Appendix A

NDF Issues
This appendix contains summaries of eleven key issues for the NDF, identified by stakeholders through formal and informal engagement exercises undertaken during 2016-17. These issues, in turn, have informed the NDF Objectives. Further details are available on the NDF webpages:


The issues addressed in this appendix are:

A. Culture
B. Climate Change, Decarbonisation and Energy
C. Digital Connectivity
D. Economy
E. Housing
F. Natural Resources
   - Sustainable Management of Natural Resources
   - Circular Economy
   - Flooding
G. Transport
H. Welsh Language
I. Health

The key sources of evidence for each issue are Prosperity for All: the National Strategy, and The Future Trends Report. These can be found here:

Prosperity for All: the National Strategy

The Future Trends Report

Further sources of evidence are identified throughout the appendix, and provided in endnotes.
A Culture
A. Culture - Wales Today & Drivers of Change

Overview
The importance of culture is enshrined in the Well-being of Future Generations Act (Wales) 2015 which recognises culture through one of its goals: ‘A Wales of vibrant culture and thriving Welsh language.’ The description of this goal sets the aim of: ‘A society that promotes and protects culture, heritage and the Welsh language, and which encourages people to participate in the arts, and sports and recreation.’ The planning system can play a role across Wales by supporting development proposals which positively impact on our cultural experiences.

What are the Welsh Government’s strategic aims?
Prosperity for All refers to aspects of culture throughout the document. Two of the key objectives within the document which refer to culture are:

- ‘Building resilient communities, culture and language.’
  - This objective discusses building a country with vibrant communities, where the past and the future is recognised and culture, heritage and diversity is celebrated.
- ‘Promote and protect Wales’ place in the world.’
  - This objective states how excellence in areas such as culture has helped to define modern Wales around the world and this reputation and identity must be maintained and built upon.

The Welsh Government has a dedicated national strategy for culture called Light Springs through the Dark: A Vision for Culture in Wales.

Some of the key culture messages and aims derived from this document are as follows:

- That culture means ‘arts, music, literature and heritage’ and all creative activities that give people purpose, belonging and identity;
- That culture is a priority and should be promoted and protected;
- For Wales ‘to be the most creatively active nation in Europe’;
- For the culture sector to generate new sources of income, due to uncertainties over European Union funding; and
- For culture to support other areas, including health, education, regeneration and the economy.

What are the key future trends?
The Future Trends Report identifies demographics of the people of Wales which relate to culture in general terms. Key messages given in this regard are as follows:
• The sense of Welsh identity can be viewed as broadly stable and can be viewed as being distinctive to Wales, with around 85% of those born in Wales self identifying as Welsh.

• Technological changes are driving cultural changes in Wales. This is highlighted by data which shows the use of broadband infrastructure is becoming increasingly prevalent, with use of the internet increasing across all age groups in Wales over recent years.

What are the key spatial issues for the NDF?
Legislation and Welsh Government strategies identify how culture can encompass a number of topic areas in Wales. Some of these do not have tangible land use implications, whilst others do. For example, heritage is something which is physically present in our landscape through buildings, structures and designations and can therefore be impacted on by new development. Other topic areas may relate to social trends and preferences which cannot be directly impacted upon by the NDF. Nevertheless, the planning system could have an indirect impact here through developments which facilitate in this regard, for example, through providing appropriate facilities.

Deriving from our national strategies and programmes, there are a number of potential planning implications for culture. These should be taken into account in preparation of the NDF:

• To recognise, protect, promote and enhance our existing culture.
  - Our existing culture would include, for example, ensuring historic assets and existing sports facilities are taken into account when planning for new development;

• To enable / facilitate new cultural opportunities at a national level.
  - Cultural opportunities could be provided through associated activities, economic growth, regeneration, tourism, Welsh language, health and international opportunities for the people of Wales.
  - Technological activities such as provision of broadband infrastructure could provide further cultural benefits; for example, through enabling the use of social media.

• To recognise the development of nationally significant culture led projects for Wales.
  - A number of culture related projects have been identified by the Welsh Government which could come forward over coming years. These could include a National Gallery of Art for Wales and a National Athletics Stadium for Wales. The NDF could recognise the potential of such projects to placemaking priorities and seek to maximise the positive impacts of these developments.
How can the NDF support the Welsh Government’s strategic aims?
Culture is actively recognised in Wales through legislation and the Welsh Government’s various strategies. Where culture is referenced, the word ‘protect’ is used on numerous occasions. For example, existing strategies reference the need to protect what is already there in respect of heritage and also through national planning policy in respect of existing sports provision\(^2\). Therefore it is important for the NDF to reflect this strategic position, by recognising the cultural assets already in place in Wales and protecting what we already have.

On existing culture, the Welsh Government goes further than merely looking to ensure it remains. Promotion of culture is widely discussed, particularly in the context of how it can define Wales in the wider world. Enhancing our existing culture is something that is further referenced, particularly in the context of existing assets such as heritage. Therefore, it is also important for the NDF to support this strategic position of promoting and where possible enhancing existing cultural assets.

Finally, the Welsh Government makes reference to a number of wider topic areas in the context of culture, such as health, education, regeneration and the economy. It is discussed how these topic areas should not be mutually exclusive of culture, but may support each others’ aims and objectives. The planning system through appropriate development, which may be led by regeneration or the economy, for example, could provide cultural opportunities. It is therefore important for the NDF to support development which could facilitate culture in this context.

Draft NDF Objective – Culture & Heritage

To protect, promote and enhance national cultural and historic assets.
To support opportunities for new national cultural development.
B Climate Change Decarbonisation & Energy
B. Climate Change, Decarbonisation & Energy - Wales Today & Drivers of Change

Overview
Climate change is arguably the greatest challenge the world faces. It is important Wales is resilient to the impacts of climate change and reduces its greenhouse gas emissions. The role of the planning system is to facilitate sustainable development and enable a move towards a low carbon economy, which mitigates and takes account of future climate impacts.

What are the Welsh Government’s strategic aims?
The Welsh Government is committed to tackling the causes and consequences of climate changes. A commitment has been set in legislation to reduce Wales’ greenhouse gas emissions by at least 80% by 2050. Interim targets, carbon budgets and a delivery plan are being developed. In the meantime, there is an existing target in policy to reduce emissions by 3% year on year and 40% by 2020 on all emissions. Our ambition is to create a sustainable, low carbon economy and our energy priorities are to:

- Reduce the amount of energy we use in Wales;
- Reduce our reliance on energy generated from fossil fuels;
- Actively manage the transition to a low carbon economy.

Our aim is to see the deployment of a wide range of renewable and low carbon technologies, at all scales, whilst recognising that gas will be a key transitional fuel. We have set the following ambitious targets for the generation of renewable energy:

- For 70 per cent of Wales’ electricity consumption to be generated from renewable energy by 2030.
- For one Gigawatt of renewable electricity capacity in Wales to be locally owned by 2030.
- For new renewable energy projects to have at least an element of local ownership by 2020.

What are the key future trends?
As a result of past and current greenhouse gas emissions, we cannot avoid the consequences of climate change. Global temperatures are increasing and, even in the best case scenario, there are likely to be significant national, as well as global, impacts beyond those already observed. The risks to Wales include:

- Risks to infrastructure (from all sources of flooding)
- Risk to public water supplies from drought and low flows
• Risks from some land management practices exacerbating flood risk
• Risks to ecosystems and agriculture businesses from changes in climatic conditions
• Risks to communities from all sources of flooding and sea-level rise
• Risks to infrastructure, business and buildings from high river flows, erosion and extreme weather
• Risks and opportunities from changes to agriculture and forestry productivity
• Risks to people’s health and well-being and associated service delivery from high temperatures, flooding and extreme weather.

The overall level of emissions in Wales is reducing and there have been significant reductions in the business, residential, waste and public sectors. However, there have only been minor reductions in the energy and transport sectors, which are two of the larger contributors, and significant further action will be required to achieve the challenging targets.

**Figure B1: Greenhouse Gas Emissions in Wales, by Sector**


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Wales has great potential to generate energy, particularly from low carbon and renewable sources and is a net exporter of electricity. In 2016, Wales met an estimated 43 per cent of its electricity consumption by renewable generation. There has been rapid growth in renewable energy generation, having doubled in the last five years. However, electricity consumption accounts for only approximately 17% of total energy consumption, with the rest being used for heat and transport. Energy consumption in Wales has also reduced by 14% since 2005\textsuperscript{8}. Encouraging progress is being made on reducing energy use and increasing renewable energy generation. However, there is need for greater generation from renewable and low carbon technologies and decarbonisation of heating and transportation if we are to meet our targets.

**Figure B2 – Electricity Generation Trends in Wales (TWh)**

![Electricity Generation Trends in Wales](source)

Following the UK Government’s cuts to the renewable energy subsidy regime, developers are faced with a challenging investment environment. However, there is the potential for technological advances to improve the efficiency, effectiveness and availability of renewable and low carbon energy. Mass deployment of current technologies, such as solar power and energy storage, may also help to drive an increase in the penetration of renewable and low carbon energy.

\textsuperscript{8} Energy Generation in Wales 2016\textsuperscript{2}

\textsuperscript{2} Energy Generation in Wales 2016
There is expected to be a growth in the uptake of electric and low-carbon vehicles, which presents a huge opportunity to decarbonise the transport sector. However, it also presents a challenge to generate more electricity from renewable and low-carbon energy, to ensure the decarbonisation benefits are fully realised.

**What are the key spatial issues for the NDF?**
A key, all-Wales issue for the NDF should be the imperative to reduce greenhouse gas emissions and limit, as far as possible, the consequences of climate change, and actively manage the transition to a low carbon economy.

Wales has significant potential in virtually every renewable and low carbon energy source, which the NDF can facilitate and seek to enable the realisation of their wider benefits. Identified below are the key spatial issues in relation to energy for the NDF:

- **In north Wales,** there is the Anglesey Energy Island and Wylfa Newydd. These projects have significant economic and social opportunities arising from them. The area also has potential for solar and wind energy, as well as the emerging Small Modular Reactor (SMR) markets. There is a need for new grid infrastructure to connect the electricity to the grid.

- **In mid Wales,** there is potential for large scale renewable energy projects, as identified in the Strategic Search Areas for wind energy. These developments can provide community benefits, whilst requiring the protection of our valuable natural, cultural and heritage assets. There is a need for new infrastructure to connect the electricity to the grid.

- **In south west Wales,** the LNG imports and distribution have a strategic importance in the supply of gas, which is a key transitional fuel, and offer associated economic benefits for Pembrokeshire and the wider area.

- **In south Wales,** as the primary urban area of Wales, including major centres of population and industry (encompassing Swansea, Cardiff, Newport and the Valleys), there is potential for decarbonisation, energy efficiency, heat networks and buildings/site integrated energy generation.

- **There is significant renewable energy potential off our coastline,** including tidal, wave and wind energy. The Welsh National Marine Plan seeks to maximise the opportunity to sustainably develop marine renewable energy resources, whilst fully considering other’s interests and ecosystem resilience. The planning system has an important role to play in facilitating the on-shore requirements of these generators, as well as enabling associated leisure and tourism benefits.
It is a Welsh Government objective to establish a bespoke infrastructure consent process which is responsive to business and community needs, to support sustainable economic growth, and to decarbonise our energy supply. Decisions arising from this streamlined process are intended to be in accordance with the NDF onshore. Policies in the NDF can provide certainty to renewable energy promoters in Wales and encourage growth in the renewable energy sector.
Energy

- Wylfa Newydd (proposed)
- Milford Haven LNG
- Swansea Bay Tidal Lagoon (proposed)

Legend:
- Energy Development
- TAN 8 Strategic Search Area
- Gas Pipeline
- HEV Powerline

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Ordnance Survey 00023874
Cartography: Welsh Government • M113/17.18
Data source: National Grid, 2016
March 2018
How can the NDF support the Welsh Government's strategic aims?
The NDF can support the Welsh Government's commitment to building resilience to the impacts of climate change. The NDF can also support the Welsh Government's greenhouse gas emission reduction targets, by making decarbonisation a central principle and integrating it throughout the plan. The NDF should support the decarbonisation of the energy, housing, transport, business, agriculture and land use sectors.

The NDF can play a key role in actively managing the transition to a low carbon economy and meeting our renewable energy targets. The NDF can support a reduction in energy use and energy generated from fossil fuels. The NDF should support the widespread deployment of renewable and low carbon energy, for a diverse range of technologies. The NDF can identify and provide the policy context for energy projects which are Developments of National Significance. The NDF should identify spatially and support sites or areas with potential for nationally significant renewable and low carbon energy development. As well as large scale development, the NDF should also provide a framework for local generation, such as District Heating Networks, emerging technologies and developments benefiting the local community.

Draft NDF Objective – Climate change, decarbonisation and energy

To enable the transition to a low-carbon economy.
To enable management of and adaptation to the consequences of climate change.
To support decarbonisation in Wales and help deliver the Welsh Government's greenhouse gas emissions and renewable energy targets.
C Digital connectivity
C. Digital connectivity - Wales Today & Drivers of Change

Overview
Digital connectivity is a key driver of economic growth and is vital for both productivity and competitiveness. It is also essential to the operation and provision of public services, and to the social activities of individuals and well being of society.

The planning system plays an important role in helping create the right environment for the deployment of infrastructure for mobile telecommunications and broadband. National planning policy encourages Local Planning Authorities to respond positively to development proposals and there are extensive permitted development rights to support operators with the roll-out of infrastructure.

The roll-out of mobile and broadband infrastructure across Wales is progressing and there are various initiatives to help deliver this, but the dispersed population and topography mean there are areas where coverage is poor or not available, which can affect the viability of new infrastructure requirements. The Welsh Government’s objective is to make modern and effective mobile and broadband services available to everyone.

What are the Welsh Government’s strategic aims?

Prosperity for All
- Increasing productivity and competitiveness are central to Wales’s economic future; digital connectivity will help achieve this
- Digital infrastructure is critical in providing the services needed to stay healthy, to learn, to access employment, and to build prosperity
- Digital skills are a vital part of the economy
- It is important to deliver fast reliable broadband to parts of Wales not currently served by the market
- Digital connectivity is important to address changing working patterns, to reduce congestion, and to support aspirations for lower carbon living.

Delivering a Digital Wales
Delivering a Digital Wales\(^9\) remains the overarching strategy for the development of digital connectivity in Wales. The main aims are:

- Benefits of digital technologies should be enjoyed by all
- Children and adults should be able to develop ICT skills
- Public services should be more joined-up, more convenient and more efficient
- A thriving economy driven by technology, and research and development
- Flourishing Welsh cultural creativity
- Enhanced mobile and wireless coverage across Wales.
Mobile Action Plan

‘Delivering a Digital Wales’ is complemented by the Mobile Action Plan\(^{10}\). The plan sets out how the Welsh Government will work with the mobile phone industry and the regulator to provide connectivity to meet the needs of Wales. The actions include amending permitted development rights to assist needs of mobile operators and simplify the planning process, and refreshing planning policy to support deployment of telecoms equipment.

Welsh Government Strategic Initiatives

- **Superfast Cymru project\(^{11}\)**. BT commissioned to provide superfast broadband in areas requiring intervention. Over 647,000 homes and businesses have received connections since 2013. The project ended on 31 December 2017, but the Welsh Government will seek to extend the investment project to 2020 with a new contract established spring 2018.
- **Access Broadband Cymru\(^{12}\)** funds the installation costs of new high speed broadband connections for homes and businesses in Wales. The scheme uses satellite, wireless and 4G tech and will operate until March 2018.
- **Ultrafast Connectivity Voucher Scheme\(^{13}\)** provides up to £10,000 to help fund the installation of ultrafast connections for businesses in Wales. The scheme will operate until March 2018.
- **The Superfast Business Exploitation scheme** is to train and support businesses to make the most of superfast broadband.

Planning Policy Wales

- Recognising the impact of digital communication on the economy, Planning Authorities are encouraged to respond positively to telecommunications developments, whilst taking account of the need to protect sensitive urban and rural areas.
- Much telecommunications infrastructure is covered by permitted development rights. However, authorities and operators are encouraged to work together to find optimum solutions to minimize number of masts and share masts where possible.
- Development plans should set out policies and proposals for the location of major telecommunications development where known, and include criteria based policies to guide other development.

What are the key future trends?

- Provision of broadband infrastructure is developing rapidly after a slower start relative to the rest of the UK. Wales’s demographics and topography have been barriers to connectivity.
• Expansion of the mobile internet infrastructure is set to continue, and will help reach households that cannot currently access higher speed internet. 5G mobile technology will create a step change in connectivity allowing high speed/high bandwidth connectivity for mobile phone users across Wales.

• Infrastructure across Wales is exposed to a range of climate hazards, which are projected to increase in frequency and severity. Digital infrastructure, particularly mobile telecoms services could be impacted by this.

• Use of the internet continues to grow together with the use of social media for communication. People in Wales are more likely than the rest of the UK to use social networks. Despite this digital skills lag behind the rest of the UK.

• Advances in household, transport and energy technologies could have a transformative effect on population behaviours, even over fairly short timescales. The ‘Internet of Things’ (where household appliances and devices are connected to the internet) is becoming a reality.
What are the key spatial issues for the NDF?

- Telecommunications policy is not devolved to Wales.
- Wales needs modern sustainable infrastructure to underpin economic growth and well being of people. The deployment and location of digital infrastructure across Wales is key to supporting delivery of economic growth.
- Parts of Wales, particularly in rural areas where population is dispersed and less accessible, are characterised by poor or no mobile service.
- There are a range of roll-outs underway to improve broadband, mobile and enterprise level connectivity in Wales. Some of these came to an end in 2017 with successor projects planned.
- Data centres need to be situated near to very high bandwidth digital connectivity and to a significant power supply. They need resilient connectivity which requires more than one connection.
- The growth in mobile infrastructure along transport corridors will be important to allow demand for train and in car connectivity, but also to support new innovation such as autonomous cars.
- A 5G roll-out is likely to be significant for planning. Densification of mobile infrastructure could lead to many more antennae in urban areas than currently exist, although these may be physically smaller and more easily accommodated in the urban environment, for example on buildings.
- Parts of Wales, including Cardiff and Swansea, need to be promoted as digital centres of excellence to capitalise on their new or proposed digital infrastructures highlighted in the City Deals.
- Planning has a key role to play by helping provide the right conditions for digital infrastructure to come forward. Permitted development rights regime and planning policy are key to this, and both are being reviewed at present.

How can the NDF support the Welsh Government’s strategic aims?
The NDF needs to reflect the Welsh Government ambition of ensuring fast reliable broadband and mobile coverage to every property in Wales. It also needs to recognise the essential nature of digital infrastructure to the economy, public services, and social well being of society in general. The NDF needs to support the deployment of infrastructure to support mobile and broadband connectivity, and reflect the rapidly changing nature of new technology in particular the challenge of 5G in urban and rural areas.

The NDF will identify and explain the spatial distribution of existing and proposed strategic infrastructure, and recognise the different requirements across Wales and describe the strategies which have been developed to help deliver this on a national scale. Furthermore, the NDF should seek to encourage local solutions to ‘not spots’.
Draft NDF Objective – Broadband and digital infrastructure

To support the delivery of digital infrastructure and help achieve the Welsh Government’s objective of 100% coverage of broadband and telecoms services across Wales.
D Economy

Ffyniant Economaidd ac Adfywio
Economic Prosperity and Regeneration
D. Economy (inc tourism, rural economy & agriculture) - Wales
Today & Drivers of Change

Overview
A thriving economy is key to the future prosperity and well being of Wales.

The Well-being of Future Generations (Wales) Act 2015 identifies a set of goals for a prosperous society. Wales should be an innovative, productive and low carbon society which recognises the limits of the global environment and therefore uses resources efficiently and proportionately (including acting on climate change); and which develops a skilled and well-educated population in an economy which generates wealth and provides employment opportunities, allowing people to take advantage of the wealth generated through securing decent work.

Planning has an important role to play in creating the right conditions for sustainable economic growth across Wales. In particular, the planning system should ensure that economic development is not constrained by a shortage of land, is steered to the most sustainable locations, and is supported by modern and effective infrastructure.

What are the Welsh Government’s strategic aims?

Taking Wales Forward 2016-21
Taking Wales Forward identifies economic related goals which seek to:

- Drive forward investment, innovation and the creation of new jobs
- promote tech hubs and links to higher education
- promote green growth
- support development of creative and tourism industries
- deliver the City deals for Cardiff, Swansea and North Wales
- support development and improvement of infrastructure including renewable energy, telecommunications and transport

Prosperity for All: the National Strategy
Prosperity for All explains how the key commitments of Taking Wales Forward will be delivered. It identifies planning as an important lever in implementing the priority areas needed to achieve prosperity and wellbeing. Aims with links to the economy fall under the sections Prosperous and Secure, and United and Connected, and include:

- A Welsh economy delivering individual and national prosperity, spreading opportunity and tackling inequality.
- Employment which provides better health and life prospects.
- Growth which supports quality services and community prosperity.
• Growth in productivity and competitiveness.
• The development of high quality skills, cities as engines of growth, and the right digital and transport infrastructure.
• Support businesses to operate sustainably, create nurturing environments for future business, building on Wales’s human, creative and natural resources, and improving economic and environmental resilience.
• The introduction of a regional model of economic development.
• Support for rural diversification.

**Economic Action Plan**¹⁵

The Economic Action Plan supports the delivery of Prosperity for All.

Through collaborative efforts between public and private sectors its aims are to:
- Support people and businesses to drive prosperity.
- Tackle regional inequality.
- Drive sustainable growth and counter climate change.
- Encourage learning and development of the right skills.
- Deliver modern and connected infrastructure.

The Action Plan identifies a number of specific challenges; responding to Brexit and globalisation which will affect wealth and wellbeing, addressing low productivity and innovation which impacts on wages, tackling skills shortages and mismatches because individuals have the wrong qualifications, understanding the benefits of automation and sustainability, and addressing the consequences of climate change and sustainability whilst remaining competitive.

**Taskforce for the South Wales Valleys and Our Valleys Our Future**

The Taskforce for the South Wales Valleys was set up in 2016 to develop a plan aimed at creating good-quality jobs which are closer to people’s homes, improve people’s skills and bring prosperity to all. The Plan ‘Our Valleys, Our Future’¹⁶ was published in 2017 to help achieve these aims, and is based around three priority areas.

**Priority 1 - Good quality jobs and the skills**

The employment gap between South Wales Valleys and the rest of Wales will be closed by creating new, secure and sustainable jobs, supported by the right skills. Investment will be targeted, and strategic hubs created to reflect opportunities and demand in particular areas. Support will be directed to the foundational and digital economy, and business start-ups. Job creation opportunities from infrastructure investment in South Wales Metro, the M4 and A465 duelling will be exploited. Hub locations include:
• Pontypidd/Treforest, to focus on residential, office, industrial and retail development
• Caerphilly/Ystrad Mynach, Cwmbran and Merthyr Tydfil to focus on residential, office and industrial development.
• Neath, to focus on industrial, residential, digital and energy development.
• Ebbw Vale, to focus on a new automotive technology business park, backed by £100m of Welsh Government investment over 10 years creating up to 1500 jobs.
• Support new and existing employers in Blaenau Gwent with skills development.

Priority 2 – Better public services

Public services will work with the third sector and local communities to respond to people’s needs. Healthier lifestyles, better physical and mental wellbeing and reduction in health inequalities will be supported. Affordable and integrated public transport will help people get to where they need to. Improve education outcomes for all children and close the attainment gap.

Priority 3 – My local community

A Valleys Landscape Park will be set up to help local communities maximise the use of the natural resources and heritage, and investment will take place in green infrastructure. Town centres will be promoted as vibrant places, with a mixture of housing, retail, business and green spaces, whilst consideration will be given to the use of free car parking. New tourism opportunities will be promoted with projects focused on the landscape, heritage and people. Community renewable energy schemes will be supported and fuel poverty addressed.

Other relevant Strategies

• City Regions\textsuperscript{17}
• Delivering a Digital Wales\textsuperscript{18} and Mobile Action Plan\textsuperscript{19}
• Enterprise Zones\textsuperscript{20}
• Science for Wales\textsuperscript{21} and Innovation Wales\textsuperscript{22}

What are the key future trends?

The Future Trends Report 2017\textsuperscript{23} makes the following comments.

• Since 2008 productivity slowdown has reduced growth rates; the UK and Wales have been particularly affected.
• Across developed countries economic growth has shifted towards a service based economy; manufacturing has fallen; the reduction in the UK has been
greater than many other countries. In Wales heavy and extractive industries has been particularly affected.

Figure D1 – Manufacturing as a share of GDP in selected countries

Prior to the Great Recession, manufacturing's share of GDP was on a long downward trend in UK and in Wales, as in other developed countries; the trend in employment was even more marked (due mainly to increased automation):

- In 2017 exports to the EU accounted for 67.4 per cent of Welsh exports. Wales exports for the year ending June 2017 was £15.9 billion, up £2,391 million, of which increases to EU countries was £1,272 (15.4 per cent). Brexit may have future implications on these figures.
- Wales has great potential to generate energy from renewable sources; in 2015 20% of Wales’s energy came from renewables.
- Rail use is increasing, but private vehicles will remain the primary mode of transport in Wales over the short to medium term.
- Development of autonomous and electric/hybrid vehicles over the next 15 years could have major implications for the transport system and servicing infrastructure.
- Broadband and telecommunications infrastructure is growing rapidly, but topography and dispersed population are barriers to full coverage in some areas.
- Within Wales, people’s chances of employment are driven more by their skills than where they live.
What are the key spatial issues for the NDF?
The main issues arising from key evidence sources are as follows.

Economy

- Wales’s GVA performance, economic productivity per head, employment rates and earnings are below the UK average.
- Brexit is likely to have important consequences for the Welsh economy particularly the rural sector.
- There is higher than average deprivation in the South Wales Valleys and in some North Wales Coastal towns (compared to Wales and UK).

Figure D2 – Economic performance and deprivation rates

Over the medium term, the economy in Wales broadly tracks the wider UK economy (with fluctuations); Welsh Government policy levers operate mainly over the longer term:

Taking economic indicators "in the round", Wales has kept pace with UK on most indicators since devolution (after marked deterioration in the 1990s), and has outperformed on the employment rate

- Wales's climate change obligations are both a challenge and opportunity to industry and business.
- Competitiveness, innovation and technological advancement are essential to a modern prosperous economy in Wales.
- Constraints on public expenditure place increasing demands on public services and on improvements to some types of infrastructure.
- Restricted access to finance may limit growth of some SMEs in Wales. The Wales Development Bank may help address this issue.
Figure D3 – Deprivation rates
Many parts of Wales have high levels of economic inactivity, with low or no qualifications, and limited employment opportunity. Education and skills need to be increased at all levels and are vital to support a growing and prosperous economy.

**Sector Specialisation and Innovation**

- R&D stimulates innovation which is important for economic growth; Wales needs to embrace this and move to a more knowledge based economy.
- Wales needs to capitalise on and make interventions in key science, innovation and technology based sectors to incentivise investment. For example, life sciences, energy and the environment, advanced engineering and materials, IT, aerospace and creative industries. Different parts of Wales are characterised by particular sector specialisations and these distinctions should continue to be promoted and developed, for example, through Enterprise Zones and other initiatives.

**Infrastructure**

- Modern infrastructure is a key economic driver; Wales needs modern sustainable infrastructure to underpin economic growth and well being of people. This includes transport, ICT, energy (including the grid) and other utilities.
- Broadband and telecommunications infrastructure is critical to deliver the benefits of digital technology and to support a modern prosperous economy, public service delivery, and for social interaction and inclusion. Modern infrastructure is needed in urban and rural areas so economic growth is not restricted. Gaps in digital communications provision need to be addressed.
- Wales has great potential to generate renewable energy, to maximise economic opportunity, and in so doing help meet climate change and sustainability obligations.

**Rural**

- Agricultural sector must be able to respond to the consequences of Brexit.
- For rural areas to retain people, especially young people, and to grow and prosper in a sustainable fashion, policies need to support economic development and job creation, protect the environment, and provide modern infrastructure and services.
- Whilst agriculture is an important economic activity in rural areas, tourism and other forms of diversification are also key economic drivers and need to be supported particularly given the uncertainty of Brexit.
- Local Growth Zones (Powys\(^24\) and Teifi Valley\(^25\)) include a suite of improvements to tackle rural issues over a wide area.
Planning

- Wales needs to ensure that the economy is not constrained by a lack of land for employment purposes, and that sufficient land is allocated in the most sustainable locations. Sites need to be well integrated with infrastructure, located within or near urban and rural centres, and where appropriate close to where people live. It will often be advantageous to cluster technology and innovative uses and/or locate close to academic institutions.
- Planning Authorities should develop strategies and policies based on national policy and local requirements to address the economic needs of their areas.

Regional Issues

- Successful delivery of City Regions and Growth across Wales is important to the economic growth of Wales. All are characterised by the need for improved infrastructure and connectivity (in particular region wide transport systems or metro’s), economic specialisation and innovation, employment creation and development of skills.
- Parts of Wales are closely associated with key growth sectors. North Wales is particularly associated with energy, advanced engineering and aeronautics while South Wales is associated with finance and professional services, creative industries, advanced engineering and more recently proposed class leading high technology investment (for example the semi-conductors cluster at Newport), generating links to academic institutions, and supporting clustering of enterprises. Enterprise zones across Wales are identified as locations for key industry growth sectors.
- Proposed tidal energy schemes at Swansea, Cardiff, Newport and Colwyn Bay would make significant contributions to Wales’s or the UK’s future renewable energy needs, with benefits for local supply chains and employment needs.
- The location of economic development and jobs needs to reflect the primary transport infrastructure, the main population centres and the strategic employment sites allocated in development plans. The M4, Heads of the Valleys and A55 corridors, proposed metro systems, rail electrification, and hubs such as Cardiff Airport are key to the pattern of growth and regeneration. Links to England and cross border issues are also important and need to be addressed.

How can the NDF support the Welsh Government’s strategic aims?

The Welsh Government’s main strategic aims for the economy are, to raise productivity, spread opportunity and tackle inequality, raise skills and qualifications and create an environment to help develop sustainable, innovative and competitive businesses, and in this way to deliver individual, community and national prosperity. Crucial to this delivery is the development of modern, effective, and sustainable economic infrastructure such as transport, energy and telecoms.
The NDF will identify and explain the spatial distribution of existing and proposed strategic economic initiatives and developments, infrastructure and key facilities and could establish sustainable locations for economic growth across Wales.

The spatial analysis provided by the NDF will recognise the different economic requirements across Wales and provide guidance to help deliver this.

**Draft NDF Objective – Economic prosperity and regeneration**

To provide strategic direction for the delivery of infrastructure that supports economic prosperity for all and green growth.

To support the national and foundation sectors; and growth and innovation in a low carbon economy.

To support strong, regional economies.

To tackle inequality and provide strategic direction for regeneration initiatives.

**Draft NDF Objective – Rural Wales**

To enable the delivery of jobs, services and infrastructure to strengthen rural communities and retain young people.

To support resilience and diversification in the rural economy.

**Draft NDF Objective – City Regions & Growth Deals**

To support the effective delivery of city region deals and growth deals across Wales.
E Housing
E. Housing - Wales Today & Drivers of Change

Overview
Good quality homes are the bedrock of communities and form the basis for individuals and families to flourish in all aspects of their lives. Homes also need to be well-located, affordable and energy-efficient. The role of the planning system is to facilitate the provision of market and affordable housing to meet the needs of local communities, in particular by identifying a supply of land to support the delivery of housing.

What are the Welsh Government’s strategic aims?
‘Taking Wales Forward’ includes a commitment to work in partnership to deliver an additional 20,000 affordable homes by 2021. In achieving this target the intention is to support a range of housing tenures through a number of existing and emerging schemes.

In particular, the Welsh Government will:

- Continue to support Help to Buy Wales, with the aim being for 6,000 new homes to be provided as part of the 20,000 affordable homes target;
- Continue to support the provision of homes at affordable rents in every part of Wales;
- Introduce a Rent to Own scheme;
- Expand the Homebuy scheme to target areas where home ownership is particularly unaffordable;
- Support new and innovative housing designs to meet challenges such as pressing housing need, fuel poverty, climate change and demographic change;
- Work with local authorities to begin council house building at pace and scale;
- Unlock the potential of SMEs to build homes by promoting the Wales Property Development Fund;
- Incentivise housing providers to build homes which respond to the challenges of an ageing population; and
- Improve the energy efficiency of housing to contribute to sustainable growth, combatting climate change and improving health.

What are the key future trends?
A number of trends have been identified which could impact on housing.

The number of households is projected to grow faster than the overall population (due to smaller household sizes), with the number of single person households predicted to rise by over 30% in the next 20 years. Recent trends in house-building indicate that the number of properties available may not keep up with this rise in households.
Figure E1 – Projected population and household changes, 2014-2036

Demographic change will also influence housing demand, particularly when combined with changes in household composition. In Wales the number of households is projected (2014-based) to grow faster than the population between 2014 and 2039.

Wales’ population is projected to increase by around 5% over the next twenty years. Over the same period the percentage of people over 65 is set to increase from around 20% to around 25% of the population of Wales.

Figure E2 – Population change, by age group

The growth in population is primarily driven by increases in those aged 65 or above.
Resulting from climate change there are flooding and coastal change risks to communities, businesses and infrastructure which could reduce the availability of land for development.

The identified trends relating to housing could potentially be disrupted by the exit of the UK from the European Union. It is probable that this process will have a significant and wide-ranging impact on Wales, potentially on economic growth and migration which could affect the need for housing.

**What are the key spatial issues for the NDF?**

In providing a strategic steer for the provision of new housing the NDF needs to identify locations for growth linked to areas for economic growth (e.g. City Deal areas) and to proposed connectivity infrastructure (e.g. the South Wales Metro). There may also be a need to consider the differing requirements for, and impacts of, housing development in urban and rural areas.

Changing demographics could also have spatial implications due to increased demand for accessible services supported by connective infrastructure. Likewise, the projected increase in net migration (mainly from within the UK) is expected to have the greatest impact in urban areas.

**How can the NDF support the Welsh Government’s strategic aims?**

The Welsh Government’s overall strategic aim is to increase the provision of homes to meet the needs of communities across Wales and to assist this by diversifying the means of delivery. By identifying areas of economic growth, infrastructure provision and key facilities, the NDF will establish sustainable locations for significant housing provision.

The NDF will provide a strategic direction for the location of housing, helping to increase certainty for housing providers and providing opportunities for a broader range of house-builders (including SMEs and custom and self-build options) to contribute to the delivery of new homes.

The spatial analysis provided by the NDF will recognise the differing requirements across Wales and this will need to be reflected in both the type and location of housing.

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**Draft NDF Objective – Housing**

To provide strategic direction for affordable and market housing linked to connectivity infrastructure, key facilities and areas of growth.
F Natural Resources – Sustainable Management of Natural Resources
F. Natural Resources – Sustainable Management of Natural Resources (SMNR) - Wales Today & Drivers of Change

Overview.
Natural resources (our air, land, water, wildlife, plants and soil) underpin our well-being (our prosperity, health, culture and identity) and we rely on high quality natural resources to provide our food, clean water and clean air.

Decisions made within the planning system can have a knock-on effect on the environment as a whole, now and for many generations to come; how the planning system makes those decisions is critical to enabling resilience to be built within our natural resources. In this context the planning system can facilitate the identification of opportunities for the management and protection of our natural resources.

The Environment (Wales) Act 2016 focuses on building resilience into our ecosystems and recognising the benefits they provide if we manage them in a smarter way; using the principles of the sustainable management of natural resources is how we work to achieve this.

What are the Welsh Government’s strategic aims?

Welsh Government’s Natural Resource Policy
The Natural Resources Policy sets out the national priorities for the sustainable management of Wales’ natural resources, to maximise their contribution to achieving the goals within the Well-being of Future Generations Act and delivering international and national obligations. These are:

- Delivering nature-based solutions,
- Increasing renewable energy and resource efficiency,
- Taking a place-based approach

The Policy states that together these priorities tackle the challenges Wales’ natural resources face and realise the many opportunities they provide for Wales’ well-being and prosperity.

Prosperity for All: the National Strategy
The key role of Wales’ natural resources in delivering the National Strategy is outlined under three, of the four, key themes below:

Prosperous and secure: We will build prosperity in a way that supports and sustains Wales’ stunning natural environment, ensures that current and future generations will continue to benefit, and makes a tangible contribution to the fight against climate
change. **Our aim is to realise the economic opportunities of Wales’ natural resources, whilst building their resilience to support future generations.**

**Healthy and active:** Government has an important role to play in improving local environments and making it easier for people to take more exercise. We will support people to adopt healthy lifestyles from an early age. Drawing on Wales’ significant natural resources, we will support and encourage a substantial increase in people’s physical activity. We acknowledge the importance of the wider environment (including air quality and access to green spaces) for good health, well-being, and greater physical activity. *The contribution made by the environment to good health cannot be overstated.*

**United and connected:** Our aim is to build a nation where people take pride in their communities, where people can play an active role in shaping their local environment. We will work with communities to help maintain local facilities that bring people together, including green spaces.

**What are the key future trends?**

A number of key future trends have been identified that could impact on natural resources.

Wales’ biodiversity and habitats will be under ever greater pressure, mirroring the global situation. Whilst there have been improvements in recent years, particularly in water quality and some elements of air quality, many of our natural resources and the resilience of Wales’ ecosystems are continuing to decline (SoNaRR 2016)\(^{26}\). It is likely that ecosystems across Wales have insufficient resilience to the challenges they face, and this could impact on their capacity to provide services and benefits into the future.

Potential trends for animals, plants and other organisms vary enormously across species, with some species increasing and some decreasing. However, long-term combined trends for species are downwards.

Soil carbon has been stable in improved land for 30 years. Recent increases in soil carbon in woodland until 2007 have now stabilised with no further increase detected. However, a significant decline in soil carbon in habitat land over the last 10 years has been detected and further work is needed to identify possible reasons for this. Soil acidity has continued to decrease in habitat land and woodland reflecting the decline in acidic deposition over the last 3 decades. However, soil acidity is increasing again in improved land perhaps reflecting low levels of lime applications needed to maintain soil conditions under intensive management. Soil nitrogen levels are stable in improved land and woodland whilst a recent observed decline in soil nitrogen in habitat land is likely to be beneficial for native vegetation.

The trends around climate change point to increasing temperatures and subsequently increasing pressures on the habitats, biodiversity and ecosystems on which we all depend, as well as increasing flood risk.
Environment

- National Nature Reserve (NNR)
- Site of Special Scientific Interest (SSSI)
- Special Area of Conservation (SAC) (includes SACs)
- Special Protection Area (SPA) (includes SPAs)
What are the key spatial issues for the NDF?

In providing a clear strategic steer for lower tier plans for the building of ecological network resilience and the implementation of the principles of SMNR the NDF should:

- provide opportunities for the identification of broad buffers/corridors/stepping stones for resilience purposes and the delivery of multiple benefits,
- map key designated sites which provide a high level view of extent of ecological networks and an indicator of connectivity between them,
- consider the role and function of edge of settlement sites in the drive to build resilience,
- promote actions that deliver habitat creation on a landscape-scale,
- provide opportunities for the restoration or creation of habitats, and
- consider and accommodate the differing functions of rural and urban habitats in building resilience.

The planning system should identify opportunities to improve the resilience of ecological networks, and it can have particular influence in terms of addressing extent and connectivity of networks and seek diversity improvements.

How can the NDF support the Welsh Government’s strategic aims?

The Welsh Government’s overall strategic aim is to protect existing biodiversity assets and to seek opportunities for the creation and restoration of habitats in order to build resilient ecological networks, this should be an integral part of NDF planning approaches.

The NDF can

1. Protect designated sites and existing biodiversity assets from impacts which directly compromise the resilience of ecological networks
2. Improve the connectivity between habitats (of all types) and encouraging habitat creation and restoration, through mechanisms such as buffers, corridors and stepping stones.
3. Protect designated sites and existing biodiversity assets by reducing the impacts of development in wider social, economic, cultural and ecological terms.

Draft NDF Objective – see page 52
F Natural Resources – The Circular Economy
F. Natural Resources – The Circular Economy - Wales Today & Drivers of Change

Overview
A Circular Economy (CE) approach seeks to limit the use of finite resources while making better use of resources currently in the system.

Why is this an important national issue?
There is a need to ensure resource efficient choices as part of proposing and making of decisions in relation to development, and these should take into account wider resilience – ecosystems, social (health and well-being reasons) and economic (jobs and prosperity) resilience.

According to Construction Excellence Wales, adopting CE practices in the construction and built environment sectors in Wales could lead to a benefit in the region of £1 billion annually from 2035. The £1 billion annually is an increase of 12.5% in the turnover of the Welsh built environment sector and generating 7,300 jobs (gross).

Planning and building regulations could actively encourage development to maximise resource use, supporting the use of recycled/secondary materials and by-products and limit the use of finite resources and make better use of resources currently in the system.

What is the role of the planning system?
Planning can make a contribution to promoting resource efficiency and improving circularity. However, there are also wider transformations required in terms of legislative barriers, mind-set and behavioural changes within the practices of various sectors, supply chain and market issues and producer responsibility. All of which would need to be addressed to move towards true circularity.

Where Wales is
Wales performs well in terms of recycling, reaching the 2019/20 target of 64% of waste being recycled 4 years early. There are strict targets in Towards Zero Waste to, by 2025, minimise residual waste, recycle/compost 70% of waste across all sectors and to cap energy from waste at 30%.

However, the circle is not being closed. There are issues with infrastructure as well as manufacturing and re-manufacturing and the supply chain architecture needs to be developed further. For instance, there does not currently exist the provision for the temporary storing of soils taken from re-profiling works on housing sites which could then be used for future projects in place of using virgin materials.
What is driving us there?

The waste targets in Towards Zero Waste, the COP21 Climate Change Agreement, the Cabinet Secretary’s recent letter to Chief Planning Officers (October 2017) regarding energy targets and the need to de-carbonise are all driving us in the direction of a need to adopt the principles of the circular economy.

Wales has the 3rd highest rate of recycling in the world and there is a desire to maintain and improve upon this with a recognition that climate change is set to continue.

What are the Welsh Government’s strategic aims?

Prosperity for All: the national strategy

Prosperity for All states how we have a strong record in driving up recycling rates, putting Wales first in the UK, second in Europe and third in the world. It further notes that, climate change is set to continue, and this means we have to reduce carbon emissions further, actively managing the risks that climate change presents to health, well-being and to communities.

Natural Resources Policy

The Natural Resources Policy advocates a move towards a more circular economy. It describes how moving towards a more resource efficient economy has a crucial role to play in green growth Wales. The NDF can facilitate this move.

What are the key future trends?

The Future Trends Report states that Wales performs well in terms of recycling, achieving a rate of 60% of municipal waste being recycled in 2015/16. The report does not cover minerals and the circular economy and very little in the way of waste. It identifies that “there has been good progress in waste reduction in Wales, but there is more to do.” It also provides some information on waste management trends between 2000/1 and 2013.
What are the key spatial issues for the NDF?

Ensuring supply of materials and products for society’s needs

The supply of materials for the construction sector is key for planning, both in terms of directing extraction and production operations and waste infrastructure (including reuse, processing/reprocessing and recycling facilities) to the right place, but also in terms of recognising the underpinning nature of the supply of materials to the development industry.

Large projects need to factor in their requirements for aggregates and the NDF should provide a direction of travel on how to deal with this issue. It will, however, need to look at how to gain a balance between oversupply (where supply may be taken up by demand not directly related to those large projects) and impacts.

There is a need to safeguard wharves and other infrastructure necessary for the transportation of heavy, low value products, because once lost they are unlikely to be replaced and the consequence will be increased road transportation.
Areas where demands and pressure exist are the areas where Construction & Demolition (C&D) arisings are likely to occur so can we support infrastructure to allow this to be recycled or reused rather than it being sent to landfill. Urban areas can be viewed as a proxy for demand but they are also where supply arises in relation to recycled C&D, although the supply pattern is reasonable regarding proximity (transport from supply to demand) and on the basis of environment capacity research.

Use of secondary and recycled materials/aggregates

The benefits of using secondary and recycled metals are in extending the lifetime of primary products, to contribute to security of supply and to gain considerable savings in energy consumption and greenhouse gas (GHG) production. There is evidence to suggest the percentage contribution available from secondary and recycled sources, having risen from around 10% of the total aggregates market in the 1990s to around 28% in 2010 (as a direct result of financial incentives and promotional work to increase acceptability), is now likely to have peaked. There is a need to facilitate the infrastructure necessary to enable these materials to enter supply chains. Slate, for example, is the most significant material which is secondary or recycled in north Wales – used as a by-product of roofing slate production and a secondary material from waste tips.

Arisings of Construction & Demolition waste is in line with construction activity but it is unclear whether there is sufficient processing/reprocessing capacity. Inert waste is still being landfilled according to latest monitoring reports which anecdotally suggests a further opportunity exists to make effective use of this material.

Design and choices of materials and products for the built environment

We can safeguard long term supplies of materials by making resource efficient choices about how we use resources now. Circular economy principles suggest:

- raising awareness about choices - packaging, source separation and collection of waste, use of renewable materials and consideration of materials with low embodied energy.
- influencing choices made at design stages - for site selection and treatment and for buildings/infrastructure.
- promoting the message that by applying circular economy principles to the built environment it can bring benefits in terms of changes in revenue costs over time and to retain a significant residual value in the building at the end of its life. Whereas, there are diminishing returns are associated with worst choices.
**What can the NDF do?**
One option could be for the NDF to set a target to increase the recycled content of schemes. The NDF could set a policy for the spatial distribution of reprocessing facilities, including, for example, an requirement that they are concentrated in urban areas, in order to be collocated with the source of waste arisings.

Projects outlined in the NDF could be examplars for the circular economy.

**How can the NDF support the Welsh Government’s strategic aims?**
One of the Welsh Government’s strategic aims is to de-carbonise the environment by reducing carbon emissions further, actively managing the risks that climate change presents to health, well-being and to communities. Already in place is the aim of MTAN1 Aggregates to increase the proportion of aggregates production in Wales from secondary and recycled sources to at least 25% of total aggregates supply.

The spatial analysis of the NDF will identify areas/regions of differing demands for growth and by definition will identify materials and resources required to provide this growth. The NDF could conclude reprocessing facilities to be concentrated in urban areas as typically this will be where the arisings occur in the main.

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**Draft NDF Objective – see page 52**
F Natural Resources – Flooding
F. Natural Resources - Flooding - Wales Today & Drivers of Change

Overview
Flooding affects the safety and sustainability of communities across Wales, with around one in six properties at risk of flooding from rivers, the sea or surface water. It also has major economic consequences.

Climate change projections suggest that Wales can expect to see different rainfall patterns in the future, along with rising sea levels. These projections suggest that Wales will experience more frequent and more severe flooding in the future, along with increased rates of coastal erosion. As well as climate change, flood risk is increased as a consequence of poor land management, and building in the wrong place. The planning system is a crucial lever in ensuring development is resilient to the effects of flooding, but in the first instance where possible is directed away from areas at risk of flooding.

What are the Welsh Government’s strategic aims?
The National Strategy for Flood and Coastal Erosion Risk Management in Wales set four overarching objectives for managing flood and coastal erosion risk in Wales:

- reducing the consequences for individuals, communities, businesses and the environment from flooding and coastal erosion
- raising awareness of and engaging people on flood and coastal erosion risk
- providing an effective and sustained response to flood and coastal erosion events
- prioritising investment in the most at risk communities.

Prosperity for All: the National Strategy states:

“Climate change is set to continue, and this means we will have to reduce carbon emissions further, actively managing the risks that climate change presents to health, well-being and to communities”.

The planning system at national, regional and local levels will have a vital role in delivering the ‘active management of risks’ identified in Prosperity for All.

What are the key future trends?
Climate change is the dominant factor when considering how flood risk will change in the future. The Welsh Government issued a planning guidance note29 in 2016 outlining the allowances that should be made for climate change when undertaking flood consequence assessments. The note outlines allowances for projected peak river flows in the three river basin district areas in Wales and a projected sea level rise projection for the whole of the Welsh coast, of 1094mm by 2116.
Section 4 of the Future Trends Report, on Climate Change\textsuperscript{30}, states:

*Flooding poses the greatest long-term risk to infrastructure performance from climate change, but the growing risks from heat, water scarcity and slope instability caused by severe weather could also be significant.*

As a result of climate change, the expectation is that flood events will become more common than currently:

*By 2050, average river flows in winter may rise by 10-15%. However, in the summer and early autumn they could reduce by over 50% and as much as 80% in some places. Droughts and flood events may become more common. Climate change may also affect the rates of groundwater recharge.*

The report makes a clear link between the growing threat of flooding, and the challenge of providing new housing to future generations:

*Housing need in Wales is growing due to the number of households increasing faster than the number of available properties. In contrast, there is likely to be less suitable land available for development as flood plains and other lower lying land becomes increasingly prone to flooding.*

**What are the key spatial issues for the NDF?**

The majority of Wales’ population live near the potential sources of flooding, in cities and towns which were historically established due to their close proximity to water and the topographical constraints presented by Wales’ sloping hills and valleys. Similarly, many miles of key roads and railways lie in flood risk areas, either on exposed parts of the coast or on low valley floors. Our connectivity and ability to access jobs and services are compromised when flooding disrupts these key infrastructure assets.

Areas at risk of flooding are identifiable through flood risk mapping. The TAN 15 Development Advice Map indicates for planning purposes the areas where development should be restricted or very carefully managed, due to the risk of flooding from rivers and the sea.

In coastal areas Shoreline Management Plans outline recommended courses of action over the short, medium and long term for all parts of the coast, ranging from ‘hold the line’ to ‘managed realignment’.

A third and increasingly significant source of flood risk is surface water. Surface water flooding can occur almost anywhere, but the risk is exacerbated by development and use of non-porous surfacing. Methods such as Sustainable
Drainage can ensure development does not generate more run-off than an undeveloped site, and targeted land management policies can have similar impact for rural and upland areas.
Flooding

Risk of Flooding from Rivers and Seas

- **Zone B:** Areas known to have been flooded in the past
  

- **Zone C1:** Served by significant infrastructure, including flood defences

- **Zone C2:** Without significant flood defence infrastructure

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Ordnance Survey 00021974

Cartography: MoJ Government MA110/17/16

Data source: Natural Resources Wales 2004, 2015

March 2018
How can the NDF support the Welsh Government’s strategic aims?
The NDF provides an opportunity to establish a sustainable settlement strategy, which identifies areas in which growth will be focussed. In flood terms, there will be a need to consider the role and functions of places, and the appropriateness of long-term development. There will be a need for advances in resilient construction, accepting that some places will always be at some risk of flooding. Where possible, the strategy should recognise that a sustainable location will not be a location prone to frequent and significant flooding from any source.

The NDF is also an opportunity to further develop strategic catchment-based solutions, by ensuring upland areas are actively managed to reduce the run-off that makes its way through populated catchments. Land uses which have positive impacts on the amount and rate of run-off should be favoured over less beneficial land-uses, in order to reduce the risk to major areas of population.

Draft NDF Objective – Natural Resources, Circular Economy & Flooding

To strengthen the resilience of biodiversity assets, including habitats, species, and designated sites.

To support the sustainable management of our natural resources and facilitate nature recovery.

To protect, promote and enhance nationally important landscapes

To provide strategic direction to manage and adapt to the potential threat of flooding.

To ensure resource efficiency, minimise the unsustainable use of resources and support the development of the circular economy.

To support the reduction of pollution and improve air, noise and water quality.

To support the delivery of the objectives of the Welsh National Marine Plan.
G Transport
G. Transport - Wales Today & Drivers of Change

Overview
Transport is important in connecting people to jobs, facilities and services. The way in which we travel and move goods is also important, as this affects our health, social interactions and environmental impact. The planning system can facilitate transport infrastructure and, by influencing the location, scale, density, mix of uses and design of new development, reduce the need to travel, support sustainable travel modes and help tackle the causes of climate change and airborne pollution.

What are the Welsh Government’s strategic aims?
The current Welsh Government has committed, in Prosperity for All, to make significant investment in transport, including the following projects:

- Deliver an M4 relief road, and improvements to the A465, A55, the A40 in West Wales and other trunk roads.
- Create a South Wales Metro and advance the development of a North Wales Metro system.
- Develop a new, not-for-profit, rail franchise and deliver a more effective network of bus services once powers have been devolved.
- Ensure seamless ticketing arrangements and improved marketing as part of the new travel arrangements for Wales.
- Ensure better access to active travel for all.

The Economic Action Plan sets out the Welsh Government’s aim for infrastructure to support growth and investment. Roads, railways, ports and airports are key infrastructure in enabling our economy to function.

The Welsh Government is also committed to helping everyone in Wales live longer, healthier lives. Prosperity for All outlines the ever greater emphasis being placed on encouraging people to stay fit, as well as treat them when they are ill, and one of the ways of achieving this is for people to be more physically active and to build this into their everyday activities. The Welsh Government’s aim is to make walking and cycling the preferred option for shorter journeys, particularly everyday journeys, such as to and from a workplace or education establishment, or in order to access health, leisure or other services and facilities. Encouraging more walking and cycling, as well as public transport, is also important in reducing our greenhouse gas emissions and tackling the cause of climate change.

The Welsh Government’s transport strategy, which seeks to promote sustainable transport, is currently under review. This will programmed to take place simultaneously with the development of the NDF.
Transport (Productive and Enterprising)
What are the key future trends?
Transport in Wales is currently dominated by private vehicles. However, there has been a large increase in recent years in the number of people making rail journeys in Wales, with passenger numbers increasing by 61% between 2003 and 2013. There are no clear and consistent trends in bus use over time, however, there appears to have been a slight decline. Overall, current trends suggest, despite the growth in rail use, the reliance on the car will remain the case in the short to medium term at least. Forecasts also show an overall increased travel demand of at least 150% for public transport and private vehicle by 2030. The planning system has an important role in influencing these trends. Advances in transport technologies, such as autonomous or driverless vehicles, could also have a transformative effect on our transport systems and population behaviours.

Figure G1 – Indexed Traffic Volume of All Motor Vehicles, Great Britain

There is a significant proportion of the population who rarely or never make journeys by foot or by bike. This highlights a significant problem of inactivity and is concerning given the associated health implications. In contrast, a large number of children walk to school, though this is significantly influenced by how close they live. This shows the impact of people living near schools, as well as services and facilities more generally. Irrespective of distance, very few children cycle to school.
Figure G2 - Frequency of Adults Walking or Cycling as a Means of Transport, by Gender

Source: National Survey for Wales 2014/15

Figure G3 – Usual Mode of Transport Used by Children to Get to School

Source: National Survey for Wales 2014/15

\[3\] National Survey for Wales 2014/15
\[4\] National Survey for Wales 2014/15
Over the past 60 years the movement of freight in Great Britain has grown considerably and there has been a shift away from rail to road. In the last decade, there has been a levelling of the rate of growth in freight transport and an increasing dominance of road transport.

Cardiff Wales Airport passenger numbers continue to grow, reaching in excess of 1 million in 2014-15.

In 2014, the transport sector accounted for 13% of Wales' greenhouse gas emissions. Despite improvements in the efficiency of transport vehicles, the affordability of cars has increased and there has been a growth in transport demand. As a result, unlike the majority of other sectors, many of which have seen significant reductions, the emissions from transport are similar to those in 1990. To achieve the challenging target of reducing emissions by a minimum of 80% by 2050, Wales will require a major decarbonisation, including the transport sector.

Figure G4 - Greenhouse Gas Emissions from the Transport Sector in Wales


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What are the key spatial issues for the NDF?
A large number of transport projects have been put forward through the Call for Projects and at engagement events, which we will continue to consider throughout the process. There are several key transport projects with existing Government commitments, such as the Metro schemes, electrification of parts of the rail network and an M4 relief road, which the NDF should support. As well as facilitate the delivery of key projects, the NDF can also enable the realisation of their wider benefits.

A key theme coming through the Call for Projects and Evidence and engagement events was the importance of east-west links. This includes roads, such as the M4 and A55, and the train lines, such as Paddington to west Wales and Crewe to Holyhead. There were also suggestions to improve north-south links. The NDF should recognise the strategic importance of key routes and support ways of reducing road traffic and encouraging the use of public transport as an alternative, particularly for more local journeys, as well as the modernisation and electrification of the rail network.

Cardiff Airport is of significant importance in Wales. It offers national and international connectivity for tourism and business. The Welsh Government has ambitious plans to grow the airport and surrounding area, which the NDF should support. The NDF should also support the improvement of road and rail links to the airport, particularly its public transport accessibility.

Ports in Wales, including Swansea, Port Talbot, Barry, Cardiff, Newport, Milford Haven, Fishguard and Holyhead have an important role in the movement of freight. The NDF should recognise the strategic importance of key ports and promote the sustainable movement of freight from them.

The facilitation of walking and cycling is a key issue for the NDF. Local authorities are required to prepare Integrated Active Travel Maps and there is a National Cycling Network. A number of specific active travel projects were also put forward through the Call for Projects. These projects are individually small in scale, but when considered together could be considered of national significance.

Transport, and in particular road transport, is the main cause of noise and air pollution. The planning system is integral to tackling noise and air pollution and, to do so, needs to be integrated with transport planning. The planning system can ensure new development is not car dependent and instead is located and designed to encourage people to walk, cycle and use public transport. There are a number of Noise and Air Quality Zones in Wales, particularly around major roads such as the M4 and A55; the NDF should support the objectives of these zones.
Transport (Active and Social)
How can the NDF support the Welsh Government’s strategic aims?
The NDF can support the Welsh Government’s strategic aims, by integrating transport measures with land use planning. The NDF can support the key transport infrastructure projects the Welsh Government has committed to, such as the South Wales Metro, and recognise the strategic importance of, and seek to facilitate the growth in, Cardiff Airport and key ports.

The NDF can support the Welsh Government’s greenhouse gas emission reduction targets, by supporting the decarbonisation of the transport sector. This can be achieved by addressing the current trends of increasing travel demand, particularly the reliance on car travel, and by promoting walking, cycling and public transport. The NDF can also promote the movement of freight by rail, water or pipeline over road. The NDF can also support the electrification of the train lines and the uptake of electric and low carbon vehicles.

The NDF can support the Welsh Government’s aim to improve the health of the nation, by promoting development that is located and designed for people to walk and cycle as part of their everyday activities. The NDF can also contribute to the improvement of noise and air quality, by supporting a reduction in the number of vehicles on the roads.

Draft NDF Objective – Transport

To support a reduction in travel by private vehicles and a growth in walking, cycling and public transport.

To facilitate the delivery and improvement of key transport infrastructure to decarbonise travel.
H Welsh language
H Welsh language - Wales Today & Drivers of Change

Overview
The Welsh language is an important and distinctive feature and a part of Welsh identity. It is spoken by a fifth of the population but is taught to the majority of children in Wales. Welsh remains the predominant language of the community in parts of west and north Wales, while the language has grown steadily in many parts of the south east over recent years.

What are the Welsh Government’s strategic aims?
The Welsh Government is committed to seeing the Welsh language thrive and ensuring Wales develops as a bilingual nation. As Prosperity for All: the National Strategy outlines:

“We will build a country characterised by vibrant, welcoming and cohesive communities, with a pride in the present and ambition for the future – a truly bilingual nation, celebrating its unique culture, heritage and diversity.”

The Welsh Language Strategy Cymraeg 2050 was issued in July 2017. It contains the twin aim of a million Welsh speakers by 2050, with 20% of the population fluent and using the language every day.

Figure H1 - The Path to a million Welsh speakers, 2017-2050

The path to a million

To realise the vision of a million Welsh speakers by 2050, the Cymraeg 2050 Strategy identifies the following three strategic themes.

Theme 1: Increasing the number of Welsh speakers
- Language transmission in the family
- The early years
- Statutory education
- Post-compulsory education
- The education workforce, resources and qualifications

Theme 2: Increasing the use of Welsh
- The workplace
- Services
- Social use of Welsh

Theme 3: Creating favourable conditions - infrastructure and context
- Community and economy
- culture and media
- Wales and the wider world
- Digital technology
- Linguistic infrastructure
- Language planning
- Evaluation and research
Figure H2 - Proportion of people (aged 3 and over) able to speak Welsh, by Local Super Output Area, 2011

Welsh Language

Proportion of people (aged 3 and over) able to speak Welsh, by LSOA, 2011

- 10% or less
- between 10% and 30%
- between 30% and 50%
- between 50% and 70%
- over 70%

Local Authority Boundary

Source: 2011 Census (2013 data)
What are the key future trends?
The key indicator on the Welsh language is the 10-yearly Census, which records the number of Welsh speakers aged three and over. The 2011 Census found 562,000 people aged 3 and over could speak Welsh (19% of the population) – a decrease of 20,000 since 2001, but an increase on 1991 levels.

The Cymraeg 2050 strategy contains an assessment of the changes required from present trends to enable the aim of million Welsh speakers to be realised. Figure H3 shows the difference between current trends and the trajectory required in order to reach 1 million Welsh speakers by 2050.

Figure H3 - Projection and trajectory for the number of Welsh speakers aged three and over, 2011 to 2050

What are the key spatial issues for the NDF?
The planning system can establish conditions for developments which may help the Welsh language to prosper to take place. The prime example is economic development, because jobs are absolutely necessary to maintain and grow the Welsh speaking population in any area of Wales. Planning can also direct the development of new housing and community facilities. This supports the third theme of Cymraeg 2050, which is ‘to create favourable conditions’ - in particular in relation to the ‘Community and Economy’ aspect.

How can the NDF need support the Welsh Government’s strategic aims?
The variations in the prevalence of the language shown in Figure H2 above show that local approaches are vital in this field. The NDF may identify regional priorities. In the west and north west - the language’s ‘heartland’ areas - where a high proportion of the population already speak Welsh the focus may need to be on maintaining, and where possible increasing, Welsh speaker numbers. A key
challenge in these areas, which are generally of a rural nature, is to increase the attractiveness or remaining in the area to young adults, as demographic patterns show a long-term trend of out-migration of this age group, ostensibly to seek better employment prospects. The provision of employment opportunities and appropriate housing, including affordable options, will be vital.

There may be more scope to increase the prevalence of Welsh, and make progress towards the 1 million target, in areas with historically lower number and proportion of Welsh speakers. In these areas growth and development do not pose challenges to the language. A growing population with well-connected employment and housing opportunities, coupled with education and social opportunities to learn and use the language, could lead to increasing the number of Welsh speakers.

**Draft NDF Objective – Welsh Language**

To support the socioeconomic infrastructure of communities and help to create the conditions to realise the Welsh Government’s Welsh language objectives, including 1 million Welsh speakers by 2050.
I Health
I. Health - Wales Today & Drivers of Change

Overview

Having good health and well-being throughout our lives enables us to fulfil our potential socially, economically and culturally. The planning system can help put in place the conditions and infrastructure which helps people to live healthy lives, including the delivery of:

- high quality places;
- improved access to facilities and services;
- a range of high quality houses;
- active travel infrastructure; and
- access to open spaces and the natural environment

What are the Welsh Government’s strategic aims?

The Welsh Government recognises that a broad range of societal factors, known as socio-economic determinants of health, affect the overall health and well-being of individuals, communities and the population as a whole. Most of these determinants lie outside of the health sector itself, and so a focus of the Welsh Government is on integrating consideration of health across all policy areas. This is known as a ‘Health in All Policies’ approach.

In keeping with a ‘Health in All Policies’ approach, health features prominently in the priorities identified in Prosperity for All. ‘Healthy and active’ is one of four key themes of the strategy, with the Government’s high-level aim expressed as follows:

‘Our aim is to improve health and well-being in Wales, for individuals, families and communities, helping us to achieve our ambition of prosperity for all, taking significant steps to shift our approach from treatment to prevention’.

This focus is also reflected in the critical importance of the five priority areas within the strategy (early years, housing, social care, mental health and skills and employability) to the health agenda.

Among the specific actions in Prosperity for All, there are commitments to:

- deliver quality health and care services fit for the future; including:
  - shifting the provision of health care into communities and away from hospitals; and
  - investing in a new generation of integrated community health and care centres;
- promote good health and well-being for everyone; including:
  - encouraging an increase in people’s physical activity, drawing on natural resources;
  - delivering integrated public transport network;
  - providing digital ways of accessing health and care services
investing in homes to improve their warmth and energy efficiency
  - build healthier communities and better environments; including:
    - Tackling health inequalities for individual and access to services;
    - Co-ordinating housing, health and social care capital programmes
    - Reducing emissions and improve air quality through planning, infrastructure, regulation and communication measures.

The goals of “a healthier Wales” and “a more equal Wales” place health and health inequalities as central to the work of the whole public sector. This again recognises good health depends on more than the provision of good health services. The way a society is organised; its economic prosperity; a person’s early life chances; their education and employment opportunities; community support and cohesion; the food we eat; the homes in which we live and many more factors make up the wider social determinants which impact on the health of both an individual and the nation.

**What are the key future trends?**

A number of trends have been identified in relation to health. Overall health is improving; people are living longer and rates of certain types of diseases are coming down. However, improvements in health are not equal across communities, and changing demographics such as an ageing population mean new challenges in relation to non-communicable disease and managing long term conditions.

The social gradient in health is unambiguous in Wales: health gets progressively better as the socioeconomic position of people/communities improve. This social gradient affects every part of our lives, from birth, through education and employment, eventually to our time of death.

It is recognised that in many parts of Wales the health of those living in rural communities is generally good in comparison to those in a more urban setting. However, there are factors specific to a rural environment compared to those of urban environments that can impact on health more significantly and lead to inequalities and poorer health, such as distance from public services and support; availability of transport; housing standards; and an ageing population.

There are mixed trends when looking at specific illnesses, with prevalence of some illnesses such as heart conditions and arthritis slightly decreasing over the last 10 years, while others such as diabetes, and mental illnesses have increased. Prevalence of mental health problems has increased, rising from 9% of adults reporting being treated in 2009 to 13% by 2015. Cancer rates have shown little change, although overall numbers have increased due to the growing and ageing population, as well as factors such as screening and improvements in survival rates.
Figure I1 – Health deprivation in Wales

Welsh Index of Multiple Deprivation 2014 Health Domain
by Lower Level Super Output Areas

Rank  | Most Deprived
---    | ---
1 - 191 | 10% most deprived
192 - 382 | 10-29% most deprived
383 - 573 | 20-39% most deprived
574 - 955 | 30-50% most deprived
956 - 1900 | 50% least deprived
Least Deprived

Local Authority Boundary
Figure 12 – Indicators of Health inequalities

There are significant inequalities between the health of the most and least deprived people in Wales. In terms of overall life expectancy, there is a difference of around 8 years between the most and least deprived areas, while the difference in healthy life expectancy is around 18 years. The complex and stubborn causes of health inequalities mean that a combination of approaches is required to address them, through working differently with partners, intervening early and promoting better integration between services.

With an ageing population, there could be, if current rates persist, a marked increase in dementia sufferers. By 2025 there could be 50,000 people aged 65 or over living with dementia in Wales, with nearly a quarter of them aged 90 or over.

There are mixed trends in healthy lifestyle behaviours in Wales. Using demographic trends it is projected that smoking levels will continue to reduce, while obesity levels and the number of people eating fewer than five portions of fruit and vegetables per day look set to increase slightly. Government action in relation to promoting healthier lifestyles continues to focus on key areas such as tackling the harms caused by smoking and drinking too much alcohol, promoting healthy diets and promoting physical activity amongst the population. Access to health facilities and services are
a particular challenge for areas with dispersed populations, with people having to travel large distances to access services.

**What are the key spatial issues for the NDF?**

There are many determinants of health which are impacted by planning either directly or indirectly as shown in Figure 13

**Figure 13 - The settlement health map – relationship between health and the physical environment**

The NDF has an important contribution to make towards ensuring that health challenges are addressed in order to improve health and well-being and reduce inequalities. The key spatial issues include:
- Provision of appropriate services and housing to meet the needs of an ageing population;
- Reducing inequality within and between communities;
- Improving air quality, water quality, noise and addressing contaminated land;
- Improving access to recreation and natural green spaces;
- Provision of active travel infrastructure;
- Provision of services including the quality and location of services, and improving access;
- Promoting and facilitating healthy and active lifestyles;
- Delivering stronger support for mental health; and
- Reducing isolation and loneliness.

How can the NDF need support the Welsh Government’s strategic aims? The planning system through shaping places can improve the conditions for better health and well-being enabling people to achieve their potential and deliver a prosperous Wales. The NDF has a key role in supporting health and well-being through helping to guide decisions through the planning process relating to health services and those that affect health, as well as making natural resources available that can encourage an improvement in physical and mental health whilst promoting healthy and active lifestyles and reducing inequality. The NDF can help enable people to achieve their potential and to make Wales a more equal society.

**Draft NDF Objective – Health**

To support healthy and active lifestyles and improve access to services.

To support the reduction of health inequalities across Wales.

**Draft NDF Objective – Cohesive Communities**

To support the delivery of cohesive communities.
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