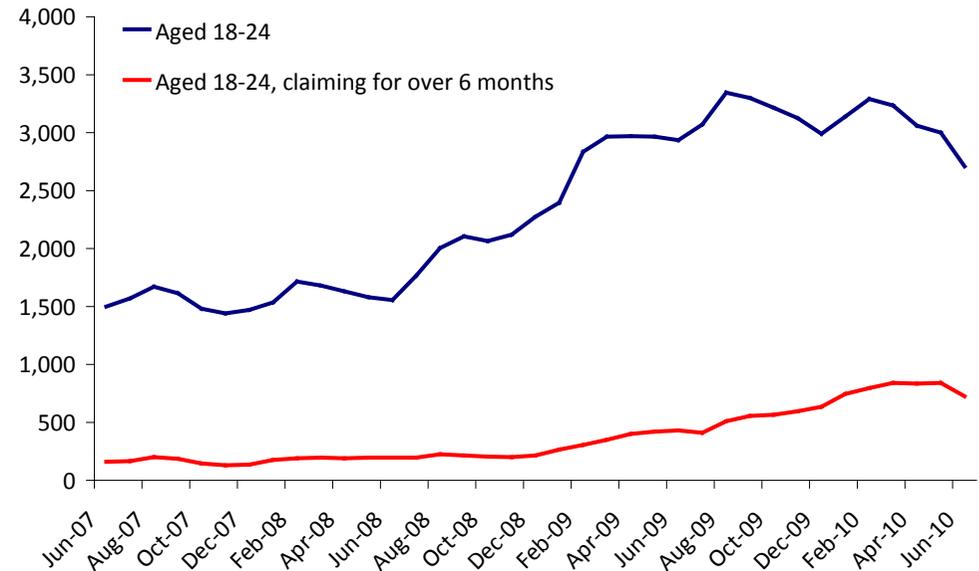


Figure 6.1 Unemployment claimants ages 18-24 (Cardiff Economic Needs Assessment, 2010)

No.	Indicator	Cardiff data	Wales data	UK data	Target	Trend	Indicator status	Commentary	Data quality	Data sources
6.6	Percent of unemployed people claiming benefit who have been out of work for over a year	17.7% (Dec. 2011)	13.9% (Dec. 2011)	15.7% (Dec. 2011)	No target identified	↓ 11.6% in 2005	-	Cardiff is performing unfavourably compared with Wales and UK, and still has some way to go.	1	Nomis Labour Market Profile: Cardiff

6.7	Proportion of residents on Jobseeker's Allowance	May 2011 4.0%	May 2011 3.7%	May 2011 3.6%	No target identified	↓ 2.5% (Jan. 2006)	-	JSA counts represent the economically active and working age population who are unemployed. This is the highest level since mid 1998.	1	Nomis Labour Market Profile: Cardiff
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Significant areas of employment land have changed to alternative uses (notably housing) although land for employment is still available

6.8. Changing market conditions (as described above) have resulted in a shift in demand away from manufacturing towards alternative uses such as housing. Examples of this include the Arjo Wiggins site at Ely Bridge, AWE site on Caerphilly Road, and Maes y Coed Road. This trend has slowed due to the economic recession. Currently the employment land bank stands at 97.79 hectares.

No.	Indicator	Cardiff data	Wales data	UK data	Target	Trend	Indicator status	Commentary	Data quality	Data sources
6.8	Amount of land (in hectares) available for employment	97.79 (2011)	Not applicable		No target identified	↔ 100.4 in 2007	-		1	DTZ Employment Land Study 2011

7. Health and wellbeing

Introduction

7.1. Although Cardiff generally has above average health and social conditions compared to the rest of Wales, there are considerable variations between and within localities, with people in some electoral divisions experiencing health deprivation that is amongst the worst in Wales. In 2009 Cardiff was awarded Healthy City Status by the World Health Organisation, which demonstrates a commitment to improve the health and well being of local people.

The health of Cardiff's population is generally better than the Welsh average although considerable discrepancies exist at ward level

7.2. Life expectancy is determined by a range of factors and gives an indication of the comparative wellbeing of the population up to now⁷. A range of factors can influence life expectancy, including lifestyle, income, employment, access to services and the wider environment. Life expectancy at birth for Cardiff's residents is currently 76.6 years for men and 81.7 for women. Of the 404 local authorities in England and Wales, Cardiff ranks 301 for men and 240 for women: its women's life expectancy is roughly that of the Welsh average of 81.4, but men's life expectancy is less than the Welsh average of 77.0 (Office for National Statistics, 2009).

7.3. 23% of men and 22% of women in Cardiff have a limiting long-term illness. This compares well with the Welsh average of 26% (men) and 29% (women) (Welsh Health Survey 2008/09).

⁷ It does not provide an indication of the life expectancy for people born today. For this measure to accurately predict the life expectancy of existing residents two variables would need to remain constant: i) all people to live in the same area for their whole lives, and ii) the health of the population in the area to remain exactly the same for the next 80 years. These two conditions are obviously unlikely to be met.

7.4 The single largest cause of death in Cardiff is cardiovascular disease. Two major determinants of cardio vascular disease are smoking and diabetes. Cardiovascular diseases have been decreasing over time (as have other smoking related diseases) as smoking rates have declined. The smoking ban in public places means that the number of people smoking is likely to continue to decrease.

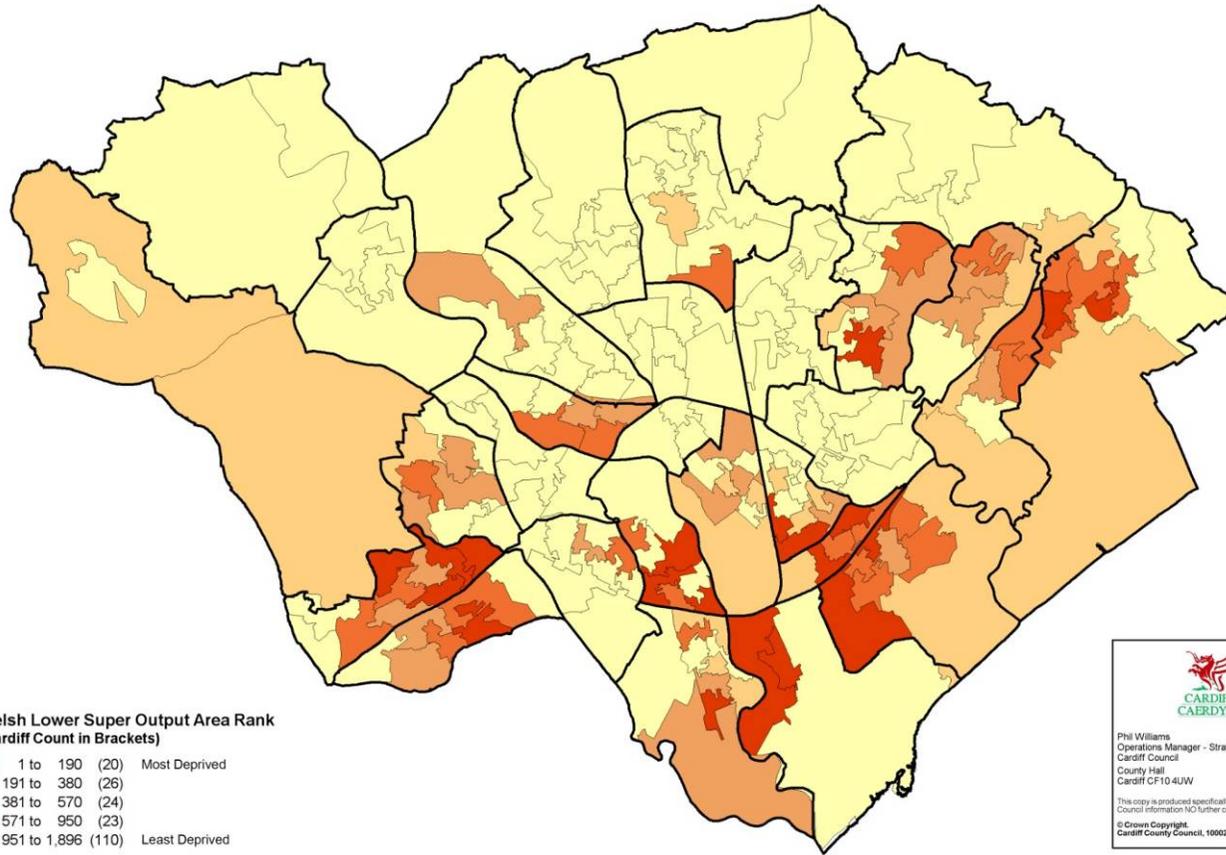
Health varies considerably across the City

7.5. Considerable differences exist between individual areas within Cardiff. Map 7.1, which shows the health component of the Welsh Index of Multiple Deprivation 2011, suggests that residents of Plasnewydd, Grangetown and Adamsdown have worse than average health. The WIMD health component brings together data on cancer incidence, death and long term limiting illness. In 2005-9 the difference in life expectancy between the best fifth of Cardiff wards and the worst fifth was about 13 years for men and 10 for women. This was about the same as in 1999-2003 and a much bigger difference than the Welsh average.

No.	Indicator	Cardiff data			Wales data	UK data	Target	Trend	Indicator status	Commentary	Data quality	Data sources
7.1	Prevalence of key illnesses in 2009/10 (in %): High blood press. Heart condition Respiratory illness Mental Illness Arthritis Diabetes	17 7 13 10 11 6			20 9 14 10 13 6	No readily comparable data available	No target	↔ data for 2004/06 15 6 14 8 9 4	+ Cardiff out performs Wales - but most illnesses are rising		1	Welsh Health Survey 2010 Welsh Health Survey 2004/06
7.2	Gap between the wards with the highest and lowest life expectancy	2005-9 Lowest: highest:	M 70.5 83.3	F 76.7 86.7	Average: M - 77.2 F - 81.6 (2007-09) Average:	Average: M - 77.9 F - 82.0 (2007 - 2009) Average:	Reduce difference (Cardiff Council)	?	?		2	Measuring inequalities 2011: Trends in mortality and life expectancy in

		2003 Lowest: 69.4 Highest: 83.0	75.4 84.8	M - 75.1 F - 79.9 (1999- 2003)	M - 75.9 F - 80.5 (1999 – 2003)						Wales, NHS Public Health Wales Observatory Experimental Statistics, ONS Life Expectancy statistical bulletin (WAG – November 2010).
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MAP 7.1: Welsh Index of multiple deprivation 2011 - Health




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Over half of Cardiff's adults are clinically overweight or obese

7.6. Obesity among UK children and adults is increasing, and evidence suggests that this trend will continue in the future. In Cardiff 57% of men and 46% of women were overweight or obese in 2008/09, up 2% from three years earlier.

Under a third of Cardiff's adults get the exercise that they need

7.7. Government guidelines recommend that adults should undertake 30 minutes or more of at least moderate intensity physical activity on five or more days a week (Department of Health 2004). Only one in three men and one in five women in Cardiff reported meeting these levels. Cardiff ranks second lowest of the Welsh authorities for men, and joint lowest for women on this basis. Access to recreational open space is an important determinant of good health: open space provision is discussed in Chapter 8 (landscape).

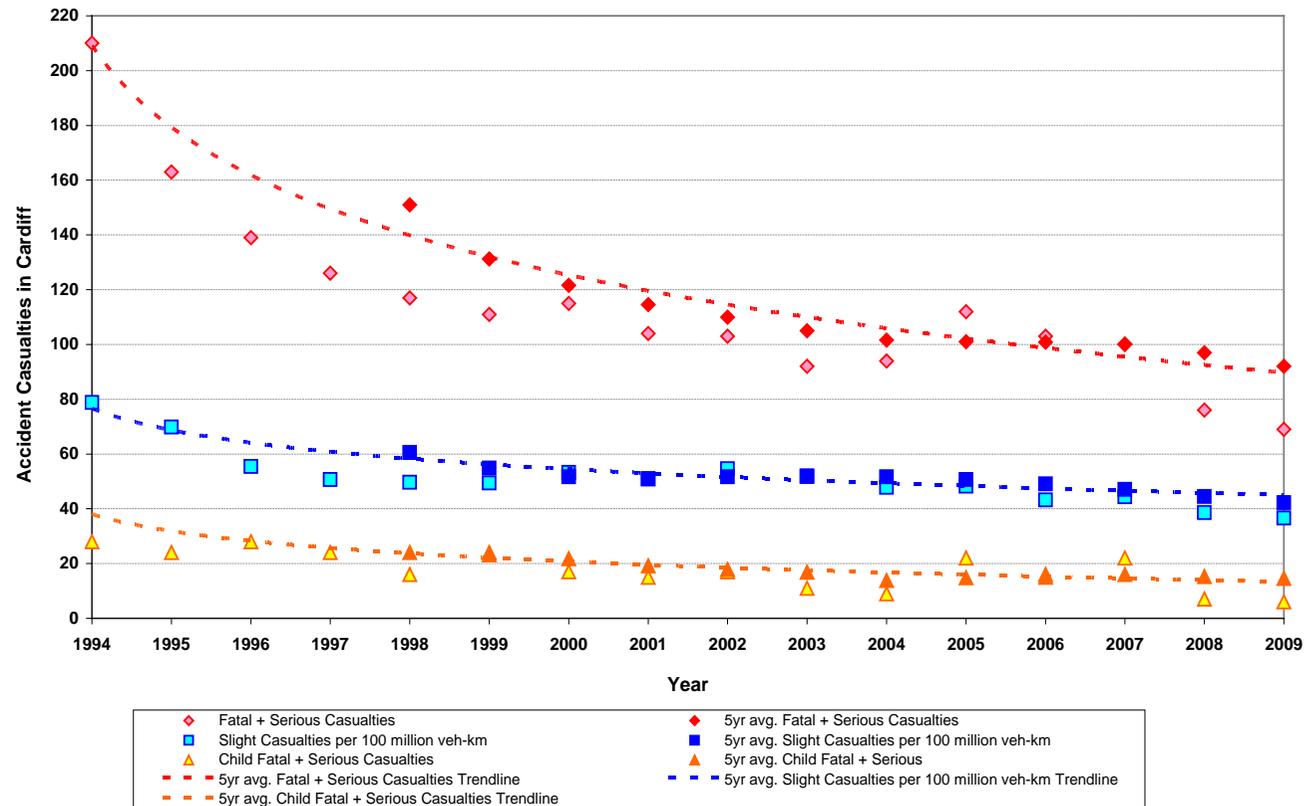
No.	Indicator	Cardiff data	Wales data	UK data	Target	Trend	Indicator status	Commentary	Data quality	Data sources
7.3	Percent of adults who are overweight or obese	M: 56%, W: 46% M+W: 51% Best of the Welsh local authorities for women	M: 62% W: 52%	England 2009: M: 66% W: 57%	No target	↓ 50% M+W in 2004/06	-	Better than Welsh and UK averages, but still a long way to go.	1	Welsh Health Survey, 2009 and 2010 Welsh Health Survey 2004/06
7.4	Percent of adults who reported meeting physical activity guidelines in the past week	M:30%, W: 21% 2 nd lowest of the Welsh local authorities for men, joint lowest for women	M: 36% W: 23%	England 2008: M: 39% W: 29%	No target	↓ 31% overall in 2004/06	!		1	Welsh Health Survey 2009 and 2010 Welsh Health Survey 2004/06

Road safety has generally improved

7.8. Figure 7.1 shows that there continues to be a downward trend in the number of road casualties over time. Taking a five year rolling average, the total number of casualties for 2009 decreased by 23% from the 1998 baseline year. Similarly, there has been a decrease in the number of killed or seriously injured (KSI) casualties between 1998 and 2009 of 39%. There have been no child fatalities since 2007, however 6 serious child casualties occurred during 2009 and 10 in 2010.

7.9. Of all accident casualties (killed, seriously injured and slightly injured) in 2008, 18% were pedestrians, 8% cyclists, 5% motor-cyclists, 63% car users, and 7% other.

Figure 7.1 Accident trends for Cardiff



No.	Indicator	Cardiff data	Wales data	Target	Trend	Indicator status	Commentary	Data quality	Data sources
7.5	No. people killed or seriously injured in traffic accidents	2005-2009 5 year average All: 92 Children: 15	1247 people were killed or seriously injured in 2011. This is up from 1087 in 2010, the first increase after steady reductions from 1871 in 1999. The 1994-1998 average was 2008.	40% fewer killed or seriously injured by 2010s (LTP t PI 3.1) 50% fewer children under the age of 16 killed or seriously injured by 2010 (LTP PI 3.2)	↑ on target: 39% decrease from 127 average 1994-1998	+	The number of fatal, serious and slight casualties continues to fall. The rate of slight casualties to total volume of road traffic saw a 26% decrease between the 5 year rolling average of 1994-98 and 2005-09.	1	Police Accident Statistics / Department for Transport Road Safety Cardiff Infrastructure, Cardiff Council LTP APR Monitoring LTP PI 3.1 and 3.2

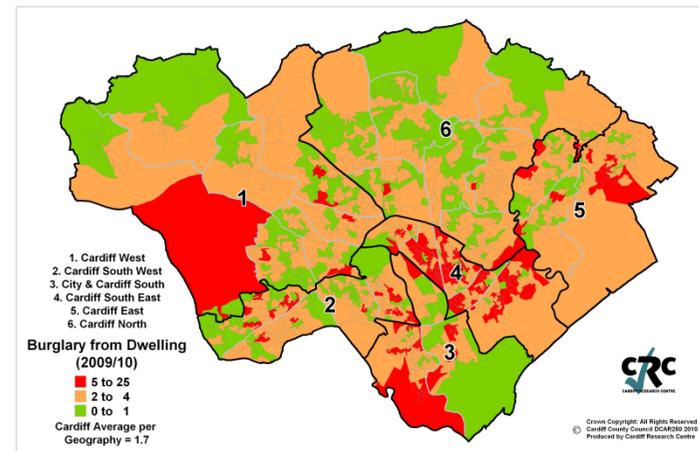
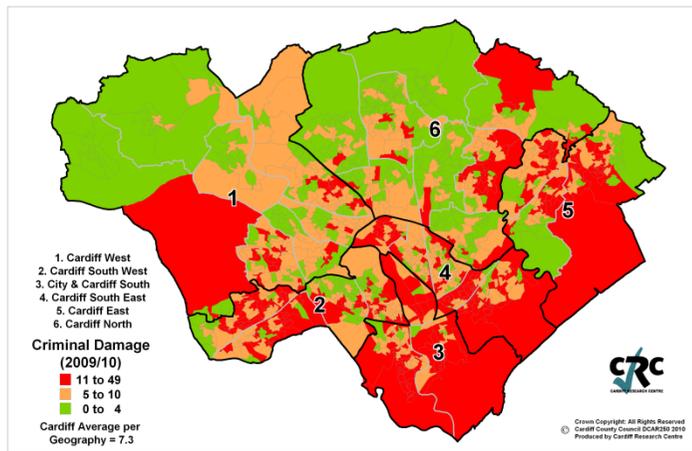
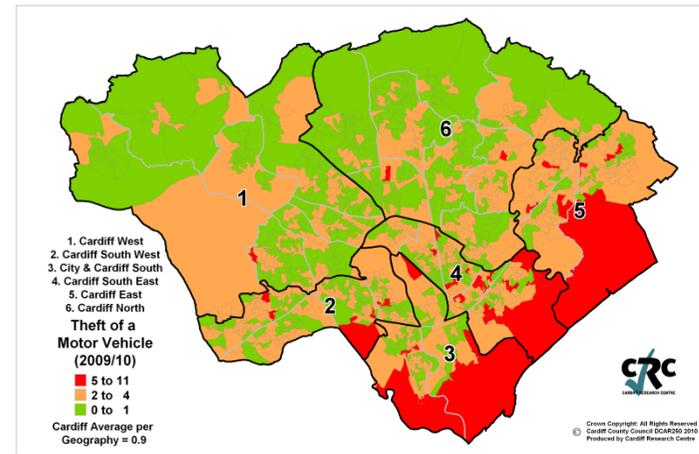
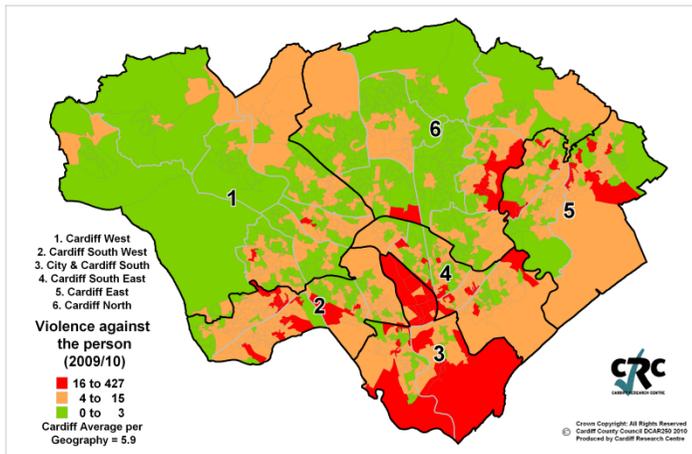
Crime levels have also broadly improved or remained steady

7.10. There were more than 30,000 notifiable offences in Cardiff in 2009/10, with criminal damage, violence against the person and theft from motor vehicles being the most prevalent. Overall crime levels have stayed broadly level over the last decade, with a reduction in burglaries and theft, but more variability amongst other forms of crime. The south and east of the city is subject to higher levels of crime than elsewhere, and Cathays ward (includes city centre) sees a particularly high number of criminal damage, violence against the person, and drug offences – see Map 7.3 (Cardiff Needs Assessment, 2010).

Environmental quality – a determinant of health – varies greatly within Cardiff

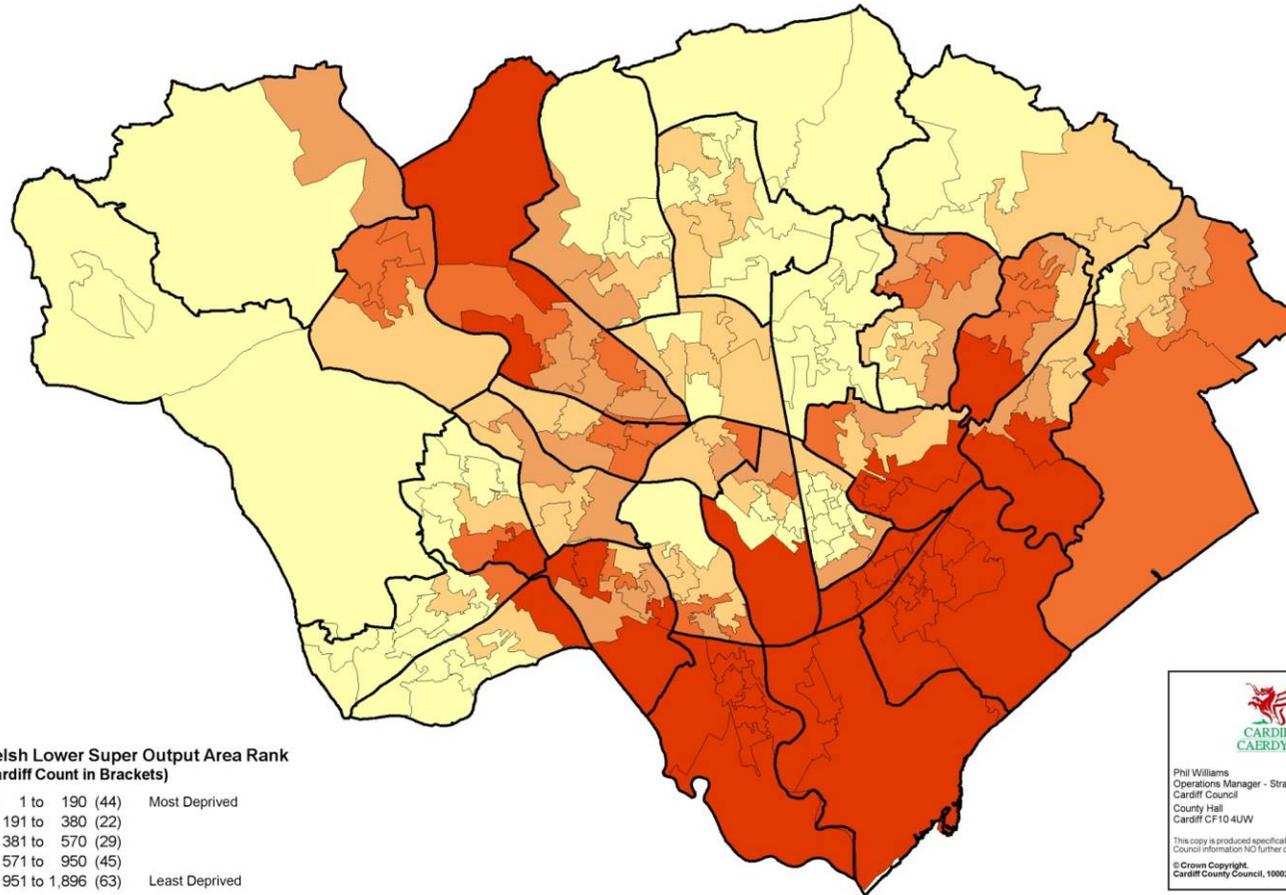
The Welsh Index of Multiple Deprivation brings together information about air quality, air emissions, flood risk, and proximity to waste disposal and industrial sites into a physical environment index. Map 7.3 shows that, under this index, Butetown, Splott and Adamsdown fare particularly badly, as does Whitchurch and Tongwynlais.

No.	Indicator	Cardiff data		Wales data	UK data	Target	Trend	Indicator status	Commentary	Data quality	Data sources
			2003/04								
7.6	Notifiable offences 2010-11:		2003/04	Not applicable	No target identified	↔ Burglaries and theft down, others more variable	+ some offences are down		1	Office of National Statistics, Neighbourhood Statistics	
	violence against person	6141	6089								
	wounding/endorsing life	317	364								
	other wounding	2434	2782								
	harassment	1806	1506								
	common assault	1217	702								
	robbery	284	367								
	theft from person	1387	1632								
	criminal damage	5894	9136								
	burglary in building	1801	2726								
	burglary elsewhere	1792	3081								
	theft of motor vehicle	685	2811								
	theft from motor vehicle	3126	6839								



Map 7.2 Violence against the Person, Theft of a Motor Vehicle, Criminal Damage, Burglary from a Dwelling (Joint Needs Assessment, 2010)

MAP 7.3: Welsh Index of multiple deprivation 2011 - Physical environment




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8. Landscape

Introduction

8.1. Cardiff has a unique landscape setting comprising of an island, coastline, three major river valleys and a countryside backdrop of distinctive topography. A landscape study (Cardiff Council *et al* 1999) using the Countryside Council for Wales LANDMAP methodology was completed in 1996 for Cardiff's countryside. The study identified fourteen areas of distinctive landscape character ('Combined Aspect Areas') and also proposed five of these areas as Special Landscape Areas (SLAs) to be considered for formal designation, in 2007 the 1999 landscape study was updated and extended to include more of the river corridors. Landscape interests also extend into the urban area, principally through the important strategic role played by the river valleys of the Taff, Ely, and Rhymney together with other valued areas of open space within the urban fabric. Map 8.1 shows some of the features that contribute to Cardiff's unique landscape. The main issues relating to Cardiff's landscape resource concern the effective protection, management and enhancement of this unique resource.

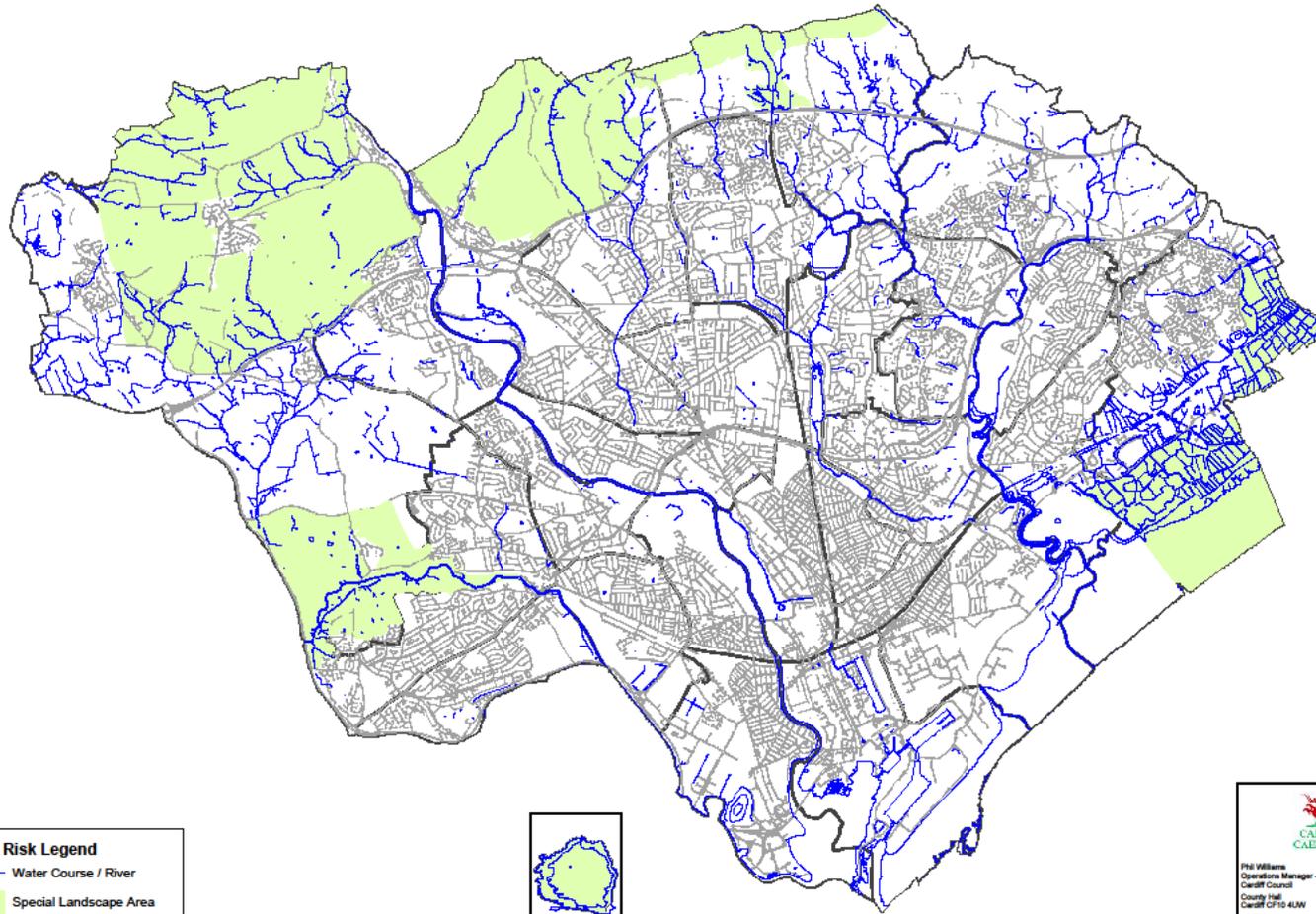
Cardiff has a very strong and distinctive landscape backdrop

8.2. Garth Mountain, Caerphilly Mountain and Graig Llanishen provide a strong and imposing backdrop along the northern edge to the city. The ridge rises to a thousand feet above sea level on the summit of Garth Mountain and has a pronounced escarpment together with lower slopes leading down to the M4 and northern edge of the urban area. The ridge, forming the southern rim of the South Wales coalfields, is dramatically broken where the River Taff breaks through, forming the Taff Gorge at Tongwnglas.

8.3. Much of the west of the urban area is enclosed by the Leckwith Escarpment. This forms a strong physical and visual backdrop for land immediately outside the administrative area and within the Vale of Glamorgan.

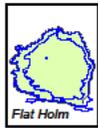
8.4. In contrast to the strong topography to the north and west, the eastern edge of the city, adjacent to the Severn Estuary, is flat. It forms part of a much larger historic landscape unit, the Gwent Levels, which extends alongside the River Severn beyond Newport.

Map 8.1: Major landscape features of Cardiff



Flood Risk Legend

- Water Course / River
- Special Landscape Area



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Three major river valleys run through the city

8.5. Three major river valleys run through Cardiff. The valleys contain large areas of open space and are a significant determinant of the urban form of the city. They also provide a valued resource for biodiversity, recreational, historic and cultural interests.

8.6. The River Taff valley has strong historic links as it provided an important corridor for the movement of goods between Cardiff Docks and the South Wales Valleys. It is well accessed by local communities along its whole length and a National Cycleway, the Taff Trail, follows its length in Cardiff and beyond to the Brecon Beacons. It forms a significant and well-known feature, passing through Llandaff, the City Centre and Cardiff Bay.

8.7. The River Ely merges with the Taff in Cardiff Bay and forms the administrative boundary with the Vale of Glamorgan for its lower length. Although not containing the same scale of open spaces and adjoining communities as the River Taff, the Ely Valley performs an important strategic and local role. Its western section in the vicinity of St Fagans is of particularly high landscape, biodiversity and historic value.

8.8. To the east of the city, the River Rhymney forms a well defined valley and contains the only tidal estuary in the city (as the Taff and Ely run into Cardiff Bay that is held within a barrage to the Severn Estuary). Visually, the valley is very prominent as the A48, a main route into the city, follows the western edge of the valley into the city.

8.9. Tributaries to the rivers also add to Cardiff's range of landscape features. Most are small streams with catchments from within the city. However, some have become important corridors in their own right such as the Nant Fawr which contains a range of well-used open spaces including Roath Park, a major attraction of Green Flag status. Action plans have been prepared for all three river valleys detailed above.

The coastline presents complex issues and opportunities

8.10. Cardiff has a coastline on the River Severn Estuary with its huge tidal range, but its characteristics and accessibility are very mixed. The Cardiff Bay Barrage provides public access to the coast in the west but the shoreline to the east along the operational dock area and to the south of the steel works/ sewerage station is not currently accessible. To the east of the Rhymney estuary lies the Lamby Way landfill site, and part of a much longer stretch of undeveloped coastline running to Newport.

8.11. The undeveloped coast contains mudflats and rapidly eroding saltings below the high water mark. A sea wall then runs along the whole length of coast to Newport. The flat land behind forms part of the Gwent Levels, an area of land reclaimed from the sea in Roman times that is drained by a complex of ditches known as reens. This land is below high water level, hence the need for a sea wall.

8.13 Flat Holm Island is a Special Landscape Area (SLA) situated approximately 5 miles from Cardiff and Barry. Flat Holm is a locally, nationally and internationally designated site due to the unique assemblages of flora and fauna it supports plus historic interests.

8.12. The Wales Assembly Government announced in late 2006 its aim of improving public access to the coast. The Wales Coast Path (WCP) was from the border near Chester to Chepstow officially opened on 5th May 2012. The Cardiff section links to the Vale of Glamorgan at the Barrage in the west and Newport boundary along the seawall in the east, total route is 15.60km

No.	Indicator	Cardiff data	Wales data	UK data	Target	Trend	Indicator status	Commentary	Data quality	Data sources
8.1	Length of coast with formal public access	WCP route 15.60 km, inc 5.64 km (2012) PRoW 0.35 km (2012) Park 1.73 km (2010) 1.04 km (2006)	Not applicable Wales Coast Path total route 1,400 km		To increase - Achieved	↑ 1.73km in (2010) 1.04km in 2006	+	New Creation orders for Public Rights of Way total 5.64km (inc 0.94km Dedication by DCWW & 1.41km as PRoW Bridleway) and 0.35km on Parks land (Parc Tredelerch). Appropriate Assessment has confirmed feasibility of the route adjacent to the Severn Estuary subject to mitigation measures.	1	Natural Environment Group, Cardiff Council Coastal Access Officer, Rights of Way Team, Cardiff Council

Five areas have been proposed as SLAs

8.13. The Cardiff Landscape Study (Cardiff Council *et al* 1999, updated 2007) considered that 5 of the 14 landscape character areas were of sufficient quality to be proposed for Special Landscape Area status (SLA). They indicate parts of Cardiff's landscape that are considered to be of quality meriting local designation. The areas are:

- Garth Hill & Pentyrch Hills
- St Fagans
- Flat Holm
- Caerphilly Mountain
- Gwent Levels

No.	Indicator	Cardiff data	Wales data	UK data	Target	Trend	Indicator status	Commentary	Data quality	Data sources
8.2	Area (in hectares) of landscape protected by local landscape designations	Proposed SLAs - 2409 ha Proposed Greenbelt - 1468 ha	Not applicable		No target	?	?	Areas of SLA and Green Belt are those proposed in the deposit copy of the UDP	1	Deposit copy UDP, Cardiff Council

Cardiff is generally well served by open spaces within the urban area, but some areas are under-provided

8.14. Green/open spaces are important because they improve people's mental and physical health, encourage physical activity, are attractive, support biodiversity, act as a carbon sink, and can help to adapt to climate change. There are several ways of testing the adequacy of open space provision:

- *Accessibility:* Distance to green areas influences how often people visit them. A survey of 2007 showed that 69% of Cardiff's area (not its population) is within 400 metres – about a six minute walk – of a green area, and only 1% is more than 2 kilometres from a green area. Whilst Pentwyn, Llanrumney, Llanishen, Pentyrch and Fairwater all have more than 85% of their area within 400m of an accessible natural green space, the areas of Roath, Birchgrove, Ely, Canton and particularly Adamsdown and Plasnewydd have limited areas within 400m of green spaces (CCW and Cardiff Council (2008) Analysis of Accessible Natural Greenspace Provision in Cardiff).
- *Amount:* The Welsh Assembly Government recommends that 2.43 hectares (6 acres) of open space should be provided per 1000 population, divided into formal, informal and children's play areas. Only two of Cardiff's 29 wards – Caerau and Riverside - meet these standards. The wards of

Adamsdown, Cyncoed, Ely, Fairwater, Gabalfa, Lisvane, Llandaff, Pentwyn, Penylan, Plasnewydd all have less than one-third of their open space requirements – see Map 8.2 (Cardiff Open Space Survey 2009).

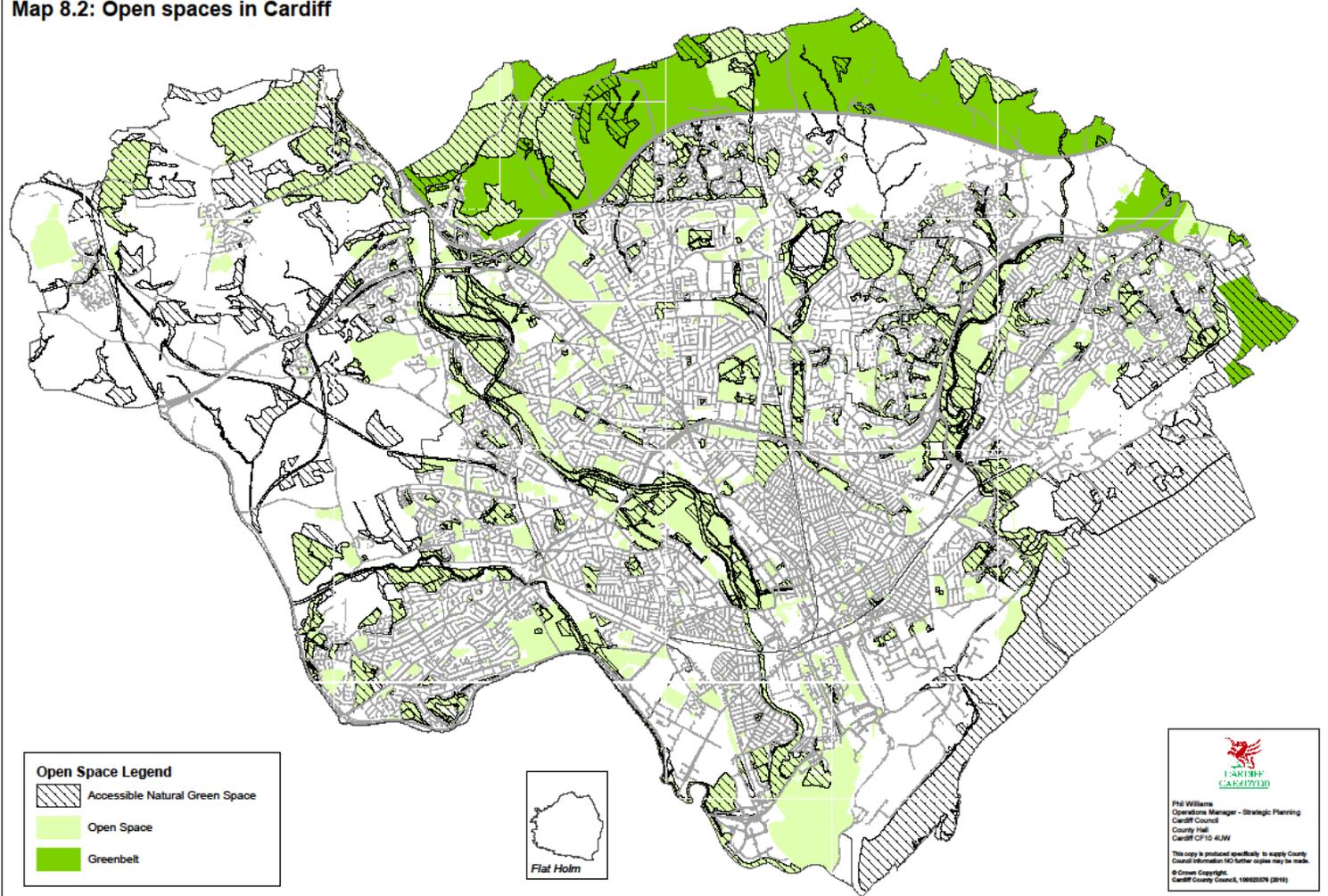
- *Quality:* A survey of 2007 which analysed the quality and value of Cardiff's open spaces found that the Ely, Gabalfa, Llandaff North and Adamsdown, which contained no sites designated for nature and built environment conservation purposes, were the worst wards in terms of their average value ratings. Wards with open space of both high quality and value are concentrated at the heart of the city, with quality scores ranging from 43% to 64%. Open spaces in the eastern and western sides of the city were more likely to have lower scores, with the exception of Creigiau and St. Fagans. In terms of overall quality and value, Plasnewydd came out on top with an average of 64%, whilst Grangetown had the lowest average score of 55% (Cardiff Open Space Survey 2007).

Cardiff’s landscape qualities are vulnerable to insensitive new development and land management practices

8.15. The Landscape Study (Cardiff Council *et al* 1999) identified a number of negative attributes and detractors that have and could adversely affect landscape quality in the city.

No.	Indicator	Cardiff data	Wales data	UK data	Target	Trend	Indicator status	Commentary	Data quality	Data sources
8.3	Achievement of recreational open space requirements	Only 2 out of Cardiff's 29 wards (Caerau and Riverside) meet requirements (2009)	Not available		(2.43ha per 1000 population)	?	!	Overall provision of 430.29ha; requirement of 780.03ha; deficit of 349.74ha.	2	Cardiff Open Space Survey 2009
8.4	Area of Cardiff within 400m of accessible natural green space	68.7% (2007)			100%	?	-	Over 30% of Cardiff's population are over 400m away.	2	

Map 8.2: Open spaces in Cardiff



Open Space Legend
Accessible Natural Green Space
Open Space
Greenbelt

Flat Holm


Cardiff Council
Phil Williams
Operations Manager - Strategic Planning
County Hall
Cardiff CF10 4LW
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S:\Technical Work Folder\April 2010 onwards\GIS\LDP 2010\SEA\Map 8.2

9. Natural resources

Introduction

9.1. Cardiff has developed over the centuries utilising the natural resources available within the area and from beyond. As the city continues to develop, it is important that its natural resources are used prudently. Land is a key resource in the city as it is an essential requirement for development, but also the basis for agriculture, open spaces and biodiversity interests. Approximately two thirds of the administrative area is built up, and a third is countryside or open space. Whilst there is physical capacity for greenfield expansion, account needs to be taken of the wider role and value of the land. Agricultural land and allotments help to provide local food, as well as improving residents' physical and mental health. Brownfield land offers opportunities for development, although remediation may be required on contaminated sites resulting from previous industrial activities. Water resources are becoming an increasingly important issue in the light of climate change. Water quality is improving in the rivers, but it is important that vulnerable aquifers are suitably safeguarded and that the water resource as a whole is properly managed.

Recent years have seen a high proportion of housing completions on previously used (brownfield) land

9.2. New housing built in 2011/12 was almost solely on brownfield sites. During the last decade, the use of predominantly brownfield sites has contributed to the development of a large proportion of apartments, particularly in the Cardiff Bay and central areas of the city (Local Housing Strategy 2010). Whilst this has reduced the demand on greenfield sites, they have also affected the range and choice of housing on supply, with implications for the provision of affordable housing, family housing and affordability in general. Additionally, the development of many brownfield sites may have implications for local employment if existing business premises are being lost to housing.

No.	Indicator	Cardiff data	Wales data	UK data	Target	Trend	Indicator status	Commentary	Data quality	Data sources
9.1	Percent of housing on previously developed land	98.6% (2011/12)	Not available		60% (DCLG)	↑ 94.7% in 2005/06, 36.4% in 1997/98	+		1	Housing Monitoring, Cardiff Council

As a result of Cardiff's industrial past, many sites could potentially be contaminated

9.3. Past industrial activities have led to land to become contaminated in various ways over many years. Cardiff Council is aware of about 1410 hectares of potentially contaminated land, including industrial, mining and quarrying, dockland and former waste disposal sites. Some contaminated land sites only come to the Council's attention when developers undertake site investigations on land being considered for future development, so this number could increase in the future.

9.4 In recent years Cardiff has undergone a significant amount of redevelopment works which has seen many remediation projects occurring. Development of contaminated land has the advantage of cleaning up land and securing regeneration although this incurs additional costs. When brownfield sites are redeveloped, they are usually done so on a 'suitable for use' basis, and as such the remediation undertaken on the sites depends on the proposed end use⁸. Most of the remediation that is undertaken involves engineering practices, for instance capping over the existing contaminated land with imported clean soils, thus encapsulating the contamination. Whilst this is an effective remediation methodology in that it breaks the pathways and exposure to the contamination, it does not reduce/ breakdown or remove the contamination from the site.

9.5. The Council has prepared a Contaminated Land Inspection Strategy (Cardiff Council 2010) that sets out how the Council will deliver its statutory duties and provides a framework to identify, inspect and remediate contaminated land.

No.	Indicator	Cardiff data	Wales data	UK data	Target	Trend	Indicator status	Commentary	Data quality	Data sources
9.2	Number and area (in hectares) of potentially contaminated sites	Approx. 1410 ha (10% of Cardiff area), 2010	Not applicable		Reduce area of potentially contaminated land (Cardiff Council)	? unclear due to how sites are identified	?	The sites have been identified (predominantly) by looking at past industrial activities and identifying those activities that could have resulted in contamination.	2	Cardiff Pollution Control Division

⁸ For instance, the remediation undertaken on a site for commercial/industrial development would not be suitable to accommodate residential purposes, so if such a site was considered for residential development in the future, some form of additional remedial works would probably be required.

Good quality agricultural land is known to exist in Cardiff but no comprehensive survey has been undertaken recently

9.6. The latest Agricultural Land Classification (ALC) criteria adopted in 1976 classifies land into 5 grades. The ‘best and most versatile land’ is defined as Grades 1, 2 and 3a. This is the land which is most flexible, productive and efficient in response to inputs and which can deliver future crops for food and non food uses such as biomass, fibres and pharmaceuticals. Old ALC records (before the subdivision of Grade 3) show areas of grade 2 and 3 at locations outside the urban area. The best quality land is located within the Rhymney valley to the north east of the city and is known to have supported arable use in recent years. Other farmland outside the urban edge to the north and west was classified within Grade 3 but no known comprehensive survey has been undertaken to classify under the 1976 criteria. The ridge to the north of the city and levels to the east are considered less likely to fall within the best and most versatile land under the criteria.

9.7. Agricultural land values have risen sharply in recent years, particularly in Wales. A survey by Savills suggests that land values in Wales rose by more than 80% between 2003 and 2008 - more than twice as fast as the Great Britain average - driven in part by a sharp reduction in the land available for sale, and the higher values that non-farmers are willing to pay (Savills Agricultural Land Market Survey 2009).

No.	Indicator	Cardiff data	Wales data	UK data	Target	Trend	Indicator status	Commentary	Data quality	Data sources
9.3	Area (in hectares) of grades 1, 2 and 3a agricultural land	Current data gap				?	?	No recent survey of agricultural land (last survey occurred prior to the 1976 revision of ALC).	Current data gap	

Cardiff's allotments are important for people's health and food security, but they are oversubscribed

9.8. Allotments play an important part in improving people's health. Not only do they offer the opportunity to grow food but they also provide an excellent form of outdoor activity, exercise, relaxation, and a place where people can meet each other. Cardiff's allotments strategy suggests that a minimum of 15 plots should be provided per 1000 households⁹. This would mean 2055 plots for Cardiff's current population, and almost 2700 for its future population¹⁰.

⁹ This is equivalent to the 1993 average for England (Cardiff allotments strategy 2005).

¹⁰ The Welsh Assembly Government's Household Projections for Wales 2010 predict that Cardiff will have 179,000 households in 2023

Although Cardiff currently has about 2000 plots, allotments in Cardiff are already often difficult to obtain due to long waiting lists: in 2009, only three of the council's sites had plots available (Cardiff Council allotment categories and prices, 2010).

No.	Indicator	Cardiff data	Wales / UK data	Target	Trend	Indicator status	Commentary	Data quality	Data sources
9.4	Number and area of allotments, number of plots	Between 25 and 28 allotments (more than 2000 plots) covering between 65 and 79 hectares, depending on the data source used. 24 sites fully let with a total of 2015 tenants; waiting list over 1000	Not applicable	15 plots per 1000 households (Cardiff Allotment Strategy 2005) No loss of area of allotments (Cardiff Biodiversity Action Plan) "ensure that statutory allotments ... are sufficient to meet the demands of local residents wishing to cultivate them" (TAN 16)	?	-	Different data sources provide different information about allotments. Long waiting lists at many sites.	2	Cardiff Allotment Strategy 2005 Draft Allotment Strategy 2010 Cardiff Biodiversity Action Plan Cardiff Open Space Survey 2007

Cardiff has sufficient mineral reserves to last about 30 years

9.9. Mineral resources are a valuable but finite resource. They provide the essential raw materials for our buildings, infrastructure and their maintenance. An adequate and steady supply of minerals is essential to the national, regional and local economy and their exploitation makes a significant contribution to economic prosperity and quality of life.

9.10. Cardiff is one of the largest producers and consumers of minerals in the region. Natural minerals in Cardiff include quarried hard rock (carboniferous limestone and dolomite) and dredged sand landed in Cardiff Docks. In 2004, crushed rock production in Cardiff was just over half a million tonnes (mt) per year, and about 0.2 mt of sea dredged sand is landed at Cardiff Docks each year¹¹. Most of this natural mineral production is used in the construction

¹¹ South Wales Regional Aggregates Working Party, Annual Reports 2004, 2008 and 2010

industry as aggregates. Secondary materials also substitute for natural aggregates. Approximately 0.1 mt of steelworks slag is used per year for construction purposes, and a significant quantity of construction and demolition waste is recycled as aggregate.

9.11. Cardiff's permitted reserves of hard rock minerals represented about 69 years of supply at the then current output rates in 2010, up from 33 years in 2008 and 53 years in 2004¹². This variation reflects changes in rates of use in development. The land bank will continue to decrease as the reserves are quarried, highlighting the need to protect them from inappropriate development. However, they still represent a significant land bank.

No.	Indicator	Cardiff data	Wales data	UK data	Target	Trend	Indicator status	Commentary	Data quality	Data sources
9.5	Landbank (in years) of mineral reserves	About 69 years	18 – 122 (South Wales authorities)	n/a	10 years	↔ variable, depending on demand	+		2	South Wales Regional Aggregates Working Party, 2010

Chemical and biological water quality of the rivers Taff, Ely and Rhymney is ‘fair to good’ and water quantity is satisfactory

9.12. Cardiff contains the three major river valleys of the Taff, Ely and Rhymney together with other watercourses such as the Nant Fawr. Historically, the rivers' water quality has been degraded due to mining activities, urban run-off and extensive physical modifications. However water quality has dramatically improved in recent years as improvements have been made to drainage systems and mining related activities have ceased upstream. This has allowed the return of salmon and sea trout, with some tributaries providing spawning and nursery areas.

9.13. However Cardiff's rivers are still vulnerable to overflows from abandoned mine workings, and diffuse and intermittent pollution from urban and industrial development. The South East Valleys catchment, of which they are part, is one of the worst catchments of the ten that comprise the Severn River Basin. In the catchment overall, only 6% of river length is achieving good ecological status or potential, as required by the Water Framework Directive. The Environment Agency does not expect this to change by 2015. Proposed action to tackle problems in the river catchment include improvements to sewer overflows and sewage treatment works discharges to reduce pollution by ammonia and other substances, pollution monitoring and habitat improvements (Environment Agency, 2009, River Basin Management Plan Severn).

¹² *ibid.*

9.14. Abstraction in the lower Taff catchment is dominated by the exempt abstraction at Blackweir that supplies Cardiff docks, while the licensed abstractions sum to a comparatively small total. Water resources in the Ely catchment are currently not fully utilised. The main abstractions in this unit are industry related (Environment Agency Wales 2006).

No.	Indicator	Cardiff data	Wales data	UK data	Target	Trend	Indicator status	Commentary	Data quality	Data sources
9.6	Percent of river lengths achieving good ecological status or potential	South East Valleys Catchment: Good 4.0% Moderate 77% Poor 18% Bad 1%			100% good by 2027	? In 2006, good chemical quality 94.4%; good biological quality 79.4%	-	The Water Framework Directive requires water quality to be monitored differently from 2006, so there is no trend data. Data is for the entire catchment, including Cardiff's rivers	2	Environment Agency Wales
9.7	Total non-tidal water abstractions	Number of abstraction licenses: 47 4,409,970 M ³ per year, total. (2010)	No Comparator			? This was the amount abstracted in 2010, data will be acquired for subsequent years as part of LPD monitoring	?		2	Environment Agency Wales
9.8	Percentage of Cardiff's rivers achieving Good General Quality Assessments	Cardiff Data (including Whitchurch canal). biology A – 5.74	Wales Data Biology A – 33.18 B – 50.39			↑ General quality assessments for biology and chemistry	+	GQA are made yearly by the Environment Agency Wales. Cardiff has shown its strongest improvements in		Environment Agency Wales (2010)

		B- 51.36 C- 22.96 D- 14.69 E- 0 F- 0 No data – 5.24 Chemistry A- 55.91 B- 18.32 C- 25.77 D – 0 E – 0 F – 0	C – 10.83 D – 0.71 E – 0.74 F – 0 No data – 4.15 Chemistry A- 74.43 B – 19.42 C – 3.01 D – 0.83 E – 1.23 F – 0.06 No data – 1.01		show year on year improvements (figure 9.1)		chemical water quality compared with biology. However, GQA is still below the Welsh average.	
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GQA Biology and Chemistry Trends in Cardiff

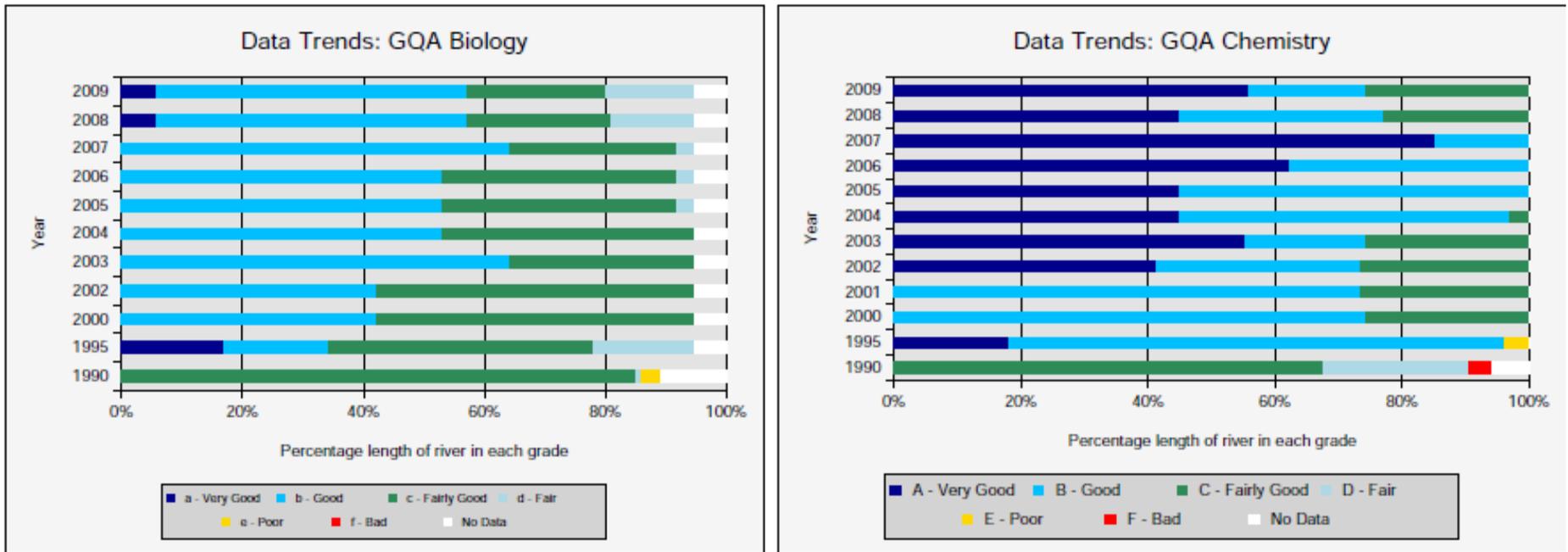


Figure 9.1 – Trends in Biological and chemical General Water Quality in Cardiff (1990 – 2009 Environment Agency Wales 2010)

10. Population

Introduction

10.1 Cardiff has unique population characteristics that are different to those experienced within the South East Wales region and Wales as a whole. Its population has grown rapidly over the last 20 years, and this rapid growth is expected to continue.

Cardiff's population has increased steadily over the past 20 years but much more rapidly since 2001 reaching 345,400 in 2011

10.2. Figure 10.1 shows the change in Cardiff's population over the last 29 years. The average growth rate over this period was 0.57%. Analysis of the components of population change (births, deaths and net migration) are shown at Figure 10.2. This reveals relatively stable birth and death rates resulting in an average natural change of 1,000 persons per year over the past 29 years. Migration trends fluctuate more considerably but the overall trend between 1981 and 2009 shows a net migration of 700 persons per year.

10.3. The average annual population increase over the period 2001-2009 was 3,300 per year, approximately 83% above the average for 1981-2009 and approximately 181% above the average for 1981-2009. This reflects the trend for population to increase mostly from net migration rather than from relatively stable natural increase. The last 4 years have seen a net in migration of approximately 2,800 per year.

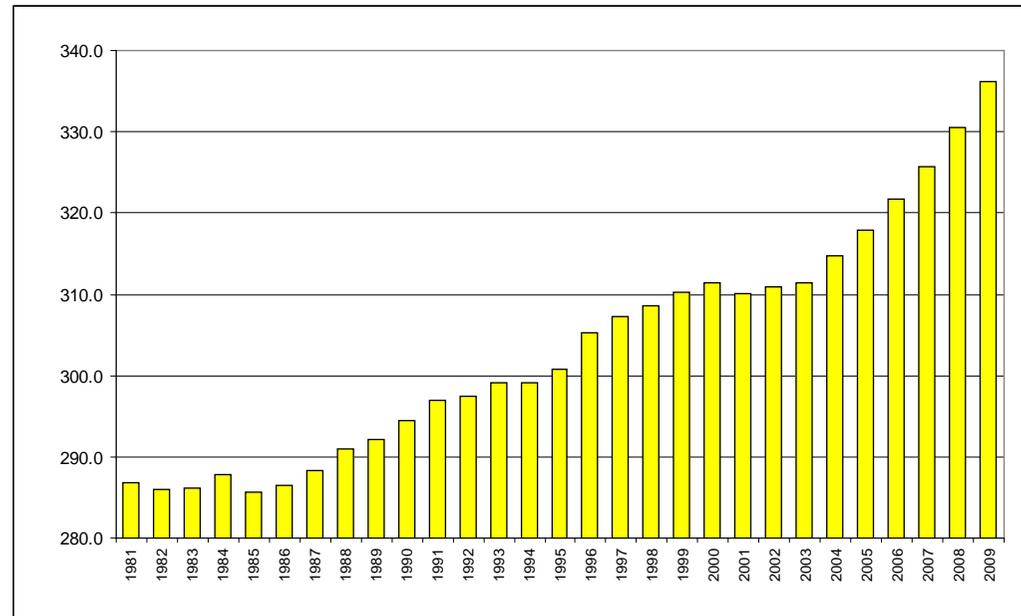


Figure 10.1 Cardiff's population (000s), 1981-2009 (National Statistics)

10.4. The population of the South East Wales region has increased from 1.37 million in 1981 (48.8% of the Wales total) to 1.45 million in 2009 (48.2% of the Wales total). However within the region, the coastal areas have seen an increase in populations whilst the valley authorities have experienced a loss of share (and amount) to varying degrees. For example, Cardiff has experienced a 17.2% growth in population over the period 1981-2009, whilst Merthyr Tydfil has experienced a loss of 8.1% over the same period.

Figure 10.2 Births, deaths and net migration, 000s
(National Statistics)

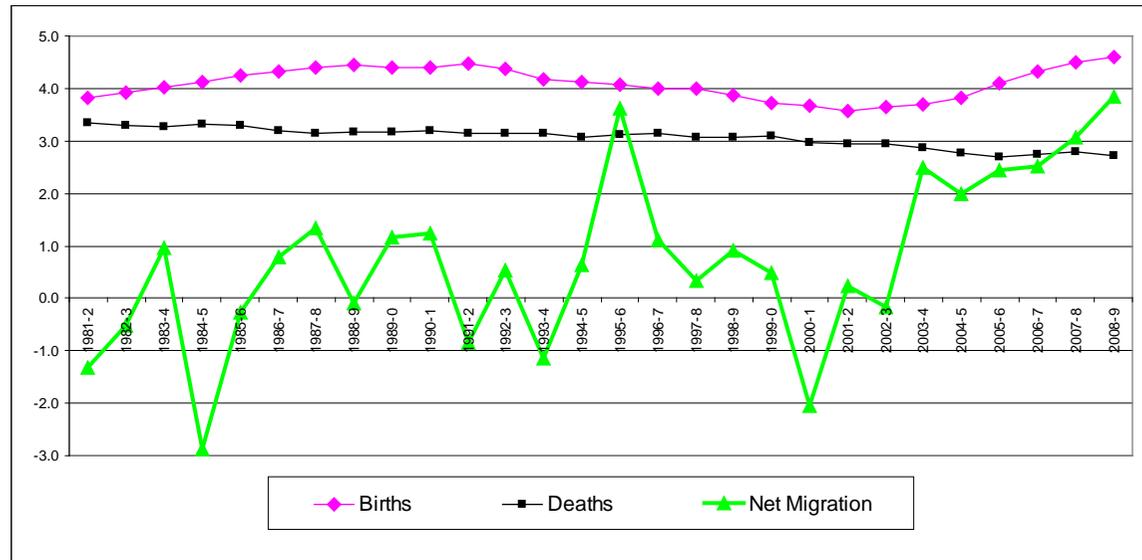
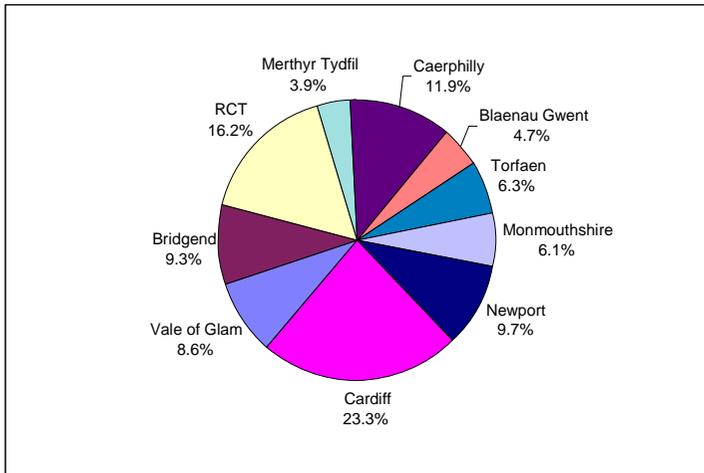


Figure 10.3 Population (%) by local authority in South East Wales 2009 (total 1.45 million) (National Statistics)



Population and household numbers will increase in South East Wales, and Cardiff's proportion of this is increasing

10.5. The Welsh Assembly Government's population projections suggest that Cardiff's population will increase by 22% to 2023, from 336,200 to 410,500. Predictions of household numbers are for a 31% increase between 2008 and 2023, from 137,000 households to 179,000 (WAG Household and Population Projections for Wales (2008-Based), 2010).

No.	Indicator	Cardiff data	Wales data	UK data	Target	Trend	Indicator status	Commentary	Data quality	Data sources
10.1	Total population	341,100 population (2010)	3,006,400	60,462,600	No target	Increase	contextual indicator	Cardiff's population and number of households has increased steadily over the past 29 years but much more rapidly since 2001.	1	Office for National Statistics
10.2	Number of households and average household size	Households 142,100 (2010) Average size 2.34 (2010)	1,318,500 (2010) Average size 2.26 (2010) 2.75 (1981)	England and Wales Households - 218,680,00 (2008) Average size -2.30 (2008) 2.65 (1981)	Accommodate LDP household projections	number up, size down: 2.45 (2001) 2.54 (1991) 2.75 (1981)	contextual indicator	The number of households is increasing year on year in Cardiff, Wales and the UK. Average household size is decreasing.	1	DCLG and WAG projections

Average household size is decreasing, with a decline in married couples but an increase in one person, lone parents and cohabiting couples

10.6. Cardiff's average household size has been consistently higher than that for Wales and England & Wales, but it has been decreasing in line with national rates. Household size is diminishing due in part to a marked decline in the proportion of married couple households and an increase in single households and cohabiting couple households. The latest WAG 2006 based household projections indicates that Cardiff's predominant sizes of household is of 1 or 2 people (64% of households). Based on past trends, it is projected that this will increase to 68% of all households by 2026: see Table 10.1.

Cardiff: Projected Households by Type - Thousands (WAG 2006 based projections)					
Household Type	Year		Change		
	2006	2026	No	%	% of total change
1 person	40.5	59.0	18.5	45.7	51.2
2 person (no children)	37.1	44.5	7.4	19.9	20.5
2 person (no children)	5.6	10.1	4.5	80.4	12.5
3 person (no children)	9	8.7	-0.3	-3.3	-0.8
3 person (2 adults, 1 child)	8.1	10.2	2.1	25.9	5.8
3 person (1 adult, 2 children)	3.9	7.0	3.1	79.5	8.6
4 persons (no children)	3.5	3.5	0.0	0.0	0.0
4 persons (no children)	11.1	10.5	-0.6	-5.4	-1.7
4 persons (1 adult, 3 children)	1.3	2.3	1.0	76.9	2.8
5+ persons (no children)	2.6	3.4	0.8	30.8	2.2
5+ persons (2 adults 1+ children)	7.3	6.3	-1.0	-13.7	-2.8
5+ persons (1 adult, 4+ children)	0.7	1.3	0.6	85.7	1.7
All Household Types	130.7	166.8	36.1	27.6	100

Table 10.1 Projected households by type for Cardiff, 000s (WAG 2006 based projections)

Cardiff has a relatively high proportion of young adults and a low proportion of older age groups compared to Wales as a whole

10.7. Figures 10.4 and 10.5 provide a summary of the population age structure for Cardiff and South East Wales. Cardiff's population distribution contrasts markedly from that of South East Wales (and UK, which are similar to each other). Cardiff has a higher percent of population in age groups 15-39 years but relatively lower percent in older age groups from 40 years upwards.

10.8. Of particular significance is the effect of Cardiff's student population who represent around 10% of the city residents. Most full-time students are aged between 18 and 29 years old. Almost 19% of Cardiff's population falls within the 20-29 age range compared with less than 12% for South East Wales as a whole.

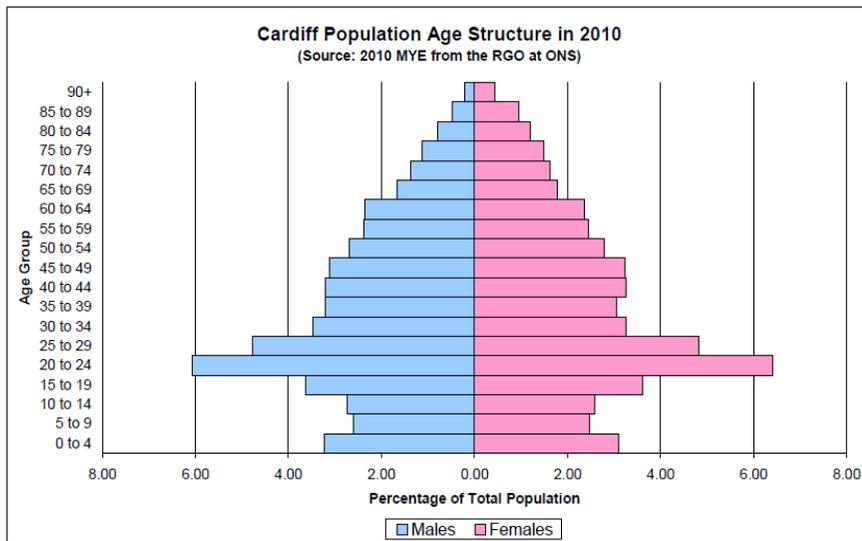


Figure 10.4 Cardiff age structure in 2010 (National Statistics)

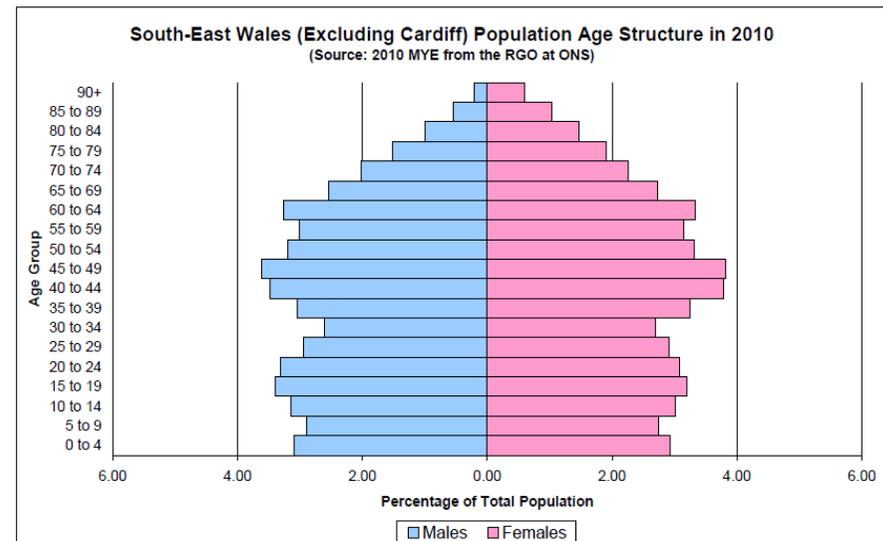


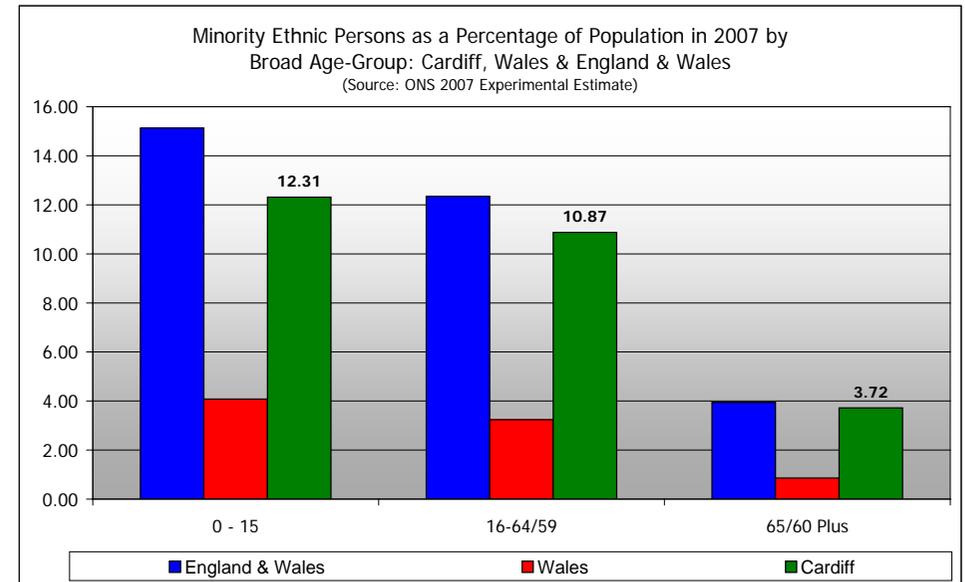
Figure 10.5 South East Wales age structure in 2010 (National Statistics)

Ethnic groups as a proportion of Cardiff's population are higher than for Wales as a whole

10.9. Figure 10.6 shows that Cardiff's population profile in terms of ethnic group is quite different to the Wales average but much closer to England and Wales combined. At the time of the 2001 population census, Cardiff's white population accounted for 91.6% of the total, compared to Wales (97.9%) and England & Wales (91.3%). The ethnic minority populations tend to live in the poorest inner city areas that rank amongst the most deprived areas in Wales (see Map 1.1).

Figure 10.6 Ethnic groups of the population

(Cardiff Council, Joint Needs Assessment 2010, based on ONS 2007 Experimental Statistics)



11. Waste

Introduction

11.1. The Welsh Assembly Government has set challenging targets for recycling and composting. Combined with European Union legislation, these are driving change towards more sustainable waste management practice. Cardiff's waste is managed on a sub-regional basis, along with other local authorities in South East Wales. Information on waste produced in Cardiff is limited: much of the information provided in this chapter is about South East Wales as a whole.

11.2 The South East of Wales had an estimated 8.6 years of remaining landfill capacity in 2008, see figure 11.1.

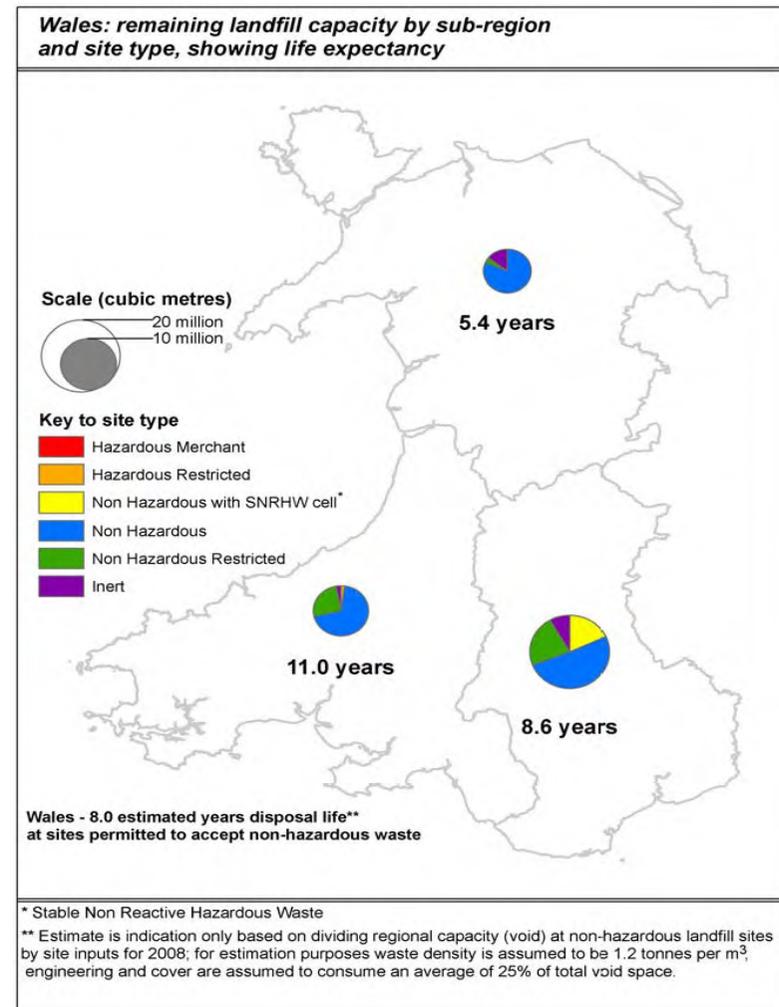


Figure 11.1 Remaining landfill capacity, in years (Environment Agency Wales 2008)

Construction and demolition waste is currently the biggest component of waste in South East Wales

11.2. Construction and demolition waste is the biggest component of waste in South East Wales, accounting for about 55% of all waste produced. This is followed by municipal (17%), industrial (15%) and commercial (10%) waste (South East Wales Regional Waste Group 2008) - see Figure 11.2.

11.3. Municipal waste produced in Cardiff, as in the UK as a whole, increased rapidly to a peak in 2004/05 but is now decreasing significantly. In 2008/09, Cardiff Council was responsible for over 118,000 tonnes of municipal waste, down sharply from a peak of 171,000 four years earlier (Statswales, 2010). The first quarter of 2012 was 11% lower than the same period in 2011.

11.4. In 2005/06, Cardiff had 4 civic amenity sites, 11 scrapyards/metal reprocessing sites, 24 mobile plants, 3 physical treatment plants, 1 physico-chemical treatment plant, 14 transfer stations, and 1 windrow composting site. In total, these had a capacity for 4.44 million tonnes of waste, more than half of that for South East Wales as a whole (South East Wales Regional Waste Group Regional Waste Plan 1st Review, 2008).

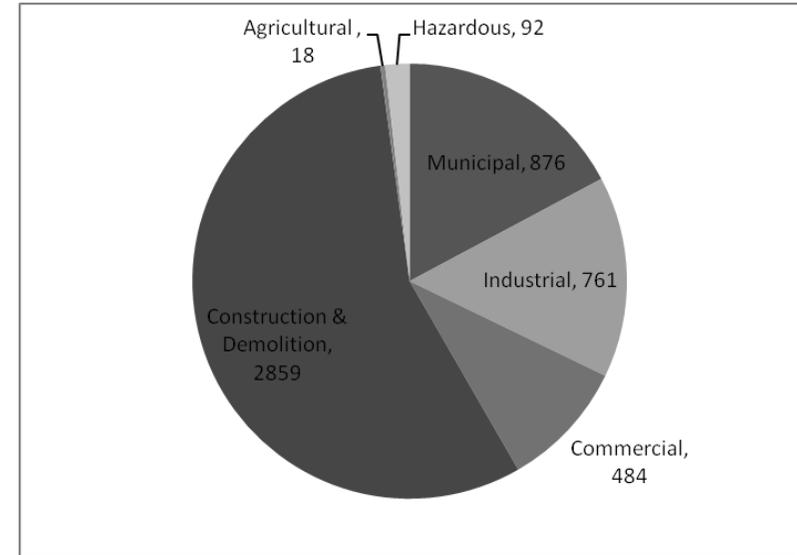


Figure 11.2 Amount (in 000 tonnes) of waste arisings in South East Wales, 2005/06 (South East Wales Regional Waste Group, 2008)

No.	Indicator	Cardiff data	Wales data	UK data	Target	Trend	Indicator status	Commentary	Data quality	Data sources
11.1	Commercial and industrial waste arising per year	247,608 tonnes (2002/03 – most recent data available)	SE Wales 1,244,948 (2005/06)	Not known	No target	↑ 1,290,902 in 2002/03 (SE Wales)	- tonnage down but still high	Cardiff Council has no suitable local data	3	South East Wales Regional Waste Group Regional Waste Plan 1 st Review,

11.2	Construction and demolition waste arising per year	Not available	SE Wales 2,858,774 tonnes (2005/06)	Not known	Recycle or reuse 70% by 2025 (WG)	↓ 2,747,765 in 2002/03 (SE Wales)	-			2008
11.3	Municipal waste arising per year	161,800 tonnes (2011/12), down from 181,800 in 2007/8	Wales 1.479 million (2011/12), down from 1.713 (2007/8)	11% decrease in 4 years		↑ Decreasing	+		1	Statswales, Municipal Waste Arisings 2012 (http://www.statswales.wales.gov.uk/TableViewer/tableView.aspx?ReportId=10564)
11.4	Number of planning applications with site waste management plans		Current data gap. Feasibility of this indicator to be investigated				?	Such plans may become a legal requirement for large projects in the future	Current data gap	

Recycling rates are improving rapidly following the completion of a new recycling facility and rolling out a recycling scheme

11.5. Cardiff's recycling and composting rates have historically been significantly below the Welsh average. Only 10.4% of the municipal waste stream was recycled in 2004/05 compared to a Welsh recycling rate of 21.7%. However this has improved rapidly with the opening of the Materials Recycling Facility, the PAS 100 Composting Facility, the In-vessel composting facility and the roll-out of an integrated kerbside recycling scheme, and Cardiff at 49% is now slightly ahead of the Wales average of 48%.

No.	Indicator	Cardiff data	Wales data	UK data	Target	Trend	Indicator status	Commentary	Data quality	Data sources
11.5	The percent of municipal waste prepared for reuse, composted or recycled	49% (2011-12)	48% (2011-12)		WG targets of 52% (2012-13), 58% (2015-16) 64% (2019-20) and 70% (2024-25)	↑ 3.4% in 2000/01 10.4% in 2004/05 39% (2009/10)	+		1	Statswales, Local Authority Municipal Waste Management, January – March 2012 http://wales.gov.uk/docs/statistics/2012/120628sdr1042012en.pdf
11.6	Number of bring sites and large household recycling centres	14 bring sites 4 Household recycling centres	N/A	N/A	N/A					

It is unclear how Cardiff's waste will change in the future

11.6. There is considerable uncertainty regarding the likely future of Cardiff's waste. Factors affecting waste growth include:

- Population changes
- Changes to the number and size of households
- Consumer behaviour
- Effectiveness of waste minimisation strategies
- Changes in the economic prosperity of the region

11.7. In 2008, based on past trends, future population change, economic activity and legislation, the South East Wales Regional Waste Group predicted an 83% growth in municipal waste between 2003/04 and 2024/25; a 17-20% increase in commercial and construction waste; and a significant reduction in industrial, agricultural and hazardous waste – see Figure 11.3.

11.8. The group predicted in 2004 that Cardiff would need significantly more waste treatment facilities of most types, albeit not landfill (South East Wales Regional Waste Group, 2004, South East Wales Regional Waste Plan). However these predictions may change now as a result of the economic recession, increased population projections for Cardiff, and further measures taken by the Council to reduce waste production. Prosiect Gwyrdd is looking for the best environmental, cost effective and practical solution for waste in South East Wales once recycling and composting has been maximised in each Local Authority area (partnership between Caerphilly, Cardiff, Monmouthshire, Newport and Vale of Glamorgan Councils).

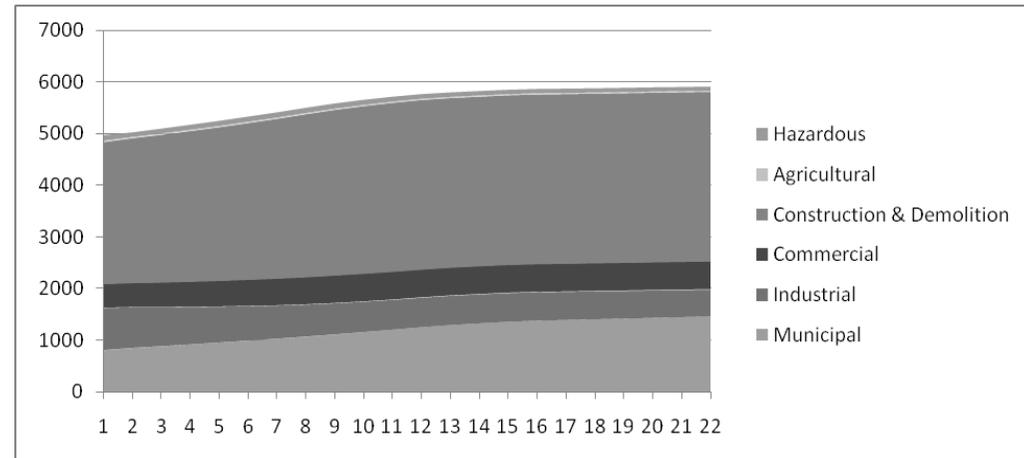


Figure 11.3 Predicted waste arisings, 2003/04 – 2024/25 (South East Wales Regional Waste Group Regional Waste Plan 1st Review, 2008)

Cardiff Council & Levett-Therivel Sustainability Consultants

**Sustainability Appraisal and Strategic Environmental Assessment
of the Cardiff Local Development Plan**

**Appendix C: Consultees' Responses on Scoping
Report**

**Final Sustainability Appraisal Report of the Cardiff Local
Development Plan**

January 2016

Caldicot and Wentlooge Levels IDB	
Consultee comment	Recommended response
Policy Review	
Biodiversity, Flora and Fauna: Suggest including the 'Environment Strategy for Wales'. The Key Policy Document contains a number of outcomes and actions relevant to the LDP.	Agree, added.
Climate Change: <ul style="list-style-type: none"> • Suggest that references to the Flood Risk Regulations (2009) and the Flood and Water Management Act (2010). • The reference to threats from potential flooding is welcomed but the inclusion of a reference to existing communities, development, infra-structure and other assets alongside 'new developments' is suggested for the 'how the LDP might help' column. • Suggest that a reference to the additional flood risk assessments, mapping and related responsibilities and actions for local authorities in the recent legislation. 	Agree, added. Agree, add to bullet point. Agree, added.
Landscape: Suggest including the 'Register of Landscapes of Historic Interest in Wales' to the Key Policy Documents part of the table.	Disagree; this is a non statutory advisory document.
Scoping Report	
The reference to the risk of flooding and new developments but would urge that existing developments are also included,	Agree, amended.
The specific reference to the need to consider the significant threat from flooding for the Wentlooge Levels is welcomed.	Noted.
Sustainability Issues	
Cultural Heritage and the Historic Environment: There is a case for making a reference here to the importance of Historic Landscape interests.	Agree, added.
Landscape: The reference to the Gwent Levels and the Severn Estuary are welcomed as these are very important assets for the City.	Noted.
SA/SEA Objectives	
Sub objective 4e: This point needs to refer to the need to protect existing developments, communities, infrastructure etc.	Disagree, objective 4g in the SA/SEA Framework encompasses all developments new and old.
Sub objective 4f: We welcome the reference here to the relevance and importance of Sustainable Drainage Systems. This is an area of work of direct relevance to the Board.	Noted.
Suggests studying Defra's Adaption to Climate Change Programme; particularly the Climate Change Risk Assessment Project for a comprehensive account of the potential effects of climate change, a section on Wales is available.	Noted.
The Board has concerns that there are development sites on Wentlooge Levels with extant planning permission.	This concerns the content of the LDP and is not directly relevant to the SA/SEA, and has been

	forwarded to the LDP Team for consideration as part of the preparation of the LDP.
Appendix 2	
The Board is also concerned about the current data gap in relation to indicators 4.9 and 4.11, relying on the Number of Properties at risk from flooding, percentage of new developments with SUDS and Number of new approved housing units in C1 and CV2 Flood risk areas.	At the current time changes are not considered necessary to the Scoping Report, however this issue will be kept under review. Current data gaps – the feasibility of these indicators is to be investigated, and alternative indicators developed if necessary.
Welcomes the inclusion of Wentlooge Levels in Paragraph 5.3 but would urge that specific reference is made here to the Historic Landscape Interest of this area.	Disagree, already included in cultural heritage and historic environment section.
Welcomes the inclusion of Gwent Levels as one of the five sites to be proposed as Special Landscape Areas.	Noted.

Cardiff Civic Society	
Consultee comment	Recommended response
Scoping Report	
The Draft Sustainability and Environmental Impact Assessment is comprehensive and written in plain English but presented but presented in an overly complex sequence making access difficult.	A Non-Technical Summary is provided, which summarises the information contained within the Scoping Report over 5 pages.
Major concern is the lack of importance given to climate change. Welcome the statement in section 4 “climate change is probably the greatest long-term challenge facing the human race, and is a serious and urgent issue” as it suggests that sustainability and environmental policies will be central to the LDP.	This is a matter for the LDP rather than the SA/SEA and has been forwarded to the LDP Team to consider as part of the preparation of the LDP. However, climate change is a principle concern and will be integral to the development of strategic options and policies. There is a specific objective, and range of sub objectives, in the SA/SEA Framework to ‘reduce emissions of greenhouse gases that cause climate change and adapt to its effects’.
Suggest that a drive for a sustainable city must be central to any assessment of the LDP.	Agreed. The SA/SEA Framework of objectives

	has been designed to take into account socio-economic and environmental factors and provide a range of objectives that are based on achieving a more sustainable city. They form the basis of the criteria for assessment.
Appendix 1	
Transport: The implications of the goals on transport must be based upon extensive modelling of the options available, and requires data on actual projected traffic flows into and around the city. The proposals are too weak and radical alternatives must be professionally examined to ensure solutions are suitable for 2026 and the climate change goals.	This is a matter for the LDP rather than the SA/SEA but has been noted and forwarded to the LDP Team to consider as part of the preparation of the LDP.
Air Quality: Improvements must be specific and delivered, it is not sufficient to minimise travel and consider the location of polluting industry.	The SA/SEA can only set out how it assesses the LDP, but has been noted and forwarded to the LDP Team to consider as part of the preparation of the LDP.
Biodiversity: In this Year of Bio-diversity the importance of addressing this aspect of human damage to the planet has been accepted by many countries, not least by the WAG.	The SA/SEA can only set out how it assesses the LDP, but has been noted and forwarded to the LDP Team to consider as part of the preparation of the LDP. Biodiversity is an objective set out in the SA /SEA Framework.
Climate Change: Vague statements about promoting, helping, supporting and encouraging must be replaced by positive and action orientated words like providing, ensuring and delivering. There is not enough evidence on which to base protective measures like flood protection schemes in the event of water levels increasing and the anticipated risk is understated.	The SA/SEA can only set out how it assesses the LDP, but has been noted and forwarded to the LDP Team to consider as part of the preparation of the LDP.
Cultural heritage and historic environment: Cardiff Civic Society concurs with the implications identified in the draft.	Acknowledged.
Economy: The list of things the LDP must do lacks supporting and justifying data from external sources.	This is a policy review document and supporting data and sources can be found in the original documents reviewed.
Health and well-being: There is no specific reference to the facilities to encourage young people to participate in sports.	This is a policy review document and as such can only reference items

	included in these policies.
Landscape: Cardiff Civic Society concurs with the implications identified in the draft	Acknowledged.
Population: Section on housing needs reinforcing by policy on standards, design, mix and regeneration/ green deals. It is not enough to indicate or support good development.	This is a policy review and cannot set additional policies, but comments have been noted and forwarded to the LDP Team to consider as part of the preparation of the LDP.
Waste: Recycling goals must be achieved not just given help. There is no reference to energy from waste schemes.	This is a policy review document and cannot set additional policies or include recommendations not included in the policies reviewed.
Appendix 2	
Indicator 4.2 Cardiff ecological footprint data is dated 2001; an update is needed to quantify the target “reduce growth in footprint”.	At the current time changes are not considered necessary to the Scoping Report, however this issue will be kept under review. WAG have now taken responsibility for measuring this at a local authority level. Currently awaiting updated data that is comparable with the 2001 data.
Indicator 4.7 As stated, there is no data on affordable housing, despite this being an area of failure last time.	At the current time changes are not considered necessary to the Scoping Report, however this issue will be kept under review. Current data gap and seeking data to fill.
Indicator 4.8 As stated there is no data on renewable energy sources. This is a remarkable omission especially since Cardiff’s potential was showcased in the Government Office for Science report “Powering our Lives” Published in 2008.	At the current time changes are not considered necessary to the Scoping Report, however this issue will be kept under review. Current data gap and the feasibility of this indicator is to be investigated, and alternative indicator developed if required. The LDP Team will be undertaking a Renewable Energy Assessment using

	the WAG toolkit, which will identify potential renewable energy sites and constraints.
Indicator 4.9 – 4.11 Flood Risk – This was specifically mentioned by the Inspector, and data is essential to ensure a prudent response to the LDP.	The SA/SEA contains objectives, sub-objectives and indicators relating to flood risk. Since the Inspectors report further flood risk data is being collected so work on the new LDP is informed by an up to date strategic flood risk consequences assessment.
Indicator 6.2 The assessment of Cardiff's competitiveness is misleading. Our position is, at best, average and it is not with other Welsh cities that we are in competition.	The data in 6.2 refers to the UK competitiveness index and is assessed on that basis. Whilst Cardiff does out perform other Welsh cities it's economy has still experienced strong growth and improved it's position in the UK Index.
Indicator 7.3 and 7.4: The poor state of public health is recognised and is an LDP issue but without targets action cannot be effective.	At the current time changes are not considered necessary to the Scoping Report, however this issue will be kept under review. Targets to be researched.
Indicator 9.2 A total of 1410 ha of contaminated land is identified, but is not accompanied by an analysis of its capability for development. This is sufficient, if appropriate for construction, once decontaminated for all Cardiff's housing needs in the plan period (1410 x 30 per ha). The model of the Olympic Park should be examined.	Noted, this is an issue for the consideration in the LDP, and will be forwarded to the LDP Team to consider as part of the preparation of the new LDP.
Indicator 9.3 As stated, the latest farmland data used is dated 1976, so at least 34 years old. This lack of up to date data will prevent effective planning for careful use of Greenfield sites if this proves necessary to support chosen growth plans.	At the current time changes are not considered necessary to the Scoping Report, however this issue will be kept under review. Further data is currently being collected by the LDP Team in liaison with WAG and ADAS.
Indicator 11.1 and 11.2 The data indicates that the recycling of commercial and construction waste is not adequately managed. As the main sources of waste this should be an LDP focus.	Disagree. Whilst it is an issue that will be considered by the LDP the problem might not be solvable by the Plan, rather

	it may be better addressed by the Waste Management Strategy.
The omission of data from the European Commission report Perception survey on Quality of Life in European Cities, published in November 2009 should be rectified.	At the current time changes are not considered necessary to the Scoping Report, however this issue will be kept under review. This will be used to inform indicators research.
Conclusion	
This report is an update on the 2006 document, and many of the data elements missing last time are still present.	This has been dealt with in the detailed comments and responses above.
The extended period of the plan adds force to the need for an ambitious approach that has not yet been fully grasped.	The SA/SEA can only set out how it assesses the LDP, but has been noted and forwarded onto the LDP Team for consideration as part of the preparation of the LDP.
There is a notable lack of benchmarking information and models of best practice that can be learned from. Cardiff Civic Society commend to the council the work undertaken in Seattle on sustainable cities: in the view of the Cardiff Civic Society this should form a core to the revised sustainability plan for the LDP.	This is a matter for the LDP rather than the SA/SEA, but has been noted and forwarded onto the LDP Team for consideration as part of the preparation of the LDP.

Cardiff and Vale University Health Board	
Consultee comment	Recommended response
Recommend that an HIA be carried out alongside SA/SEA and LDP development.	Noted, LDP Team is coordinating HIA.
Include that Cardiff is a member of the World Health Organisation Network of Healthy Cities for Phase V (2009 – 2013) and is committed to adopting the principles of healthy urban planning is recommended.	Agree, include in Health and Wellbeing chapter of Appendix 2.
Include the concept of healthy urban planning and health map and the impact of the environment on inequalities.	Disagree – the figure does not provide information that contributes to building an overview of the current state of Cardiff.
Healthy and Well-Being indicators (Source: Integrated Partnership Strategy, Interim Report of the Director of Public Health Cardiff Vale University Health Board, November 2010 – Appendix 2). <ul style="list-style-type: none"> - Life expectancy (7.2) (Page 8 of interim report on DPH). - Obesity (7.6). Replace map with data from WHS. 	Appendix 2 contains data from the WHS, and the map demonstrates the distribution of the issues of obesity across the city. This may assist in the delivery of services for promoting healthy lifestyles.

Policy Review	
Include The Cardiff Health, Social Care and Well-being Strategy and Cardiff Children and Young People's Plan.	Agree, added.
Include The Healthy Weight Healthy City Strategic Framework (Cardiff Health Alliance 2010).	Disagree – this is an action plan to deliver policy in the Health, Social Care and Wellbeing Strategy, Cardiff and Young Persons Plan, Safer Capital and LDP in order to fulfil WHO Healthy City status.
Include Creating an Active Wales (Welsh Assembly Government 2009).	Disagree – the policy review only includes key policies.
Include Every Child Has the Right to Play – The Play Strategy for Children and Young People in Cardiff (Cardiff Council 2010).	Disagree – the policy review only includes key policies.
Include Interim Report of the Director of Public Health (Cardiff and Vale University Health Board, November 2010).	Disagree – the policy review only includes key policies.
Include NICE (2008) Physical Activity and the Environment, National Institute for Clinical Excellence, England.	Disagree – the policy review only includes key policies.
Include Marmot M (2010) Strategic Review of Health Inequalities in England post 2010. Fair Society Lives The Built Environment: Task Group 5.	Disagree – the policy review only includes key policies.

Civil Aviation Authority	
Consultee comment	Recommended response
The area in question does not contain any designated aerodrome. Therefore the Civil Aviation has no comments on the Final Draft Scoping Report.	Noted.

Countryside Council for Wales	
Consultee comment	Recommended response
CCW Warmly welcomes the scoping report, which is very clear, well structured and purposeful.	Noted.
Welcomes the recognition that the LDP is subject to Habitats Regulations Assessment Process.	Noted.
Policy review	
Welcome and acknowledge the Council's intention to keep the policy framework under review throughout the plan preparation period.	Noted.
Suggest the following additional information: <u>Biodiversity:</u> <ul style="list-style-type: none"> • Reference geodiversity as well as biodiversity • Cardiff Council's Countryside Strategy • The Welsh Assembly Government's emerging Natural Environmental Framework (A Living Wales) • Encourage the promotion of green infrastructure, a multifunctional network of green space providing for both 	This issue is referenced in objectives 8 and 9. Disagree, already in Landscape section of policy review. Disagree – the policy review only includes

people and biodiversity. Spatial Plan Area work for SE Wales has a vision of a “Networked Environment Region” , which Cardiff could help to deliver.	adopted policies. Disagree – this is guidance and not policy.
<u>Climate Change:</u> Cardiff specific policies should also come from Swansea and Carmarthen Bay Shoreline Management Plan 2.	Disagree – the policy review only includes adopted policies.
<u>Health and Well-Being:</u> <ul style="list-style-type: none"> • Rights of Way Implementation Plans • Encourage the Council to include the promotion of green infrastructure, a multifunctional network of green space providing for both people and biodiversity. 	Only key policies are included in the policy review. The issues of green infrastructure will be covered by SA/SEA objectives 8 and 3.
<u>Landscape:</u> The need to protect the historic landscape of the Gwent Levels should be included as a Cardiff specific policy.	The policy review only includes adopted policies and is not a policy document in itself.
<u>Natural resources:</u> <ul style="list-style-type: none"> • The Welsh Government’s emerging Natural Environment Framework (<i>A living Wales</i>) • Would like to see specific mention of the importance of conserving and enhancing the countryside for all of its intrinsic value – the Gwent Levels and Cardiff Beech Woods are particularly important in providing a setting for Cardiff. 	The policy review only includes adopted policies. There is a SA/SEA objective and sub objectives on designated sites (objective 3).
Indicators	
<u>Air Quality</u> Suggest additional indicators for air quality might include: <ol style="list-style-type: none"> 1. Population living within AQMAs 2. Number of developments in AQMAs 3. annual statistics for PM₁₀ and/or NO². 	At the current time changes are not considered necessary to the Scoping Report. Additional info on AQMAs to be considered to enhance current indicator if data collection feasible. PM10 and NOx are already monitored in order to decide whether a AQMA is required.
<u>Biodiversity, flora and fauna</u> Would like to see more indicators for biodiversity, including some that focus on geodiversity.	Geodiversity already covered in sections 3, 8 and 9 of Appendix 2.
<u>Climate Change</u> Many of the indicators are unclear or cannot be assessed due to lack of data. Would like clarity on how data for the indicators is to be collected in future, ensuring relevance.	At the current time changes are not considered necessary to the Scoping Report, however this issue will be kept under review. Current data gaps in some indicators – the feasibility of these indicators is to be investigated and alternative indicators formulated if required.

<p><u>Health and well-being</u> An indicator expressing the relationship between open/ green space and health and well-being would be beneficial. This should relate to the findings of the council's access to natural green space assessment.</p>	<p>Agree, although this is not currently a measureable indicator, and as such no changes will be made to the Scoping Report at present but the issue will be kept under review.</p>
<p><u>Landscape</u> It is noticeable that the majority of indicators for landscape are either not in use, unclear or lacking data. Suggest additional, measurable indicators are added.</p>	<p>Disagree, current data available for indicators, but lacking historic data for trend comparison due to not previously measuring data.</p>
<p><u>Natural resources</u> Many of the indicators for natural resources are either unclear or lacking data. Suggest additional, measurable indicators are added.</p>	<p>At the current time changes are not considered necessary to the Scoping Report, however the issue will be kept under review. Lacking historic data for trend comparison due to not previously measuring data. Agricultural land data is currently being collected by LDP Team in liaison with WAG and ADAS.</p>
<p>Sustainability issues Suggest that the following issues be considered:</p>	
<p><u>Utility Provision</u> Both the risks to existing infrastructure posed by flooding as well as the need to consider the requirement and location of new installations such as masts and cables carefully.</p>	<p>This is a matter for the LDP rather than the SA/SEA, but it has been noted and forwarded to the LDP Team for consideration as part of the preparation of the LDP.</p>
<p><u>Health and well-being</u> Recognition of the importance of open space to health and well-being (and current provision for this in Cardiff) would be welcomed.</p>	<p>Agree, added.</p>
<p><u>Minerals</u> Supply versus demand and the potential link to aggregate dredging in the Severn Estuary.</p>	<p>Agree, added.</p>
<p><u>Transport</u> The reliance on the car, the opportunity for the LDP to shift choice to favour public transport, the location of new roads/bus and rail stations and connectivity to neighbouring towns and cities.</p>	<p>Whilst not explicitly mentioned, this is implicit in table 4.1.</p>
<p><u>Population</u> While the recognition of housing provision for an expanding population is welcomed, the scope should be extended to include all other services and infrastructure than an increased population will require.</p>	<p>Agree, added.</p>
<p>SA/SEA Objectives</p>	

<p><u>3. Protect and enhance biodiversity, flora and fauna</u> This should also include geodiversity and opportunities to link grey and green infrastructure.</p>	<p>This is referenced in objectives 8 and 9 of the SA/SEA Framework.</p>
<p><u>6. Help deliver growth of a sustainable and diversified economy</u> Development of skills should be mentioned as an objective and these should be consideration of green jobs.</p>	<p>This is covered by the overarching objective 'help deliver the growth of a sustainable and diversified economy' in the SA/SEA Framework.</p>
<p><u>9. Use natural resources efficiently and safeguard their quality</u> Need to consider adding an objective that reflects the Welsh Assembly Government's emerging Natural Environment Framework (<i>A Living Wales</i>) with emphasis on valuing the environment for intrinsic goods and services that it provides.</p>	<p>This is unadopted policy.</p>
<p>Monitoring</p>	
<p>CCW expect to see a reference to a monitoring strategy within the Scoping document along with an Action Plan for monitoring.</p>	<p>The monitoring framework will be set out in detail in later publications.</p>
<p>Appendix 1</p>	
<p>Welsh Assembly Government's Natural Environment Framework (<i>A Living Wales</i>) – Currently under consultation.</p>	<p>The policy review only includes adopted policies.</p>
<p>WAG's Regeneration Framework (October 2010).</p>	<p>Framework for Regeneration Areas (2010) is not a key policy document.</p>
<p>WAG's <i>Creating an Active Wales</i> (2009).</p>	<p>The policy review only includes key policies.</p>
<p>WAG's Planning for Renewable and Low Carbon Energy – A Toolkit for Planners (July 2010).</p>	<p>This is a matter for the LDP rather than the SA/SEA, but has been noted and forwarded onto the LDP Team for consideration as part of the preparation of the LDP.</p>
<p>Emerging national strategy for Flood and Coastal Erosion Risk management in Wales (on consultation).</p>	<p>The policy review only includes adopted policies.</p>
<p>Appendix 2</p>	
<p><u>2. Air Quality</u> Would like to see an explicit statement about the link between air quality and health of both humans and ecosystems.</p>	<p>Agree, added.</p>
<p><u>3. Biodiversity, flora and fauna</u> Would like to see reference to geodiversity in this section – both an explanation of what geodiversity is and a review of important resources in Cardiff. These would include Castell Coch, Flat Holm and Rhymney Quarry.</p>	<p>Geodiversity issues are covered in sections 8 and 9, landscape and natural resources, of Appendix 2. Additional info on Flatholm added to landscape section.</p>
<p><u>3.9 Vulnerability of biodiversity resource</u> Development and changing land use practice are significant concerns. Would also like to see recognition of long-term threats – for example predicted sea level rise and the future sustainability of</p>	<p>Sea level rise issues covered in section 4, climate change, of</p>

<p>the Gwent Levels.</p> <p>Take a broader view of the protection of biodiversity by considering other important reservoirs of biodiversity outside of designated sites such as brownfield land, parks and commons. This could be achieved by promoting green infrastructure.</p> <p>Would like to see recognition of the fact that the natural environment and the goods and services it provides underpin our well-being in a whole range of vastly different ways.</p>	<p>Appendix 2.</p> <p>Already included in section 3.9 of Appendix 2.</p> <p>At the current time changes are not considered necessary to the Scoping Report, however this issue will be kept under review. This is a small sector of the economy and no suitable data currently exists for Cardiff.</p>
<p><u>4.4 Risks associated with climate change</u> Would add the loss of prime agricultural land (often coastal) due to saltwater incursion to the list.</p>	<p>Areas of potential coastal flooding in Cardiff are not prime agricultural land.</p>
<p><u>4.7 Travel in Cardiff</u> Would encourage the Council to work with neighbouring authorities to ensure that sustainable transport solutions are joined up across administrative boundaries.</p>	<p>This is a matter for the LDP rather than the SA/SEA, but has been noted and forwarded onto the LDP Team for consideration as part of the preparation of the LDP.</p>
<p><u>Renewable energy</u> Suggest a specific mention of renewable energy provision should be included on climate change.</p> <p>Suggest using the Welsh Assembly Government's Planning for Renewable and Low Carbon Energy – A Toolkit for Planners.</p>	<p>Objective 4b covers this issue as part of the SA/SEA Framework.</p> <p>The LDP Team will be undertaking a Renewable Energy Assessment using the WAG Toolkit.</p>
<p><u>7.7 Open space and health</u> Would like to see recognition of the fact that the natural environment underpins well-being (as per comments above).</p>	<p>Already included in 8.14 of Appendix 2.</p>

Environment Agency Wales	
Consultee comment	Recommended response
Non Technical Summary	
<p>The table which provides a summary of indicators do not accurately reflect Appendix 2, i.e. indicators under item 4 Climate should include flood risk matters.</p>	<p>Items for which there are current data gaps are not measurable and thus have not been included / assessed in the indicator table within the NTS. Flooding is an important issue and we will identify ways in which to address these omissions as we</p>

	develop the SA/SEA and LDP.
Additional information and data has been provided by the Environment Agency on WFD (Water Framework Directive), water quality and waste.	Acknowledged, information will be considered for the SA/SEA and shared with the LDP team.
Scoping Report	
In reference to the key messages under the policy review, the implications from the review should be addressed in the Plan, for example, inclusion of water efficiency measures and sustainable drainage in proposals; delivery of suitable waste management facilities for different waste streams.	This concerns the content of the LDP and is not directly relevant to the SA/SEA, and has been forwarded to the LDP Team for consideration as part of the preparation of the LDP.
Requirements of SEA regulations. Additionally recommend that a comparative analysis is used in reporting i.e. a Wales wide view and cross boundary.	Noted, the SA/SEA will take account of cross boundary issues.
Recommend that a monitoring strategy is agreed so that objectives targets and indicators can be agreed for those environmental measures to be monitored.	The monitoring framework will be set out in detail in later publications.
Climate Change, provides only a selection of areas at risk of flooding. There may be other areas and/or sites to include in your Plan for future development and these may be also at risk from flooding. These areas/sites will also need to be appropriately assessed.	This concerns the content of the LDP and is not directly relevant to the SA/SEA, and has been forwarded to the LDP Team for consideration as part of the preparation of the LDP. The LDP Team are currently updating the strategic flood risk consequences assessment for the city.
Natural Resources, agree that whilst water quality is improving in rivers Taff, Ely and Rhymney, WFD requirements still need to be addressed.	Noted.
Noted that in your Table 4.1 in your Scoping Document you state that "Abstraction from the Rivers Usk and Wye is a concern, and this will be exacerbated by population growth and climate change". Noted that your corresponding objective in Table 5.1 is to "Conserve water resources and increase water efficiency". Welcome this, although we would stress that you ensure that your evidence base provides evidence that sufficient water is available to supply new developments, prior to making allocations in the Plan. Policies should be based identification of key issues.	Noted.
Policy Review	
In reference to the key messages under the policy review, the implications from the review should be addressed in your Plan, for example, inclusion of water efficiency measures and sustainable drainage in proposals; delivery of suitable waste management	This concerns the content of the LDP and is not directly relevant to the SA/SEA, and has been

facilities for different waste streams.	forwarded to the LDP Team for consideration as part of the preparation of the LDP.
Under the heading of SA/SEA topic 'Climate Change' Technical Advice Note 14: Coastal Planning (Welsh Assembly Government 1998) should be included.	Disagree, already in natural resources section of policy review.
Under the heading of Landscape reference to TAN5 should be included. The EA also agree with LDP approach to delivering policy aim to "avoid development of greenfield sites where possible and appropriate by giving preference to the re-use of suitably developed land".	Disagree, already in biodiversity section of policy review.
Support the delivery of policy aims, "plan for new development in discussions with water and wastewater companies and the Environment Agency Wales, to ensure that water resources are adequate and water quality is maintained".	Noted.
SA/SEA Objectives	
Welcome Objective 3 (Protect and enhance biodiversity, flora and fauna) and its sub objectives 3d and 3e. As part of these sub objectives, the EA would expect the Plan to promote "green infrastructure", wherever possible, such as wildlife corridors and river corridors, in order to enhance the connectivity of biodiversity networks wherever possible.	This concerns the content of the LDP and is not directly relevant to the SA/SEA, and has been forwarded to the LDP Team for consideration as part of the preparation of the LDP.
Welcome Objective 4 (Reduce the emissions of greenhouse gases that cause climate change and adapt to its effects). However, we request that sub-objective 4e be re-worded to focus more on the management of consequences, i.e. Ensure that a precautionary approach is applied and ensure that the location and design of new development manages the potential risks and consequences of flooding down to an acceptable level.	Agree, amended.
Taking into account the baseline evidence for 'Environmental Quality – a determinant of health - varies greatly within Cardiff' you may wish to reword Sub Objective 7d to reflect this evidence. Suggest amending Sub Objective 7d to read, "Improve environmental quality by minimising adverse impacts on health and wellbeing from pollution, flooding and waste management disposal".	Agree, amended.
Welcome Objective 8a, in reference to the protection of river valleys. We would question whether there is any "undeveloped" coastline remaining in Cardiff, as most coastline within the borough is either urbanised or covered by flood defences. You may therefore wish to change remove the word "undeveloped".	Agree, amended.
Welcome Objective 9 (Use natural resources efficiently and safeguard their quality), especially sub-objectives 9a, 9b, 9e and 9f.	Noted.
Welcome Objective 11 (Minimise waste, increase re-use and recycling). However, advise that the objective should be expanded to encompass the aim to improve the waste management infrastructure available to the people of Cardiff. (Regional influence may also need to be considered).	Disagree, this is a matter for the Waste Management Strategy.
Acknowledge that in preparing new plan changes there is a policy direction away from building on brownfield land to also building on	This concerns the content of the LDP and is not

greenfield land. Note, however, that Table 2.1 of the Scoping document states that the LDP should give preference to the re-use of suitable previously developed land. Nevertheless decisions will need to be in accord with sustainable development principles. It will also need to be established whether the land is suitable for development.	directly relevant to the SA/SEA, and has been forwarded to the LDP Team for consideration as part of the preparation of the LDP
Appendix 1	
Welcome that “Locational policies in the LDPs should take account of the effects of development on air quality and vice versa”. Refer to previous advice (in our letter dated 9 June 2009, Reference SE/2006/100087/LD-01/DE1-L01) in relation to air quality impacts (potential, significant and/or in combination effects) and Cardiff Beech Woods SAC. Recommend that further consultation with the Countryside Council for Wales (CCW) takes place in respect of Habitats Regulations Assessment.	This concerns the content of the LDP and is not directly relevant to the SA/SEA, and has been forwarded to the LDP Team for consideration as part of the preparation of the LDP.
Recommend the addition of the NERC Act (Natural Environment and Rural Communities Act) 2006.	Agree, added.
Suggest including: Environment Strategy for Wales (2006).	Agree, added.
Recommend the addition of: Sustaining Ecosystem Service for Human Wellbeing, which can be found on CCW’s website. This may be useful to review because this links biodiversity as a resource in improving people’s health and wellbeing.	The policy review only includes policy documents, however this guidance may be a useful resource for the LDP Team and has been forwarded for consideration as part of the preparation of the LDP.
<u>Climate Change Act 2008 and TAN15</u> <ul style="list-style-type: none"> • Ensure that a precautionary approach is applied and ensure that the location and design of new development manages the potential risk, causes and consequences of flooding down to an acceptable level. 	This is a matter for the LDP rather than the SA/SEA, but has been noted and forwarded to the LDP Team for consideration as part of the preparation of the LDP.
<u>TAN15</u> <ul style="list-style-type: none"> • Take a precautionary and strategic approach to flood risk, having regard to WAG guidance, the potential consequences of flooding and the extent and location of unobstructed floodplains . • Ensure that the location and design of new development manages the potential risk, causes and consequences of flooding down to an acceptable level. 	This concerns the content of the LDP and is not directly relevant to the SA/SEA, and has been forwarded to the LDP Team for consideration as part of the preparation of the LDP.

<p>It is noted that Technical Appendix 1 does not include reference to documents or implications for LDP relating to the remediation of brownfield land. You may also wish to consider reviewing the following;</p> <ul style="list-style-type: none"> • We would recommend that our new Groundwater Protection Policy is reviewed: "Underground, under threat, Groundwater Protection: Policy and Practice Parts 1-4". This is available from our website: http://www.environment-agency.gov.uk/research/library/publications/40741.aspx • We also advise that you review our latest land contamination guidance, 'Guiding Principles for Land Contamination (GPLC)': a series of 3 documents available at: http://www.environment-agency.gov.uk/research/planning/121619.aspx • Planning Policy Wales (2010) paragraph 13.6, which gives advice on Development Plans and Contaminated Land. 	<p>The policy review only includes policy documents, however this guidance may be a useful resource for the LDP Team and has been forwarded for consideration as part of the preparation of the LDP.</p> <p>The policy review only includes policy documents, however this guidance may be a useful resource for the LDP Team and has been forwarded for consideration as part of the preparation of the LDP.</p> <p>Already included in the policy review under the overarching policy section.</p>
<p>Welcome the implications for the LDP as set out in Technical Appendix 1 (under the heading of Natural Resources) and note that the LDP should include Water Cycle Studies in growth or high risk areas (Severn River Basin Management plan).</p> <p>With regard to EC Directive 1991/271/EEC on Urban Waste Water Treatment (as Amended by EC Directive 1998/15/EEC), we also suggest changes to the following implication;</p> <ul style="list-style-type: none"> • Locational policies to take account of the effects of development on water quality and seek improvements. <p>The PPPs should also include policies in regard to land affected by contamination, as this appears to have been omitted, for example, Planning Policy Wales (2010).</p>	<p>Noted.</p> <p>Agree, amended.</p> <p>PPW is already included in the policy review in the overarching policy section.</p>
<p>With regard to EC Directive 1991/271/EEC on Urban Waste Water Treatment (as Amended by EC Directive 1998/15/EEC) - We note that as part of the policy review in Technical Appendix 1, it is stated that an implication for the Plan is the intention to discuss wastewater treatment arrangements with sewage authorities and with ourselves. The EA welcomes this.</p>	<p>Noted.</p>
<p>The EA request that the SEA and HRA for Cardiff Council should take into account the plans of other local authorities, which are also supplied as part of the SEWCUS zone to understand the regional pressures on water resources, e.g Vale of Glamorgan, Blaenau Gwent, Caerphilly, Merthyr Tydfil, Bridgend, Rhondda Cynon Taff, Forest of Dean, Torfaen and Newport City Council.</p>	<p>Agree, the SA/SEA will take account of cross boundary issues.</p>
<p>The EA suggest the addition and review of: Strategic Environmental Assessment of their Water Resources Management Plan.</p>	<p>Disagree, this is not a policy document and has no direct bearing on the</p>

	SA/SEA or LDP.
The EA suggest the addition and review of: Water Resources Strategy for Wales.	Agree, Added.
Water Cycle Studies: The EA welcome the intention to undertake water cycle studies, following the review of the Severn River Basin Management Plan, as stated in your Technical Appendix 1.	Noted.
<p>Welcome the review CAMS (Catchment Abstraction Management Strategy) as part of the Policy Review in Technical Appendix 1. The CAMS areas within the Cardiff Unitary Authority boundary are Taff & Ely, Ebbw & Lwyd and Rhymney, as correctly stated. The implications of the relevant CAMS, which should be considered in the development of the LDP and which should come out of the Policy review are as follows:</p> <p>The Ely CAMS area has been classified as 'water available' and the Taff as 'over licensed'. The Rhymney CAMS area is also classified as 'water available'. The Ebbw and Lwyd CAMS area has been classified as 'over abstracted'. However, the area contained within Cardiff's Unitary Authority boundary was not assessed as part of the first cycle of CAMS.</p>	At the current time changes are not considered necessary to the Scoping Report, however the issue will be kept under review.
<p><u>Climate Change and Waste headings</u></p> <p>The EA welcome the following implication for the LDP, as set out in Technical Appendix 1 (under the Climate Change and Waste headings):</p> <ul style="list-style-type: none"> • Support for anaerobic digestion, biomass, and other large renewable energy generation projects. • Ensuring that infrastructure for waste management is adequate to accommodate proposed development. • Identifying sites for waste management facilities. • Promotion of recycling, anaerobic digestion and other forms of waste treatment. 	Noted.
Appendix 2	
With reference to section 2 of Technical Appendix 2 Baseline Information, it is recommended that reference also be made to industrial emissions from PPC (Pollution Prevention and Control) Permit regulated installations and their impact on air quality. Examples could include current and proposed power stations.	At the current time changes are not considered necessary to the Scoping Report. Information will be considered as background to air quality indicators.
Condition of Designated sites: In paragraph 3.8 of the baseline data report, it is stated that the Council is not aware of any up to date information relating to the condition of all designated sites. The EA suggest referring to CCW's Special Sites Actions Database, where CCW have identified issues and actions for identified competent authorities which will remove the impact on the relevant designated sites. There will be actions for Cardiff Council in relation to its designated sites, which it may be possible to deliver through the LDP. The Database may also help to provide the conditions of the designated sites.	Noted, however measures are in place to address this and any future changes in condition will be monitored accurately.
Paras 4.9 to 4.11 in Section 4 of Technical Appendix 2, the EA welcome the reference to flood risk. The EA agree that management of flood risk in consideration of climate change is an	Noted.

<p>environmental issue for Cardiff that should be addressed in the LDP and SA.</p>	
<p>Map 4.1 Areas at risk of flooding: With reference to the evidence in Technical Appendix 2, it is noted that Map 4.1 shows 'Areas at risk of flooding'. Please confirm whether these areas reflect the zones contained in TAN15 development advice maps or do these areas reflect your flood risk assessment?</p> <p>Subject to our requested amendments above, we welcome that you have proposed indicators related to flood risk as part of your measurement of the sustainability of the Plan. We would be pleased to discuss the rewording of objectives and indicators, data provision and collection with you further.</p>	<p>These are TAN15 development advice map zones.</p> <p>Acknowledged.</p>
<p>The EA welcome inclusion of indicators 4.9 and 4.10.</p>	<p>Noted.</p>
<p>Indicator 4.11: Whilst it is noted the proposed indicator on the number of housing units proposed in Zones C1 and C2, it may be useful to measure the extent to which planning permissions have been granted where the consequences of flooding can and/or cannot be acceptably managed. It may also be helpful to measure the approval of developments other than housing.</p>	<p>Acknowledged, this will be considered especially since there is a current data gap and this would provide a means to monitor allocations over the plan period. However at the current time changes are not considered necessary to the Scoping Report.</p>
<p>Suggest indicator 4.11 be reworded to "Number and percent of all new development approved in C1 and C2 areas where the risks and consequences of flooding are acceptably managed". Given the justification test, it may be useful to consider different types of development within this indicator, i.e. emergency services, highly vulnerable development, less vulnerable development and other development.</p>	<p>At the current time changes are not considered necessary to the Scoping Report, however this issue will be kept under review. These suggestions will be considered, however clear definitions will be required to monitor effectively.</p>
<p>It is noted that there is currently a data gap, and the LPA should consider how this data can be collected, including information from decision notices and High Level Target (HLT) reporting. The EA also may be able to contribute to data collection.</p>	<p>At the current time changes are not considered necessary to the Scoping Report, however this issue will be kept under review. Current data gap and seeking data to fill.</p>
<p>Comments made 'that brownfield land offers for opportunities for development, although remediation may be required on contaminated sites resulting from previous industrial activities'. Recommendations on the redevelopment of brownfield land is as follows;</p> <p>Brownfield land and biodiversity: Advise that it should be recognised that brownfield sites often contain a significant biodiversity resource, as stated in paragraph 3.9 of Technical Appendix 2. Many of the river banks and coast of Cardiff are brownfield sites, encourage riverbank restoration over</p>	<p>This concerns the content of the LDP and is not directly relevant to the SA/SEA, and has been forwarded to the LDP Team for consideration as part of the preparation of the LDP. Issues of biodiversity will be covered by SA/SEA Framework objective 3.</p>

<p>redevelopment at these sites, in order to promote restored green corridors through Cardiff. If redevelopment of riverine and coastal brownfield sites does occur, it is recommended that buffer zones should be incorporated in the new developments to create a network of green infrastructure.</p>	
<p>The environmental impacts of mineral extraction and aggregates must be considered. Any continued operations or any mineral extension proposed may result in the loss of important and protected habitats. Potential impacts to particularly sensitive areas such as Cardiff Beech Woods SAC and Garth Woods SSSI should be appropriately assessed. Any quarry activity proposals should be accompanied with restoration proposals and recommendations, site aftercare and monitoring should also be agreed. CCW and the County Ecologist should be consulted for their advice on whether the expansion of the quarries would require an Appropriate Assessment under the Habitats Regulations.</p> <p>The LPA may wish to include additional indicators and we therefore suggest the following additional indicators;</p> <ul style="list-style-type: none"> • Percentage of developments using secondary aggregates; and/or • Percentage of aggregates being sent to landfill 	<p>This concerns the content of the LDP and is not directly relevant to the SA/SEA, and has been forwarded to the LDP Team for consideration as part of the preparation of the LDP.</p> <p>These additional indicators will be considered later in the development of the plan. However at the present time changes are not considered necessary to the Scoping Report.</p>
<p>Welcome that data on the chemical and biological water quality of the Rivers Taff, Ely and Rhymney is being considered as part of the SEA/ SA. It appears that data/information is used from the South East Valleys catchment and it may be appropriate to use information, which is more specific to the Authority area.</p> <p>Refer to the Local Evidence pack for data on GQA (attached). A copy of a 'Summary of WFD Status and Pressures within the Cardiff LDP Boundary' is also enclosed. This summarises the main pressures on the water environment for those waterbodies within Cardiff. It is advised that you should use this as part of your baseline data and consider the data's implications for policies and allocation and for your SEA/SA. From the data it can be seen that water quality is an issue for Cardiff, so should be considered in your LDP, as your Technical Appendix 1 States.</p> <p>You should consider whether the policies and allocations in the LDP are able to address these pressures through suitable policies or allocations. The LDP should also seek improvements.</p>	<p>Noted.</p> <p>Noted, this information will support indicator development for natural resources section in Appendix 2, and has been shared with the LDP Team for consideration as part of the preparation of the LDP.</p> <p>This concerns the content of the LDP and is not directly relevant to the SA/SEA, and has been forwarded to the LDP Team for consideration as part of the preparation of the LDP.</p>
<p>It is noted that indicator 9.6 (Percent of river lengths achieving good ecological status) uses data collected under the Water</p>	<p>Noted, this information will support indicator</p>

<p>Framework Directive (WFD). Our Data Package (attached) also gives you information on General Quality Assessment (GQA). Both datasets are useful; The historic GQA data (in the attached Data Package) provides you with historic trends in water quality, while WFD data forms a basis for measuring future water quality trends.</p>	<p>development for natural resources section in Appendix 2, and has been shared with the LDP Team for consideration as part of the preparation of the LDP.</p>
<p>Baseline information in regard to the adequacy and suitability of wastewater facilities in relation to future development appears to have been omitted. The LDP should ensure that there is suitable planned infrastructure to enable delivery. To this end, the EA suggest the LPA;</p> <ul style="list-style-type: none"> • Refer to information on DCWW’s Asset Management Plan (AMP)_Improvement, which is included in our data pack for Cardiff. This summarises the investment programme for the treatment and supply of wastewater. • Review DCWW’s Asset Management Plan (AMP) itself, prior to any discussions with sewerage authorities on sewage capacity. This is available from www.dwrcymru.com 	<p>This concerns the content of the LDP and is not directly relevant to the SA/SEA, and has been forwarded to the LDP Team for consideration as part of the preparation of the LDP.</p>
<p>It is advised that information from the Review of Consents process for the Usk and Wye SACs is added as part of the baseline data collection process, in order to establish whether sufficient water exists in order to supply future development. It may be possible to do this as part of your water cycle studies. The EA have identified the need to make changes to public water supply abstraction licences to ensure ‘no adverse effect’ on the integrity of these SACs.</p>	<p>At the current time changes are not considered necessary to the Scoping Report, however this issue will be kept under review. This will be considered as the plan progresses.</p>
<p>We note indicator 9.7 (Total non-tidal water abstractions). It is stated that there is a data gap. The EA hold information on the number of non-tidal water abstractions for Cardiff.</p>	<p>At the current time changes are not considered necessary to the Scoping Report, however this issue will be kept under review. Using the details from Environment Agency Wales on how to acquire this information to support Appendix 2.</p>
<p>It may be more useful to measure the water availability in the Cardiff area, as a measure of sustainability. The EA would therefore suggest that per capita consumption (water use per person per day) should be included as an indicator for reducing water consumption because it appears to be the most suitable indicator for reducing water consumption.</p>	<p>At the current time changes are not considered necessary to the Scoping Report, however this issue will be kept under review. This will be considered as the plan progresses to enhance indicator 9.7 on total abstraction.</p>
<p>It is advised that indicators used within the Wales Waste Strategy and draft sector plans be used to ensure the LDP delivers the requirements of both the Welsh Assembly Government Policy and the European targets. The LPA may wish to include additional</p>	<p>This concerns the content of the LDP and is not directly relevant to the SA/SEA, and has been</p>

indicators in the use of secondary materials, such as construction and demolition waste. We request to be re-consulted on future indicators, targets and monitoring requirements.	forwarded to the LDP Team for consideration as part of the preparation of the LDP. EAW as a statutory consultee will be consulted at all applicable stages of the SA/SEA.
Surface water flood maps: Recommend that these should form part of the baseline data for the LDP, and be included in your SA/SEA and appropriately used to assess your Plans proposals.	At the current time changes are not considered necessary to the Scoping Report, however this issue will be kept under review. Data to be investigated and added to baseline.

A. P. Eyton - Jones	
Conslutee comment	Recommended response
Scoping Report	
The Council has a duty to under take a Sustainability Appraisal and Strategic Environmental Assessment. Who made this a duty?	A brief outline of the origins of Sustainability Appraisal and Strategic Environmental Assessment can be found on Page 5 of the Scoping Report. Both of these procedures are thoroughly integrated into UK planning law and are a statutory requirement.
There is no such word as "Scoping".	Disagree. The directive and government produced guidance specifies the use of the term "Scoping".
The report consists of a lot of items which appear to have nothing to do with the use of land e.g. Proportion of adults who are overweight...	The purpose of this SA/SEA Scoping Report is to draw out the social, economic and environmental issues for Cardiff and ensure that those issues are considered during the preparation of the LDP.
Some of the items under the Sustainability heading are rather sinister e.g. resource use by Cardiff residents, which significantly exceeds their EARTH SHARE.	In order for the LDP to progress the economic growth of Cardiff the issue of resource use must be considered. The high "earth share" of Cardiff citizens expressed is not intended to scare; more highlight the fact that people are using resources at an unsustainable rate

	that is not conducive with a sustainable city.
Under the heading “Objectives and Indicators” are eleven headings, only two of which have any relationship to the use of land.	The purpose of this SA/SEA Scoping Report is to draw out the social, economic and environmental issues for Cardiff and ensure that those issues are considered during the preparation of the LDP.
To summarise the whole thing has become far too complicated, why were consultants used and how much did they cost? Is the planning department not up to its job?	SA/SEA is a specialist field that requires an environmental scientist with a broad knowledge of environmental factors and the principles of sustainable development. Consultants were used for this report both for quality assurance purposes and to temporarily cover a vacant post.
Why use words not normally used i.e. “demographic” when changes in lifestyle would be simpler?	“Demographic” is a standardised term that is commonly used when referring to the study of human population, particularly the size and distribution thereof. However, in influencing the development of the LDP (through the SA/SEA process) we hope to encourage changes in lifestyle over the plan period.
Your forefathers left us with a Cardiff of tree lined streets, good parks and open green spaces without all this nonsense. How on earth can anyone expect to produce a land plan to cover events until 2026?	Conservation of Cardiff’s cultural heritage and historic environment will be key to the LDP. However, in order for Cardiff to grow as a city it is necessary to plan. The LDP will provide the policy framework to guide that growth and it is important that those policies take into account all of the factors that make this city unique (socially, historically, economically and environmentally), and

	that is the purpose of this SA/SEA.
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Friends of Insole Court	
Consultee comment	Recommended response
Scoping Report	
Welcome the thoroughness of the review process.	Noted.
Policy Review	
Suggest in terms of infrastructure the priority should be interpreted as including heritage assets and green infrastructure.	This is a policy review and as such can only refer to information contained in these policies.
Suggest that the General/ Overarching topic should include: <ul style="list-style-type: none"> • Planning and Compulsory Purchase Act 2004 • Planning your community: A guide to Local Development Plans July 2006 • Minerals Planning Policy Wales 2001 	Disagree – only key policy included in the policy review. Disagree - this is guidance and not policy. Disagree – already included in natural resources section of policy review.
Suggest “Facilitate community involvement and life-long learning via appropriate use of heritage assets” is added as a policy aim to Cultural Heritage and Historic Environment.	This is a policy review and as such can only refer to information contained in these policies.
Suggest adding a reference to either Landscape or Natural Resources to the importance of green infrastructure and ecosystem services.	This is a policy review and as such can only refer to information contained in these policies.
Suggest amending 2.12 to read “The Decentralisation and Localism Bill could (not necessarily will) affect how housing and planning decisions are made”. WAG has devolved responsibility for housing and planning in Wales and so makes its own legislation on these matters.	Agree, amended.
Indicators	
Concerned that the number of listed buildings at risk is the same as it was in 2006 i.e. “some way below target.. or .. getting worse”.	Noted.
SA/SEA Objectives	
The Friends of Insole Court agree with SA/SEA Objectives relating to heritage.	Noted.
Suggest adding to either Landscape or Natural Resources (or both): <ul style="list-style-type: none"> • Protect and enhance the City’s legacy of historic parks and gardens and create new ones 	Disagree – protection and enhancement of greenspaces (which includes historic parks and gardens) included in SA/SEA sub objective 8a.

Jane Hayes	
Consultee comment	Recommended response

Scoping Report	
A landscape assessment should be carried out to inform the LDP evidence base. Cardiff is the only local authority in Wales which failed to carry out a landscape character assessment of its urban area.	This concerns the content of the LDP and is not directly relevant to the SA/SEA, and has been forwarded to the LDP Team for consideration as part of the preparation of the LDP.
House by house, development by development change will come, the only way to assess the impacts of these changes on the urban landscape of Cardiff and the population concern is by undertaking a landscape character assessment of the whole territory.	This concerns the content of the LDP and is not directly relevant to the SA/SEA, and has been forwarded to the LDP Team for consideration as part of the preparation of the LDP.
The plan will affect the whole of Cardiff, how will the environmental characteristics of all of Cardiff be assessed in relation to the whole territory of Cardiff?	The purpose of the SA/SEA Scoping Report is to capture the sustainability and environmental issues for Cardiff and ensure that they are sufficiently incorporated into the SA/SEA Framework, this is the criteria by which the policies and options emerging from the LDP development process will be assessed.
Stage 7 – at what time will the impacts be assessed?	The impacts will be assessed in a detailed Environmental Report.
Table 4.1, population – population growth – how will this impact be assessed?	The SA/SEA Framework contains an objective on ‘responding to demographic changes in a sustainable way’ and population growth is an issue that is relevant to most of the SA/SEA objectives to some degree, particularly those encompassing access, housing and the economy.
Policy Review	
Include European Landscape Convention (2004)	Agree, added.
Include CCW Landmap Public Perceptions of Landscape Cardiff (1999)	Disagree, this is not a policy document and has no direct implications for the LDP.
Cultural heritage - without landscape character assessment of the urban area of Cardiff, where 98% of residents live, how can we	This concerns the content of the LDP and is not

assess local distinctiveness?	directly relevant to the SA/SEA, and has been forwarded to the LDP Team for consideration as part of the preparation of the LDP.
Landscape – policy HER3 Landscape Protection of the withdrawn LDP states the following ‘the information in the study (Review of Landscape Character Areas 2008) is intended to assist both countryside management and development control matters’ however this policy is intended to apply to the whole county acknowledging that the urban area also contains features of landscape importance.	This concerns the content of the LDP and is not directly relevant to the SA/SEA, and has been forwarded to the LDP Team for consideration as part of the preparation of the LDP.

Nathaniel Lichfield and Partners on behalf of the Trustees of Plymouth Estates	
Consultee comment	Recommended response
Policy Context	
Cardiff has an important role as the key economic driver for the Capital Region and a pivotal role as a key provider of higher level services. This role is not fully recognised in the policy review.	The policy review can only reference items included in the reviewed policies. This will be addressed in the LDP evidence base.
New bullet point suggested: <i>“Cardiff occupies a pivotal role in the capital region – being a key economic driver and key provider of higher level services but has an interdependent relationship with the wider Capital Region”.</i>	This is a matter for the LDP rather than the SA/SEA, but has been noted and forwarded to the LDP Team for consideration as part of the preparation of the LDP.
New bullet point suggested: <i>“The Capital Region is projected to have substantial housing growth particularly in the City Coastal Zone and Cardiff will account for a large proportion of this growth”.</i>	This is a matter for the LDP rather than the SA/SEA but has been noted and forwarded to the LDP Team for consideration as part of the preparation of the LDP.
Policy Review	
The policy review includes a review of the “South East Wales Regional Housing Apportionment Memorandum” (SPWSPG 2007). This is regarded as out of date and no longer of relevant to considered. Remove.	Disagree, still valid.
Baseline	
Suggest two new indicators: measuring net migration of families and the level of housing delivery against housing growth in Cardiff.	At the current time changes are not considered necessary to the Scoping Report, however this issue will be kept under review. Investigate feasibility of measuring these indicators.
Sustainability issues	
Support the statement which recognises that Cardiff has seen significant redevelopment of brownfield land in recent years with little Greenfield development.	Noted.

Also support the assertion that it will be important in the future that the market is delivering sufficient family and affordable housing.	Noted.
Extend support to “ <i>Table 4.19 Natural Resources</i> ”, which recognises the under provision of family housing, and to “ <i>10. Population</i> ”, which highlights the need to provide an appropriate range of tenure for population growth in a sustainable way.	Noted.
SEA/SA Objectives	
Despite significant changes in stages A1 and A2 note that very little amendment has been made to the SA/SEA Objectives and sub-objectives. This is considered not appropriate, considering changes.	The SA/SEA objectives were reviewed in light of changes to A1 and A2 and a 5 week consultation held on the amended document during Nov/Dec 2010; this was sent to all LDP database stakeholders and individuals. All suggested changes to objectives have been considered and amended where appropriate.
Objective 8a: a distinction needs to be made between areas of countryside which are designated of landscape value and those which are not; this will help direct development to the least sensitive areas. Suggested amendment: “ <i>protect and enhance areas of designated landscape quality, character and importance</i> ”	Disagree, SA/SEA objective 8a currently encompasses.
Objective 9 – A new sub-objective is necessary, which seeks to make efficient use of Greenfield sites.	Disagree, overarching objective 9 in the SA/SEA Framework already encompasses this.
Objective 10 – New sub-objective under suggested which references the need to create sustainable mixed communities.	Disagree, overarching objective 10 in the SA/SEA Framework already encompasses this.

Mrs Denise Pole	
Consultee comment	Recommended response
Request that St Marys Church, Caerau and surrounding hill fort area be included within the LDP, and that they be made protected heritage sites.	This is not directly related to the SA/SEA but will be forwarded to the LDP and Conservation Teams for consideration.

Reservoir Action Group (RAG)	
Consultee comment	Recommended response
Scoping report	
Support the Final Draft Scoping Report, particularly the three	Noted.

chapters on: 'Biodiversity, Flora and Fauna', 'Cultural Heritage and the Historic Environment' and 'Landscape' found in the main document.	
<p>Wording to be tightened up on:</p> <ul style="list-style-type: none"> • Para 4.9, page 24: Cardiff's "significant network of strategically important open space corridors and green spaces. • Page 26, "8 Landscape": reference is made to the "three river valleys running through the City"; it is assumed that this refers to the Ely, the Taff and the Rhymney. The Nant Fawr also has main river status, has a long distinctive open corridor with features including nature sites. Wording should be amended to "Four" accordingly <p>References within the Scoping Report to the above should then correctly refer to four river valley corridors.</p>	<p>Agree amend to 'strategically important open spaces and green corridors'.</p> <p>Disagree, the Nant Fawr is a tributary of the Rhymney.</p> <p>Disagree, the Nant Fawr is a tributary of the Rhymney.</p>
Appendix 1	
The Welsh Office Circular 61/60 also stresses the need to protect the "setting" of historic buildings. This point is omitted, suggest it is included.	Agree, amended.
Suggest adding Planning Policy Wales, Chapter 6 – Conserving the Historic Environment.	Disagree - Planning Policy Wales is included in the policy review under overarching policies, including a bullet point on 'conserving the historic environment'.
Landscape PPPs - suggest removing the word "possibly" in view of the strategic importance of the Nant Fawr corridor to the open space network of Cardiff.	Agree, amended.
Appendix 2	
The figure of five Local Nature Reserves is mentioned; this should be amended to six to include the Council's decision in October 2010 to designate the Nant Fawr Corridor as the City's sixth Local Nature Reserve.	Disagree. The Nant Fawr LNR has not been formally adopted as the Council are awaiting the outcome of the Llanishen Reservoir Judicial Review.

RPS on behalf of the North East Cardiff Development Consortium	
Consultee comment	Recommended response
The North East Cardiff Development Consortium supports the following statements within the Scoping Report:	
Cardiff's role as the driver of the city region is vital for the wellbeing of the city.	Noted.
It is important that the needs of the future population are met in a sustainable way in terms of their housing, employment and infrastructure requirements.	Noted.
It is important that the market delivers sufficient family and affordable housing.	Noted.
It is essential that the city's unique landscape assets such as its open space corridors are maintained and protected, and even	Noted.

expanded as the city expands to accommodate an increasing population.	
The number of households in Cardiff could increase by 30% over the plan period. Indeed the increase may actually be required to be greater than that number.	Noted.
Cardiff has an international potential and national role that needs to be exploited.	Noted.
A fully integrated high quality transport system is essential if its potential is to be realised with significant emphasis being placed upon the ability of future residents to, where possible, walk, cycle, and use public transport.	Noted.
There is a need for significant investment in infrastructure.	Noted.
Energy efficiency and renewable energy are critical to the reduction of green-house gas emissions by 40% by 2020.	Noted.
Sustainable drainage is key to future development.	Noted.
Totally endorses the comments that recent development has led to <i>“relative under-provision of family housing”</i> and that <i>“providing an appropriate range and choice of housing for this population growth (137,000 to 179,000 from 2008 to 2032) in a sustainable way is the key sustainability issue raised by Cardiff’s planners”</i> .	Noted.

RSPB	
Consultee comment	Recommended response
Environmental Report Requirements	
Concerned that the Environmental Report will not examine the “environmental characteristics of areas likely to be significantly affected” until “possible development sites are identified”.	As sites are identified they will be examined, assessed (using the SA/SEA Framework) and added to the Environmental Report.
Concerned that the policy direction toward the inclusion of Greenfield land and not just brownfield will increase pressure on Wentloog Levels.	This concerns the content of the LDP and is not directly relevant to the SA/SEA, and has been forwarded to the LDP Team for consideration as part of the preparation of the LDP. However, potential sites will be assessed using the SA/SEA Framework as they emerge.
Scoping Report should include an examination of the environmental characteristics of Wentloog Levels.	Disagree. The SA/SEA Scoping Report is intended to set out the framework by which the LDP will be assessed, and the environmental baseline is provided as an overview of Cardiff’s assets. Specific examination of a SSSI is more appropriate for

	project level environmental assessments.
Policy Review	
Support the broad policy aim of “protect and enhance... national designated sites” but objects to the lack of detail in “how the LDP might assist in delivering policy aims” section.	The SA/SEA is an assessment tool to assess the sustainability performance of the LDP, and is not a policy document. The policy review can only reference issues included in these policies.
Given the clear policy line set out in Technical Advice Note 5 and especially in “Nature Conservation and Physical Developments on the Gwent Levels” this section should include a bullet point which establishes a very strong presumption against proposing to allocate sites for development on the Wentloog Levels. Suggest that bullet point 2 is amended to <i>“Provide criteria against which developments affecting the different types of designated sites will be assessed. This will take the form of not allocating sites or affecting nature conservation interest of the Wentloog Levels SSSI except in exceptional circumstances of proven UK-national need, and even then only when no alternatives are possible”</i> .	This is a matter for the LDP rather than the SA/SEA, but has been noted and forwarded to the LDP Team for consideration as part of the preparation of the LDP.
The ODPM Guide “Sustainability Appraisal of Regional Spatial Strategies and Local Development Documents states: <i>“Planning authorities may also choose to include more detailed decision-making criteria... in their SA Framework”</i> Considering the exceptional circumstances detailed above recommend that such a decision making criterion is included in the document.	It is noted by the consultee that this relates to a different stage in SEA formulation and as such will be considered later in the SEA process.
A bullet point on how CIL could be used to promote and deliver Green Infrastructure in Cardiff should be included here.	This is a matter for the LDP rather than the SA/SEA but has been noted and forwarded to the LDP Team for consideration as part of the preparation of the LDP.
Climate Change: This section should include strong presumption against proposing to allocate land for development on or materially affected by the flood plain.	This is a matter for the LDP rather than the SA/SEA but has been noted and forwarded to the LDP Team for consideration as part of the preparation of the LDP.
Economy: supports the statement in “How the LDP might assist in delivering policy aims”, which states:- <i>“Ensure that development for enterprise and employment uses is in line with sustainability principles and respects the environment”</i>	Acknowledged.
Natural Resources: supports the statement in “How the LDP might assist in delivering policy aims”, which states:- <i>“avoid the development of Greenfield sites where possible and appropriate, by giving preference to the re-use of suitable previously developed</i>	Acknowledged.

<i>land</i>	
Population: Reference to the use of CIL in relations to infrastructure should be expanded to include Green Infrastructure.	This is a matter for the LDP rather than the SA/SEA but has been noted and forwarded to the LDP Team for consideration as part of the preparation of the LDP.
Policy Review	
Include Nature Conservation and Physical Developments on the Gwent Levels CCW (1993)	Disagree, the policy review only includes key policies central to the development of the LDP.
Include Welsh Assembly Government Environment Strategy and Action Plans 2008.	Agreed, added.
Baseline	
Indicates that the percentage of SSSI features in favourable condition is: - <i>“some way below target or equivalent regional/national performance, and/or the situation is getting worse”</i> . The RSPB concurs with this conclusion.	Acknowledged.
Table 3.1, Section 3.4: of the view that the 2010 box relating to the percentage of features of designated sites should be red, rather than orange.	Noted, however the process of assessment, whilst underway, is not yet complete.
Objects to the lack of an evidence base in terms of the area of the UK BAP Priority Habitats. It is illogical to include the LBAP equivalent of this, which is a local issue, without reference to the UK national equivalent.	Cardiff’s LBAP priorities reflect local priorities that contribute to the wider UKBAP targets; these LBAP priorities have been agreed with the Local Biodiversity Partnership.
Sustainability Issues	
Strongly supports the statement at paragraph that: - <i>“it is imperative that (Cardiff’s) biodiversity resources are protected and maintained”</i> .	Acknowledged.
Supports the identification as a “Sustainability Problem” that: - <i>“Cardiff’s biodiversity resource is vulnerable to new development... which could result in habitat loss and fragmentation”</i> . However, they object to the lack of detail in this section with relation to the description of the problem. Threats to Wentloog Levels SSSI and UKBAP priority habitat from development should be explicitly identified.	This is a matter for the LDP rather than the SA/SEA, but has been noted and forwarded to the LDP Team for consideration as part of the preparation of the LDP.
Supports the statement that:- <i>“Wentloog Levels... are at particular risk from flooding”</i>	Acknowledged.
SA/SEA Objectives	
Supports the sub-objective which states that it is an SEA objective to:1 <i>“maintain and achieve... favourable condition of... national sites of nature conservation interest”</i>	Acknowledged.
Objects to the lack of inclusion of reference to the protection and enhancement of UKBAP Priority Habitats. Additionally, the wording in this section is not in the form of a target. The LDP	Cardiff’s LBAP priorities reflect local priorities that contribute to the wider

<p>Manual states: - <i>“The SA Framework objectives... should be, where possible, expressed in the form of targets”</i>. Recommend that UKBAP target should be as follows: - <i>“no net loss of UKBAP Priority Habitats”</i>.</p>	<p>UKBAP targets; these LBAP priorities have been agreed with the Local Biodiversity Partnership. SA/SEA objective 3b relates directly to the protection of LBAP priority habitats.</p>
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Cardiff Council & Levett-Therivel Sustainability Consultants

Sustainability Appraisal and Strategic Environmental Assessment of the Cardiff Local Development Plan

Appendix D: Appraisal of LDP Vision and Objectives

Final Sustainability Appraisal Report of the Cardiff Local Development Plan

January 2016

This appendix details the outcomes of the sustainability appraisal of the LDP Vision and Objectives.

The matrices were completed using the following symbols to show how compatible the LDP Vision and Objectives are with the sustainability appraisal objectives:

✘	= incompatible
✓	= compatible
-	= no links
?	= uncertain

The LDP Vision is:

“By 2020...Cardiff will be a world class European capital city with an exceptional quality of life and at the heart of a thriving city region”

The LDP Vision is taken from the emerging ‘Cardiff: What Matters’ Strategy, which will be delivered through 7 outcomes:

- People in Cardiff are healthy;
- People in Cardiff have a clean, attractive and sustainable environment;
- People in Cardiff are safe and feel safe;
- Cardiff has a thriving and prosperous economy;
- People in Cardiff achieve their full potential;
- Cardiff is a great place to live, work and play; and
- Cardiff is a fair, just and inclusive society

SA Objective	LDP Vision
1. Help deliver equality of opportunity and access for all	✓ The LDP Vision aims to achieve outcomes to address inequality and deprivation, ensure education, and improve access to facilities and provision of affordable housing. Focus on education could be improved by explicitly mentioning the need for adult education opportunities as well securing futures for young people; however education for all is explicit in the LDP Objectives.

SA Objective	LDP Vision
2. Maintain and improve air quality	✓ The LDP Vision incorporates “ <i>clean, attractive and sustainable environment</i> ”, this includes delivering sustainable transport and an explicit outcome to improve the quality of Cardiff’s environment. Specific LDP Objectives will assist in the delivery of air quality improvements.
3. Protect and enhance biodiversity, flora and fauna	✓ The LDP Vision looks to improve biodiversity through the outcome for a “ <i>clean, attractive and sustainable environment</i> ” which includes improving the quality of Cardiff’s environment. This could be improved by aiming to protect biodiversity also; however the need to maintain, protect and enhance biodiversity is explicit within the LDP Objectives.
4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	✓ The LDP Vision aims to establish Cardiff as a ‘Carbon Lite’ City and as a sustainable travel city. The Vision could be improved by including the need to adapt to the effects of climate change and not just mitigate climate change through the reduction of carbon emissions. The need to adapt to the effects of climate change, however, is explicit in the LDP Objectives.
5. Protect and enhance historic and cultural heritage	✓ The LDP Vision looks to improve the quality of Cardiff’s environment which will assist in maintaining and enhancing heritage. Additionally provision of world class cultural facilities is included. The LDP Vision is not explicit in the need to protect and enhance historic assets, or ensure that local character and distinctiveness is protected; however measures to ensure that these features are protected are set out in the LDP Objectives.
6. Help deliver the growth of a sustainable and diversified economy	✓ The Vision contributes positively through the outcome “ <i>Cardiff has a thriving and prosperous economy</i> ”, which includes the creation of a sustainable economy, supports skill retention, and, encouraging business and entrepreneurs in Cardiff.
7. Improve health and well-being	✓ Improving health and well being is well addressed through the LDP Vision across multiple outcomes covering life expectancy, encouraging healthy lifestyles, sustainable travel, reducing crime and ensuring that people are safe and feel safe in Cardiff.

SA Objective	LDP Vision
8. Protect and enhance the landscape	✓ The LDP Vision outcome of “ <i>clean, attractive and sustainable environment</i> ” includes improving the quality of Cardiff’s environment. The Vision would contribute more positively to the protection of landscape if it was specifically mentioned in the outcomes; however landscape issues are thoroughly covered by the LDP Objectives.
9. Use natural resources efficiently and safeguard their quality	✓ The LDP Vision seeks to improve the quality of Cardiff’s environment, which would include natural resources. Issues such as the use of brownfield land, soils and mineral resources are not addressed but are adequately covered in the LDP Objectives.
10. Respond to demographic changes in a sustainable way	✓ The LDP Vision supports the provision of a sustainable economy, affordable housing and facilities/services.
11. Minimise waste, increase re-use and recycling	✓ The LDP Vision promotes a “ <i>clean, attractive and sustainable environment</i> ”. Whilst waste management and resource efficiency are not explicitly mentioned in the Vision they are adequately addressed within the LDP Objectives.

Summary:

The LDP Vision is a series of high level statements that support more detailed objectives, and sub objectives, beneath them. No changes to the LDP Vision are recommended as a result of this assessment.

The LDP high level objectives are:

1. To respond to evidenced economic needs and provide the necessary infrastructure to deliver development
2. To respond to evidenced social needs
3. To deliver economic and social needs in a co-ordinated way that respects Cardiff's environment and responds to the challenges of climate change
4. To create sustainable neighbourhoods that form part of a sustainable city

The detailed LDP objectives are shown at Section 3 of the Final Sustainability Appraisal Report. The numbering was altered from 1.1 to 1.a etc between the 2012 Preferred Strategy and 2013 Deposit LDP. The original numbering is retained here for ease of cross reference to earlier documents.

SA Objective	LDP Objectives
1.Help deliver equality of opportunity and access for all	<p>✓</p> <p>The LDP Objectives aim to: provide affordable housing (2.2) and access to education, employment, facilities and services (2.12), and promote social inclusion, equality of opportunity and access for all (2.14). Location of development is key for achieving sustainable transport solutions and networks.</p> <ul style="list-style-type: none"> • Suggest that Headline Objective (1) is amended to include <i>“sustainable and accessible”</i> • Suggest that Sub-objective 2.6 is amended to include <i>“employment opportunities”</i>. • Suggest that Sub-objective 2.12 is amended to include <i>“especially in deprived”</i> areas.
2.Maintain and improve air quality	<p>✓ / ? – per capita ? / ✗ – city wide</p> <p>The LDP Objectives contribute positively towards assisting in the improvement of air quality through the provision of sustainable transport solutions, and by aiming to reduce the need to travel (1.10 and 4.1.2). Additionally Objective 3.3 makes strong commitments to maintaining and enhancing Cardiff's natural environment (including air quality). However, whilst per person emissions may reduce as a result of the LDP, it is a plan for the growth of Cardiff and therefore it is recognised that it is unlikely that, overall, the city's emissions to air will be decreased. Whilst growth <i>per se</i> may bring about increased absolute emissions for the city, the LDP Objectives put in place a framework to</p>

SA Objective	LDP Objectives
	<p>mitigate these impacts and are considered appropriate.</p> <ul style="list-style-type: none"> • Suggest that Sub-objective 1.10 is amended to include <i>“reducing the need to travel”</i> • Suggest that Sub-objective 2.10 is amended <i>“provide a range of youth/adult learning opportunities <u>for all...</u>”</i> • Suggest that Sub-objective 4.1.2 is amended to include <i>“and decrease air pollution”</i> • Mitigation: Ensure green infrastructure is provided to improve air quality.
<p>3. Protect and enhance biodiversity, flora and fauna</p>	<p>✓</p> <p>LDP Objective 3.3 makes strong commitments to protecting and enhancing biodiversity including international, national and local sites, the biodiversity value of recreational open spaces (e.g. parks). Additionally there is provision to protect areas without designation or of unknown biodiversity value, and the LDP Objective recognises the importance of flora in combating climate change. There is need to ensure the biodiversity value of brownfield land is considered and protected.</p> <ul style="list-style-type: none"> • Suggest that Sub-objective 3.3 is amended to include <i>“<u>Networks that link together...</u>”</i>
<p>4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects</p>	<p>✓ - per capita ✗ - city wide</p> <p>The LDP Objectives assist and support in reducing carbon emissions by reducing the need to travel, encouraging a modal shift in transport, aiming to provide sustainable transport solutions (1.10) and aiming to adapt to and mitigate the effects of climate change, including flooding (3.1 and 3.2). However although carbon emissions per person may reduce as a result of the LDP, this is a plan for the city’s growth and as such it is unlikely that the city’s overall carbon emissions will reduce. Whilst growth <i>per se</i> may bring about increased absolute emissions for the city, the LDP Objectives put in place a framework to mitigate these impacts and are considered appropriate.</p> <ul style="list-style-type: none"> • Suggest that Sub-objective 1.10 is amended to include <i>“reducing the need to travel”</i> and <i>“and networks”</i>. • Suggest that Sub-objective 3.1 is amended: Removed <i>“consumption”</i> in favour of <i>“demand”</i> • Suggest that Sub-objective 3.3 is amended: Add <i>“The role that vegetation plays in combating climate change by providing shading, cooling and carbon sinks”</i> • Suggest that Sub-objective 4.1.2 is reworded to strengthen against <i>‘car-based developments’</i> and for linkage to the <i>‘strategic cycle network’</i>

SA Objective	LDP Objectives
5. Protect and enhance historic and cultural heritage	<p>✓</p> <p>The LDP Objectives contribute positively to ensuring the protection of historic and cultural assets. Objective 3 provides measures to protect and enhance historic assets, and measures to ensure that new development is respectful to existing character are included in objective 4. Objective 2 aims to provide accessible cultural facilities for all communities.</p> <ul style="list-style-type: none"> • Suggest that Sub-objective 2.12 is amended to include “<i>cultural facilities</i>”. • Suggest that Sub-objective 3.4 amended to include “<i>...including parks and amenity spaces</i>” and to ‘<i>define Cardiff’s distinctive character</i>’
6. Help deliver the growth of a sustainable and diversified economy	<p>✓</p> <p>The LDP Objectives provide all of the key drivers to deliver the growth of a diverse sustainable economy including: provision of a range of employment land and promotion of specialist sectors to promote economic diversity (1.1, 1.2 and 1.5), and providing good transport links. Location of development will be <u>key</u> to delivering sustainable economic growth.</p> <ul style="list-style-type: none"> • Suggest that Headline Objective (1) is amended to include “<i>sustainable and accessible</i>” • Suggest that Sub-objective 1.2 is amended to include “<i>...and well connected to other UK cities</i>” • Suggest that Sub-objective 2.6 is amended to include “<i>employment opportunities</i>”
7. Improve health and well-being	<p>✓</p> <p>The LDP Objectives assist in the promotion of more healthy lifestyles by increasing the provision of cycle and walk ways (as alternative transport) (1.10), and aiming to protect public open spaces such as parks (3.3). Additionally Objective 2 promotes the inclusion of healthier food choices as part of community centres and facilities (2.8/ 2.12).</p> <ul style="list-style-type: none"> • Suggest that Sub-objective 2.8 is amended, added “<i>healthy food choices</i>” • Suggest that Sub-objective 2.12 is amended, added “<i>shops with healthy food choices</i>”
8. Protect and enhance the landscape	<p>✓</p> <p>The LDP Objectives, specifically Objective 3, contribute positively toward the protection of Cardiff’s distinctive landscape features both designated and undesignated. Sub-objective 3.3 also aims to safeguard geodiversity and important geological sites.</p>
9. Use natural	<p>✓</p>

SA Objective	LDP Objectives
resources efficiently and safeguard their quality	Several of the measures within the LDP Objectives contribute positively to the Sustainability Objective including: the protection of Cardiff's mineral supply (1.11), protection and enhancement of water and soil quality (3.3), increasing water efficiency (4.1.4) and the promotion of good design with resource efficiency (4.1.9). However, there may be issues with sustainably sourcing appropriate building materials for development.
10. Respond to demographic changes in a sustainable way	<p>✓</p> <p>The LDP Objectives effectively address what is required to meet the needs of Cardiff's growing population both socially and economically. However, it is also important to consider how population growth will impact on factors such as carbon emissions and waste (see Sustainability Objectives 4 and 11). It is recognised that, whilst the amount of carbon emissions and waste per capita may decrease over the plan period, the absolute levels of these will probably increase as a direct result of growth of the city and its population; however the LDP Objectives put in place a framework to mitigate these impacts and are considered appropriate.</p>
11. Minimise waste, increase re-use and recycling	<p>✓ - per capita ✗ - city wide</p> <p>LDP Objective 4 aims to minimise waste, maximise recycling (4.1.3) and reuse and promote good design (4.1.9), which may reduce the waste generated by developments both during construction and after completion. However, whilst the LDP will contribute positively and assist in reducing the amount of waste from development and per capita, it is recognised that the total waste arisings will probably increase over the plan period in Cardiff as a result of growth. Whilst growth <i>per se</i> may bring about increased absolute waste arisings for the city, the LDP Objectives put in place a framework to mitigate these impacts and are considered appropriate.</p> <ul style="list-style-type: none"> • Suggest Sub-objective 1.12 is divided into 3 separate sub-objectives • Suggest an additional sub-objective division to 4.1 to reflect the need to plan for waste in neighbourhoods. • Suggest that Sub-objective 4.1.3 is amended, add "stored" and "reused"

Summary: Overall the LDP Objectives support the Sustainability Objectives. The appraisal has resulted in some suggested changes to the LDP Objectives as detailed above and in table 5.2 of the Final Sustainability Appraisal Report of the LDP.

Cardiff Council & Levett-Therivel Sustainability Consultants

Sustainability Appraisal and Strategic Environmental Assessment of the Cardiff Local Development Plan

Appendix E: Appraisal of LDP Strategic Options

Final Sustainability Appraisal Report of the Cardiff Local Development Plan

January 2016

This appendix first shows the detailed appraisal of the growth options considered at Preferred Strategy stage and then the appraisal of the spatial options for delivery of Option B. For those options included in the LDP, mitigation measures are proposed in Appendix G of the Final Sustainability Appraisal Report (Appraisal of the LDP key and detailed policies).

Growth options

Assumptions:

- LDP will aim to maximise the contribution of Brownfield but allow for phased release of both green and Brownfield land to provide a range and choice of development land in accordance with Welsh Planning Policy

LDP Option	Option A:	Option B:	Option C:
	About 54,400 new homes in total (30,548 residual requirement)	About 45,400 new homes in total (21,571 residual requirement)	About 36,500 new homes in total (12,634 residual requirement)
SA Objective	About 55,000 new jobs in total	About 40,000 new jobs in total	About 26,000 new jobs in total
1. Help deliver equality of opportunity and access for all	✓✓ Overall Option A could perform very well against the SA Objective as it has the potential to provide a significant number of affordable homes and help to address an existing shortage in the City. Additionally, the scale of growth provided has the potential to create new communities that are large enough to support a range of community facilities and services. Due to the scale of growth proposed Option A also has the potential to improve connectivity with and between existing	✓ As Option A but to a lesser extent due to the lower scale of growth.	?/✗ The scale of growth under Option C could present fewer opportunities to address and improve equality of access than Option A or B. Whilst the Option could deliver a reasonable number of homes, fewer affordable homes could be provided overall. Additionally the developments could be smaller and may not reach the population thresholds required to support new community services and facilities, which in could increase pressure on existing facilities and services.

LDP Option	Option A: About 54,400 new homes in total (30,548 residual requirement) About 55,000 new jobs in total	Option B: About 45,400 new homes in total (21,571 residual requirement) About 40,000 new jobs in total	Option C: About 36,500 new homes in total (12,634 residual requirement) About 26,000 new jobs in total
SA Objective			
	<p>communities and increase accessibility of community facilities.</p> <p>If new developments are provided that include integrated sustainable transport infrastructure or reduce the need to travel by including mixed uses the effect could be more positive as this could help to improve access to services, facilities and employment particularly for those without access to a private car.</p>		
2. Maintain and improve air quality	<p>xx</p> <p>Option A is incompatible with the SA Objective. Independent of any potential improvements to the City's transport infrastructure, the option could lead to a significant increase in transport (domestic and economic) and potentially an increase in industrial activity. This could lead to a reduction in air quality particularly through increased congestion, which is an existing issue for the City. Additionally Option A could lead to the development of a large proportion of</p>	<p>x</p> <p>Option B is mainly incompatible with the SA Objective but to a lesser extent than Option A.</p>	<p>?/x</p> <p>The negative effects that could occur under Options A and B could also occur under Option C but to a much less degree and with more dependence on location of development. Cardiff already experiences high levels of in-commuting, for example over 33,000 people commute in by car every day from the valleys alone. With the decline of the valleys, and without sufficient provision of housing in Cardiff the level of congestion could continue</p>

LDP Option	Option A:	Option B:	Option C:
SA Objective	<p>About 54,400 new homes in total (30,548 residual requirement)</p> <p>About 55,000 new jobs in total</p>	<p>About 45,400 new homes in total (21,571 residual requirement)</p> <p>About 40,000 new jobs in total</p>	<p>About 36,500 new homes in total (12,634 residual requirement)</p> <p>About 26,000 new jobs in total</p>
	<p>the available Greenfield land in the City, green spaces help to improve air quality.</p> <p>However, there is an opportunity to provide new developments that integrate sustainable transport infrastructure, and mixed uses to reduce the need to travel. This could help to reduce congestion, new developments would also benefit from green infrastructure.</p>		<p>to increase, reducing air quality at key access points to the City.</p>
<p>3. Protect and enhance biodiversity, flora and fauna</p>	<p>xx</p> <p>Option A is incompatible with the SA Objective.</p> <p>The land required to accommodate the level of growth proposed by Option A represents a significant proportion of the available development land in the City, the majority of which is Greenfield. Whilst designated nature sites would be protected, the development of large proportions of the City's Greenfield areas could result in wide scale habitat loss and severe</p>	<p>x</p> <p>Option B is mainly incompatible with the SA Objective but to a lesser extent than Option A.</p>	<p>?/x</p> <p>The effect of Option C is less certain. The pressure of development is considerably lower than Option A or B and there could be more room for mitigation as more land could be available to provide replacement habitat.</p>

LDP Option	Option A:	Option B:	Option C:
SA Objective	About 54,400 new homes in total (30,548 residual requirement)	About 45,400 new homes in total (21,571 residual requirement)	About 36,500 new homes in total (12,634 residual requirement)
	About 55,000 new jobs in total	About 40,000 new jobs in total	About 26,000 new jobs in total
	<p>disruption to habitat connectivity.</p> <p>Opportunities for mitigation could be limited due to extensive urbanisation.</p>		
<p>4 Reduce emissions of greenhouse gases that cause climate change and adapt to its effects</p>	<p>✘✘ - Citywide carbon emissions ✓/? – Per capita emissions ✘/? – Adaptation to climate change</p> <p>Under Option A, citywide emissions of green house gases could increase significantly due to a large increase in population, waste, travel and economic activities. Option A could also require the majority of the available Greenfield land for development, significantly reducing the carbon sink this provides and reducing the city’s ability to adapt to climate change as green space also aids in land drainage and helps to reduce the urban heat island effect.</p> <p>Whilst citywide emissions are likely to increase significantly over the plan period there is an opportunity to reduce per capita emissions in the city through the design of developments e.g. mixed use development to reduce</p>	<p>✘ - Citywide carbon emissions ✓/? – Per capita emissions ✘/? – Adaptation to climate change</p> <p>As Option A but to a lesser extent due to a lower scale of growth.</p>	<p>✘ - Citywide carbon emissions ✓/? – Per capita emissions ?/✓ – Adaptation to climate change</p> <p>Under Option C citywide emissions of green house gases could increase due to an increase in population and economic activities. However, this effect would be significantly less than under Option A or B.</p> <p>Additionally the lower scale of growth may allow for more opportunities to mitigate or adapt to climate change; for example more land may be available for the provision of sustainable urban drainage systems and more Greenfield land could be retained as a carbon sink.</p>

LDP Option	Option A:	Option B:	Option C:
	About 54,400 new homes in total (30,548 residual requirement)	About 45,400 new homes in total (21,571 residual requirement)	About 36,500 new homes in total (12,634 residual requirement)
SA Objective	About 55,000 new jobs in total	About 40,000 new jobs in total	About 26,000 new jobs in total
	trips and promote a modal shift to more sustainable transport; and/or the incorporation of energy efficiency measures and renewable energy generation.		
5. Protect and enhance historic and cultural heritage	<p>✘</p> <p>Option A is generally incompatible with the SA Objective due to the demand for development land. There is potential for negative impacts to listed buildings, and to historic assets (both known and unknown) and their settings.</p> <p>Negative impacts to the historic environment could be mitigated by ensuring that developments are sympathetic to local character and distinctiveness, and by ensuring that thorough archaeological investigations are carried out on potential development sites.</p>	<p>✘</p> <p>As Option A.</p>	<p>?/✘</p> <p>The effect of Option C on the SA Objective is less certain. The likelihood of impacts to the historic environment from development is reduced as less land would be required. Negative impacts could still occur if sites for development are not chosen carefully and if the appropriate mitigation is not applied.</p>
6. Help deliver the growth of a sustainable and diversified economy	<p>✓✓</p> <p>Option A is very compatible with the SA Objective as it aims to provide a high number of jobs and homes in Cardiff,</p>	<p>✓</p> <p>Option B is compatible with the SA Objective as it aims to provide a large number of jobs in the City, which is</p>	<p>✓/?</p> <p>The effect of Option C on the SA Objective could be positive as it aims to provide a reasonable number of new</p>

LDP Option	Option A:	Option B:	Option C:
	About 54,400 new homes in total (30,548 residual requirement)	About 45,400 new homes in total (21,571 residual requirement)	About 36,500 new homes in total (12,634 residual requirement)
SA Objective	About 55,000 new jobs in total	About 40,000 new jobs in total	About 26,000 new jobs in total
	<p>which is generally inline with the view of Cardiff as the economic driver for South East Wales.</p> <p>Additionally, the volume of jobs created under Option A is significant and could provide a good range and choice of employment that benefit all areas of the City.</p>	<p>inline with the view of Cardiff as the economic driver for South East Wales.</p> <p>Additionally, the volume of jobs created under Option B is significant and could provide a good range and choice of employment.</p>	<p>jobs. However, the manner in which these jobs are generated could be more dependent on the economic land made available, potentially providing a smaller range and choice and limiting the potential benefits to the more deprived areas of the City.</p> <p>Additionally, the Option is less compatible with the vision of Cardiff as the economic driver for South East Wales.</p>
7. Improve health and well-being	<p>✓✓ - Increased access to health care ✕✕ - Reduced Greenfield amenity</p> <p>Under Option A it may be possible to create new communities with population densities high enough to support new accessible leisure and health care facilities.</p> <p>However, there is a strong link between health and being able to access green open space. The Option could require the release of the majority of the City's Greenfield sites for development.</p>	<p>✓ - Increased access to health care ✕ - Reduced Greenfield amenity</p> <p>As Option A but to a lesser extent due to the lower scale of growth.</p>	<p>✕/? – Increased access to health care ?/✓ – Reduced Greenfield amenity</p> <p>Unlike Options A and B, Option C may not be able to provide new health and leisure facilities as the opportunities to create new communities of appropriate density to support them could be fewer. However, Option C could require considerably less land and may leave more open green space available for recreation over the plan period.</p>
8. Protect and enhance the landscape	✕✕	✕	?/✕

LDP Option	Option A:	Option B:	Option C:
SA Objective	<p>About 54,400 new homes in total (30,548 residual requirement)</p> <p>About 55,000 new jobs in total</p>	<p>About 45,400 new homes in total (21,571 residual requirement)</p> <p>About 40,000 new jobs in total</p>	<p>About 36,500 new homes in total (12,634 residual requirement)</p> <p>About 26,000 new jobs in total</p>
	<p>Option A could have a significant negative effect on the SA Objective as it could require the release of the majority of Greenfield land that is available for development, resulting in a drastic transformation of the landscape from rural to urban.</p>	<p>As Option A but to a lesser extent due to the lower scale of growth.</p>	<p>Like Options A and B, Option C could have a negative impact on the landscape through extensions to the urban environment. However, this impact could be significantly lower as the scale of growth is much lower and requires considerably less Greenfield release.</p>
<p>9. Use natural resources efficiently and safeguard their quality</p>	<p>✓✓ - Reuse and remediation of land ?/* - Conservation of soil resource</p> <p>Overall the effect of Option A on the SA Objective could be positive as there could be opportunities to utilise previously developed land and remediate contaminated land due to the scale of growth proposed, but this would depend on LDP Policy.</p> <p>However, the scale of development, which could require the majority of the available Greenfield land, could result in the loss of a large amount of agricultural land, some of which is of high soil quality.</p>	<p>✓ - Reuse and remediation of land ?/* - Conservation of soil resource</p> <p>As Option A but to a lesser extent due to a lower scale of growth.</p>	<p>? - Reuse and remediation of land ?/✓ - Conservation of soil resource</p> <p>The effect of Option C on the SA Objective is less certain.</p> <p>The scale of development is considerably lower than that proposed under Options A or B, and this may limit the opportunities to remediate or re-develop previously developed land due to a need to provide a range and choice of housing and employment.</p> <p>Additionally the lower level of Greenfield requirement under Option C may allow for better security of the best and most versatile agricultural land but this would be dependant on LDP policy.</p>

LDP Option	Option A:	Option B:	Option C:
SA Objective	About 54,400 new homes in total (30,548 residual requirement)	About 45,400 new homes in total (21,571 residual requirement)	About 36,500 new homes in total (12,634 residual requirement)
	About 55,000 new jobs in total	About 40,000 new jobs in total	About 26,000 new jobs in total
10. Respond to demographic changes in a sustainable way	<p>✓/✗</p> <p>For the plan period, Option A could provide a significant number of new jobs and the proposed level of housing could make significant progress in addressing the housing shortage in the City. The release of large areas of development land may also provide new communities on a scale that would support a good provision of new community facilities. However, Option A would also require the release of most of Cardiff's available development land, which raises concerns over how the City will respond to demographic change beyond the plan period.</p>	<p>✓</p> <p>Option B, like Option A is generally compatible with the SA Objective as it could provide a good level of jobs and housing over the plan period. Option B requires less land than Option A and would leave more residual development land for after the plan period.</p>	<p>?</p> <p>Option C is based upon the long term population figures for the last 8 years and may reflect a more sustainable approach to providing growth. However, the trend in the wider city region and in the valleys is for decline as the region looks to Cardiff for jobs and homes. Option C does not take this eventuality into account may not be able to respond to these demographic changes.</p>

LDP Option	Option A:	Option B:	Option C:
SA Objective	About 54,400 new homes in total (30,548 residual requirement)	About 45,400 new homes in total (21,571 residual requirement)	About 36,500 new homes in total (12,634 residual requirement)
	About 55,000 new jobs in total	About 40,000 new jobs in total	About 26,000 new jobs in total
11. Minimise waste, increase re-use and recycling	<p>✘✘ - Citywide waste ✓/? – Per capita waste</p> <p>Option A would significantly increase the number of households and business premises and therefore the absolute quantity of waste generated in Cardiff will also increase significantly placing increasing pressure on existing waste recycling, disposal and collection facilities.</p> <p>However, there is potential to decrease per capita arisings through the integration of recycling and composting facilities (including bring sites and household recycling facilities) into new developments.</p>	<p>✘ - Citywide waste ✓/? – Per capita waste</p> <p>Under Option B the absolute quantity of waste generated in Cardiff is likely to increase considerably, though not as significantly as under Option A.</p> <p>However, there is also potential to decrease per capita arisings through the integration of recycling and composting facilities (including bring sites and household recycling facilities) into new developments.</p>	<p>✘ - Citywide waste ✓/? – Per capita waste</p> <p>Under Option C the absolute quantity of waste will increase steadily over the plan period but there is potential to decrease per capita arisings through the integration of recycling and composting facilities (including bring sites and household recycling facilities) into new developments.</p>

Spatial options for delivery

Greenfield sites west of Pentrebane		
SA Objective	Rank	Comments
1. Help deliver equality of opportunity and access for all	✓ x x	This large site would provide 7,500 new homes including significant amounts of affordable housing, and community facilities. There is the potential to provide community facilities for nearby areas. The site is not in the southern arc of deprivation, and is far from city centre. Transport impacts depend on implementation: active attempts will be made to provide public transport and the plan aims for a 50:50 modal split (50% by car, 50% by other mode). However the site's location does not encourage this.
2. Maintain and improve air quality	x?	The plan aims to minimise car traffic from the site, but an overall increase in traffic (and thus air pollution is expected. Housing and employment development would also increase air pollution. About 3,000 jobs are expected to be provided at the site: this would help to reduce the need to commute if residents also work at the site.
3. Protect and enhance biodiversity, flora and fauna	x	The site is primarily composed of fields, but includes SINCs and a local nature reserve. There are also local streams and hedgerows which would be affected by development
4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	✓ x	The site is not in the flood zone, and has potential for 2MW+ turbines
5. Protect and enhance historic and cultural heritage	x?	The site has some historic interest which could be affected by development – two grade II listed buildings and part of site is in St Fagans conservation area
6. Help deliver the growth of a sustainable and diversified economy	✓	Would help to provide about 3000 jobs
7. Improve health and well-being	✓ ?	The site would provide new areas of accessible green space. It would not cause the loss of existing health facilities. The additional traffic from development could lead to road-related health impacts. The details depend on the masterplan
8. Protect and enhance the landscape	x/x x?	The site is currently undeveloped; development would change this to a more urban, built-up area.
9. Use natural resources efficiently and safeguard their	x	The land is Greenfield, with some 3a agricultural land. It includes no contaminated land, so there is no possibility for remediation. It contains no mineral resources, and so would not sterilise them

quality		
10. Respond to demographic changes in a sustainable way	✓✓	The site would provide about 7500 homes including affordable homes, also community facilities
11. Minimise waste, increase re-use and recycling	✗	Some of this will depend on how the site is developed. However any development will lead to a net increase in waste

Greenfield sites south of Creigiau / north of Junction 33 on M4		
SA Objective	Rank	Comments
1. Help deliver equality of opportunity and access for all	✗	This site would provide about 2750 new homes including significant amounts of affordable housing, and community facilities. The site is not in the southern arc of deprivation, and is far from city centre. Transport impacts depend on implementation: a Park & Ride facility is planned, and the site will not go forward until the North West Cardiff site and its bus route have been developed. However the distant location does not encourage non-car transport.
2. Maintain and improve air quality	✗/✗✗	Even with sustainable transport solutions, the site will be heavily car based. The P&R facility would improve air quality in the city centre but could exacerbate air pollution near the P&R site
3. Protect and enhance biodiversity, flora and fauna	✗✗	The site contains 8 SINCs, is adjacent to a riverine SSSI, and there are protected species on the site. Development would have a significant negative impact on these sensitive features.
4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	✓✗	The site is not in a flood zone. It has no real potential for large turbines, although it could possibly accommodate smaller ones
5. Protect and enhance historic and cultural heritage	?	The site contains one grade II listed building which may be affected by development
6. Help deliver the growth of a sustainable and diversified economy	✓✓	4331 jobs are proposed for the site
7. Improve health and well-being	✓?	The site would provide new areas of accessible green space. It would not cause the loss of existing health facilities. The additional traffic from development could lead to road-related health impacts. The details depend on the masterplan Development could enhance the opportunity for Creigiau

		residents to access open space and other facilities, though this would involve crossing the busy A4119.
8. Protect and enhance the landscape	xx	The site is adjacent to a proposed SLA. Development would be on Greenfield sites, and is visible from the M4 motorway
9. Use natural resources efficiently and safeguard their quality	x	The land is Greenfield. It includes no contaminated land, so there is no possibility for remediation. It contains no mineral resources, and so would not sterilise them
10. Respond to demographic changes in a sustainable way	✓✓	The site would provide about 2750 homes including affordable homes, also community facilities
11. Minimise waste, increase re-use and recycling	x	Some of this will depend on how the site is developed. However any development will lead to a net increase in waste

Greenfield sties west of Pontprennau		
SA Objective	Rank	Comments
1. Help deliver equality of opportunity and access for all	✓x	<p>This large site would provide 6,000 new homes including significant amounts of affordable housing, and community facilities. There is the potential to provide community facilities for nearby areas.</p> <p>The site is not in the southern arc of deprivation, and is far from city centre.</p> <p>Transport impacts depend on implementation: active attempts will be made to provide public transport and the plan aims for a 50:50 modal split (50% by car, 50% by other mode). However the site's location does not encourage this.</p>
2. Maintain and improve air quality	x?	<p>There would be three main entrance/exit points to the site, the eastern one of which would connect to a P&R site. Provision of 5922 jobs at the site would help to reduce the need to travel. Active attempts would be made to reduce car traffic, but this is likely to still be quite a car-based development with consequent air pollution impacts. The additional housing and employment development would also increase air pollution.</p> <p>If the development included a junction onto the motorway, then this might attract residents who work further away, e.g. Swansea. This would further increase air pollution.</p>
3. Protect and enhance biodiversity, flora and fauna	x	The site contains 9 small SINCS, adjacent two SSSIs, a river valley in middle, and several protected species

4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	x	Part of the area is a historic flood zone and some is zone C2 (flood plain without flood defence). See 2. above
5. Protect and enhance historic and cultural heritage	?	One Grade I and two Grade II listed buildings
6. Help deliver the growth of a sustainable and diversified economy	✓✓	The site would help to provide 5922 jobs
7. Improve health and well-being	✓?	The site would provide new areas of accessible green space. Development would not cause the loss of existing health facilities. The additional traffic from development could lead to road-related health impacts. The details depend on the masterplan. Development at the site could enhance facilities for Pontprennau residents
8. Protect and enhance the landscape	x/xx?	The site is currently undeveloped; development would change this to a more urban, built-up area.
9. Use natural resources efficiently and safeguard their quality	x	The land is Greenfield. It includes no contaminated land, so there is no possibility for remediation. It contains no mineral resources, and so would not sterilise them. Development could affect the water quality of the streams on site and downstream.
10. Respond to demographic changes in a sustainable way	✓✓	Development of the site would provide about 6000 homes and almost 6000 jobs, plus community facilities
11. Minimise waste, increase re-use and recycling	x	Some of this will depend on how the site is developed. However any development will lead to a net increase in waste

Greenfield sites east of Pontprennau		
SA Objective	Rank	Comments
1. Help deliver equality of opportunity and access for all	✓x	This site would provide 2,000 new homes including significant amounts of affordable housing, and community facilities. There is the potential to provide community facilities for nearby areas. The site is not in the southern arc of deprivation, and is far from city centre. Transport impacts depend on implementation: see 2.
2. Maintain and improve air quality	x?	active attempts will be made to provide public transport and the plan aims for a 50:50 modal split (50% by car, 50% by other mode). However the site's location does not encourage this.

3. Protect and enhance biodiversity, flora and fauna	x	Dormice on site, SINC habitat NW of site
4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	x	No known flood risk along developable area. Area is severed from facilities to the west by the Link Road – would need significant walking, cycling and public transport infrastructure to prevent the development from being heavily car-based
5. Protect and enhance historic and cultural heritage	x?	Three Grade II and 1 Grade II* listed buildings plus 9 historic records Archaeological features may restrict development
6. Help deliver the growth of a sustainable and diversified economy	0	Housing-based development, although could offer small-scale employment
7. Improve health and well-being	✓ x	The site would provide new areas of accessible green space, as well as a primary school, local stores and a community centre. The additional traffic from development could lead to road-related health impacts. The details depend on the masterplan.
8. Protect and enhance the landscape	x/x x?	The site is currently undeveloped; development would change this to a more urban, built-up area.
9. Use natural resources efficiently and safeguard their quality	x	The land is Greenfield, with a high proportion of grade 3a agricultural land. It includes two areas of landfilling. It contains no mineral resources, and so would not sterilise them. Development could affect the water quality of the streams on site and downstream.
10. Respond to demographic changes in a sustainable way	✓✓	Development of the site would provide about 2000 homes plus community facilities
11. Minimise waste, increase re-use and recycling	x	Some of this will depend on how the site is developed. However any development will lead to a net increase in waste

Greenfield site north of M4 at Thornhill		
SA Objective	Rank	Comments
1. Help deliver equality of opportunity and access for all	x	Not in southern arc of deprivation Has good links to areas outside Cardiff; links into Cardiff are poor Helps to provide affordable housing
2. Maintain and improve air quality	x/x x	Development would be heavily car dependent. The site's long edge alongside the M4 means that residents may be affected by pollution from M4
3. Protect and enhance	x	Roughly 20% of the site is SINC; riverine ecosystems and protected species are on site; the western side of the site

biodiversity, flora and fauna		borders onto a SSSI
4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	x	Not in a flood risk zone. Likely to be heavily car dependent. Potential for renewable energy generation
5. Protect and enhance historic and cultural heritage	x	The site includes 3 Grade II listed buildings and a Grade II* listed building. Development has the potential to affect the setting of a Scheduled Ancient Monument at nearby Castell Morgraig
6. Help deliver the growth of a sustainable and diversified economy	0	Housing only
7. Improve health and well-being	✓/x	Would help to improve access to open space, but access to city centre would be minimal. Possible negative impacts from air pollution (see 2.)
8. Protect and enhance the landscape	xx	About half of the site is in a proposed Special Landscape Area. Development would be isolated and in the open countryside
9. Use natural resources efficiently and safeguard their quality	x	Mixture of farmland types affected, including grade 3a (good) agricultural land. Would not lead to remediation of contaminated land. Water quality of streams through the site could decrease.
10. Respond to demographic changes in a sustainable way	✓	Would help to meet the need for homes, but would not improve the provision of community facilities
11. Minimise waste, increase re-use and recycling	x	Some of this will depend on how the site is developed. However any development will lead to a net increase in waste

Greenfield sites around Old St. Mellons Village		
SA Objective	Rank	Comments
1. Help deliver equality of opportunity and access for all	x	Not in the southern arc of deprivation. Local connectivity is poor. Development is unlikely to help provide community facilities.
2. Maintain and improve air quality	x/xx	Development is likely to be heavily car dependent. Located between the M4 and Newport Road, so would have the potential for residents to be affected by air pollution from these roads
3. Protect and enhance biodiversity, flora and fauna	x?	The sites include a small amount of SINCLAND, some riverine ecology, some dormice

4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	x?	No known flood risk on areas earmarked for development. Development is likely to be heavily car dependent
5. Protect and enhance historic and cultural heritage	0	No significant constraints
6. Help deliver the growth of a sustainable and diversified economy	0	Housing only proposed
7. Improve health and well-being	✓/x	Development would increase access to open space. No significant new community facilities are proposed. Development would be heavily car dependent, so few benefits from regular walking and cycling.
8. Protect and enhance the landscape	0	Not in any landscape designations. Cumulatively, development on infill sites is likely to have detrimental impact on countryside
9. Use natural resources efficiently and safeguard their quality	x	Would not allow for high density development, so not a good use of land. Would not allow for clean-up of contaminated land. High probability of best and most versatile agricultural land on some sites
10. Respond to demographic changes in a sustainable way	✓?	Would provide some homes, but likely to be low density and relatively low number
11. Minimise waste, increase re-use and recycling	x	Some of this will depend on how the site is developed. However any development will lead to a net increase in waste

Greenfield sites in the east – largely employment uses		
SA Objective	Rank	Comments
1. Help deliver equality of opportunity and access for all	✓	Close to the southern arc of deprivation, and could provide jobs to residents of this area. Would not provide community facilities or housing
2. Maintain and improve air quality	x?	Development is likely to be car-dependent and so worsen air quality
3. Protect and enhance biodiversity, flora and fauna	xx	Located near the Severn Estuary Ramsar/SPA/SSSI site. The entire site is in the SSSI. Development would have a significant cumulative impact on re-en ecosystems

4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	xx	All of the site is in a flood risk area. Public transport to the area is currently poor, and existing development is car dependent; new development is also likely to be car dependent
5. Protect and enhance historic and cultural heritage	x	Roughly 20% of the site is Cardiff Archaeologically Sensitive Site. Most of the site contains historic reens. Adjacent to the Rumney sea wall Scheduled Ancient Monument.
6. Help deliver the growth of a sustainable and diversified economy	✓✓	Would help to provide employment and to support the regeneration of nearby deprived areas
7. Improve health and well-being	x?	Would not improve access to open space or provide new community facilities. Would encourage the use of cars. Flooding would affect people's health
8. Protect and enhance the landscape	xx	Roughly half of the site is a proposed Special Landscape Area and forms part of CCW/CADW/ICOMOS Caldicot and Wentloog Levels Landscape of Outstanding Historic Interest
9. Use natural resources efficiently and safeguard their quality	x	Would not reuse land or remediate contaminated land. Would have significant negative impact on water quality
10. Respond to demographic changes in a sustainable way	✓	Would help to provide jobs but not new housing
11. Minimise waste, increase re-use and recycling	x	Some of this will depend on how the site is developed. However any development will lead to a net increase in waste

NB: Dispersed Brownfield sites and dispersed Greenfield sites options were too varied and diffuse to effectively appraise at the strategic level.

Cardiff Council & Levett-Therivel Sustainability Consultants

Sustainability Appraisal and Strategic Environmental Assessment of the Cardiff Local Development Plan

Appendix F: Criteria used in candidate site appraisals

Final Sustainability Appraisal Report of the Cardiff Local Development Plan

January 2016

SA objective	✓✓	✓	0 or ✓✗	✗	✗✗	?
1a. Help deliver equality of opportunity and access for all: Transportation context	Very well located in relation to transportation network. Relatively low car generation, location highly accessible by existing sustainable transportation modes, effective measures identified to achieve a 50:50 modal split.	Well located in relation to existing sustainable transport infrastructure. Would generate some additional car trips but site has the potential to deliver sustainable transportation modes to achieve a 50/50 modal split .	Reasonably-well located in relation to existing sustainable transport infrastructure. Would have significant impacts in terms of traffic generation and congestion; impacts could be managed and could potentially achieve 50:50 modal split;	Poorly located in relation to existing sustainable transport infrastructure. Without significant mitigation site would find it difficult to achieve a 50/50 split and wider benefits, and lead to increased congestion and negative impacts on the network.	Very poorly located in relation to existing sustainable transport infrastructure. Significant car trip generation and/or represents car-based site, very limited potential to achieve a 50:50 modal split and deliver wider strategic transport benefits. Would significantly increase congestion. Mitigation not feasible.	Effect unknown
1b. Help deliver equality of opportunity and access for all: Community facilities	The site has the potential to effectively deliver a broad range of community facilities, including local centres, schools, green infrastructure and other public facilities and also benefit existing communities with deficiencies.	The site has the potential to deliver adequate community facilities.	The scale/nature of the site does not place increased pressure on existing community facilities and adequate community facilities already exist.	The site will place increased pressure on existing community facilities and is dependent on existing limited community facilities available in the surrounding area and too few additional facilities are likely to be delivered as part of development.	The scale of the site will result in the loss of community facilities or place significant increased pressure on existing community facilities and is unlikely to be able to deliver new community facilities as part of development.	Effect unknown

SA objective	✓✓	✓	0 or ✓x	x	xx	?
2. Maintain and improve air quality	Not assessable at locational level		Either no air quality issues identified or where impacts can be demonstrably evidenced to fully mitigate harm and which are considered feasible, proportionately affordable, likely to deliver necessary improvements and/or raise no further inappropriate consequences.	Commuting off site may impact on an area or areas of air quality concern due to existing congestion issues, and where potential mitigation solutions are considered either not feasible, disproportionately costly, not likely to deliver necessary improvements and/or raise further inappropriate consequences.	Site is likely to increase road traffic within an existing AQMA and where potential mitigation solutions are considered either not feasible, disproportionately costly, not likely to deliver necessary improvements and/or raise further inappropriate consequences.	Effect unknown

SA objective	✓✓	✓	0 or ✓x	x	xx	?
3. Protect and enhance biodiversity, flora and fauna	No negative impact on biodiversity/ geological interests together with additional measures to enhance current biodiversity/geological interests to deliver wider than local benefits. The enhancement measures would need to demonstrate that they are considered feasible, proportionately affordable, likely to deliver necessary improvements and/or raise no further inappropriate consequences.*	No negative impact on biodiversity/ geological interests together with additional measures to enhance current biodiversity/geological interests to deliver local benefits to the extent of delivering an enhanced local status of biodiversity/geological interests. The enhancement measures would need to demonstrate that they are considered feasible, proportionately affordable, likely to deliver necessary improvements and/or raise no further inappropriate consequences.*	Either no impact on biodiversity/geological interests or where impacts can be demonstrably evidenced to fully mitigate harm and which are considered feasible, proportionately affordable, likely to deliver necessary improvements and/or raise no further inappropriate consequences	Overall, negative impact on biodiversity/geological interests of local importance (e.g. SINC or LNR). Potential mitigation solutions are considered feasible to reduce impact on local biodiversity interests. Also includes proposals where impacts relate to features of more than local importance but where impacts can be effectively reduced.	Overall, significant negative impact on biodiversity/geological interests of more than local importance (e.g. SSSI, SAC, SPA or Ramsar). Potential mitigation solutions are considered either not feasible, disproportionately costly, not likely to deliver necessary improvements and / or raise further inappropriate consequences.	Effect unknown

SA objective	✓✓	✓	0 or ✓x	x	xx	?
4a. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects: flood risk	Not applicable		No known flood risk	Significant flood risk (tidal or fluvial: C1 or C2) relating to part of the site where it is considered to be technically possible to mitigate the risk, in line with TAN 15 guidelines, through major scale mitigation measures but regardless of cost, impact on the and wider consequences.	Significant flood risk (tidal or fluvial C1 or C2) or significant surface water) relating to a large portion of the site where the extent and nature of the risk are such that measures are not considered able to effectively mitigate the risk in line with TAN 15 guidelines.	Effect unknown
4b. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects: scope for renewable energy solutions	The scale of development, and/or the site's physical attributes and/or other opportunities present significant potential for renewable energy solutions. Key strategic sites might offer the opportunity for exemplar solutions, above those standards set out in national guidance. Further detailed work at the master planning stage is needed to fully assess the potential and viability of any renewable energy schemes.	The scale of development, and/or the site's physical attributes and/or other opportunities offer moderate potential for renewable energy solutions. Further detailed work at the master planning stage is needed to fully assess the potential and viability of any renewable energy schemes.	No technical, physical or financial constraints which may limit the opportunity for or feasibility of renewable energy solutions have been identified at this stage. Further detailed work at the master planning stage is needed to fully assess renewable energy opportunities and feasibility.	Limited. Technical, physical or financial constraints may limit the potential or feasibility of renewable energy solutions. Further detailed work at the master planning stage is needed to fully assess the potential and viability of any renewable energy schemes.	Very limited. Significant technical, physical or financial constraints limit the opportunities for, or feasibility of delivering renewable energy solutions. Further detailed work at the master planning stage is needed to fully assess the potential and viability of any renewable energy schemes.	Effect unknown

SA objective	✓✓	✓	0 or ✓x	x	xx	?
5. Protect and enhance historic and cultural heritage	No negative impact on historic, cultural and built environment interests together with additional measures to enhance current historic/ cultural interests to deliver wider than local benefits. The enhancement measures would need to demonstrate that they are considered feasible, proportionately affordable, likely to deliver necessary improvements and/or raise no further inappropriate consequences.*	No negative impact on historic, cultural and built environment interests together with additional measures to enhance current historic/cultural interests to deliver local benefits to the extent of delivering an enhanced local status of historic/cultural interests. The enhancement measures would need to demonstrate that they are considered feasible, proportionately affordable, likely to deliver necessary improvements and/or raise no further inappropriate consequences.*	Either no impact on historic, cultural and built environment interests or where impacts can be demonstrably evidenced to fully mitigate harm and which are considered feasible, proportionately affordable, likely to deliver necessary improvements and/or raise no further inappropriate consequences	Overall, negative impact on historic, cultural and built environment interests of local importance (e.g. Conservation Area, Historic Parks and Gardens, Archaeologically Sensitive Areas or Locally Listed Building). Potential mitigation solutions are considered feasible to reduce impact on local historic, cultural or built environment interests. Also includes proposals where impacts relate to features of more than local importance but where impacts can be effectively reduced.	Overall, significant negative impact on historic, cultural and built environment interests of more than local importance (e.g. Scheduled Ancient Monument or Nationally Listed Building). Potential mitigation solutions are considered either not feasible, disproportionately costly, not likely to deliver necessary improvements and/or raise further inappropriate consequences.	Effect unknown
7. Improve health and well-being	Site has the potential to deliver significant health and wellbeing benefits for existing as well as future residents, (e.g. significant improvements in health facilities or publicly accessible open space) beyond catering for the site's residents, and	Site has the potential to deliver health and well being benefits for existing as well as future residents (e.g. significant improvements in health facilities, publicly accessible open space), and where these measures are	Either no impact on health and wellbeing or where impacts can be demonstrably evidenced to fully mitigate harm and which are considered feasible, proportionately affordable, likely to deliver necessary	Overall negative impact on health and well being (e.g. site occupies a portion of recreational open space, places significant negative pressure on an existing health facility), and where potential mitigation solutions are considered either not	Overall negative impact on health and well being (e.g. site fully occupies recreational open space, removes existing health facilities), and where potential mitigation solutions are considered either not feasible, disproportionately costly, not likely to deliver	Effect unknown

SA objective	✓✓	✓	0 or ✓x	x	xx	?
	where these measures are considered feasible, proportionately affordable, likely to deliver necessary improvements and/or raise no further inappropriate consequences.	considered feasible, proportionately affordable, likely to deliver necessary improvements and/or raise no further inappropriate consequences.	improvements and/or raise no further inappropriate consequences.	feasible, disproportionately costly, not likely to deliver necessary improvements and/or raise further inappropriate consequences.	necessary improvements and/or raise further inappropriate consequences.	
8. Protect and enhance the landscape	No negative impact on landscape interests together with additional measures to enhance current landscape interests to deliver wider than local benefits. The enhancement measures would need to demonstrate that they are considered feasible, proportionately affordable, likely to deliver necessary improvements and/or raise no further inappropriate consequences.*	No negative impact on landscape interests together with additional measures to enhance current landscape interests to deliver local benefits to the extent of delivering enhanced local status landscape interests. The enhancement measures would need to demonstrate that they are considered feasible, proportionately affordable, likely to deliver necessary improvements and/or raise no further inappropriate consequences.*	Either no impact on landscape interests or where impacts can be demonstrably evidenced to fully mitigate harm and which are considered feasible, proportionately affordable, likely to deliver necessary improvements and/or raise no further inappropriate consequences.	Overall, negative impact on landscape interests of local importance (e.g. river valleys, TPOs, LCAs or Greenfield site). Potential mitigation solutions are considered feasible to reduce impact on the local landscape interest. Also includes proposals where impacts relate to features of more than local importance but where impacts can be effectively reduced.	Overall, significant negative impact on landscape interests of more than local importance (e.g land considered to possess qualities meeting Special Landscape Area status following the regionally agreed methodology). Potential mitigation solutions are considered either not feasible, disproportionately costly, not likely to deliver necessary improvements and/or raise further inappropriate consequences.	Effect unknown
9a. Use natural resources efficiently and safeguard	Not assessable at location level		Overall, neutral impact on natural resources including Best and most versatile agricultural land, mineral deposits	Overall, negative impact on natural resources of local importance (aquifers) and where potential	Overall, significant negative impact on natural resources of more than local importance (Sand and	Effect unknown

SA objective	✓✓	✓	0 or ✓x	x	xx	?
their quality: Natural resources			and aquifers. Either no impact on natural resources or where impacts can be demonstrably evidenced to fully mitigate harm and which are considered feasible, proportionately affordable, likely to deliver necessary improvements and/or raise no further inappropriate consequences.	mitigation solutions are considered either not feasible, disproportionately costly, not certain to deliver necessary improvements and/or raise further inappropriate consequences.	Gravel Resource, Minerals Buffer Zone, Best and Most Versatile Agricultural Land) and where potential mitigation solutions are considered either not feasible, disproportionately costly, not likely to deliver necessary improvements and/or raise further inappropriate consequences.	
9b. Use natural resources efficiently and safeguard their quality: Contaminated land	Measures can be demonstrably evidenced to effectively bring contaminated land back into safe, beneficial use and which are considered feasible, proportionately affordable, likely to deliver necessary improvements and/or raise no further inappropriate consequences.	Site impacts in part upon contaminated land but measures can be demonstrably evidenced to effectively bring contaminated land back into safe, beneficial use and which are considered feasible, proportionately affordable, likely to deliver necessary improvements and/or raise no further inappropriate consequences.	Site does not impact upon contaminated land in any significant way.	Site impacts in part upon contaminated land and where potential mitigation solutions are considered either not feasible, disproportionately costly, not certain to deliver necessary improvements and/or raise further inappropriate consequences	Site significantly impacts upon contaminated land and where potential mitigation solutions are considered either not feasible, disproportionately costly, not likely to deliver necessary improvements and/or raise further inappropriate consequences.	Effect unknown

* Greenfield and some brownfield sites will not achieve this rank without detailed development proposals. Some brownfield sites dependant upon their condition may achieve this rank.

NB: SA objectives 6 (sustainable and diversified economy), 10 (demographic changes) and 11 (waste) are not included as they are not applicable for assessment at the location level.

Cardiff Council & Levett-Therivel Sustainability Consultants

**Sustainability Appraisal and Strategic Environmental Assessment of
the Cardiff Local Development Plan**

Appendix G: Appraisal of LDP Key and Detailed Policies

**Final Sustainability Appraisal Report of the Cardiff Local
Development Plan**

January 2016

The previous (September 2013) version of this Appendix included SA comments and suggestions after many policies. Most of these have been resolved satisfactorily through either changes to policies or further explanations. In the few that remain, the 'response' column reports the planning team's response. In the 'status' column only, 'x' means 'issue unresolved', and '~' means 'partially addressed though not conclusively'.

Policy KP1: LEVEL OF GROWTH		
The Plan makes provision for 45,415 new dwellings (including a 4,000 dwelling flexibility allowance) to deliver a housing requirement of 41,415 new dwellings and 40,000 new jobs in Cardiff between 2006-2026		
SA Objective	Rank	Comments
1. Help deliver equality of opportunity and access for all	✓	Has the potential to provide a significant number of affordable homes and help to address an existing shortage in the City. The scale of growth provided has the potential to create new communities that are large enough to support a range of community facilities and services. Also has the potential to improve connectivity with and between existing communities and increase accessibility of community facilities. If new developments are provided that include integrated sustainable transport infrastructure or reduce the need to travel by including mixed uses the effect could be more positive as this could help to improve access to services, facilities and employment particularly for those without access to a private car
2. Maintain and improve air quality	x	<p>Mainly incompatible with the SA Objective. Independent of any potential improvements to the City's transport infrastructure, the option could lead to a significant increase in transport (domestic and economic) and potentially an increase in industrial activity. This could lead to a reduction in air quality particularly through increased congestion, which is an existing issue for the City.</p> <p>The policy would also lead to the development of a large proportion of the available Greenfield land in the City, green spaces help to improve air quality.</p> <p>However, there is an opportunity to provide new developments that integrate sustainable transport infrastructure, and mixed uses to reduce the need to travel. This could help to reduce congestion, new developments would also benefit from green infrastructure.</p>
3. Protect and enhance biodiversity, flora and	x	The land required to accommodate the proposed level of growth represents a considerable proportion of the available development land in the City, the majority of which is Greenfield. Whilst designated nature sites would be protected, the development of large areas of the City's

fauna		Greenfields could result in significant habitat loss and disruption to habitat connectivity. Opportunities for mitigation could be limited due to extensive urbanisation.
4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	<p>✘ - Citywide carbon emissions</p> <p>✓/? – Per capita emissions</p> <p>✘/? – Adaptation to climate change</p>	<p>Citywide emissions of greenhouse gases are likely to increase significantly due to a large increase in population, waste, travel and economic activities. Development on Greenfield land also reduces the carbon sink this provides and reduces the city's ability to adapt to climate change as green space also aids in land drainage and helps to reduce the urban heat island effect.</p> <p>There is an opportunity to reduce per capita emissions in the city through the design of developments e.g. mixed use development to reduce trips and promote a modal shift to more sustainable transport; and/or the incorporation of energy efficiency measures and renewable energy generation.</p>
5. Protect and enhance historic and cultural heritage	✘	Generally incompatible with the SA Objective due to the demand for development land. There is potential for negative impacts to listed buildings, and to historic assets (both known and unknown) and their settings. These impacts could be mitigated by ensuring that developments are sympathetic to local character and distinctiveness, and by ensuring that thorough archaeological investigations are carried out on potential development sites.
6. Help deliver the growth of a sustainable and diversified economy	✓	Compatible with the SA Objective as it aims to provide a large number of jobs in the City, which is in line with the view of Cardiff as the economic driver for South East Wales. Additionally, the volume of jobs created is significant and could provide a good range and choice of employment.
7. Improve health and well-being	<p>✓ - Increased access to health care</p> <p>✘ - Reduced Greenfield amenity</p>	It may be possible to create new communities with population densities high enough to support new accessible leisure and health care facilities. However, there is a strong link between health and being able to access green open space: the use of Greenfield land reduces open space.
8. Protect and enhance the landscape	✘	Likely significant negative effect on landscape as the growth envisaged would lead to significant areas of Greenfield land being developed. This would result in a transformation of the landscape from rural to urban.
9. Use natural resources	✓ - Reuse and remediation	Provides opportunities to utilise previously developed land and remediate contaminated land due to the scale of growth proposed. However, the scale of development

efficiently and safeguard their quality	n of land ?/* - Conservation of soil resource	would result in the loss of a large amount of agricultural land, some of which is of high soil quality.
10. Respond to demographic changes in a sustainable way	✓	Would provide a good level of new jobs and housing over the plan period. The release of large areas of development land may also provide new communities on a scale that would support a good provision of new community facilities. It would require the release of much of Cardiff's available development land, leaving some residual development land for after the plan period
11. Minimise waste, increase re-use and recycling	* - Citywide waste ✓/? – Per capita waste	The absolute quantity of waste generated in Cardiff is likely to increase considerably. However, there is potential to decrease per capita arisings through the integration of recycling and composting facilities (including bring sites and household recycling facilities) into new developments.

KP4 MASTERPLANNING APPROACH (Policy appraised out of sequence because it sets context for KP2 (A) – (H) strategic sites policies.)

SA objective	1. Equality	2. Air quality	3. Biodiversity	4. Climate change	5. Heritage	6. Economy	7. Health and wellbeing	8. Landscape	9. Natural resources	10. Demographic change	11. Waste
1. Masterplanning Approach											
2. Development Density	? x	? x	✓	✓	✓	0	0	✓	✓	✓	✓
3. Sustainable Transport Corridors	✓	✓	? ✓	✓	0	0	✓	✓	✓	0	0
4. Sustainable Travel Choices	✓	✓	0	✓✓	0	✓	✓✓	0	✓✓	0	✓
5. Neighbourhood Centres	✓✓	✓	0	✓	0	✓	✓	0	✓	0	0
6. High Quality Sust. Design, Distinctive Character	0	0	0	0	0	0	✓✓	✓✓	✓	0	0
7. Integration with Neighbouring Areas	✓✓	0	0	✓	0	✓	✓	? ✓	0	✓	✓
8. Strategic Green Open Space Corridors	0	0	✓✓	✓✓	? ✓	0	✓✓	✓✓	✓	0	0
9. Landscape, biodiversity and historic features	0	0	✓✓	0	✓✓	0	✓✓	✓✓	0	0	0
10. Resource Efficiency	✓	✓	0	✓✓	0	✓	✓✓	✓	✓✓	0	✓✓
Overall	✓	✓	✓	✓	✓	✓	✓✓	✓	✓	0	✓

Notes:

-Principle 1 not appraised individually since it specifies procedure, not contents.

Potential negative scores for principle 2 (density) equality and air quality reflect risk that density gradient will result in disadvantaged people concentrated on transport corridors. Needs to be watched in detailed planning of each site.

SA Objective	LDP Masterplanning Principles: 1. Masterplanning approach 2. Development density 3. Sustainable transport corridors 4. Sustainable travel choices 5. Neighbourhood centres	6. High quality sustainable design and distinctive character 7. Integration with neighbouring areas 8. Strategic green open space corridors 9. Landscape, biodiversity and historic features 10. Resource efficiency
1. Help deliver equality of opportunity and access for all	✓ The Masterplanning Principles seek to provide and promote transport options including cycling and walking corridors, access to public transport, and access for all to transport modes (including those without cars) (3, 4); provision of new community facilities via neighbourhood centres (5); provision of a range of housing type and tenure (6); to improve facilities for existing communities as well as new ones and to increase connectivity between communities (7); and provision of accessible green space corridors (8). There is no specific mention of deprived areas or disadvantaged sections of society in the Principles, but it is appreciated that the LDP can only influence communities adjacent to proposed areas of growth (ie strategic sites).	
2. Maintain and improve air quality	✓ The Masterplanning Principles contribute positively to the SA objective with provision of walking, cycling and public transport travel options (3, 4), and gaining access to green open space corridors via sustainable and active travel modes (8).	
3. Protect and enhance biodiversity, flora and fauna	✓ Masterplanning Principle 9 aims to protect and enhance the nature conservation of sites and Principle 8 to provide access to biodiversity, provide habitat connectivity within and between sites.	
4. Reduce emissions of greenhouse gases that	✓ The Masterplanning Principles assist in reducing carbon emissions by minimising energy demand, increasing energy	

SA Objective	LDP Masterplanning Principles: 1. Masterplanning approach 2. Development density 3. Sustainable transport corridors 4. Sustainable travel choices 5. Neighbourhood centres	6. High quality sustainable design and distinctive character 7. Integration with neighbouring areas 8. Strategic green open space corridors 9. Landscape, biodiversity and historic features 10. Resource efficiency
cause climate change and adapt to its effects	efficiency and utilising renewable energy sources, and adapt to climate change through the design of buildings to cope with future weather events and by avoiding development in areas of unacceptable risk (10).	
5. Protect and enhance historic and cultural heritage	✓ Masterplanning Principle 9 seeks to retain and improve historic buildings and Principle 6 to ensure that existing site features and characteristics influence and form key features in site design.	
6. Help deliver the growth of a sustainable and diversified economy	? Employment and the local economy are not explicit in the Principles, as they focus on the role of housing in the Masterplanning process. Mixed use developments are mentioned in Principle 2 in terms of density, but sites wholly for employment use are not covered, and Principle 5 looks at provision of new facilities that may have some employment use within them.	
7. Improve health and well-being	✓✓ The Masterplanning Principles contribute positively to the SA Objective through the provision of sustainable transport choices that include walking and cycling (3, 4), access to open space and sports facilities (8) and the attractiveness of the areas design (6).	
8. Protect and enhance the landscape	✓ Masterplanning Principle 9 aims to ensure that existing site features influence and form key features in the design process through identification of these features and effective integration into the development. Additionally Principle 8 seeks to positively respond to existing landscape features and Principle 7 to make links to the wider countryside and public rights of way.	
9. Use natural resources efficiently and safeguard	✓/x Masterplanning Principle 10 is wholly concerned with resource efficiency of energy, water and waste, and Principle 2	

SA Objective	LDP Masterplanning Principles: 1. Masterplanning approach 2. Development density 3. Sustainable transport corridors 4. Sustainable travel choices 5. Neighbourhood centres	6. High quality sustainable design and distinctive character 7. Integration with neighbouring areas 8. Strategic green open space corridors 9. Landscape, biodiversity and historic features 10. Resource efficiency
their quality	sets a quantified minimum density for development ‘close to’ neighbourhood centres and ‘adjacent to’ main sustainable transport corridors but does not say how much development must meet this density, or how much lower it can be elsewhere. The Principles do not set out the reuse of previously developed land prior to Greenfield release, which is likely to result in Greenfield land being built upon whilst Brownfield sites remain derelict. It is understood that this staged land release cannot be specified in the Principles due to current limited land bank figures, but there is potential to include a general statement of principle of reusing derelict land first wherever practical.	
10. Respond to demographic changes in a sustainable way	0 Masterplanning Principles 2, 3, 4 and 5 effectively address what is required to meet the needs of Cardiff’s growing population from a social perspective, and to a certain extent from an economic perspective. The issue of jobs and employment is not clearly covered in the Principles (see Sustainability Objective 6).	
11. Minimise waste, increase re-use and recycling	✓ The Masterplanning Principles seek to ensure that design and layout contribute to sustainable waste management (6) and to provide innovative management of waste (10).	

Policy KP2: STRATEGIC SITES

Policy KP2 designates 8 separate sites. Each is appraised separately, except for D and E which are adjacent and are appraised together. Each of these contains one or more of the previously identified 'candidate sites'. Where this appraisal differs from the candidate site pro formas, this reflects the different criteria used for two appraisals, and more detailed data available for the smaller component sites.

The jobs numbers quoted for each site are estimates the Council provided to the Examination in Public (Action Point 1 of Hearing Session 6.) They do not form part of the formal policies but are relevant context.

Policy KP2(A): CARDIFF CENTRAL ENTERPRISE ZONE AND REGIONAL TRANSPORT HUB		
Major employment-led initiative including a Regional Transport Hub together with other mixed uses.		
SA Objective	Rank	Comments
1. Help deliver equality of opportunity and access for all	✓✓	Adjacent to central train station, with good links to Cardiff and the wider region. Supports development in the southern arc of deprivation; good public transport links to local areas. Provides for 10,000 - 15,000 jobs.
2. Maintain and improve air quality	✓x	Will cause transport impacts, but these would be better than they would be if public transport in the area was not so good. Trains to Cardiff are becoming electrified (will help air quality in the city centre though make it worse elsewhere)
3. Protect and enhance biodiversity, flora and fauna	?	Could affect some brownfield / derelict sites that currently are biodiverse.
4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	✓x	As 2. The area is protected from flooding by the Cardiff Bay Barrage
5. Protect and enhance historic and cultural heritage	0	The area has no significant historic or cultural heritage. Potential for enhancement
6. Help deliver the growth of a sustainable and diversified economy	✓✓	Aims to deliver 10,000 - 15,000 jobs
7. Improve health		The area is easily accessible by walking, cycling and

and well-being	✓	public transport, which help to improve health. Development is expected to help reduce crime.
8. Protect and enhance the landscape	✓	Development of the area will help to revitalise and improve the streetscape
9. Use natural resources efficiently and safeguard their quality	✓	Uses brownfield land, and has the potential to use secondary aggregates
10. Respond to demographic changes in a sustainable way	✓	Provides needed jobs in a sustainable and central location
11. Minimise waste, increase re-use and recycling	x	Some of this will depend on how the site is developed. However any development will lead to a net increase in waste

Policy KP2(B): FORMER GAS WORKS, FERRY ROAD		
Housing based scheme of approximately 500 homes with associated community uses.		
SA Objective	Rank	Comments
1. Help deliver equality of opportunity and access for all	✓✓	Development of the site would support the regeneration of an existing neighbourhood experiencing high levels of deprivation and vulnerable to decline
2. Maintain and improve air quality	✓x	The site is easily accessible by bus, rail, walking and cycling: although it would generate additional car journeys, its location will help to minimise these
3. Protect and enhance biodiversity, flora and fauna	?	Protected bats recorded on site and grass snakes recorded nearby, though policy requires mitigation and compensation. SINC on adjacent land.
4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	x?	The site is partly covered by flood zone C1. See 2.
5. Protect and enhance historic and cultural heritage	0?	One grade II listed building on site
6. Help deliver the growth of a	0	No significant impacts

sustainable and diversified economy		
7. Improve health and well-being	✓	The site has the potential to deliver health and wellbeing benefits by removing an industrial use, remediating contaminated land and improve walking access to public open space
8. Protect and enhance the landscape	✓ x	Would redevelop a brownfield site, and redevelopment of the site unlikely to significantly affect the landscape character of the River Corridor provided mitigation measures are adhered to and development on the river bank is avoided
9. Use natural resources efficiently and safeguard their quality	✓	No mineral resources, aquifers, high quality agricultural land on site. Would bring contaminated land back into use
10. Respond to demographic changes in a sustainable way	✓	Site would provide about 500 homes plus community facilities
11. Minimise waste, increase re-use and recycling	x	Some of this will depend on how the site is developed. However any development will lead to a net increase in waste

Policy KP2(C): NORTH WEST CARDIFF		
Comprehensive development including about 6,500 to 7,000 homes (5,000 by 2026) employment and other associated community uses		
SA Objective	Rank	Comments
1. Help deliver equality of opportunity and access for all	✓ x x	This large site would provide 6,500-7,000 new homes (including 1,500 after 2026) including significant amounts of affordable housing, and community facilities. There is the potential to provide community facilities for nearby areas. The site is not in the southern arc of deprivation, and is far from city centre. The policy includes extensive public transport provision but the site's location does not encourage this.
2. Maintain and improve air quality	x ?	The plan aims to minimise car traffic from the site, but an overall increase in traffic (and thus air pollution is expected. Housing and employment development would also increase air pollution. About 400 – 600 jobs are expected to be provided: this would help to reduce commuting if residents also work at the site.

3. Protect and enhance biodiversity, flora and fauna	x	The site is primarily composed of fields, but includes SINCs and a local nature reserve. There are also local streams and hedgerows which would be affected by development
4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	✓ x	The site is not in the flood zone, and has potential for 2MW+ turbines
5. Protect and enhance historic and cultural heritage	x?	The site has some historic interest which could be affected by development – two grade II listed buildings and part of site is in St Fagans conservation area
6. Help deliver the growth of a sustainable and diversified economy	✓	Would help to provide about 400 – 600 jobs
7. Improve health and well-being	✓ ?	The site would provide new areas of accessible green space. It would not cause the loss of existing health facilities. The additional traffic from development could lead to road-related health impacts. The details depend on the masterplan
8. Protect and enhance the landscape	x/xx?	The site is currently undeveloped; development would change this to a more urban, built-up area.
9. Use natural resources efficiently and safeguard their quality	x	The land is Greenfield, with some 3a agricultural land. It includes no contaminated land, so there is no possibility for remediation. It contains no mineral resources, and so would not sterilise them
10. Respond to demographic changes in a sustainable way	✓✓	The site would provide about 6,500 homes including affordable homes, also community facilities
11. Minimise waste, increase re-use and recycling	x	Some of this will depend on how the site is developed. However any development will lead to a net increase in waste

<p>Policy KP2(D) and (E): NORTH OF JUNCTION 33 ON M4 AND SOUTH OF CREIGIAU</p>
<p>D – mixed use of approximately 2,000 homes, employment, other associated community uses and a strategic Park and Ride site. E - housing-based scheme of approximately 650 homes with associated community uses.</p>

SA Objective	Rank	Comments
1. Help deliver equality of opportunity and access for all	x	This site would provide about 2650 new homes including significant amounts of affordable housing, and community facilities. The site is not in the southern arc of deprivation, and is far from city centre. Transport impacts depend on implementation: a Park & Ride facility is planned, and the site will not go forward until the North West Cardiff site and its bus route have been developed. However the distant location does not encourage non-car transport.
2. Maintain and improve air quality	x/xx	Even with sustainable transport solutions, the site will be heavily car based. The P&R facility would improve air quality in the city centre but could exacerbate air pollution near the P&R site
3. Protect and enhance biodiversity, flora and fauna	xx	The site contains 8 SINCs, is adjacent to a riverine SSSI, and there are protected species on the site. Development would have a significant negative impact on these sensitive features.
4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	✓x	The site is not in a flood zone. It has no real potential for large turbines, although it could possibly accommodate smaller ones
5. Protect and enhance historic and cultural heritage	?	The site contains one grade II listed building which may be affected by development
6. Help deliver the growth of a sustainable and diversified economy	✓	400 – 600 jobs are estimated for the site
7. Improve health and well-being	✓?	The site would provide new areas of accessible green space. It would not cause the loss of existing health facilities. The additional traffic from development could lead to road-related health impacts. The details depend on the masterplan Development could enhance the opportunity for Creigiau residents to access open space and other facilities, though this would involve crossing the busy A4119.
8. Protect and enhance the landscape	xx	The site is adjacent to a proposed SLA. Development would be on Greenfield sites, and is visible from the M4 motorway
9. Use natural	x	The land is Greenfield. It includes no contaminated

resources efficiently and safeguard their quality		land, so there is no need for remediation. It contains no mineral resources, and so would not sterilise them
10. Respond to demographic changes in a sustainable way	✓✓	The site would provide about 2650 homes including affordable homes, also community facilities
11. Minimise waste, increase re-use and recycling	x	Some of this will depend on how the site is developed. However any development will lead to a net increase in waste

Policy KP2 (F): NORTH EAST CARDIFF (WEST OF PONTPRENNAU)		
Comprehensive development of approximately 4,500 homes, employment and other associated community uses;		
SA Objective	Rank	Comments
1. Help deliver equality of opportunity and access for all	✓x	This large site would provide 4,500 new homes including significant amounts of affordable housing, and community facilities. There is the potential to provide community facilities for nearby areas. The site is not in the southern arc of deprivation, and is far from city centre. Transport impacts depend on implementation: active attempts will be made to provide public transport and the plan aims for a 50:50 modal split (50% by car, 50% by other mode). However the site's location does not encourage this.
2. Maintain and improve air quality	x?	There would be three main entrance/exit points to the site, the eastern one of which would connect to a P&R site. Provision of 800-1000 jobs at the site would help to reduce the need to travel. Active attempts would be made to reduce car traffic, but this is likely to still be quite a car-based development with consequent air pollution impacts. The additional housing and employment development would also increase air pollution. If the development included a junction onto the motorway, then this might attract residents who work further away, e.g. Swansea. This would further increase air pollution.
3. Protect and enhance	x	The site contains 9 small SINCS, adjacent two SSSIs, a river valley in middle, and several protected species

biodiversity, flora and fauna		
4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	x	Part of the area is a historic flood zone and some is zone C2 (flood plain without flood defence). See 2. Above
5. Protect and enhance historic and cultural heritage	?	One Grade I and two Grade II listed buildings
6. Help deliver the growth of a sustainable and diversified economy	✓✓	The site would help to provide 800-1000 jobs
7. Improve health and well-being	✓?	The site would provide new areas of accessible green space. Development would not cause the loss of existing health facilities. The additional traffic from development could lead to road-related health impacts. The details depend on the masterplan. Development at the site could enhance facilities for Pontprennau residents
8. Protect and enhance the landscape	x/xx?	The site is currently undeveloped; development would change this to an urban, built-up area.
9. Use natural resources efficiently and safeguard their quality	x	The land is Greenfield. It includes no contaminated land, so there is no need for remediation. It contains no mineral resources, and so would not sterilise them. Development could affect the water quality of the streams on site and downstream.
10. Respond to demographic changes in a sustainable way	✓✓	Development of the site would provide about 4,500 homes and almost 800-1000 jobs, plus community facilities
11. Minimise waste, increase re-use and recycling	x	Some of this will depend on how the site is developed. However any development will lead to a net increase in waste

Policy KP2(G):EAST OF PONTPRENNAU LINK ROAD		
–Housing-based scheme of approximately 1,300 homes with associated community uses		
SA Objective	Rank	Comments
1. Help deliver	✓x	This site would provide 1,300 new homes including

equality of opportunity and access for all		significant amounts of affordable housing, and community facilities. There is the potential to provide community facilities for nearby areas. The site is not in the southern arc of deprivation, and is far from city centre. Transport impacts depend on implementation: see 2.
2. Maintain and improve air quality	x?	active attempts will be made to provide public transport and the plan aims for a 50:50 modal split (50% by car, 50% by other mode). However the site's location does not encourage this.
3. Protect and enhance biodiversity, flora and fauna	x	Dormice on site, SINC habitat NW of site
4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	x	No known flood risk along developable area. Area is severed from facilities to the west by the Link Road – would need significant walking, cycling and public transport infrastructure to prevent the development from being heavily car-based
5. Protect and enhance historic and cultural heritage	x?	Three Grade II and 1 Grade II* listed buildings plus 9 historic records Archaeological features may restrict development
6. Help deliver the growth of a sustainable and diversified economy	0	Housing-based development, although could offer small-scale employment
7. Improve health and well-being	✓x	The site would provide new areas of accessible green space, as well as a primary school, local stores and a community centre. The additional traffic from development could lead to road-related health impacts. The details depend on the masterplan.
8. Protect and enhance the landscape	x/xx?	The site is currently undeveloped; development would change this to an urban, built-up area.
9. Use natural resources efficiently and safeguard their quality	x	The land is Greenfield, with a high proportion of grade 3a agricultural land. It includes two areas of landfilling. It contains no mineral resources, and so would not sterilise them. Development could affect the water quality of the streams on site and downstream.
10. Respond to demographic changes in a sustainable way	✓✓	Development of the site would provide at least 1300 homes plus community facilities

11. Minimise waste, increase re-use and recycling	x	Some of this will depend on how the site is developed. However any development will lead to a net increase in waste
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Policy KP2(H): SOUTH OF ST. MELLONS BUSINESS PARK		
Employment land		
SA Objective	Rank	Comments
1. Help deliver equality of opportunity and access for all	✓	Close to the southern arc of deprivation, and could provide jobs to residents of this area. Would not provide community facilities or housing
2. Maintain and improve air quality	x?	Development is likely to be car-dependent and so worsen air quality
3. Protect and enhance biodiversity, flora and fauna	xx	Located near the Severn Estuary Ramsar/SPA/SSSI site. All of the site is in the SSSI. Development would have a significant cumulative impact on reen ecosystems
4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	xx	All of the site is in a C1 flood risk area. Public transport to the area is currently poor, and existing development is car dependent; new development is also likely to be car dependent
5. Protect and enhance historic and cultural heritage	xx	All of the site is Cardiff Archaeologically Sensitive Site. Most of the site is in the CCW/CADW/ ICOMOS Caldicot and Wentloog Levels Landscape of Outstanding Historic Interest. Most of the site contains historic reens.
6. Help deliver the growth of a sustainable and diversified economy	✓	1,800-2000 jobs estimated. Claimed to provide employment and to support the regeneration of nearby deprived areas. However: (1) Not clear it is realistic to attract the proposed knowledge based jobs to Cardiff; (2) If they do come, site A would seem a better place; (3) If they do come, they are unlikely to be filled by local residents, and (4) even with better transport links they will not be very easy to access.
7. Improve health and well-being	x?	Would not improve access to open space or provide new community facilities. Would encourage the use of cars. Flooding would affect people's health
8. Protect and enhance the landscape	xx	The site is currently undeveloped; development would change this to an urban, built-up area. Most of the site is in the CCW/CADW/ ICOMOS Caldicot and Wentloog

		Levels Landscape of Outstanding Historic Interest. The site is adjacent to a proposed Special Landscape Area and the Newport Green Belt, and the area has been identified as a high quality landscape by a study undertaken in 2008.
9. Use natural resources efficiently and safeguard their quality	x	Would not reuse land or remediate contaminated land. Would have significant negative impact on water quality
10. Respond to demographic changes in a sustainable way	✓	Would help to provide jobs but not new housing
11. Minimise waste, increase re-use and recycling	x	Some of this will depend on how the site is developed. However any development will lead to a net increase in waste

SA comments and suggestions	Response	Status
<p>From an environmental perspective, this is a very poor site and recommend that it is not included in the plan. Its only real benefit is that it will provide land for the kinds of jobs that would not easily be accommodated in the city centre, and that these may be accessible for residents of Trowbridge and Rumney. From a transport perspective, it would be more sustainable to provide several smaller employment sites scattered across the city.</p>	<p>St Mellons Business Park is already an established business park, within a Strategic Location.</p> <p>A large strategic allocation coupled with the provision of modern, flexible premises is important, if Cardiff is to continue to attract inward investment, and promote high value, knowledge based activities, thus fulfilling its role within the City Region. The plan needs to provide a range and choice of sites including out of centre alternatives.</p> <p>Travel implication concerns should be reduced through the provision of smaller local employment sites within mixed use strategic allocations. Furthermore, the protection of existing strategic and locally important areas through policy planning should further</p>	x

	alleviate this concern in relation to travel, in addition to the provision of a rail link to the city centre as a result of this scheme.	
Landscape impacts cannot be mitigated	The Site Specific Principles on page 57 of the Masterplanning Framework which forms a Supporting Document to the LDP state that the Wentloog Levels Landscape of Outstanding Historic Interest will be protected. In order to ensure this it is important that the development of the site is undertaken in a sensitive manner to minimise harm. These principles will be used by the Council through the planning and design process to work with developers to design detailed masterplans.	x

Policy KP3(A) and KP3(B) appraised together because they jointly define settlement boundaries and constraints on development outside them		
<p>KP3(A) GREEN WEDGE: In order to strategically manage the urban form of Cardiff and to protect the setting of the urban area, a Green Wedge is proposed on land North of the M4 as shown on the Proposals Map. Within this area development which prejudices the open nature of this land will not be permitted. Positive biodiversity, landscape, climate change mitigation and informal recreational management and enhancement measures will be encouraged in this area to further enhance the long term role of the area as a key natural resource benefitting the city.</p> <p>KP3(B): SETTLEMENT BOUNDARIES In order to strategically manage the spatial growth of Cardiff, settlement boundaries are proposed as shown on the Proposals Map. In all areas outside the defined settlement boundaries, otherwise referred to as countryside, there will be a corresponding presumption against inappropriate development.</p>		
SA Objective	Rank	Comments
1. Help deliver equality of opportunity and access for all	0	
2. Maintain and improve air	✓	Policies will help reduce air pollution by helping keep settlements compact, reducing need for motorised

quality		transport
3. Protect and enhance biodiversity, flora and fauna	✓	Policies will help maintain open countryside
4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	✓	Policies will help reduce air pollution by helping keep settlements compact, reducing need for motorised transport
5. Protect and enhance historic and cultural heritage	0	
6. Help deliver the growth of a sustainable and diversified economy	?	Policies may restrict economic development outside settlements, though provision 'Where it can be demonstrated that development outside settlement boundaries is acceptable in principle, other detailed Deposit LDP policies provide the framework to consider the merits or otherwise of proposals' (4.82 of Deposit LDP) should permit genuinely justified development.
7. Improve health and well-being	✓	Policies will help maintain open countryside
8. Protect and enhance the landscape	✓✓	Policies will help maintain open countryside
9. Use natural resources efficiently and safeguard their quality	✓	Policies will help promote more compact and therefore resource efficient settlements.
10. Respond to demographic changes in a sustainable way	?	Policies will restrict development outside settlements, though provision 'Where it can be demonstrated that development outside settlement boundaries is acceptable in principle, other detailed Deposit LDP policies provide the framework to consider the merits or otherwise of proposals' (4.82 of Deposit LDP) should permit genuinely justified development.
11. Minimise waste, increase re-use and recycling	0	

Policy KP5: GOOD QUALITY AND SUSTAINABLE DESIGN

To help support the development of Cardiff as a world-class European Capital City, all

new development will be required to be of a high quality, sustainable design and make a positive contribution to the creation of distinctive communities, places and spaces by:

- (i) Responding to the local character and context of the built and landscape setting so that layout, scale, form, massing, height, density, colour, materials, detailing and impact on the built and natural heritage are all addressed within development proposals;
- (ii) Providing legible development which is easy to get around and which ensures a sense of continuity and enclosure;
- (iii) Providing a diversity of land uses to create balanced communities and add vibrancy throughout the day;
- (iv) Creating interconnected streets, squares and spaces as distinctive places, which are safe, accessible, vibrant and secure and incorporate public art where appropriate;
- (v) Providing a healthy and convenient environment for all users that supports the principles of community safety, encourages walking and cycling, enables employment, essential services and community facilities to be accessible by sustainable transport and maximises the contribution of networks of multi-functional and connected open spaces to encourage healthier lifestyles;
- (vi) Maximising renewable energy solutions;
- (vii) Achieve a resource efficient and climate responsive design that provides sustainable water and waste management solutions and minimise emissions from transport, homes and industry;
- (viii) Achieving an adaptable design that can respond to future social, economic, technological and environmental requirements;
- (ix) Promoting the efficient use of land, developing at highest practicable densities and where appropriate achieving the remediation of land contamination;
- (x) Ensuring no undue effect on the amenity of neighbouring occupiers and connecting positively to surrounding communities;
- (xi) Fostering inclusive design, ensuring buildings, streets and spaces are accessible to all users and is adaptable to future changes in lifestyle; and
- (xii) Locating Tall buildings in locations which are highly accessible through walking and public transport and within an existing or proposed cluster of tall buildings.

SA Objective	Rank	Comments
1. Help deliver equality of opportunity and access for all	✓	Policy aims to provide developments with an accessible and inclusive environment
2. Maintain and improve air quality	?	Policy aims to create an environment that encourages walking and cycling and reduces car usage, which may improve air quality
3. Protect and enhance biodiversity, flora	✓	Good design can protect and enhance biodiversity interest

and fauna		
4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	✓✓	Policy aims to provide adaptable developments that mitigate and adapt to the effects of climate change both now and in the future
5. Protect and enhance historic and cultural heritage	✓	Good design can protect historic and cultural heritage
6. Help deliver the growth of a sustainable and diversified economy	✓	Policy should support development of sustainable design and construction expertise and capability
7. Improve health and well-being	✓	Policy aims to provide developments that facilitate and encourage walking and cycling and provide networks of multi-functional open space for recreation
8. Protect and enhance the landscape	✓	Policy aims to provide developments that take into account landscape setting
9. Use natural resources efficiently and safeguard their quality	✓	Policy aims to provide resource efficient developments
10. Respond to demographic changes in a sustainable way	✓	Policy aims to provide developments that responds to future requirements
11. Minimise waste, increase re-use and recycling	✓	Policy aims to provide development with integrated sustainable waste management solutions

Policies KP6 and KP7 appraised together because both are concerned with securing necessary public provisions in new development

KP6: NEW INFRASTRUCTURE

New development will make appropriate provision for, or contribute towards, all essential, enabling and necessary infrastructure required as a consequence of the proposed development in accordance with Planning Policy Guidance. Such infrastructure will be delivered in a timely manner to meet the needs of existing and planned communities and includes the following aspects which may be required having

regard to the nature, scale and location of the proposed development:

Essential / Enabling Infrastructure:

- Transportation and highways including access, circulation, parking, public transport provision, walking and cycling;
- Utility services;
- Flood mitigation / defences;

Necessary Infrastructure:

- Affordable Housing;
- Schools and education;
- Health and social care;
- Community buildings and facilities including District and Local Centre improvements;
- Local employment and training including replacement employment opportunities where relevant;
- Community safety initiatives;
- Open space, recreational facilities, playgrounds, allotments;
- Protection, management, enhancement and mitigation measures relating to the natural and built environment;
- Public realm improvements and public art;
- Waste management facilities including recycling and services;
- District heating and sustainable energy infrastructure;

KP7: PLANNING OBLIGATIONS

Planning obligations will be sought to mitigate any adverse impacts of development and will be assessed on a case by case basis in line with Planning Policy Guidance.

SA Objective	Rank	Comments
1. Help deliver equality of opportunity and access for all	✓?	The requirements have potential to avoid negative impacts and impact positively on all SA objectives, depending on how they are applied.
2. Maintain and improve air quality	✓?	
3. Protect and enhance biodiversity, flora and fauna	✓?	

4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	✓?	
5. Protect and enhance historic and cultural heritage	✓?	
6. Help deliver the growth of a sustainable and diversified economy	✓?	
7. Improve health and well-being	✓?	
8. Protect and enhance the landscape	✓?	
9. Use natural resources efficiently and safeguard their quality	✓?	
10. Respond to demographic changes in a sustainable way	✓?	
11. Minimise waste, increase re-use and recycling	✓?	

Policy KP8: SUSTAINABLE TRANSPORT
<p>Development in Cardiff will be integrated with transport infrastructure and services in order to:</p> <ul style="list-style-type: none"> (i) Achieve the target of a 50:50 modal split between journeys by car and journeys by walking, cycling and public transport. (ii) Reduce travel demand and dependence on the car; (iii) Enable and maximise use of sustainable and active modes of transport; (iv) Integrate travel modes; (v) Provide for people with particular access and mobility requirements; (vi) Improve safety for all travellers;

(vii) Maintain and improve the efficiency and reliability of the transport network; (viii) Support the movement of freight by rail or water; and (ix) Manage freight movements by road and minimise their impacts.		
SA Objective	Rank	Comments
1. Help deliver equality of opportunity and access for all	✓	Policy aims to improve access to jobs, community facilities and services by sustainable modes of transport
2. Maintain and improve air quality	✓	Policy aims to reduce reliance on private car and encourage the use of sustainable transport
3. Protect and enhance biodiversity, flora and fauna	0	
4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	✓	Policy aims to provide an integrated sustainable transport system and reduce the use of the private car
5. Protect and enhance historic and cultural heritage	0	
6. Help deliver the growth of a sustainable and diversified economy	✓	Policy aims to enable sustainable travel, for all, to employment sites
7. Improve health and well-being	✓	Policy aims to encourage and facilitate walking and cycling by providing safe and attractive routes
8. Protect and enhance the landscape	0	
9. Use natural resources efficiently and safeguard their quality	0	
10. Respond to demographic changes in a sustainable way	✓	Policy aims to meet the needs of the population in terms of access via sustainable transport to services, facilities and employment

11. Minimise waste, increase re-use and recycling	0	
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Policy KP9: RESPONDING TO EVIDENCED ECONOMIC NEEDS		
Provision will be made for a range and choice of new employment sites including those identified in KP2 for different types of employment and in different geographical locations to effectively deliver the level of growth set out in the plan together with putting in place a framework to protect the role of existing employment land		
SA comments and suggestions	Response	Status
Policy as now drafted cannot be meaningfully appraised since it merely says 'provision will be made ...' without saying what, where, when how much etc. The SA appraises specific provisions in the other policies where they occur.		

Policy KP10: CENTRAL AND BAY BUSINESS AREAS		
The following uses are considered appropriate within the Central and Bay Business Areas: (i) New offices, residential and commercial leisure uses within the Central and Bay Business Areas; (ii) Enhanced retail and complementary facilities within the Central Shopping Area; and (iii) Other uses most appropriately located in city centres.		
SA Objective	Rank	Comments
1. Help deliver equality of opportunity and access for all	✓	Opportunities for employment options and leisure facilities with good existing transport links from across city
2. Maintain and improve air quality	✓	Locations support existing infrastructure and could encourage the use of sustainable transport to access them. However, further focussed development in these areas may increase air pollution from traffic without mitigation
3. Protect and enhance biodiversity, flora and fauna	✗	Increased visitors to the bay area may increase disturbance (including on water activities) to wildfowl, and fish nurseries

4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	✓	Policy likely to encourage and promote a shift to sustainable transport
5. Protect and enhance historic and cultural heritage	0	[policy doesn't say anything one way of the other]
6. Help deliver the growth of a sustainable and diversified economy	✓	These areas have good transport links and development may support and enhance the city centre
7. Improve health and well-being	✓	Policy aims to provide new leisure facilities, which contribute to health and well being
8. Protect and enhance the landscape	✓	Policy favours development that supports the attractiveness of the city centre
9. Use natural resources efficiently and safeguard their quality	✓	Policy supports continued regeneration and remediation of the Bay business area
10. Respond to demographic changes in a sustainable way	✓	Policy meets the needs for jobs, retail and leisure facilities
11. Minimise waste, increase re-use and recycling	0	

Policy KP11: CRUSHED ROCK AGGREGATES AND OTHER MINERALS
Cardiff will maintain a steady and adequate supply of minerals and contribute to regional aggregate supplies by:
(i) Promoting and supporting the efficient use of minerals and use of alternatives to naturally occurring minerals including the re-use of secondary aggregates;
(ii) Protecting existing mineral reserves and safeguarding potential resources of limestone, coal and sand and gravel from development that would preclude their future extraction;
(iii) Maintaining a minimum 10 year land bank of permitted crushed rock aggregate

reserves in line with national guidance:

iv) Supporting appropriate applications for sand and gravel extraction; and

v) Safeguarding wharves from development that would prevent their use for landing marine dredged sand and gravel.

SA Objective	Rank	Comments
1. Help deliver equality of opportunity and access for all	0	
2. Maintain and improve air quality	✘	Dust and road transport associated with minerals extract may reduce air quality
3. Protect and enhance biodiversity, flora and fauna	?	Potential for habitat loss There may be opportunities for habitat restoration/ creation once quarries are no longer in use
4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	?	Sustained levels of transport and energy intensive activities associated with mining/ quarrying minerals
5. Protect and enhance historic and cultural heritage	0	
6. Help deliver the growth of a sustainable and diversified economy	✓	Efficiently used and well managed minerals resources could help to support the economy in the long term, particularly the construction sector
7. Improve health and well-being	✘	There may be impacts to health from noise and air pollution associated with the extraction of minerals
8. Protect and enhance the landscape	✘	Minerals extraction invariably results in landscape impacts due to excavation
9. Use natural resources efficiently and safeguard their quality	✓	Policy aims to safeguard mineral resources and encourage the efficient use Potential negative impact upon local water quality without mitigation
10. Respond to demographic changes in a sustainable way	✓	Policy aims to ensure that there are mineral reserves for future use

11. Minimise waste, increase re-use and recycling	✓	Policy encourages the efficient use of minerals and the recycling of secondary aggregates, may help to reduce waste from the construction industry
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Policy KP12: WASTE		
Waste arising from Cardiff will be managed by:		
<p>(i) Promoting and supporting additional sustainable waste treatment facilities, measures and strategies in accordance with the Collections, Infrastructure and Markets Sector Plan (2012) and TAN 21 (2014) in a manner that follows the waste hierarchy and the principles of an integrated and adequate network of waste installations; nearest appropriate installation; self-sufficiency and protection of human health and the environment;</p> <p>(ii) Encouraging the provision of in-building treatment facilities on existing and allocated areas of general industry;</p> <p>(iii) Supporting the provision and maintenance of sustainable waste management storage and collection arrangements in all appropriate new developments; and</p> <p>(iv) Supporting waste prevention and reuse and the provision of facilities that use recycled or composted products.</p>		
SA Objective	Rank	Comments
1. Help deliver equality of opportunity and access for all	0	
2. Maintain and improve air quality	?	Policy may help to reduce road traffic associated with waste management by integrating management facilities with waste producer, however potential issues with dust and odour
3. Protect and enhance biodiversity, flora and fauna	0	
4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	✓	Policy may reduce the need to transport waste, reducing any transport related emissions Policy encourages resource efficiency, reuse and recycling
5. Protect and enhance historic and cultural	0	

heritage		
6. Help deliver the growth of a sustainable and diversified economy	✓	Policy will encourage growth and jobs in the waste management sector
7. Improve health and well-being	✓ / ?	Locating waste management facilities within developments may impact on health of residents/ employees
8. Protect and enhance the landscape	0	
9. Use natural resources efficiently and safeguard their quality	✓	Policy seeks to promote resource efficiency and recycling and may reduce the need for land for land filling purposes
10. Respond to demographic changes in a sustainable way	✓	Policy may help to ensure that waste management facilities can cope with future waste arisings Provision of community facility
11. Minimise waste, increase re-use and recycling	✓✓	Policy promotes resource efficiency, reuse and recycling
SA comments and suggestions		
Suggest putting indent iv first to signal primacy of reducing waste		Disagree. Criteria are not ranked in order of importance, with equal weight afforded to each, so there is no need to reorder.
		✘

Policy KP13: RESPONDING TO EVIDENCED SOCIAL NEEDS
A key part of the successful progression of the city will be to develop sustainable neighbourhoods, tackle deprivation, and improve the quality of life for all. This will be achieved through:
<ul style="list-style-type: none"> (i) Providing a range of dwelling sizes, types and affordability including seeking to provide a target of 6,646 affordable dwellings over the remaining 12 years of Plan period ; (ii) Supporting the vitality, viability and attractiveness of existing District and Local Centres and their regeneration, including retail and other commercial development and housing of an appropriate scale; (iii) Encouraging the provision of a full range of social, health, leisure and education facilities and community infrastructure for both existing and new communities

that are accessible to all by walking and cycling and public transport;

- (iv)** Supporting the regeneration of deprived communities within the city and maximising the additional benefits that new communities can bring to adjoining or surrounding communities;
- (v)** Encouraging the enhancement of communities through better equality of access to services for all, promoting cultural and wider diversity for all groups in society, and creating places that encourage social interaction and cohesion;
- (vi)** Developing new cultural and sporting facilities to build upon Cardiff's role as a major tourist, cultural and sporting destination for visitors and residents alike; and
- (vii)** Designing out crime and creating communities which are safer and feel safer.

SA Objective	Rank	Comments
1. Help deliver equality of opportunity and access for all	✓✓	Policy strongly compatible with the SA Objective; aims to provide housing and address existing deprivation issues, provide cultural, sporting and community facilities and ensure that existing neighbourhoods benefit from the infrastructure brought forward from new neighbourhood created over the plan period
2. Maintain and improve air quality	✓	Policy aims to support local and district centres, and their regeneration. This may help to reduce the need to travel
3. Protect and enhance biodiversity, flora and fauna	0	
4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	✓	Provision of local and accessible facilities
5. Protect and enhance historic and cultural heritage	✓	Policy seeks to promote cultural diversity
6. Help deliver the growth of a sustainable and diversified economy	✓	Policy aims to support district and local centres Policy aims to support the regeneration of deprived areas

7. Improve health and well-being	✓	Policy aims to provide new sporting facilities Policy aims to design out crime and create communities where people are safe and feel safe
8. Protect and enhance the landscape	0	
9. Use natural resources efficiently and safeguard their quality	0	
10. Respond to demographic changes in a sustainable way	✓	Policy aims to provide community facilities to meet needs
11. Minimise waste, increase re-use and recycling	0	

Policy KP14: HEALTHY LIVING		
Cardiff will be made a healthier place to live by seeking to reduce health inequalities through encouraging healthy lifestyles, addressing the social determinants of health and providing accessible health care facilities. This will be achieved by supporting developments which provide for active travel, accessible and useable green spaces, including allotments.		
SA Objective	Rank	Comments
1. Help deliver equality of opportunity and access for all	✓	Policy aims to reduce health inequalities
2. Maintain and improve air quality	0	
3. Protect and enhance biodiversity, flora and fauna	?	Providing green spaces may provide opportunities for biodiversity enhancements
4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	?	Policy encourages active travel.

5. Protect and enhance historic and cultural heritage	0	
6. Help deliver the growth of a sustainable and diversified economy	?	Providing allotments may help to encourage community/ social enterprise, with potential benefits to deprived areas of the city
7. Improve health and well-being	✓✓	Policy aims to promote healthy living and reduce health inequalities Policy aims to improve access to open spaces for recreation
8. Protect and enhance the landscape	?	Provision of green space may provide opportunities for landscape/ townscape enhancement
9. Use natural resources efficiently and safeguard their quality	0	
10. Respond to demographic changes in a sustainable way	✓	Policy aims to provide accessible community green space
11. Minimise waste, increase re-use and recycling	0	

Policy KP15: CLIMATE CHANGE
To mitigate against the effects of climate change and adapt to its impacts, development proposals should take into account the following factors:
(i) Reducing carbon emissions;
(ii) Protecting and increasing carbon sinks;
(iii) Adapting to the implications of climate change at both a strategic and detailed design level;
(iv) Promoting energy efficiency and increasing the supply of renewable energy;
(v) Avoiding areas susceptible to flood risk in the first instance in accordance with the sequential approach set out in national guidance; and
(vi) Preventing development that increases flood risk.

SA Objective	Rank	Comments
1. Help deliver equality of opportunity and access for all	0	
2. Maintain and improve air quality	?	Measures to reduce carbon emissions may have potential benefits to air quality
3. Protect and enhance biodiversity, flora and fauna	?	Policy aims to protect and increase carbon sinks, which may provide benefits to biodiversity.
4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	✓?	Policy aims ensure that new developments take account of the causes and consequences of climate change
5. Protect and enhance historic and cultural heritage	0	
6. Help deliver the growth of a sustainable and diversified economy	0	
7. Improve health and well-being	0	Policy may help to reduce health related impacts related with flood risk
8. Protect and enhance the landscape	0	
9. Use natural resources efficiently and safeguard their quality	✓?	Policy aims to promote energy efficiency and renewable energy
10. Respond to demographic changes in a sustainable way	0	
11. Minimise waste, increase re-use and recycling	0	
SA comments and suggestions		
Response		Status
'take into account the following factors' is		Disagree as this is already ~

insufficient to provide grounds for turning down unsupportive development. Suggest replace with 'should, to the maximum extent practical ... '	implied in the policy wording and, in reality, the additional wording does not have a significant policy impact	
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Policy KP16: GREEN INFRASTRUCTURE

Cardiff's distinctive natural heritage provides a network of green infrastructure which will be protected, enhanced, and managed to ensure the integrity and connectivity of this multi-functional green resource is maintained.

Protection and conservation of natural heritage network needs to be reconciled with the benefits of development. Proposed development should therefore demonstrate how green infrastructure has been considered and integrated into the proposals. If development results in overall loss of green infrastructure, appropriate compensation will be required.

Natural heritage assets are key to Cardiff's character, value, distinctiveness and sense of place. They include the city's:

- i). Undeveloped countryside and coastline (EN1 and EN2);
- ii). Landscape, geological and heritage features which contribute to the City's setting (EN3);
- iii). Strategically important river valleys of the Ely, Taff, Nant Fawr and Rhymney (EN4);
- iv). Biodiversity interests including designated sites and the connectivity of priority habitats and species (EN5, EN6 and EN7);
- v). Trees (including street trees), woodlands and hedgerows (EN8);
- vi). Strategic recreational routes, cycleways and the public rights of way network (T5, T6 and T8);
- vii). Parks, playing fields, green play areas and open spaces (C3, C4 and C6);
- viii). Growing spaces including allotments, community orchards and larger gardens (C5); and
- ix). Holistic integrated surface water management systems (EN10).

SA Objective	Rank	Comments
1. Help deliver equality of opportunity and access for all	0	
2. Maintain and improve air quality	✓	Policy aims to protect and enhance Cardiff's biodiversity resources; vegetation provides carbon sinks and can help improve air quality
3. Protect and enhance	✓✓	Policy aims to protect and enhance Cardiff's biodiversity assets (including designated sites)

biodiversity, flora and fauna		
4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	✓	Policy aims to maintain and develop recreational routes which reduce the need for motorised travel, and vegetation which can help adapt to climate change
5. Protect and enhance historic and cultural heritage	✓	Policy aims to protect and enhance the city's historic parks and gardens
6. Help deliver the growth of a sustainable and diversified economy	?	Policy could restrict availability of sites for development , but natural assets provide attractive environment for investment
7. Improve health and well-being	✓	Policy aims to maintain and enhance the city's parks and open spaces for recreation
8. Protect and enhance the landscape	✓	Policy aims to protect and enhance the city's river valleys, open spaces, countryside and coastal settings
9. Use natural resources efficiently and safeguard their quality	✓	Safeguarding water resources and natural assets
10. Respond to demographic changes in a sustainable way	0	
11. Minimise waste, increase re-use and recycling	0	

Policy KP17: BUILT HERITAGE		
Cardiff's distinctive heritage assets will be protected, managed and enhanced, in particular the character and setting of its Scheduled Ancient Monuments; Listed Buildings; Registered Historic Landscapes, Parks and Gardens; Conservation Areas; Locally Listed Buildings and other features of local interest that positively contribute to the distinctiveness of the city.		
SA Objective	Rank	Comments
1. Help deliver equality of	0	

opportunity and access for all		
2. Maintain and improve air quality	0	
3. Protect and enhance biodiversity, flora and fauna	✓	Policy aims to protect and enhance the city's historic parks and gardens
4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	0	
5. Protect and enhance historic and cultural heritage	✓✓	Policy aims to protect and enhance nationally and locally important historic and cultural assets
6. Help deliver the growth of a sustainable and diversified economy	✓ / ?	Policy could restrict suitability of site, but heritage assets provide attractive environment for investment
7. Improve health and well-being	✓	Protection of built heritage will contribute to quality of life
8. Protect and enhance the landscape	✓	Policy aims to protect and enhance the city's historic parks and gardens
9. Use natural resources efficiently and safeguard their quality	0	
10. Respond to demographic changes in a sustainable way	0	
11. Minimise waste, increase re-use and recycling	0	

Policy KP18: NATURAL RESOURCES

In the interests of the long-term sustainable development of Cardiff, the city's natural resources development proposals must take full account of the need to minimise

impacts on the city's natural resources and minimise pollution, in particular the following elements:

- (i) Protecting the best and most versatile agricultural land;
- (ii) Protecting the quality and quantity of water resources, including underground, surface and coastal waters;
- (iii) Minimising air pollution from industrial, domestic and road transportation sources and managing air quality; and
- (iv) Remediating land contamination through the redevelopment of contaminated sites.

SA Objective	Rank	Comments
1. Help deliver equality of opportunity and access for all	0	
2. Maintain and improve air quality	✓	Policy aims to manage air quality and minimise air pollution
3. Protect and enhance biodiversity, flora and fauna	✓	Policy aims to protect agricultural land and water resources
4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	✓	Policy aims to minimise air pollution which may reduce greenhouse gases
5. Protect and enhance historic and cultural heritage	0	
6. Help deliver the growth of a sustainable and diversified economy	✓	Policy aims to protect best and most versatile agricultural land, with potential benefits to the rural economy
7. Improve health and well-being	✓	Policy aims to minimise air pollution with associated health benefits
8. Protect and enhance the landscape	✓	Remediation of contaminated land will enhance the landscape
9. Use natural resources	✓✓	Policy aims to safeguard soil quality, water resources and remediate and redevelop contaminated land

efficiently and safeguard their quality		
10. Respond to demographic changes in a sustainable way	0	
11. Minimise waste, increase re-use and recycling	0	
SA comments and suggestions		
SA comments and suggestions	Response	Status
Suggest removing the phrase 'take full account of the need to minimise impacts on the city's natural resources and minimise pollution, in particular the following elements:' which weakens the policy.	Disagree – as worded, the policy correctly identifies key issues to be taken account of and considered along with other policies which may promote the need for development or relate to other constraints. Deleting as suggested would make the policy too rigid, inflexible and out of context with the Plan as a whole.	~

DETAILED POLICIES

H1: NON-STRATEGIC HOUSING SITES

Policy H1: NON-STRATEGIC HOUSING SITES			
Table 3: SUMMARY OF NON-STRATEGIC HOUSING SITES			
Site Ref.	Site Name	Estimated Units	Site Size (Ha)
H1.1	Land at Areas 9-12, St Mellons	150	3.98
H1.2	Land rear of Clive Street	80	2.87
H1.3	Rookwood Hospital	<u>90</u>	<u>3.40</u>
H1.4	Former Lansdowne Hospital	75	1.51
H1.5	Land at Dan-y-Garth, Pentrych	<u>47</u>	2.49
H1.6	Land at former St John's College	<u>64</u>	2.50
H1.7	Ely Bridge Farm, Dyfrig Road. Ely	<u>41</u>	0.72
H1.8	Electrocoin Automatics Ltd, Caerphilly Road	20	0.61
H1.9	Land at Mill Road, Tongwynlais	5	0.40
SA Objective	Rank	Comments	
1. Help deliver equality of opportunity and access for all	✓	Sites will help meet housing need	

2. Maintain and improve air quality	0	
3. Protect and enhance biodiversity, flora and fauna	✓/✗	Some sites have biodiversity issues
4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	✓/✗	Most, but not all, sites have good public transport. Some have (manageable) flood risks
5. Protect and enhance historic and cultural heritage	0	
6. Help deliver the growth of a sustainable and diversified economy	0	
7. Improve health and well-being	0	
8. Protect and enhance the landscape	0	
9. Use natural resources efficiently and safeguard their quality	✓	Sites are generally brownfield in need of improvement
10. Respond to demographic changes in a sustainable way	✓	Sites address housing need.
11. Minimise waste, increase re-use and recycling	0	

Policies H2, H4, H5, H6 (Appraised together because they form a coherent package governing protection and provision of land for housing uses)

H2: CONVERSION TO RESIDENTIAL USE

Within the Central Business Area of the city centre, District and Local centres, as defined

on the Proposals Map, the conversion of suitable vacant space above commercial premises to residential use will be favoured where:

- (i) Adequate servicing and security can be maintained to the existing commercial use(s);
- (ii) Appropriate provision can be made for parking, access, pedestrian access, amenity space, and refuse disposal together with any appropriate external alterations and;
- (iii) The residential use does not compromise the ground floor use.

H4: CHANGE OF USE OF RESIDENTIAL LAND OR PROPERTIES

Outside the Central and Bay Business Areas and District and Local Centres, identified on the Proposals Map, conversion or redevelopment of residential properties to other use will only be permitted where:

- (i) The premises or their location are no longer suitable for residential use; or
- (ii) The proposal is for a community use necessary within a residential area; or
- (iii) There would be no unacceptable impact on residential amenity.

H5: SUB-DIVISION OR CONVERSION OF RESIDENTIAL PROPERTIES

Proposals for any conversion to flats or Houses in Multiple Occupation will be permitted where:

- (i) The property is of a size whereby the layout, room sizes, range of facilities and external amenity space of the resulting property would ensure an adequate standard of residential amenity for future occupiers.
- (ii) There would be no material harm to the amenity of existing, nearby residents by virtue of general disturbance, noise or overlooking.
- (iii) The cumulative impact of such conversions will not adversely affect the amenity and/or the character of the area.
- (iv) Does not have an adverse effect on local parking provision

H6: CHANGE OF USE OR REDEVELOPMENT TO RESIDENTIAL USE

Change of use of redundant premises or redevelopment of redundant previously developed land for residential use will be permitted where:

- (i) There is no overriding need to retain the existing use of the land or premises and no overriding alternative local land use requirement;
- (ii) The resulting residential accommodation and amenity will be satisfactory;
- (iii) There will be no unacceptable impact on the operating conditions of existing businesses;
- (iv) Necessary community and transportation facilities are accessible or can be readily provided or improved; and
- (v) It can be demonstrated that the change of use to a more sensitive end use has been assessed in terms of land contamination risk and that there are no an unacceptable risk to the end users.

SA Objective	Rank	Comments
1. Help deliver equality of opportunity and access for all	?	Policies will prevent some conversions and reuse of premises.
2. Maintain and improve air quality	0	
3. Protect and enhance biodiversity, flora and fauna	0	
4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	0	
5. Protect and enhance historic and cultural heritage	0	
6. Help deliver the growth of a sustainable and diversified economy	✓	H2 and H6 prevent loss of land and premises needed for employment.
7. Improve health and well-being	✓	These policies collectively aim to ensure that changes to and from residential use do not adversely affect well-being
8. Protect and enhance the landscape	0	
9. Use natural resources efficiently and safeguard their quality	✓	These policies collective aim to allow reuse and redevelopment of buildings to meet future needs
10. Respond to demographic changes in a sustainable way	✓	These policies collective aim to allow reuse and redevelopment of buildings to meet future needs
11. Minimise waste, increase re-use and recycling	0	

Policy H3: AFFORDABLE HOUSING

The Council will seek 20% affordable housing on brownfield sites and 30% affordable housing on Greenfield sites in all residential proposals that:

- (i) Contain 5 or more new dwellings; or
- (ii) Sites of or exceeding 0.1 hectares in gross site area; or Where adjacent and related residential proposals result in combined numbers or site size areas exceeding the above thresholds, the Council will seek affordable housing based on the affordable housing target percentages set out above

Affordable housing will be sought to be delivered on-site in all instances unless there are exceptional circumstances

SA Objective	Rank	Comments
1. Help deliver equality of opportunity and access for all	✓	Policy will help ensure access to housing for all.
2. Maintain and improve air quality	0	
3. Protect and enhance biodiversity, flora and fauna	0	
4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	0	
5. Protect and enhance historic and cultural heritage	0	
6. Help deliver the growth of a sustainable and diversified economy	✓	Policy will help ensure access to housing for all. Viability criterion should ensure the policy does not prevent development.
7. Improve health and well-being	✓	Policy will help ensure access to housing for all.
8. Protect and enhance the	0	

landscape		
9. Use natural resources efficiently and safeguard their quality	0	
10. Respond to demographic changes in a sustainable way	✓	Policy will help ensure access to housing for all.
11. Minimise waste, increase re-use and recycling	0	

Policy H7: SITES FOR GYPSY AND TRAVELLER CARAVANS		
<p>New sites and extensions to existing sites will be permitted where:</p> <p>(i) Necessary physical, transport and social infrastructure are accessible or can be readily provided;</p> <p>(ii) Environmental factors including flood risk, ground stability, land contamination and proximity of hazardous installations do not make the site inappropriate for residential development;</p> <p>(iii) The site is designed in line with the Welsh Government Good Practice Guide in Designing Gypsy Traveller Sites.</p> <p>(iv) There would be no unreasonable impact on the character and appearance of the surrounding areas including impact on residential amenity of neighbouring occupiers or the operating conditions of existing businesses</p> <p>(v) In the case of a transit or touring site, it has good access to the primary highway network.</p>		
SA Objective	Rank	Comments
1. Help deliver equality of opportunity and access for all	✓	Policy allows extensions and new sites where relevant conditions met
2. Maintain and improve air quality	0	
3. Protect and enhance biodiversity, flora and fauna	0	

4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	0	
5. Protect and enhance historic and cultural heritage	0	
6. Help deliver the growth of a sustainable and diversified economy	✓	Policy aims to provide for travellers' needs where this does not impact on the operating conditions of existing businesses.
7. Improve health and well-being	✓	Policy aims to safeguard the amenity of both travellers and existing residents.
8. Protect and enhance the landscape	0	
9. Use natural resources efficiently and safeguard their quality	0	
10. Respond to demographic changes in a sustainable way	✓	Policy aims to provide for travellers' needs.
11. Minimise waste, increase re-use and recycling	0	

<p>Policy EC1, EC2, EC3, EC4, EC5, EC6, EC7</p> <p>(Appraised together because they form a coherent package governing protection and provision of land for economic uses)</p> <p>EC1: EXISTING EMPLOYMENT LAND</p> <p>The city's existing employment areas outside of the Central and Bay Business Areas (as designated on the Proposals Map) will be protected for B class employment generating uses (together with appropriate ancillary and/or complementary uses and activities as referred to in Policy EC2) as described in the table below.</p> <p>EC2: PROVISION OF COMPLEMENTARY FACILITIES FOR EMPLOYEES IN BUSINESS, INDUSTRIAL AND WAREHOUSING DEVELOPMENTS</p>

Provision for open space, public realm, leisure, food and drink, and child-care facilities will be appropriate in office, industrial and warehousing developments, provided, the facility is of an appropriate scale and nature intended primarily to meet the needs of workers in the vicinity, therefore not attracting significant levels of visitor traffic into the area, or exacerbating existing traffic conditions.

EC3: ALTERNATIVE USE OF EMPLOYMENT LAND AND PREMISES

Development of business, industrial and warehousing land and premises for other uses will only be permitted if:

(i) The land or premises are no longer well-located for business, industrial or warehousing use; or

(ii) There is no realistic prospect of employment use on the site and / or the property is physically unsuitable for employment use, even after adaption / refurbishment or redevelopment; or

(iii) There is no need to retain the land or premises for business, industrial or warehousing use, having regard to the demand for such land and premises and the requirement to provide for a range and choice of sites available for such use; and

(iv) There will be no unacceptable impact on the operating conditions of existing businesses.

EC4: PROTECTING OFFICES IN THE CENTRAL AND BAY BUSINESS AREAS

The alternative use of offices within the Central and Bay Business Areas will only be permitted where it can be demonstrated that there is no need to retain the site or premises for office use having regard to the demand for offices and the requirement to provide a range and choice of sites available for such use.

EC5: HOTEL DEVELOPMENT

Proposals for hotel development will be favoured:

(i) Within the Central and Bay Business Areas of the city centre;

(ii) In appropriate locations for the conversion of suitable residential or commercial properties;

(iii) At other locations within the urban area, if there is no need to preserve the site for its existing or allocated use, assessed against the relevant policies of the plan;

Subject to considerations of scale, location, design, amenity and transportation being acceptable.

EC6: NON-STRATEGIC EMPLOYMENT SITE

Land is allocated for university related research and development uses at Maindy Road, Cathays (3.53ha)

EC7: EMPLOYMENT PROPOSALS ON LAND NOT IDENTIFIED FOR EMPLOYMENT USE

Proposals for employment use (B Use Class) on unallocated sites will be permitted

provided that:-

- i. The proposal cannot reasonably be accommodated on existing employment land and in the case of offices in the Central Enterprise Zone (Policy KP2) and the Central and Bay Business Areas (Policy EC4);
- ii. The site falls within the settlement boundary and has no specific policy designation;
- iii. The use is compatible with uses in the surrounding area and;
- iv. The proposal is well related to the primary highway network and accessible to sustainable modes of transport

SA Objective	Rank	Comments
1. Help deliver equality of opportunity and access for all	✓	These policies together aim to protect existing economic uses and allow new ones in appropriate locations consistent with the LDP's overall spatial strategy.
2. Maintain and improve air quality	✓	These policies aim to avoid unnecessary traffic generation from economic activities.
3. Protect and enhance biodiversity, flora and fauna	0	
4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	✓	These policies aim to avoid unnecessary traffic generation from economic activities.
5. Protect and enhance historic and cultural heritage	0	
6. Help deliver the growth of a sustainable and diversified economy	✓	These policies together aim to protect existing economic uses and allow new ones in appropriate locations consistent with the LDP's overall spatial strategy.
7. Improve health and well-being	0	
8. Protect and enhance the landscape	0	
9. Use natural resources efficiently and safeguard their quality	0	

10. Respond to demographic changes in a sustainable way	✓	These policies together aim to protect existing economic uses and allow new ones in appropriate locations consistent with the LDP's overall spatial strategy.
11. Minimise waste, increase re-use and recycling	0	

Policy EN1 and EN2
Appraised together because together they govern new and altered building in the countryside
<p>EN1: COUNTRYSIDE PROTECTION</p> <p>Development in the countryside, beyond the settlement boundaries identified on the Proposals Map, will only be permitted where the use is appropriate in the countryside, respects the landscape character and quality and biodiversity of the site and surrounding area and where it is appropriate in scale and design. A landscape assessment and landscaping scheme will be required for significant development proposals. Proposals for new housing, rural diversification and rural enterprise, will only be permitted where they comply with National Planning Policy.</p> <p>EN2: CONVERSION, EXTENSION AND REPLACEMENT BUILDINGS IN THE COUNTRYSIDE</p> <p>There will be a presumption against conversion, extension and replacement of buildings in Cardiff's countryside except where:</p> <p>a. The proposed conversion is demonstrated to:</p> <ul style="list-style-type: none"> (i) be structurally sound and capable of being made so without major alterations, reconstructing or extensions; (ii) be possible without materially changing the existing character of the building or have a harmful effect on the countryside; (iii) Not give rise to a demand for additional buildings; and (iv) Be suitable for the proposed re-use. <p>b. The proposed extension is demonstrated to:</p> <ul style="list-style-type: none"> (i) be the subordinate part of the existing building; and (ii) Respect the scale, character and design of the original part of the building within its countryside and landscape setting. <p>c. The proposed replacement building is demonstrated to:</p> <ul style="list-style-type: none"> (i) Not result in any greater impact on the quality and character of the surrounding area in terms of its proposed scale and design, including any residential curtilage; (ii) Be on the footprint of the existing building unless relocation can be justified in terms of either being part of an existing group or improving the countryside or landscape setting; and (iii) Not replace any building of architectural, historic or visual merit. <p>All proposals should be of an appropriate scale and design and be at least as sympathetic in its setting as the existing building.</p>

SA Objective	Rank	Comments
1. Help deliver equality of opportunity and access for all	x	Policies will prevent some development in the countryside
2. Maintain and improve air quality	✓	Policies are likely to reduce traffic generation
3. Protect and enhance biodiversity, flora and fauna	✓	Policies will prevent loss of land to buildings in the countryside
4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	✓	Policies are likely to reduce traffic generation
5. Protect and enhance historic and cultural heritage	✓	Policies aim to prevent loss of buildings of architectural, historic or visual merit and ensure new construction is sympathetic to its surroundings
6. Help deliver the growth of a sustainable and diversified economy	x	Policies will prevent some rural diversification
7. Improve health and well-being	0	
8. Protect and enhance the landscape	✓	Policies aim to prevent loss of buildings of architectural, historic or visual merit and ensure new construction is sympathetic to its surroundings
9. Use natural resources efficiently and safeguard their quality	✓	Policies aim to conserve existing buildings unless there are good reasons to the contrary
10. Respond to demographic changes in a sustainable way	x	Policies will prevent some rural diversification
11. Minimise waste, increase re-use and recycling	✓	Policies aim to conserve existing buildings unless there are good reasons to the contrary

Policy EN3: LANDSCAPE PROTECTION		
<p>Development will not be permitted that would cause unacceptable harm to the character and quality of the landscape and setting of the city.</p> <p>Particular priority will be given to protecting, managing and enhancing the character and quality of the following Special Landscape Areas:</p> <ul style="list-style-type: none"> i). St Fagans Lowlands and the Ely Valley ii). Garth Hill Uplands and the Pentyrch Ridges and Valleys; iii). Fforest Fawr and Caerphilly Ridge; iv). Wentloog Levels; and v). Flat Holm <p>A landscape assessment and landscaping scheme will be required for significant development proposals.</p>		
SA Objective	Rank	Comments
1. Help deliver equality of opportunity and access for all	0	
2. Maintain and improve air quality	0	
3. Protect and enhance biodiversity, flora and fauna	✓	Policy designates Special Landscape Areas where there is potential for benefits to biodiversity
4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	0	
5. Protect and enhance historic and cultural heritage	✓	Special Landscape Areas are designated to protect areas that are considered to be important due to their historic landscapes
6. Help deliver the growth of a sustainable and diversified economy	0	
7. Improve health and well-being	0	
8. Protect and	✓✓	Policy designates Special Landscape Areas and aims to

enhance the landscape		protect and enhance these areas
9. Use natural resources efficiently and safeguard their quality	0	
10. Respond to demographic changes in a sustainable way	0	
11. Minimise waste, increase re-use and recycling	0	

<p>Policies EN4, EN5, EN6, EN7, EN8, EN9</p> <p>Appraised together because they form a coherent package concerned with protecting valuable elements and features of Cardiff's environment</p> <p>EN4: RIVER CORRIDORS</p> <p>The Natural Heritage, character and other key features of Cardiff's river corridors will be protected, promoted and enhanced, together with facilitating sustainable access and recreation.</p> <p>EN5: DESIGNATED SITES</p> <p>Development will not be permitted that would cause unacceptable harm to sites of international or national nature conservation importance. Development proposals that would affect locally designated sites of nature conservation and geological importance should maintain or enhance the nature conservation and/or geological importance of the designation.</p> <p>Where this is not the case and the need for the development outweighs the nature conservation importance of the site, it should be demonstrated that there is no satisfactory alternative location for the development which avoids nature conservation impacts, and compensation measures designed to ensure that there is no reduction in the overall nature conservation value of the area or feature.</p> <p>EN6: ECOLOGICAL NETWORKS AND FEATURES OF IMPORTANCE FOR BIODIVERSITY</p> <p>Development will only be permitted if it does not cause unacceptable harm to:</p> <ul style="list-style-type: none"> (i) Landscape features of importance for wild flora and fauna, including wildlife corridors and 'stepping stones' which enable the dispersal and functioning of protected and priority species; (ii) Networks of importance for landscape or nature conservation. <p>Particular priority will be given to the protection, enlargement, connectivity and</p>
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management of the overall nature of semi natural habitats.

Where this is not the case and the need for the development outweighs the nature conservation importance of the site, it should be demonstrated that there is no satisfactory alternative location for the development and compensatory provision will be made of comparable ecological value to that lost as a result of the development.

EN7: PRIORITY HABITATS AND SPECIES

Development proposals that would have a significant adverse effect on the continued viability of habitats and species which are legally protected or which are identified as priorities in the UK or Local Biodiversity Action Plan will only be permitted where:

- (i) The need for development outweighs the nature conservation importance of the site;
- (ii) The developer demonstrates that there is no satisfactory alternative location for the development which avoids nature conservation impacts; and
- (iii) Effective mitigation measures are provided by the developer.

Where harm is unavoidable it should be minimised by effective mitigation to ensure that there is no reduction in the overall nature conservation value of the area. Where this is not possible, compensation measures designed to conserve, enhance, manage and, where appropriate, restore natural habitats and species should be provided.

EN8: TREES, WOODLANDS AND HEDGEROWS

Development will not be permitted that would cause unacceptable harm to trees, woodlands and hedgerows of significant public amenity, natural or cultural heritage value, or that contribute significantly to mitigating the effects of climate change.

EN9: CONSERVATION OF THE HISTORIC ENVIRONMENT

Development relating to any of the heritage assets listed below (or their settings) will only be permitted where it can be demonstrated that it preserves or enhances that asset’s architectural quality, historic and cultural significance, character, integrity and/or setting.

- (i) Scheduled Ancient Monuments;
- (ii) Listed Buildings and their curtilage structures;
- (iii) Conservation Areas;
- (iv) Archeologically Sensitive Areas;
- (v) Registered Historic Landscapes, Parks and Gardens; or
- (vi) Locally Listed Buildings of Merit and other historic features of interest that positively contribute to the distinctiveness of the city.

SA Objective	Rank	Comments
1. Help deliver equality of opportunity and	✓	Policies aim to maintain and enhance access to valued environments

access for all		
2. Maintain and improve air quality	0	
3. Protect and enhance biodiversity, flora and fauna	✓✓	Policies aim to maintain and enhance biodiversity
4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	0	
5. Protect and enhance historic and cultural heritage	✓✓	Policy EN9 protects and enhances the historic environment
6. Help deliver the growth of a sustainable and diversified economy	0	
7. Improve health and well-being	✓	Maintaining and enhancing valued environments, and access to them, will contribute to wellbeing
8. Protect and enhance the landscape	✓✓	Policies aim to protect and enhance several key elements of Cardiff' landscape.
9. Use natural resources efficiently and safeguard their quality	0	
10. Respond to demographic changes in a sustainable way	0	
11. Minimise waste, increase re-use and recycling	0	

Policy EN10 and EN11

Appraised together because they specify the methods and aims of sustainable water resource management

EN10: WATER SENSITIVE DESIGN

Development should demonstrate the incorporation of water sensitive urban design solutions (the process of integrating water cycle management with the built environment through planning and urban design). To include the management of:

- (i) Water demand and supply;
- (ii) Waste water and pollution;
- (iii) Rainfall and runoff;
- (iv) Watercourses and water resource;
- (v) Flooding; and
- (vi) Water pathways.

EN11: PROTECTION OF WATER RESOURCES

Development will not be permitted that would cause unacceptable harm to the quality or quantity of underground, surface or coastal waters.

SA Objective	Rank	Comments
1. Help deliver equality of opportunity and access for all	0	
2. Maintain and improve air quality	0	
3. Protect and enhance biodiversity, flora and fauna	✓	Policies will minimise pressure on biodiversity from changes to water resources
4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	0	
5. Protect and enhance historic and cultural heritage	0	
6. Help deliver the growth of a sustainable and diversified economy	0	
7. Improve health and well-being	0	
8. Protect and	? / ✓	

enhance the landscape		
9. Use natural resources efficiently and safeguard their quality	✓	Policies will safeguard water resources and promote their efficient use.
10. Respond to demographic changes in a sustainable way	✓	Minimising pressure on water resources will help keep 'headroom' for further development as needed.
11. Minimise waste, increase re-use and recycling	✓	Policies promote efficient use of water resources.

SA comments and suggestions	Response	Status
EN 10: Suggest replace title with 'water sensitive design' because no reason to privilege 'innovative' methods over old ones that work.	Done	✓
Suggest replace 'should demonstrate the incorporation of' with 'apply'	Done	✓
Could these policies usefully be combined?	Not supported: there are distinct differences between the policies and their intended effect	✓
SUDS not specified in the policy though mentioned in the supporting text – would it be helpful to include this standard term?	No: it is intended to expand the approach beyond SUDS and to refer to it specifically within the policy may lead to a focus on SUDS rather than consideration of wider water management solutions incorporating SUDS.	✓

Policy EN12: RENEWABLE ENERGY AND LOW CARBON TECHNOLOGIES		
<p>Development proposals are required to maximise the potential for renewable energy. The Council will encourage developers of major and strategic sites to incorporate schemes which generate energy from renewable and low carbon technologies. This includes opportunities to minimise carbon emissions associated with the heating, cooling and power systems for new development.</p> <p>An independent energy assessment investigating the financial viability and technical feasibility of incorporating such schemes will be required to support applications.</p>		
SA Objective	Rank	Comments
1. Help deliver	0	

equality of opportunity and access for all		
2. Maintain and improve air quality	0	
3. Protect and enhance biodiversity, flora and fauna	0	
4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	✓✓	Policy requires measures to minimise carbon emissions.
5. Protect and enhance historic and cultural heritage	0	
6. Help deliver the growth of a sustainable and diversified economy	✓	Will help support development of sustainable energy expertise in the construction sector.
7. Improve health and well-being	0	
8. Protect and enhance the landscape	0	
9. Use natural resources efficiently and safeguard their quality	✓✓	
10. Respond to demographic changes in a sustainable way	0	
11. Minimise waste, increase re-use and recycling	0	

Policy EN13: AIR, NOISE, LIGHT POLLUTION AND LAND CONTAMINATION

Development will not be permitted where it would cause or result in unacceptable harm

to health, local amenity, the character and quality of the countryside, or interests of nature conservation, landscape or built heritage importance because of air, noise, light pollution or the presence of unacceptable levels of land contamination.

SA Objective	Rank	Comments
1. Help deliver equality of opportunity and access for all	0	
2. Maintain and improve air quality	✓✓	Policy will prevent development which will cause unacceptable air pollution
3. Protect and enhance biodiversity, flora and fauna	✓✓	Policy will prevent development which will cause unacceptable harm to nature conservation
4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	0	
5. Protect and enhance historic and cultural heritage	✓✓	Policy will prevent development which will cause unacceptable air pollution harm to built heritage
6. Help deliver the growth of a sustainable and diversified economy	0	
7. Improve health and well-being	✓✓	Policy will prevent development which will cause unacceptable harm to wellbeing in various ways
8. Protect and enhance the landscape	✓✓	Policy will prevent development which will cause unacceptable harm to landscape
9. Use natural resources efficiently and safeguard their quality	0	
10. Respond to demographic changes in a sustainable way	0	

11. Minimise waste, increase re-use and recycling	0	
SA comments and suggestions		
SA comments and suggestions	Response	Status
This policy provides stronger and clearer protection than KP18 and partly overlaps KP16 and EN4-9. Suggest deleting KP18 and reducing repetition between other policies	EN4-9 relate specifically to river valleys, LNRs, ecological networks etc whereas EN13 is a generic policy which will cover all developments regardless of whether they fall within a statutorily designated area for example.	~

Policy EN14: FLOOD RISK		
Development will not be permitted:		
<p>i. Within tidal or fluvial flood plains unless it can be demonstrated that the site is justified in line with national guidance and an appropriate detailed technical assessment has been undertaken to ensure that the development is designed to alleviate the threat and consequences of flooding over its lifetime;</p> <p>ii. Where it would increase the risk of flooding from fluvial and/or tidal flooding or from additional run-off from the development in any location;</p> <p>iii. Where it would hinder future maintenance or improvement schemes of flood defences and watercourses;</p> <p>iv. Where it would cause adverse effects on the integrity of tidal or fluvial defences;</p> <p>v. Where ground floor bedrooms are proposed in areas at high risk of flooding.</p> <p>Where appropriate the developer should demonstrate that they have considered the need to incorporate environmentally sympathetic flood risk mitigation measures such as Sustainable Urban Drainage Systems (SUDS).</p>		
SA Objective	Rank	Comments
1. Help deliver equality of opportunity and access for all	✓	Will avoid vulnerable people being pushed into housing with high flood risk
2. Maintain and improve air quality	0	
3. Protect and enhance biodiversity, flora	0	

and fauna		
4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	✓	LFRRMS and guidance for carrying out FCAs include taking account of effects of climate change, so the policy will help adaptation.
5. Protect and enhance historic and cultural heritage	0	
6. Help deliver the growth of a sustainable and diversified economy	0	
7. Improve health and well-being	✓	Will avoid people being pushed into housing with high flood risk
8. Protect and enhance the landscape	? / ✓	
9. Use natural resources efficiently and safeguard their quality	0	
10. Respond to demographic changes in a sustainable way	0	
11. Minimise waste, increase re-use and recycling	0	

Policy T1: WALKING AND CYCLING
<p>To enable people to access employment, essential services and community facilities by walking and cycling the Council will support developments which incorporate:</p> <p>(i) High quality, sustainable design which makes a positive contribution to the distinctiveness of communities and places;</p> <p>(ii) Permeable and legible networks of safe, convenient and attractive walking and cycling routes;</p> <p>(iii) Connections and extensions to the Cardiff Strategic Cycle Network and routes forming part of the Cardiff Walkable Neighbourhoods Plan;</p> <p>(iv) Measures to minimise vehicle speed and give priority to vulnerable road users;</p>

- (v) Safe, convenient and attractive walking and cycling connections to existing developments, neighbourhoods, jobs and services;
- (vi) Infrastructure designed in accordance with standards of good practice including the Council's Cycling Design Guide;
- (vii) Supporting facilities including, signing, secure cycle parking and, where necessary, shower and changing facilities; and
- (viii) The provision of Car-Free Zones .

SA Objective	Rank	Comments
1. Help deliver equality of opportunity and access for all	✓	Policy aims to provide developments with good access to employment and essential services via walking or cycling
2. Maintain and improve air quality	✓	Policy encourages walking and cycling and may reduce the need to travel by car/ bus
3. Protect and enhance biodiversity, flora and fauna	0	
4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	✓	Policy promotes sustainable modes of transport
5. Protect and enhance historic and cultural heritage	0	
6. Help deliver the growth of a sustainable and diversified economy	✓	Policy aims to facilitate access to employment opportunities by providing good walking and cycling connectivity
7. Improve health and well-being	✓✓	Policy aims to encourage and facilitate walking and cycling Policy aims to improve road safety for walkers and cyclists
8. Protect and enhance the landscape	0	
9. Use natural resources	0	

efficiently and safeguard their quality		
10. Respond to demographic changes in a sustainable way	0	
11. Minimise waste, increase re-use and recycling	0	
SA comments and suggestions		
SA comments and suggestions	Response	Status
'Will support' is not very strong. Why not 'Council will only support developments which, to the greatest practicable extent, incorporate ...'?	The supporting text for KP8 emphasises the importance of maximising access by sustainable modes. This implies that in considering applications the Council will seek to secure these provisions as far as practically possible. Policy T1 should be considered in this context. The policy states that to enable people to access employment, essential services and community facilities by walking and cycling the Council will support developments which incorporate the measures specifically listed in the policy. This arguably provides the basis to refuse applications for proposals which fail to enable people to access employment, essential services and facilities by walking and cycling or meet the requirements of KP8.	~
(i) duplicates sustainable design policy and does not mention or have any specific relevance to active travel. Suggest delete.	The 'duplication' of the sustainable design policy is deliberate to make an explicit connection between development design and provision for active modes.	~

Policy T2: STRATEGIC RAPID TRANSIT AND BUS CORRIDORS
To avoid car-based developments and maximise use of sustainable transport, infrastructure and associated services will be introduced to develop strategic rapid transport and bus corridors including:
RAPID TRANSIT CORRIDORS
(i) North West Corridor;
(ii) North Eastern Corridor;
(iii) Eastern Corridor; and
(iv) Southern Corridor.

BUS CORRIDOR ENHANCEMENTS

- (i) City Centre Bus Routes;
- (ii) Eastern Bus Corridor (A48, A4232 from the A48 to Junction 30 of the M4 Motorway, A48M Trunk Road, Southern Way and A4161 Newport Road);
- (iii) Northern Bus Corridor (A470 North Road/ Manor Way and A469 Caerphilly Road / A470 Trunk Road to the County Boundary); and
- (iv) Western Bus Corridor (Cowbridge Road, A48, A4055 Cardiff Road; A4119 Llantrissant Road from the County Boundary to Cowbridge Road and A4232 Trunk Road from Culverhouse Cross to Junction 33 of the M4 Motorway).
- (v) Southern Bus Corridor (Lloyd George Avenue, Lloyd George Avenue to the County Boundary via A4232 and Cogan Spur and via the Cardiff Barrage).

Provision will be made to facilitate the functional integration of these corridors and associated services with the wider transport network including the bus network and local walking and cycling routes. The trunk road sections of the Bus Corridor Enhancements are the responsibility of the Welsh Government. Cardiff Council will work with the Welsh Government to identify appropriate measures on the trunk road sections of these routes.

Improvements to the city's wider bus network, including the provision of new infrastructure and the introduction of new routes and services will be supported where these are necessary to provide sustainable travel options and address the movement impacts of new development.

SA Objective	Rank	Comments
1. Help deliver equality of opportunity and access for all	?✓	Policy should help achieve better access, via public transport, to key employment areas, services and facilities
2. Maintain and improve air quality	?✓	Policy should reduce car use
3. Protect and enhance biodiversity, flora and fauna	0	
4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	?✓	Policy aims to improve public transport infrastructure and provision, and may encourage a modal shift from the private car
5. Protect and enhance historic and cultural heritage	0	
6. Help deliver the growth of a	?✓	Improvements to infrastructure and services will contribute to the regeneration of deprived areas,

sustainable and diversified economy		promote the city centre and access to employment areas
7. Improve health and well-being	0	
8. Protect and enhance the landscape	0	
9. Use natural resources efficiently and safeguard their quality	0	
10. Respond to demographic changes in a sustainable way	?✓	Improved access to services and jobs responding to city's population growth
11. Minimise waste, increase re-use and recycling	0	
SA comments and suggestions		
SA comments and suggestions	Response	Status
All positive scores now qualified with '?' because of lack of explicit commitment to implement measures before new developments are occupied (see appraisal comments on most of the strategic sites under KP2.)	In certain cases it will not be possible to implement all transport measures in advance of the occupation development. In practice measures will need to be introduced through a phased approach secured through the master planning and application processes.	x
Restore the clear commitment in PS policy 12: 'all developments will be supported by safe, attractive, fast and efficient public transport services that meet the everyday travel needs of all residents.'	The stated purpose of the policy is to avoid car-based developments and maximise use of sustainable transport. The policy relates to strategic rapid transit corridors and bus corridors. The provision of public transport infrastructure and its contribution to modal share is easier to assess and measure than whether a development meets 'the everyday transport needs' of all residents – some of which may be met by car or walking and cycling. The existing wording is therefore considered to be appropriate.	~

Policy T3: TRANSPORT INTERCHANGES

In order to facilitate the transfer between transport modes and help to minimise travel demand and reduce car dependency, the following developments will be supported:

- (i) New rail stations which can be easily accessed by walking, cycling and local bus services , facilitate rail park and ride, where appropriate, and meet the access needs of all users;
- (ii) Improvements to existing rail and bus interchanges, including measures to facilitate access by active travel modes and people with special access needs;
- (iii) Measures to support interchange between local bus services, including facilities to accommodate bus layover and driver facilities;
- (iv) Strategically located park and ride facilities, supported by attractive, frequent and reliable bus or rapid transit services;
- (v) High quality passenger facilities including but not limited to seating, information, toilet facilities and cycle parking;
- (vi) Facilities for park and share;
- (vii) Facilities for coach parking, taxis and passenger drop off;
- (viii) Facilities for overnight lorry parking and freight transfer; and
- (ix) Facilities for interchange with water-based transport.

SA Objective	Rank	Comments
1. Help deliver equality of opportunity and access for all	✓	Policy likely to help provide better access to employment areas, services and facilities
2. Maintain and improve air quality	✓	Policy aims to promote sustainable transport into the City and may reduce congestion related air pollution
3. Protect and enhance biodiversity, flora and fauna	?	There may be impacts to biodiversity depending on the location of new Park and Ride/Share Facilities
4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	✓ / ✗	Policy aims to promote public transport infrastructure and improve regional access The policy promotes park and ride / share schemes, which may not mitigate the current commuter congestion effectively and may encourage people from the city region to drive to Cardiff in the first instance rather than use rail / bus.
5. Protect and enhance historic and cultural heritage	0	
6. Help deliver the growth of a sustainable and diversified economy	✓	The policy aims to improve transport accessibility from the wider region and may assist in promoting the city centre economy, particularly retail
7. Improve health		

and well-being	0	
8. Protect and enhance the landscape	?	There may be impacts to landscape depending on the location of new Park and Ride/Share Facilities
9. Use natural resources efficiently and safeguard their quality	0	
10. Respond to demographic changes in a sustainable way	0	
11. Minimise waste, increase re-use and recycling	0	
SA comments and suggestions		
SA comments and suggestions	Response	Status
The caveat under 4 is very important. Suggest adding a statement that interchanges with a significant scale of car use will not be implemented if modelling suggests they will result in an overall increase in car mileage.	Park and Ride facilities can help to reduce localised congestion by intercepting vehicles before they enter the central area of the city. Park & Ride on its own is not the answer to congestion but works in conjunction with other physical and non-physical transport measures to provide sustainable alternatives to car travel and reduce demand for it. . Well designed and appropriately located Park and Ride is unlikely to induce additional demand for travel and thus increase overall mileage. Rather it is a means of reducing the impact of car trips which would most likely have taken place anyway whether or not the P&R is available	x

Policy T4: REGIONAL TRANSPORT HUB
Support will be given to the development of infrastructure and facilities in and around Cardiff Central Railway Station which:
(i) Facilitate the easy interchange of passengers between national, regional and local rail and bus services;
(ii) Provide high quality passenger facilities, including but not limited to seating, information, toilet facilities and cycle parking;
(iii) Can be easily accessed by walking and cycling and meets the access needs of all users;
(iv) Is well integrated with development in the surrounding area and facilitates easy

access to the centre of the city, Cardiff Bay and the Enterprise Zone;
(v) Complement the development and regeneration of land north and south of Central Railway Station and the wider Enterprise Zone;
(vi) Provide a public transport gateway of a high aesthetic and functional quality, which is commensurate to Cardiff's status as a European capital city; and
(vii) Provides an attractive, legible and vibrant environment.

SA Objective	Rank	Comments
1. Help deliver equality of opportunity and access for all	✓	Policy will help all residents access amenities in the city centre, other parts of Cardiff and beyond
2. Maintain and improve air quality	✓	Policy will facilitate non car options
3. Protect and enhance biodiversity, flora and fauna	0	
4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	✓	Policy will facilitate non car options
5. Protect and enhance historic and cultural heritage	0	
6. Help deliver the growth of a sustainable and diversified economy	✓	Policy will improve access to businesses for residents and visitors
7. Improve health and well-being	✓	Policy will support cycling and walking
8. Protect and enhance the landscape	0	
9. Use natural resources efficiently and safeguard their quality	? / ✓	
10. Respond to demographic	0	

changes in a sustainable way		
11. Minimise waste, increase re-use and recycling	0	

Policy T5: MANAGING TRANSPORT IMPACTS		
<p>Where necessary, safe and convenient provision will be sought in conjunction with development for:</p> <ul style="list-style-type: none"> i) Pedestrians; (ii) disabled people with mobility impairments and particular access needs; (iii) Cyclists; (iv) Powered two-wheelers; (v) Public transport; (vi) Vehicular access and traffic management within the site and its vicinity; (vii) Car parking and servicing; (viii) Coach parking; and (ix) Horse-riders. 		
SA Objective	Rank	Comments
1. Help deliver equality of opportunity and access for all	✓	Policy aims to ensure equality of access to transport, including those with special access and mobility requirements
2. Maintain and improve air quality	✓	Policy may encourage walking and cycling and promote a modal shift from the private car
3. Protect and enhance biodiversity, flora and fauna	0	
4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	✓	Policy aims to reduce parking and make other forms of transport safer and more convenient, which may promote a modal shift to sustainable transport
5. Protect and enhance historic and cultural heritage	0	
6. Help deliver the growth of a sustainable and diversified	0	

economy		
7. Improve health and well-being	✓	Policy may promote a modal shift to walking and cycling Policy aims to improve safety for all users
8. Protect and enhance the landscape	0	
9. Use natural resources efficiently and safeguard their quality	0	
10. Respond to demographic changes in a sustainable way	0	
11. Minimise waste, increase re-use and recycling	0	
SA comments and suggestions	Response	Status
Policy title is misleading: suggest 'providing for transport needs in development'.	Disagree with comments about the title of the policy – the supporting text provides a clear explanation of the purpose of the policy and its application. The title is relevant in this context.	✘
Restore previous wording on parking restraint	No reference to minimising car parking anywhere now. Supporting text states that parking and servicing will be provided in accordance with the Councils adopted standards.	✘
Hierarchy in the policy is inconsistent with the DfT one referred to at 5.244 of Deposit LDP. Public transport (v) and coach parking (viii) should be above powered two wheelers (iv) vehicular access (vi) and car parking (vii). Should horse riders be above the motorised modes?	The user hierarchy referred to in para 5.244 of Deposit LDP is related to the design considerations in Manual for Streets which makes clear that <i>"In assessing the transport and access aspects of proposals the Council will be more likely to give favourable consideration to developments which through their design and layout give priority to movements by sustainable travel modes and reflect the user hierarchy in Department for Transport Manual for Streets"</i> , The list in the policy is not a hierarchy. Therefore probably best to retain the original list so this is more obvious.	✘

	Horse riding should be retained as this links with bridle routes in Policy T6.	
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T6: IMPACT ON TRANSPORT NETWORKS AND SERVICES		
Development will not be permitted which would cause unacceptable harm to the safe and efficient operation of the highway, public transport and other movement networks including pedestrian and cycle routes, public rights of way and bridle routes.		
SA Objective	Rank	Comments
1. Help deliver equality of opportunity and access for all	✓	Existing access to be protected
2. Maintain and improve air quality	0	
3. Protect and enhance biodiversity, flora and fauna	0	
4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	0	
5. Protect and enhance historic and cultural heritage	0	
6. Help deliver the growth of a sustainable and diversified economy	0	
7. Improve health and well-being	0	
8. Protect and enhance the landscape	0	
9. Use natural resources efficiently and safeguard their quality	0	

10. Respond to demographic changes in a sustainable way	0	
11. Minimise waste, increase re-use and recycling	0	
SA comments and suggestions	Response	
Suggest 'unacceptable NET harm' to make clear that development can go ahead if the harm is remedied / offset eg by new transport provision.	The reference to unacceptable harm in the policy implies that developments that cause harm can go ahead if that harm is mitigated to an acceptable degree. The reference to Net harm is not considered appropriate in this context	~

Policy T7: STRATEGIC TRANSPORTATION INFRASTRUCTURE		
<p>Support will be given to the development of the following elements of strategic transportation infrastructure:</p> <p>(i) Eastern Bay Link;</p> <p>(ii) St Mellons rail interchange; and</p> <p>(iii) New sustainable transport corridor in North West Cardiff</p>		
SA Objective	Rank	Comments
1. Help deliver equality of opportunity and access for all	x	Will improve access for motorists, and their advantage over other road users
2. Maintain and improve air quality	x	Will facilitate extra motor traffic
3. Protect and enhance biodiversity, flora and fauna	x?	Impacts and any necessary mitigation to be assessed in project level EIA.
4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	x	Will facilitate extra motor traffic
5. Protect and	0	

enhance historic and cultural heritage		
6. Help deliver the growth of a sustainable and diversified economy	✘	Will further entrench car dependence
7. Improve health and well-being	0	
8. Protect and enhance the landscape	✘	Will damage the landscape
9. Use natural resources efficiently and safeguard their quality	✘	Will increase resource take in construction and use
10. Respond to demographic changes in a sustainable way	✓/✘	Will respond to demand though in an unsustainable way
11. Minimise waste, increase re-use and recycling	0	

SA comments and suggestions	Response	Status
(ii) and (iii) are instances of policies T3 and T2 respectively and share their assessments. This matrix assesses (i) only. This road scheme would appear inconsistent with the aim of all the other transport policies.	<p>All three listed schemes are key strategic projects. Construction of the EBL is now a strategic commitment of Welsh Government and the plan must therefore make provision of it.</p> <p>The project would be subject to a full Environmental Impact Assessment which would highlight the specific environmental impacts and any necessary mitigation.</p>	~

Policy T8: STRATEGIC RECREATIONAL ROUTES
<p>A strategic network of recreational routes will be maintained and developed to link Cardiff's coast, river corridors, open spaces, countryside, and the regional network of routes, facilitating access to them by local communities, and forming an integral part of the wider cycling and walking network in Cardiff.</p> <p>The core strategic network will comprise:</p> <p>i). (i) The Taff Trail; (ii) The Ely Trail; (iii) The Rhymney Trail; (iv) The Nant Fawr Trail; (v) The Bay Trail; (vi) The Wales Coast Path; and (vii) The Glamorgan Ridgeway</p>

Walk.		
SA Objective	Rank	Comments
1. Help deliver equality of opportunity and access for all	✓	Policy aims to increase access across the city
2. Maintain and improve air quality	✓	Policy may encourage a modal shift from the private car to walking and cycling
3. Protect and enhance biodiversity, flora and fauna	0	
4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	✓	Policy may encourage a modal shift from the private car to walking and cycling
5. Protect and enhance historic and cultural heritage	0	
6. Help deliver the growth of a sustainable and diversified economy	0	
7. Improve health and well-being	✓✓	Improvements to strategic recreational routes may promote walking and cycling with benefits to health Improves access to open space and other opportunities for physical activity
8. Protect and enhance the landscape	0	
9. Use natural resources efficiently and safeguard their quality	0	
10. Respond to demographic changes in a sustainable way	0	

11. Minimise waste, increase re-use and recycling	0	
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Policy T9: CARDIFF CITY REGION 'METRO' NETWORK		
<p>The Council will seek to facilitate the development of a future regional 'Metro' network of integrated public transport routes and services within Cardiff and connecting the city with the wider south east Wales region, including the development and/or enhancement of the following on-highway and off-highway infrastructure components:</p> <ul style="list-style-type: none"> i. Existing and new heavy rail routes ii. New light rail routes iii. Tram iv. Tram/train on segregated rails and/or running on street v. conventional buses, or guided buses using busways completely segregated from the main highway along their entire length or for short sections, in combination with use of the public highway/bus priority measures on the public highway. vi. conventional buses using dedicated buses lanes and assisted by other bus priority measures, in combination with use of other carriageway space on the public highway; and vii. conventional buses using carriageway space on the public highway used by general traffic. <p>Where the alignment of a future route which is likely to form part of a 'Metro' network falls within any part of a development site, the Council will, through the development management process, seek either to secure provision of the necessary infrastructure as part of the development, or otherwise, safeguard the land and space required to accommodate the route and potential mode options in the future. This will include requiring a development to be designed in a way which does not prejudice the future development of the 'Metro' route and would enable it to be incorporated within the development at a later date.</p>		
SA Objective	Rank	Comments
1. Help deliver equality of opportunity and access for all	✓	Metro would improve access and opportunity
2. Maintain and improve air quality	✓	Metro should enable modal shift away from private car
3. Protect and enhance biodiversity, flora and fauna	? ✓	Other policies should protect wildlife. Safeguarded routes offer opportunity for wildlife corridors.

4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	✓	Metro should enable modal shift away from private car
5. Protect and enhance historic and cultural heritage	0	
6. Help deliver the growth of a sustainable and diversified economy	✓	Metro should support economic development across the city region.
7. Improve health and well-being	0	
8. Protect and enhance the landscape	0	
9. Use natural resources efficiently and safeguard their quality	0	
10. Respond to demographic changes in a sustainable way	✓	Metro would enable population to grow without unacceptable increases in traffic
11. Minimise waste, increase re-use and recycling	0	

Policies R1 – R7		
Appraised together since they form a package specifying the locations and criteria under which new retail development and changes of use to and from retail will and will not be allowed.		
SA Objective	Rank	Comments
1. Help deliver equality of opportunity and access for all	✓	Policies together seek to ensure all residents have the best access to shops of various kinds that is commercially viable for the retailers.
2. Maintain and improve air	✓	Policies overall aim to minimise the need to drive to shops.

quality		
3. Protect and enhance biodiversity, flora and fauna	0	
4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	✓	Policies overall aim to minimise the need to drive to shops. R4 particularly important in constraining out-of-centre development.
5. Protect and enhance historic and cultural heritage	0	
6. Help deliver the growth of a sustainable and diversified economy	✓	Policies seek to maintain the best commercially viable range of kinds and locations of shops.
7. Improve health and well-being	0	
8. Protect and enhance the landscape	? / ✓	
9. Use natural resources efficiently and safeguard their quality	0	
10. Respond to demographic changes in a sustainable way	✓	Policies aim to help the retail sector respond to changing demands while maintaining the best commercially viable range of shopping.
11. Minimise waste, increase re-use and recycling	0	

Policy R8: FOOD AND DRINK USES
Food and Drink Uses are most appropriately located in: (i) The City Centre (Central Business Area) (ii) The inner harbour/waterfront area of Cardiff Bay (Bay Business Area) (iii) District and Local Centres
Subject to amenity considerations, highway matters, crime and fear of crime considerations, and where they do not cause unacceptable harm to the shopping role

and character of designated centres.

Food and drink uses are unlikely to be acceptable within or adjacent to residential areas, where they would cause nuisance and loss of amenity, or result in the loss of a residential property.

SA Objective	Rank	Comments
1. Help deliver equality of opportunity and access for all	x	Policy will prevent food and drink uses in residential areas, making them harder to access without driving.
2. Maintain and improve air quality	x	Likely to increase driving to food and drink outlets.
3. Protect and enhance biodiversity, flora and fauna	0	
4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	x	Likely to increase driving to food and drink outlets.
5. Protect and enhance historic and cultural heritage	0	
6. Help deliver the growth of a sustainable and diversified economy	x?	May restrict growth of the food and drink sector
7. Improve health and well-being	✓	Main aim of the policy is to protect residential amenity by keeping food and drink uses out of residential areas. Restrictions on outlets near schools also helpful.
8. Protect and enhance the landscape	0	
9. Use natural resources efficiently and safeguard their quality	0	
10. Respond to demographic changes in a sustainable way	x	Policy will restrict how food and drink sector responds to consumer demand.

11. Minimise waste, increase re-use and recycling	0	
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Policy C1: COMMUNITY FACILITIES

Proposals for new and improved community facilities, health and religious facilities will be encouraged, subject to the following criteria being satisfied:

- (i) The facility would be readily accessible to the local community it is intended to serve by public transport, walking and cycling;
- (ii) The facility would not unduly prejudice the amenities of neighbouring and nearby residential occupiers;
- (iii) The facility would not detract from the character and appearance of a property or the locality;
- (iv) The facility will not lead to unacceptable parking or traffic problems.

(v) The facility is designed with the greatest possible flexibility and adaptability to accommodate additional community uses without compromising its primary intended use

SA Objective	Rank	Comments
1. Help deliver equality of opportunity and access for all	✓	Policy supports provision of facilities accessible to their users.
2. Maintain and improve air quality	0	
3. Protect and enhance biodiversity, flora and fauna	0	
4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	✓	Policy should reduce need to travel by car
5. Protect and enhance historic and cultural heritage	0	
6. Help deliver the growth of a sustainable and	0	

diversified economy		
7. Improve health and well-being	✓	Policy supports provision of facilities accessible to their users.
8. Protect and enhance the landscape	0	
9. Use natural resources efficiently and safeguard their quality	0	
10. Respond to demographic changes in a sustainable way	✓	Policy supports provision of facilities needed to meet present and future demands
11. Minimise waste, increase re-use and recycling	0	

Policy C2: PROTECTION OF EXISTING COMMUNITY FACILITIES		
<p>Proposals involving the loss or change of use of buildings currently or last used for community facilities will only be permitted if:</p> <p>i) An alternative facility of at least equal quality and scale to meet community needs is available or will be provided within the vicinity or;</p> <p>ii) It can be demonstrated that the existing provision is surplus to the needs of the community.</p>		
SA Objective	Rank	Comments
1. Help deliver equality of opportunity and access for all	✓	Policy ensures no net loss of community facilities that meet needs of local community
2. Maintain and improve air quality	0	
3. Protect and enhance biodiversity, flora and fauna	0	

4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	✓	Policy should prevent need for increased travel to community facilities
5. Protect and enhance historic and cultural heritage	0	
6. Help deliver the growth of a sustainable and diversified economy	0	
7. Improve health and well-being	✓	Policy supports retention of facilities accessible to their users
8. Protect and enhance the landscape	0	
9. Use natural resources efficiently and safeguard their quality	0	
10. Respond to demographic changes in a sustainable way	✓	Policy supports retention of facilities to meet needs of local community
11. Minimise waste, increase re-use and recycling	0	

Policy C3: COMMUNITY SAFETY/CREATING SAFE ENVIRONMENTS
<p>All new development and redevelopment shall be designed to promote a safe and secure environment and minimise the opportunity for crime. In particular development shall:</p> <ul style="list-style-type: none"> (i) Maximise natural surveillance of areas which may be vulnerable to crime such as publicly accessible spaces, open space, car parking areas and footpaths; (ii) Have well defined routes, spaces and entrances that provide convenient movement without compromising security; (iii) Maintain perceptible distinction between public and private spaces through well defined boundaries and defensible space; (iv) Provide a good standard of lighting to public spaces and routes while minimising

energy use and light pollution; and		
(v) Be designed with management and maintenance in mind, to discourage crime in the present and future.		
SA Objective	Rank	Comments
1. Help deliver equality of opportunity and access for all	0	
2. Maintain and improve air quality	0	
3. Protect and enhance biodiversity, flora and fauna	0	
4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	?	Need to avoid unnecessary lighting.
5. Protect and enhance historic and cultural heritage	0	
6. Help deliver the growth of a sustainable and diversified economy	0	
7. Improve health and well-being	✓✓	Policy aims to provide safe environments
8. Protect and enhance the landscape	0	
9. Use natural resources efficiently and safeguard their quality	? / ✓	
10. Respond to demographic changes in a sustainable way	0	

11. Minimise waste, increase re-use and recycling	0	
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Policies C4 and C5		
Appraised together since they deal with protection and provision of open space		
Policy C4: PROTECTION OF OPEN SPACE		
<p>Development will not be permitted on areas of open space unless:</p> <p>(i) It would not cause or exacerbate a deficiency of open space in accordance with the most recent open space study; and</p> <p>(ii) The open space has no significant functional or amenity value; and</p> <p>(iii) The open space is of no significant quality; or</p> <p>(iv) The developers make satisfactory compensatory provision; and, in all cases;</p> <p>(v) The open space has no significant nature or historic conservation importance.</p>		
C5: PROVISION FOR OPEN SPACE, OUTDOOR RECREATION, CHILDREN’S PLAY AND SPORT		
<p>Provision for open space, outdoor recreation, children’s play and sport will be sought in conjunction with all new residential developments. This Policy is aimed at securing the provision or improvement of open space and other appropriate outdoor recreation and sport in conjunction with all new residential developments over 8 units and on site provision of functional open space in conjunction with all new residential developments over 14 units.</p> <p>The appropriate amount of multi functional green space is based on a minimum of 2.43 hectares of functional open space per 1000 projected population.</p> <p>All other open space provision will be in addition to the provision of multi functional green space.</p>		
SA Objective	Rank	Comments
1. Help deliver equality of opportunity and access for all	✓	Policies will help maintain access to existing open space and provide new ones with new housing.
2. Maintain and improve air quality	0	
3. Protect and enhance biodiversity, flora and fauna	✓	Policy C4 will prevent loss of open space with nature conservation importance.

4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	0	
5. Protect and enhance historic and cultural heritage	✓	Policy C4 will prevent loss of open space with historic importance.
6. Help deliver the growth of a sustainable and diversified economy	0	
7. Improve health and well-being	✓	Policies maintain and increase open spaces, which contributes to wellbeing
8. Protect and enhance the landscape	✓	Policy C4 protects open space
9. Use natural resources efficiently and safeguard their quality	0	
10. Respond to demographic changes in a sustainable way	✓	Policy C5 seeks to provide sufficient open space to meet the needs of residents of new housing.
11. Minimise waste, increase re-use and recycling	0	

Policy C6: HEALTH		
<p>Priority in new developments will be given to reducing health inequalities and encouraging healthy lifestyles through:</p> <p>(i) Identifying sites for new health facilities, reflecting the spatial distribution of need, ensuring they are accessible and have the potential to be shared by different service providers; and</p> <p>(ii) Ensuring that they provide a physical and built environment that supports interconnectivity, active travel choices, promotes healthy lifestyles and enhances road safety.</p>		
SA Objective	Rank	Comments

1. Help deliver equality of opportunity and access for all	✓	Policy aims to ensure access to health facilities
2. Maintain and improve air quality	✓	Policy aims to reduce need to travel to health facilities, and promote active travel
3. Protect and enhance biodiversity, flora and fauna	0	
4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	✓	Policy aims to reduce need to travel to health facilities, and promote active travel
5. Protect and enhance historic and cultural heritage	0	
6. Help deliver the growth of a sustainable and diversified economy	0	
7. Improve health and well-being	✓✓	Policy aims to promote active travel, road safety and access to health facilities
8. Protect and enhance the landscape	0	
9. Use natural resources efficiently and safeguard their quality	0	
10. Respond to demographic changes in a sustainable way	✓	Policy aims to ensure health provision meets needs.
11. Minimise waste, increase re-use and recycling	0	

Policy C7: PLANNING FOR SCHOOLS

Where a need has been identified for new and improved school facilities as a result of

development, the Council will seek contributions towards the cost of additional education provision. Negotiated contributions will be fairly and reasonably related in scale and kind to the proposed development. Where appropriate on site provision will be required.

Development of nursery, primary, secondary and sixth form education should:

(i) Be well designed, well related to neighbourhood services and amenities, and easily accessible by sustainable transport modes; and

(ii) Include, where appropriate, provision for other appropriate community uses in addition to their educational use.

SA Objective	Rank	Comments
1. Help deliver equality of opportunity and access for all	✓	Policy aims to provide for educational needs
2. Maintain and improve air quality	0	
3. Protect and enhance biodiversity, flora and fauna	0	
4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	0	
5. Protect and enhance historic and cultural heritage	0	
6. Help deliver the growth of a sustainable and diversified economy	0	
7. Improve health and well-being	✓	Availability of schools and colleges will contribute to well-being
8. Protect and enhance the landscape	0	
9. Use natural resources efficiently and safeguard their	0	

quality		
10. Respond to demographic changes in a sustainable way	✓	Policy aims to ensure education provision matches needs.
11. Minimise waste, increase re-use and recycling	0	

<p>Policies M1 – M5 Appraised together because they form a coherent package governing mineral workings</p>
<p>M1: MINERAL LIMESTONE RESERVES AND RESOURCES Mineral reserves with planning permission will be safeguarded from development that would prevent their extraction at:</p> <ul style="list-style-type: none"> (i) Creigiau Quarry; (ii) Taffs Well Quarry; (iii) Ton Mawr Quarry; and (iv) Blaengwynlais Quarry. <p>Preferred areas of known resources suitable for the future working of Limestone have been identified as extensions to:</p> <ul style="list-style-type: none"> (i) Creigiau Quarry; and (ii) Ton Mawr Quarry. <p>M2: PREFERRED ORDER OF MINERAL RESOURCE RELEASE The extension or deepening of existing mineral workings will be favoured in preference to the release of new sites and, with the exception of the lateral extensions of Creigiau and Ton Mawr Quarries referred to in Policy M1, deepening will be preferred to lateral extension. Applications to extend or deepen mineral workings will be permitted where it can be demonstrated that:</p> <ul style="list-style-type: none"> i) There are environmental improvements at the site which can be justified by the addition of new reserves, or traded off by the giving up of existing reserves, or; ii) The addition of new reserves preserves the productive capacity of Cardiff to meet its sub regional apportionment commitments; or iii) There are operational benefits in permitting further reserves that will lead to more efficient exploitation of the resource. <p>It should also be demonstrated that such an approach will not cause unacceptable harm to the environment, including consideration of impacts relating to access, noise, air quality, landscape and visual effects, ecology, soil resources, hydrology and hydrogeology, blast vibration and cultural heritage, and in the case of Creigiau Quarry, the objectives of Policy M3 are delivered as part of an extension or deepening application.</p> <p>M3: QUARRY CLOSURES AND EXTENSION LIMITS Measures to prevent further mineral working and, where appropriate, to secure</p>

restoration and landscaping works at the earliest opportunity, will be sought at the following sites:

- (i) Cefn Garw Quarry, Tongwynlais;
- (ii) Highland Park Brickworks, Ely;
- (iii) West End Brickworks, Ely; and
- (iv) Southern and western parts of Creigiau Quarry.

M4: MINERALS BUFFER ZONES

Within the minerals buffer zones no mineral working, housing or other sensitive development will be permitted.

M5: RESTORATION AND AFTER - USE OF MINERAL WORKINGS

Proposals for mineral working or for related plant and buildings will be permitted only where firm proposals are included for the reinstatement of the site to a condition fit for an appropriate after-use supported, where relevant, by adequate after-care proposals. Appropriate reinstatement and after-care proposals will similarly be required when existing controls are reviewed. In drawing up restoration proposals, mineral operators will be encouraged to:

- (i) Undertake progressive restoration;
- (ii) Make beneficial use of mineral waste generated by mineral operations;
- (iii) Consider whether restoration can contribute to nature conservation targets set out in the Local Biodiversity Action Plan.
- (iv) New uses of former mineral workings other than those appropriate to a rural area will not be permitted without special justification. Proposals to carry out safety works at derelict or dormant sites will be favoured.

SA Objective	Rank	Comments
1. Help deliver equality of opportunity and access for all	0	
2. Maintain and improve air quality	✓	Policies aim to minimise exposure to air pollution from mineral extraction
3. Protect and enhance biodiversity, flora and fauna	✓	M5 aims to encourage nature conservation benefits from restoration and after-use.

4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	0	
5. Protect and enhance historic and cultural heritage	?	
6. Help deliver the growth of a sustainable and diversified economy	✓	Policies aim to ensure adequate supply of minerals to meet demand
7. Improve health and well-being	✓	Policies aim to minimise impacts on health and wellbeing from mineral working
8. Protect and enhance the landscape	?	
9. Use natural resources efficiently and safeguard their quality	✓	Policies aim to safeguard appropriate mineral resources
10. Respond to demographic changes in a sustainable way	0	
11. Minimise waste, increase re-use and recycling	✓	M5 (ii) encourages restoration and afteruse to 'make beneficial use of mineral waste generated by mineral operations'

SA comments and suggestions	Response	Status
Are the choices of sites designed to safeguard biodiversity, historic / built environment and/or landscape? If so, positive scores and mention justified for objectives 3,5,9.	Minerals can only be worked where they exist, so sites are primarily selected on this basis of where limestone is known to exist. It is not anticipated that there will be a need to release any new mineral resources within the plan period, but if there should be a requirement then permission would only be granted for sites where there would be no unacceptable harm to the environment.	✓

Policy M6: SAND WHARF PROTECTION AREAS

The sand wharves shown on the Proposals Map will be protected against development which would prejudice their ability to land marine dredged sand and gravel. Proposals for the provision and improvement of landing and distribution facilities for marine dredged aggregates within the sand wharves shown on the Proposals Map will be favoured where there will be no unacceptable harm to the environment.

SA Objective	Rank	Comments
1. Help deliver equality of opportunity and access for all	0	
2. Maintain and improve air quality	0	
3. Protect and enhance biodiversity, flora and fauna	0	
4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	0	
5. Protect and enhance historic and cultural heritage	0	
6. Help deliver the growth of a sustainable and diversified economy	✓	Maintains capacity to land sand and gravel.
7. Improve health and well-being	0	
8. Protect and enhance the landscape	0	
9. Use natural resources efficiently and safeguard their quality	✓	Maintains capacity to land sand and gravel.
10. Respond to demographic changes in a sustainable way	0	

11. Minimise waste, increase re-use and recycling	0	
SA comments and suggestions		
None	Noted	✓

Policy M7: SAFEGUARDING OF SAND AND GRAVEL, COAL AND LIMESTONE RESOURCES

Development will not be permitted within the Sand and Gravel, Coal and Limestone Safeguarding Areas shown on the Proposals Map that would permanently sterilise these mineral resources unless:

- i. The applicant can demonstrate to the satisfaction of the Local Planning Authority that the mineral concerned is no longer of any resource value or potential resource value; or
- ii. The mineral can be extracted satisfactorily prior to the incompatible development taking place; or
- iii. The incompatible development is of a temporary nature and can be completed and the site restored to a condition that does not either sterilise the resource or inhibit extraction within the timescale that the mineral is likely to be needed; or
- iv. There is an overriding need for the incompatible development which overrides the need for the resource, including a requirement for prior extraction if practicable.

SA Objective	Rank	Comments
1. Help deliver equality of opportunity and access for all	x?	Policy may prevent development in locations where it would be beneficial.
2. Maintain and improve air quality	0	
3. Protect and enhance biodiversity, flora and fauna	?✓	Policy may protect open space which might otherwise be developed
4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	x?	Safeguarding coal resources will lead to higher emissions if they are ever exploited – unless this replaces coal imports or there is effective carbon capture and storage.
5. Protect and enhance historic and cultural heritage	0	

6. Help deliver the growth of a sustainable and diversified economy	✓	Safeguarding these resources will help keep future economic options open.
7. Improve health and well-being	0	
8. Protect and enhance the landscape	? / ✓	
9. Use natural resources efficiently and safeguard their quality	✓✓	Purpose of the policy is to keep resources available for possible future need.
10. Respond to demographic changes in a sustainable way	?	Safeguarding these resources may prevent desirable development.
11. Minimise waste, increase re-use and recycling	0	

Policy M8: AREAS WHERE COAL WORKING WILL NOT BE ACCEPTABLE		
Future Coal extraction will not be permitted within the Areas where Coal Working will not be Acceptable shown on the Proposals Map unless exceptional circumstances show a smaller Area is appropriate.		
SA Objective	Rank	Comments
1. Help deliver equality of opportunity and access for all	0	
2. Maintain and improve air quality	0	
3. Protect and enhance biodiversity, flora and fauna	0	
4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	0	

5. Protect and enhance historic and cultural heritage	✓	
6. Help deliver the growth of a sustainable and diversified economy	✓	Policy provides slight extra flexibility in coal working
7. Improve health and well-being	✓	Policy should ensure that coal working is not near enough to residential areas to cause any health or wellbeing problems.
8. Protect and enhance the landscape	0	Possible risk of additional landscape damage is balanced by opportunity to use further coal working to support remediation.
9. Use natural resources efficiently and safeguard their quality	✓	Policy will ensure that coal resources are not sterilised more than necessary to safeguard amenity.
10. Respond to demographic changes in a sustainable way	0	
11. Minimise waste, increase re-use and recycling	0	

Policy W1: SITES FOR WASTE MANAGEMENT FACILITIES
<p>Proposals for the development of waste management facilities will be permitted where:</p> <ul style="list-style-type: none"> (i) There is a demonstrable need assessed against County and regional requirements; (ii) They conform with the waste hierarchy and the principles contained in the Waste Framework Directive of An Integrated and Adequate Network; Nearest Appropriate Installation; Self Sufficiency and Protection of Human Health and the Environment; the 'proximity principle' and the principle of regional self-sufficiency; (iii) They would not cause unacceptable harm to the environment, built heritage or to human health; (iv) They include acceptable proposals for restoration, aftercare and after-use, including the beneficial after-use of by-products; (v) They would not endanger aviation safety; and (vi) They include acceptable proposals for the protection of adjoining and nearby land from landfill gas and leachate migration or contamination. (vii) They are not located within an area at risk from flooding;

(viii) They would not cause unacceptable air, noise or light pollution, dust, vibration or odours, or attract excessive vermin;

(ix) They provide safe means of access to the highway and adequate on-site parking facilities; and

(x) They are accompanied by a Waste Planning Assessment containing sufficient information to enable an assessment of the proposal.

Facilities for the handling, treatment and transfer of waste will generally be encouraged towards existing use class B2 general industrial land.

SA Objective	Rank	Comments
1. Help deliver equality of opportunity and access for all	0	
2. Maintain and improve air quality	✓	Policy promotes the waste hierarchy, which favours less polluting options.
3. Protect and enhance biodiversity, flora and fauna	0	
4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	✓	Policy promotes the waste hierarchy, which favours options better for climate change.
5. Protect and enhance historic and cultural heritage	0	
6. Help deliver the growth of a sustainable and diversified economy	✓	Policy promotes the waste hierarchy, which favours waste treatment options that create green business opportunities.
7. Improve health and well-being	✓	Policy promotes the waste hierarchy, which favours less polluting options, and requires facilities not to cause unacceptable harm to health.
8. Protect and enhance the landscape	0	
9. Use natural	✓	Options higher in the waste hierarchy reduce the need

resources efficiently and safeguard their quality		for new resources.
10. Respond to demographic changes in a sustainable way	0	
11. Minimise waste, increase re-use and recycling	✓✓	Policy promotes the waste hierarchy.

Policy W2: PROVISION FOR WASTE MANAGEMENT FACILITIES IN DEVELOPMENT		
Where appropriate, provision will be sought in all new development for facilities for the storage, recycling and other management of waste		
SA Objective	Rank	Comments
1. Help deliver equality of opportunity and access for all	0	
2. Maintain and improve air quality	0	
3. Protect and enhance biodiversity, flora and fauna	0	
4. Reduce emissions of greenhouse gases that cause climate change and adapt to its effects	✓	Policy will help enable waste management higher up the waste hierarchy, which will reduce emissions.
5. Protect and enhance historic and cultural heritage	0	
6. Help deliver the growth of a sustainable and diversified economy	✓	Policy will help enable waste management higher up the waste hierarchy, which will support green businesses eg reuse and recycling.
7. Improve health and well-being	✓	Policy should ensure that wastes can be collected and managed sustainably without health risks
8. Protect and	0	

enhance the landscape		
9. Use natural resources efficiently and safeguard their quality	✓	Policy will help reclaim secondary resources.
10. Respond to demographic changes in a sustainable way	0	
11. Minimise waste, increase re-use and recycling	✓✓	Policy will support and enable options higher in the waste hierarchy.

Cardiff Council & Levett-Therivel Sustainability Consultants

**Sustainability Appraisal and Strategic Environmental Assessment of
the Cardiff Local Development Plan**

**Appendix H: Consultees' Responses to Initial
Sustainability Appraisal Report**

**Final Sustainability Appraisal Report of the Cardiff Local
Development Plan**

January 2016

This appendix summarises statutory consultees' responses to the consultation on the October 2012 Initial SA on the LDP Preferred Strategy, and how these have been taken into account in the Final SA. A summary of public consultation responses appears in the 'Cardiff Deposit Local Development Plan 2006-2026 Initial Consultation Report – September 2013' and is not repeated here.

The tables omit numerous statements of welcome and endorsement, and consider only suggestions for change.

CCW: letter from Chris Uttley, 20 December 2012

Reference	Comment / suggestion	SA response
2.3 Stages of Appraisal	Replace 'impacts' with 'effects': impacts has negative connotations, assessment should pick up positive and negative effects	No: 'impacts' covers both positive and negative and is the standard term in appraisal.
4.3 Identifying other plans (etc)	Add Sustainable Development Bill White Paper	Agree, done.
Table 4.1 Key messages of policy review	Change second 'biodiversity, flora and fauna' LDP objective: networks that <i>link areas of value</i> is vague	No: no disadvantage to a general non technical term here.
	Refer to Welsh Government's <i>Living Wales</i> framework to help embed holistic management and ecosystem services	Agree. Living Wales Framework added to Appendix A, Policy Review.
Table 4.3 SA Framework	Provide indicators to cover all sub-objectives	Chapter 10 sets out a suite of indicators intended to give a good picture of the effects of the plan without disproportionate cost. Indicators will not always relate directly to SA sub-objectives.
	Add sub-objective of protection/enhancement of carbon sinks.	Too late to change sub-objectives: they were consulted on at scoping stage.
5.4 SA of LDP Vision	Vision should be stronger on landscape, and environment generally	Vision was set in the 'What Matters' strategy, not open for review now. LDP Objectives cover the environment in detail.
Table 5.2 / app E	Emphasise 'need to ensure that the biodiversity value of brownfield land is considered and protected	Biodiversity is one of the 11 SA objectives that all the strategic sites, both brownfield and greenfield, are assessed against.
6.9 appraisal results	State which growth option SA prefers	Final SA endorses the eventual growth option (B minus 10% housing) and explains the reasons.
6.16 Greenfield sites west of Pentrebane	Cannot agree that site has 'no significant environmental constraints'	Wording in final SA altered to reflect CCW concerns.
Greenfield sites S of Creigiau / N of J33	Sustainable transport provision must be made right from the start .	Agree. SA has pressed for this for all the remote greenfield sites.
Greenfield sites W & E of Pontpennau	Should take into account recreation impacts	The masterplanning principles for all strategic sites consider linkage to surrounding areas and existing communities.
Table 7.2 candidate	Should have summary of the	No, provided with LDP, no need to

sites summary	assessment of each site here	duplicate.
Strategic site G [now F]	Should record potential presence of dormice and bats and give negative biodiversity score	No, only potential presence, does not justify this.
Candidate sites	Suggestions for alternation of biodiversity scores on several candidate sites plus clarification over inclusion of sites	The candidate site assessment process was a joint process led by the planning team with input from the SA team. The SA influenced many of the scores, in particular those relating to biodiversity, leading to a more precautionary approach being taken. The issue around site inclusion clarification has been passed to the planning team for consideration in their amendments.
Table 8.3	Would welcome explanation for no green belt	Green Belt now in LDP.
Table 9.3	Disappointed site J [now H] not removed	SA continues to recommend removal.
Table 10.1	Add indicators for extent of habitat for European protected species and protection of historic landscape	Chapter 10 sets out a suite of indicators intended to give a good picture of the effects of the plan without disproportionate cost. We do not think these proposed additions would add enough policy relevant information to be justified.

CADW: E-mail from Suzanne Whiting, 20 December 2012

Reference	Comment / suggestion	SA response
p.21 LDP Aims	More specific reference to registered parks and gardens could be made in the LDP aims	Not necessary. Considerable coverage in the policies.
p.33	Include indicators for the number of scheduled ancient monuments and parks and gardens affected by proposals.	No: not informative enough.

EAW: no response received despite reminders.

Cardiff Council & Levett-Therivel Sustainability Consultants

Sustainability Appraisal and Strategic Environmental Assessment of the Cardiff Local Development Plan

Appendix I: Sustainability Appraisal response to Matters Arising Changes

Final Sustainability Appraisal Report of the Cardiff Local Development Plan

January 2016

The following table shows how the Matters Arising Changes set out in the May 2015, October 2015 and January 2016 schedule have been taken account of in the SA. The responses are primarily updates to Appendix G, the appraisal of policies, with some consequential changes to the main Final Sustainability Appraisal Report and Non Technical Summary. To help provide an audit trail, changes (other than trivial drafting corrections) due to the October and January MACS are shown as tracked changes.

Many of the changes do not require any changes to the SA because:

- They are drafting changes, rearrangements or updates which do not materially alter the effect of a policy; or
- They make more precise, explicit, correct or up-to-date reference to national policies which would have been effective anyway; or
- They alter how a policy would affect one or more appraisal criteria, but not enough to alter the assessment.

MAC	Summary description	SA/SEA implications	Response
1	Updates / redrafts of LDP introductory text	None	None
2	New statement that plan does not detrimentally affect Welsh language	None	None
3	Correct number of international biodiversity sites	None: correction only	None
4	Slightly increased housing provision resulting from various adjustments to the calculation, addition of a housing trajectory and more detailed monitoring requirements.	The new KP1 reflects a range of adjustments to housing figures prompted by newer data and analysis, changing housing market trends and predictions, new research and advice on interpreting variables and uncertainties, and some corrections and clarifications. These are explained in detail in the <i>Response to Housing related Action Points</i> . The overall result is a slight increase in the housing provision from 41,100 to 41,415 (both with an additional 4000 flexibility allowance) over the plan period. It is outside the SA brief to provide a second opinion on the validity of these figures and reasoning. Assuming it	None, because the adjustment is very small (under 1%) and designed to maintain the plan's response to need.

		is well founded, the result is likely to slightly better meet housing objectives.	
5	Add policies for strategic sites to KP2 (KP2 A-H)	<p>Several strengthenings of generic policies address weaknesses in the strategic site masterplans identified in earlier SA, notably MAC10 bringing stronger requirements for transport infrastructure to help deliver the 50:50 modal split target; and MAC34 changing policy EN12 to require development to maximise renewable energy, and major proposals to have an independent energy assessment.</p> <p>Inclusion of infrastructure requirements and specific density requirements strengthens policies. Otherwise, the policies appear very similar to the previous site master plans, though the material has been rearranged making exact comparison difficult.</p>	Modify the site appraisals already included and reviewed the previous site appraisals in Appendix G in light of the current text and the revised generic policies. Result has been a few improved scores. 'No detriment to the maintenance of favourable conservation status' wording added – welcome addition, though would be better and simpler if it just said 'no net loss'.
	New text saying Infrastructure Plan will implement the infrastructure stipulated in the strategic sites policies.	Provides a delivery mechanism for the infrastructure previously stated in the key site proformas.	No change needed since the SAs of these sites assumed the infrastructure would be delivered.
	Delete justification for site H	Text now included in new policy KP2(H) instead.	No change
6	Changed explanation of masterplanning approach	None	None
7	Drafting change	None	None
8	Creates <u>and explains</u> a-distinction between 'essential, enabling' and 'necessary' infrastructure.	<p><u>Following an SA recommendation, text clarifying the distinction between different categories of infrastructure has been added.</u>In response to a request for clarification, the planners stated: 'For the purpose of the plan, infrastructure items have been divided into two categories:</p>	<p>The clarification that 'essential/enabling' infrastructure will delivered before, or at the start of, development is very welcome and has enabled removal of a number of SA suggestions for strategic sites assessed under KP2.</p> <p>We strongly recommend addition of the quoted text to the plan: without it, it is not clear why 'essential'</p>

		<p>Category 1: Essential/Enabling Infrastructure—Those items which will need to be delivered prior to, or at the commencement of development (e.g. transportation/ highways infrastructure, utility services and flood mitigation/ defences).</p> <p>Category 2: Necessary Infrastructure (to support growth)— Items which need to be phased and implemented alongside new development, to ensure that the associated growth in population is served with appropriate facilities over time (e.g. schools and health care)'</p>	infrastructure is distinguished from 'necessary'— the words mean the same thing.
9	Drafting clarifying the rules on planning obligations	No difference: just makes more explicit the rules that national guidance already applies	None
10	Stronger requirement for infrastructure to be provided to meet 50/50 modal split	Improve strategic site performance on transport, access, equity and carbon criteria	Remove SA suggestions for infrastructure timing from the strategic site policies (now KP2(A)-(H))
11	Minerals provision updated to reflect latest technical report on demand. Safeguarding strengthened in October.	No significant change	None
12	Remove specific references to waste minimisation and the waste hierarchy	Loss of explicitness is regrettable but the other policies referred to will still maintain in practise, so no significant difference	None
13	Lower affordable housing target reflecting one year later	None	None
14	More explicit and slightly stronger restriction on development with flood risk or that increases flood risk	Slightly stronger performance on climate change adaptation	None - not enough to make any difference to appraisal
15	Remove 'created' from green	Slightly weaker performance – reduces emphasis on	None - not significant enough to make a difference to

	infrastructure	proactive improvement. Don't agree with WG that it is 'superfluous', it's not the same as 'enhanced', in the same way that 'destroyed' is not the same as 'degraded'	appraisal scores.
16	Drafting changes – more precise wording on historic environment	None	None
17	Drafting	None	None
18	Small differences in estimated yield for some non strategic housing sites	Mostly small increases – good for access and response to demographic change.	None. (Rookwood Hospital site boundary change discussed under PM change)
19	Tighter requirements for affordable provision	Slightly better for equality	None - not enough change to make a difference to appraisal score
20	Removal of commercial uses that 'could contribute to sustainable communities' from the list of permissible changes of residential use outside central area'	Unlikely to make a difference since relevant conversions could qualify under other criteria	None
21	Drafting tidying	None	None
22	Delete gypsy/traveller site policy	Changes will together replace a specific site with a commitment to review and meet need. The result should be to better meet gypsy and traveller needs	Delete appraisal of the removed policy (H7)
23	Announces timetable for Gypsy and Traveller Needs Assessment and implementation Figures for short and long term need added in October.		None.
24	Move 'no realistic prospect' of future employment use from reasoned justification into policy on alternative uses itself	None	None
	New criterion housing need overrides economic	Good for access and demographic objectives	None - not enough change to make a difference to appraisal score

	considerations		
25	New policy allowing employment uses on land not designated for them subject to some criteria	Good for employment, not bad for other objectives because of the criteria in the policy and other plan policies	New policy EC7 added to the group appraisal of EC1-6. Too little change overall to alter the scores.
26	Simpler and less inflexible policy on permitted development in the countryside	No significant change	None
27	Redrafting	None	None
28	Tighter and more explicit requirements for development affecting Special Landscape Areas	Small improvement in landscape protection	None- not enough change to make a difference to appraisal score
29	Drafting	None	None
30	Tighter and more explicit protection of designated conservation sites	Slightly better for biodiversity	None- not enough change to make a difference to appraisal score
31	Removal of para of reasoned justification which is inconsistent with policy	Slightly weaker for biodiversity	None- not enough change to make a difference to appraisal score
32	More explicit reference to legal protection of habits and species	None	None
33	Updated identification of heritage assets and relevant guidance	None	None
34	Stronger renewable energy requirement Commitment to produce SPG on energy assessments added in October.	Greater certainty of climate change benefits	Make policy appraisal more positive
35	Drafting	None	None
36	Stronger and more explicit restraint of development prone to flood risk or increasing it	Better for climate change and health and wellbeing.	None- not enough change to make a difference to appraisal score

37	Drafting	None	None
38	Clarify the bus corridors	None	None
39	New policy for developing 'metro' transport network	Good for transport related objectives	Added appraisal of the new policy.
40-48	Range of changes to clarify and tidy the suite of retail policies, giving a stronger and more explicit retail hierarchy while removing some unnecessarily detailed stipulations.	Overall neutral effect	Update policy numbers and texts.
49	Clarify wording	None	None
50	Update reference	None	None
51	New policy for no net loss of community facilities	New policy good for access, wellbeing and climate change objectives	Add appraisal of new policy. We have told the planners we think 'and' at the end of clause I should be 'or' because the current wording requires developers to <i>both</i> provide substitute facilities <i>and</i> prove they are not needed, instead of one or the other.
52	Add reference to children's play.	Good to clarify that informal play should be provided for, not only sport	None
53	Delete allotments policy	The deleted policy was highly positive for a range of environmental and social objectives, so its removal is a backward step	Remove appraisal. Query reasons the policy was deleted rather than the allotments policy questions answered / contested.
54	Delete separate children's play policy	Incorporated into policy C4 so no net loss	Remove appraisal.
55	Remove restriction on takeaways	Already covered in policy C7 so no difference	None
	Remove requirement for health impact assessment	Criterion ii already requires development to promote all aspects of health that are relevant to planning and likely to be significantly affected, so removing formal assessment is likely to make very little difference.	None
56,57, 59	Two schools policies C8 and C9 combined	Previous SA had appraised the two former policies together and questioned the need for them to be	None

		distinct, so this change is welcome and makes no difference to the appraisal.	
58	Remove the Heath site's designation for health uses	Increases flexibility of deciding future uses of the site together with other non strategic ones.	Remove the appraisal of policy C10.
60-63	Adjusts minerals policies to reflect latest technical information and guidance and Council discussions with operators	No significant overall changes to the effects of the suite of minerals policies	None
64-67	Combines safeguarding of sand and gravel, coal and limestone into one policy	Previous SA had appraised the three former policies together, so this change is welcome and makes no difference to the appraisal.	None
68	New policy to allow coal working closer than the normal 500m from residential areas in certain defined special circumstances.	The exceptional circumstances are tightly enough defined that there is unlikely to be significant loss of amenity from the closer working.	Redraft appraisal of the former three policies to refer to the one new one
69	Delete Lamby Way waste site allocation	Landfilling is about to end, and any future need for the site can be considered under the generic policy W2.	None. Policy had been appraised together with the generic policy W2 so no changes needed.
70	Revisions to waste policy to align with national guidance	None	None
71-74	Insert appendices	None	None
75	Monitoring framework	Extensive range of indicators and specification of trigger points should help ensure the plan is implemented and corrective action identified and taken when necessary	SA monitoring framework revised to use indicators already being monitored for the Plan where possible without loss of significant information.
76-81	Drafting and reference corrections / updates	None except for updating key diagram	None, except for substitute new key diagram in final SA report
PM1	Move settlement boundary outward to River Rhymney at strategic site G	Change will not make any difference to development on the ground because this will be constrained by floodplain which is protected by policies KP15 and EN14.	None

PM2	Explicit demarcation of 'flexibility allowance' sites	Sites already appraised	None
PM3	Small extension to Rookwood Hospital site	Site already appraised	None
PM4	Delete gypsy and traveller site	Implements MAC22	None
PM5	Show sites with planning permission for housing on proposals map	Presentational change only – does not change the planning status of the sites.	None
PM6	Correction to boundary of Central Bay Business Area to reflect land ownership	None	None
PM7	Small reduction in business park area to reflect recent planning permissions for housing	None	None
PM8-12	Clarifications and minor changes to river corridor designations	The only large change is the result of an administrative decision not to designate river corridors outside the settlement boundary.	None
PM13	Show bus corridor enhancements	Implements MAC38	None
PM14	Show protected shopping frontages	Implements MAC40	None
PM15	Delete Heath site allocation for health	Implements MAC58	None
PM16	Reductions in coal safeguarding area to comply with guidance	Implements part of MAC 67. Reflects policies to protect other environmental assets.	None
PM17	Limestone safeguarding area redefined as sand and gravel safeguarding area	Implements part of MAC 67. No change.	None
PM18	Delete waste site	Implements MAC 69	None
Insp 1	Replace Green Belt policy KP3A with Green Wedge	Removes assumption that protection will outlast the Plan period, and even opens up the possibility of rolling it back during the plan period if monitoring reveals a	Appraisal unchanged since the new policy has the same scores against appraisal objectives. Para added to report saying that the change weakens incentives for

		<u>shortfall in housing .</u>	<u>developers to support the Plan's spatial strategy and could even create perverse incentive to hold off from development that supports the Plan's objectives (such as brownfield and urban regeneration) in the hope of getting permission to develop north of the M4.</u>
<u>Insp 2</u>	<u>Replace 'or' with 'and' at end of clause I of Protection of Existing Community Facilities policy C2</u>	<u>Will result in safeguarding of community facilities only if there is need in the community</u>	<u>Appraisal unchanged since the amended policy has the same scores against appraisal objectives. NB: this amendment was suggested previously in response to MAC 51.</u>