20170331-DHPCLG – IR2040

National Planning Framework,
Department of Housing, Planning,
Community and Local Government
Custom House
Dublin 1

Sent by email to:
npf@housing.gov.ie

31.03.17

Re: Ireland 2040 – Pre-draft Consultation

Dear Sir/Madam,

An Taisce welcomes the opportunity make comment to the Department of Housing, Planning, Community and Local Government on 'Ireland 2040'.

Yours faithfully,

Doireann Ní Cheallaigh,

Planning Officer
An Taisce – The National Trust for Ireland

1. Vision and Challenges

1. Vision

Because of its overriding interest in sustainable development, An Taisce almost uniquely strives to represent the long-term public interest and in equal measure social, environmental and economic agendas, in planning. An Taisce, driven by the imperatives of sustainable development, favours balanced regional development. Essentially that involves a shift in development from Dublin to Cities (particularly) and towns and villages outside Greater Dublin. The principal driver of the National Planning Framework (NPF) should be properly planned investment in, and expansion of, the four Regional cities of Cork, Limerick, Waterford, and Galway. In particular, development of sprawl from Dublin in Meath Wicklow and Kildare, and beyond, and of one-off housing that is not for those living and working on the land need to be curtailed because they are unsustainable and because they undermine more sustainable and balanced region growth.

There is a serious danger that over-emphasis on the economic agenda will lead national government to favour development of Dublin. Sustainable societies aim to give people the option of remaining in the area where they grew up.

2. Challenges

Irish planning has been marked, historically, by successive implementation failures of plans and strategies. Enforcement is the key to the success of the NPF. That is An Taisce's key insight. It comes from our monitoring of the 2002 National Spatial Strategy, a fairly good template, that was predictably largely ignored, for many years; from our awareness from monitoring planning applications that words do not translate into action. Failure of resolve to enforce is the biggest obstacle to achieving the goals of any policy. The NPF will provide the strategic spatial policy context for decisions and actions by our Government and planning authorities. It is therefore essential that the NPF provide for its own implementation through being justiciable, as with other provisions of the Planning Acts. The key concept, if we are serious about the framework, is that it is not an academic document but one that must be implemented, in ways that no other documents in the history of Irish planning have been.

Because it believes in planning and in a national planning framework, An Taisce considers planning imperatives should be prescriptive. All documents in the planning hierarchy should be largely prescriptive. Discursive elements of documents should be separate and not operational. Otherwise it is difficult to prescribe for their implementation.
If the government is serious about this exercise it must ensure that every document in the planning hierarchy, including planning permissions, implements the national planning framework.

This can be done in several ways. We suggest using the strongest terms to enforce the implementation. For too long "having regard to" was the standard, one which allowed key documents to be ignored or flouted.

An Taisce considers that each document in the hierarchy should "comply with, be consistent with and apply" both the document immediately above it in the hierarchy and the national planning framework. It can be stated that The three terms are necessary as elements of documents will be of varying degrees of generality and precision; and their implementation best effected in different ways. For example consistency with is a standard relevant to an objective but not to a Directive, compliance with is a standard relevant to a Direction but not an objective, and application is a standard relevant to a regulation/rule but not an objective or Directive. It seems likely the national planning framework will contain objectives and regulations/rules and probably Directives. Other documents in the framework - for example planning permissions - will contain Directives.

So planning permissions, Local Area Plans, City and County Development plans and Regional Planning Guidelines in sequence should each "comply with, be consistent with and apply" the next stage up in the hierarchy and the National Planning Framework.

The NPF should address Ireland in its wider context and the major challenges and changes facing society both currently and in the coming decades, including our current settlement patterns, revitalising our rural communities, mitigation and adaptation for Climate Change, catering for a demographic shifts, catering for unpredictable growth scenarios and providing for effective regional development that would provide counter magnets for Dublin without undermining the key role played by Dublin. The NPF should be reflective of Ireland's diverse and unique places. The key planning outcomes of the NPF should encourage sustainable growth; promote inward investment through the identification of specific opportunities for urban and rural locations based on the resources and demographics for a given area; create sustainable places for all; protect and improve our environment and ensure a low carbon future. A priority of the NPF should be to strengthen the quality of life for current and future generations in Ireland.

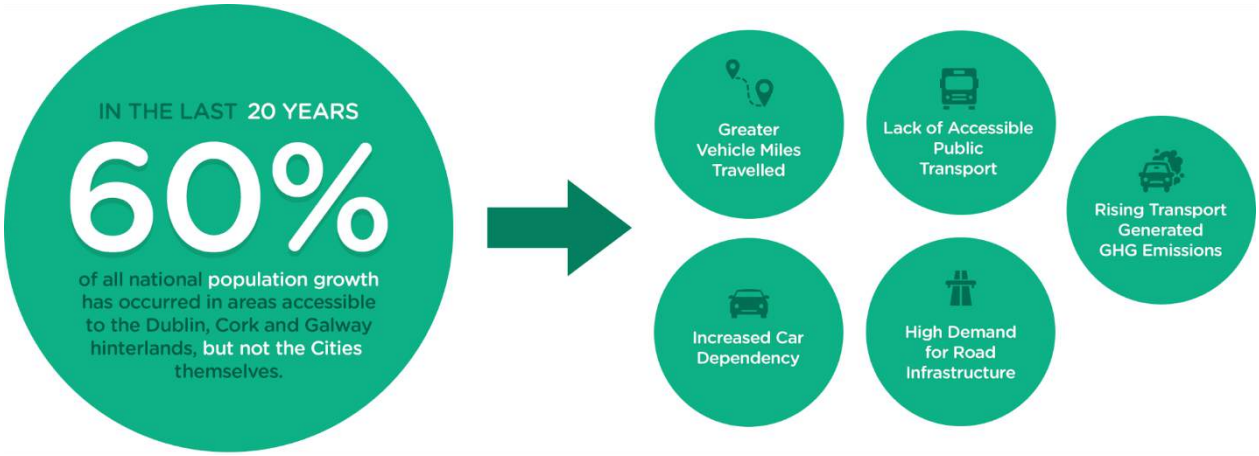
2.1 Current Settlement Pattern

The defining pattern of spatial development in Ireland in recent decades has been that of a sprawling, uncoordinated nature where land has developed in a 'leapfrog' low-density pattern.

This type of land-use development pattern has created places that lack adequate public facilities, diminished the liveability of areas and has encouraged car dependency for long commutes.

As outlined in the Issues Paper published by the Department of Housing, Planning, Community and Local Government, the largest increases in population over the past twenty years have been in **Fingal (North County Dublin), Cork (outside Cork City Council area), Kildare and Meath**. Over the same period, **Meath, Fingal, and Kildare, together with Laois**, have also had the highest rates of population growth in percentage terms. Population growth in the five aforementioned Counties, together with **Galway County** (i.e excluding the Galway City Council area) accounted for just over half a million people, or 45% of the national total, over the past twenty years. **This means that almost half of Ireland's additional people since 1996 have been accommodated in just six local**

authority areas, which together adjoin, but don't include the three Cities of Dublin, Cork and Galway.



Current figures indicate that over the past twenty years, more than 60% of all national population growth has occurred in areas accessible to the Dublin, Cork and Galway hinterlands, but not the Cities themselves with rural areas and small towns less accessible to cities and larger towns more likely to have experienced population decline during the same period. These extensive catchments have resulted in longer daily commutes, a lack of adequate public transport, great car dependency, a high demand for road infrastructure and maintenance and rising transport generated GHG emissions.

The NPF needs to address development sprawl and the imbalance of overdevelopment in places and population decline in others.

Smart growth and development patterns should be a key focus to the NPF. It is becoming ever more difficult to provide adequate infrastructure to areas that have been subject to this unsustainable and undesirable development pattern. Our current settlement pattern is resulting in, and will continue to contribute to a slow down of growth and increased deterioration to our centres and population decline in places. It will continue to impact on the vitality and character of our towns and cities throughout the country. If we continue to separate distinct land uses (such as housing, employment and retail) by great distances, our car dependency will continue to be the dominant form of transportation, resulting in increased Greenhouse Gas Emissions and undermine our legal obligation of reduce our emissions. Decades of sprawl have inevitably resulted in the incremental loss of our agricultural land, contributed to the loss and displacement of habitats, wildlife and open spaces and general environmental degradation.

In order to change this pattern, the NPF should focus on creating compact development patterns with a strong sense of place, tying land use and transportation plans together to reduce vehicle miles travelled and subsequently global warming emission, utilise existing services and infrastructure and strengthen and direct development towards existing communities.

2.2 Revitalizing our Rural Communities

An Taisce has consistently favored regeneration of Ireland's smaller towns and villages which will irrefutably necessitate an entirely different national philosophy towards 'one-off' rural housing which in combination with the primacy of Dublin and sprawl, has had a detrimental impact on the vitality of our rural economy and the livability of rural towns and villages respectively. We have long voiced concerns as to the ongoing suburbanisation of rural Ireland and the consequent decline of rural towns and villages. If 'business as usual' continues without clear proactive policies to prevent sprawl, major cities and their hinterland will continue to grow disproportionally to the detriment of rural Ireland.

Data from the CSO Statbank on Planning Permission Grants (Housing) from 2011 -2015 show the percentage share of planning permissions granted for one off housing and is outlined in the Issues Paper. These figures show a high level of planning permissions in rural Ireland for one-off dispersed housing. This unsustainable proliferation of one-off housing is not only impacting on the vitality and fabric of our towns and village but is also having serious environmental impacts through groundwater pollution from the growing number of septic tanks, increased Greenhouse Gas Emission resulting from car dependency and increased pressure on our road networks. Despite the proliferation of dispersed settlement, much of the soil conditions throughout Ireland are unsuited to private on-site waste water disposal. The legacy of this inappropriate development will be a significant challenge for the achievement of our Water Framework Directive target.

In 1976, the then An Foras Forbartha published a report which demonstrated that widely scattered houses cost the State between three and five times more to service than closely knit dwellings (An Foras Forbartha, 1976). These findings are as relevant today as they were >35 years ago. The only difference is that the cost differential is likely to have significantly widened due to increasing labour costs and the greater range of complex, costly services now provided by the State.

In the 21st Century, modern rural dwellers legitimately require a whole range of costly and complex services including healthcare, social services, education, paved roads for transport, electricity, telecommunications and sanitary services, all of which are much more costly to deliver at lower population densities.

An Taisce's document titled '*Principles for Sustainable Rural Settlement*' 2015, outlined five Core Principles that would contribute to the revitalization of Ireland's rural towns and villages. These principles include:

- A strong network of thriving towns and villages is fundamental for rural development;
- Scattered housing in un-serviced locations should be restricted and instead directed to rural towns and villages;

- Implement a 'Serviced Sites Initiative' in rural towns and villages as an alternative to scattered housing;
- Rural Ireland is a critical resource for a post carbon world; and
- Manage the economic, social and environmental legacy of scattered housing

An Taisce believes that these five principles can be applied in all contexts to create a better and more resilient future for rural communities. In the absence of such principles, rural decline is likely to continue.

It is evident that our small rural towns and villages have not been resilient over the last decade. Effective spatial planning plays a major role in the development of places throughout Ireland. 'The Action Plan for Rural Redevelopment 'Realising our Rural Potential' (DAHRRGA) has emphasised that *our towns and villages are at the heart of rural communities and should be places where people can live, work, access services and raise their families in a high quality environment*. In order to achieve this vision, the NPF should support nucleated, well-connected, walkable communities that can support opportunities for innovation, new enterprise and a diverse range of job-rich local shops, pubs and businesses that build on the unique and distinctive assets of localities throughout Ireland. Compact, well connected, nucleated settlements would reduce social alienation and promote community interaction through sporting, cultural and voluntary activities; and underpin the delivery of essential services and infrastructure, such as public transport, post offices, schools, policing, broadband and health.'

Effective regional development needs to occur in a coordinated manner, safeguarding the economic competitiveness of our cities while ensuring the revitilisation of our declining rural towns and villages.

2.3 Catering for a Demographic Shift and unpredictable growth patterns

Preliminary census results for Ireland 2016 from the Central Statistics Office indicate an existing population of c.4.7 million, representing an increase of 169,724 from 2011. This increase is set to continue with the population expected to increase by more than three quarters of a million people over the next two decades.

Demographic projections are fundamental in the formulation of urban and regional planning policy for land-use, social infrastructure (including schools, community facility),

hard infrastructure (including telecommunication, roads, railways, drainage systems, and bus terminals), housing policy and labour supply.

The Issues Paper for Ireland 2040 has outlined key demographic changes expected to occur within the next two decades, these include a reduction in Ireland's average household size, and increase in our labour force and a large proportion of our population will be over 65 years. Educational requirements are set to increase in line with the expected population growth. Supporting the development of a well-educated, well-skilled and adaptable labour force and creating and sustaining a strong pool of talented people of all ages will underpin Ireland's growth in the next two decades. The Department of Education and Skills 'Ireland's National Skills Strategy, 2025' have outlined that the number of children and young people attending school is expected to increase until 2025[1] and that demand for full time enrolment is expected to increase by 30%[2] over the next 15 years.

The NPF needs to cater not only for a population increase but also for a dramatic shift in demographics over the next twenty years. Policies should be robust, taking into account demographic variables.

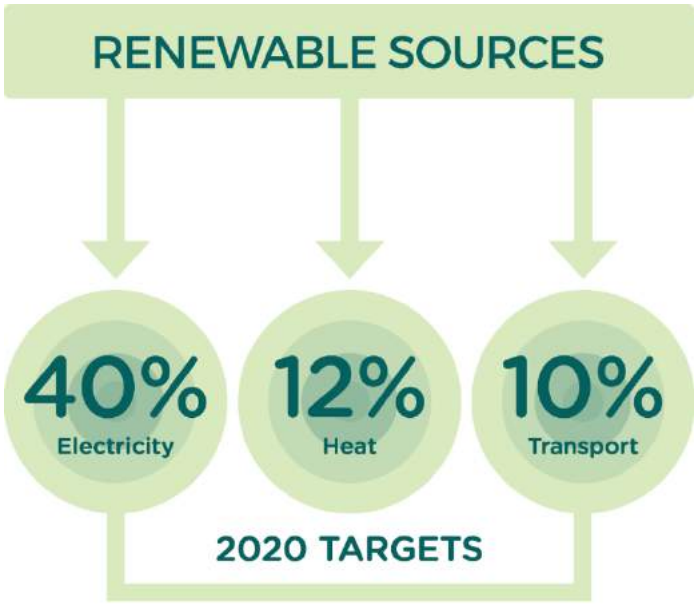
In order to facilitate the predicated demographics shift, educational demands, increased labour force and required skills the NPF needs set out a clear strategy to address these challenges. Our current pattern of development can no longer be considered sustainable and will not provide for effective regional development to cater for Ireland's changing size and profile.

The NPF needs to contain strong, clear policies that will underpin Ireland's growth taking into account the changing needs of the population which will result in the supply of differing house types, increased job prospects and be supported with adequate new infrastructure, service and facilities over the next two decades.

2.4 Climate Mitigation and Adaptation

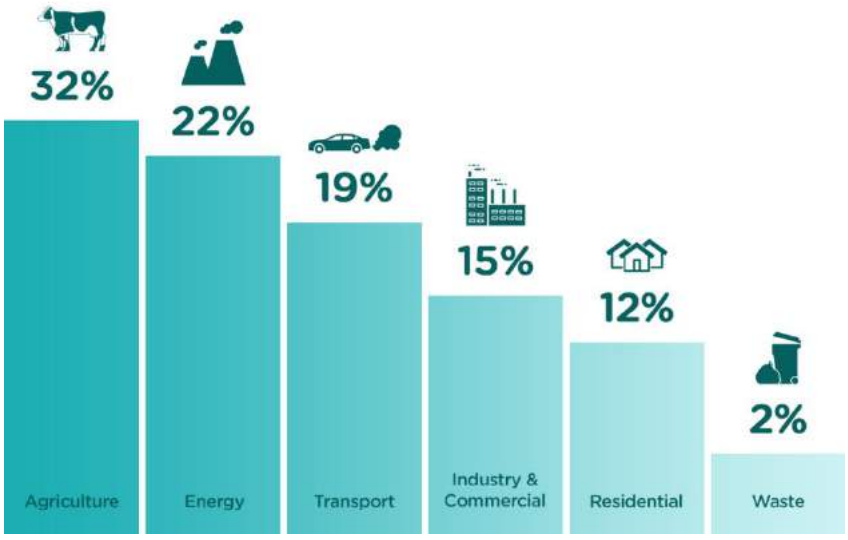
2.4.1 Climate change is a global issue that requires global solutions and participation from all countries. Ireland's greenhouse gas emissions per person are cited to be amongst the highest of any country in the world. Planning policy will play a significant role in both mitigating and adapting to Climate Change.

[1] 916,000 children and young people currently attending school
[2] 173,000+ full time and 38,000+ part time students currently in higher education



Ireland currently has legally binding targets to provide 40% of electricity, 12% of heat and 10% of transport energy from renewable sources, together with a 20% reduction in greenhouse gas emissions by 2020. The Department of Communications, Climate Action and Environment have acknowledge that Ireland will fall far short of meeting these targets.

Beyond 2020, Ireland has been mandated to reduce national emissions from transport, agriculture and buildings combined by 30% relative to 2005 levels. The Paris Agreement forged at COP21 provides further impetus for strong action on climate change mitigation in Ireland and internationally[3].



Emission figures compiled by the EPA (2012) identify agriculture as the single largest contributor to the overall emissions in Ireland, at 30% of the national total, followed by energy (power generation & oil refining) at 22% and transport at 19%. The remainder is made up by the residential sector at 12%, industry and commercial at 15%, and waste at 2%. (EPA)

Ireland has major issues in energy efficiency which it needs to address in power generation, home heating and transport. The Director General of the EPA, Laura Bourke highlighted Ireland's position and efforts in reducing our GHG emissions, stating that:

[3] *http://www.seai.ie/Publications/Energy_Policy_Publications/Energy_Modelling_Group_Publications/Ireland%E2%80%99s-Energy-Targets-Progress-Ambition-and-Impacts.81788.shortcut.pdf*

Ireland's economy is growing strongly again and the growth in the number of people at work benefits all of society. However, we haven't yet achieved a decoupling of economic growth from emissions, something most evident in the transport sector. For our current growth to be sustainable we must implement measures to decarbonise the transport and energy sectors, as described in the EPA's recently released State of the Environment Report, and ensure that increases in agricultural production aren't at the expense of the environment. Ireland is not currently on the right track to meet its 2020 targets, nor is it on the right emissions trajectory to meet future EU targets or our national 2050 decarbonisation goals.[4]

2.4.2 Transport Generated Emissions

The 2016 EPA Update Report 'Greenhouse Gas Emissions Projections to 2020' highlights Ireland lagging position in our targets. Under transport it was concluded that emissions from this sector under the 'with measures scenario' are projected to increase by 16% in the period of 2014-2020. Under 'With Additional Measures' emissions are projected to increase by 10% (the latter scenario assumes the target of 10% renewable fuel use in transport is reached, 50,000 electric vehicles are deployed and more efficient eco-driving practices are in place)[5]. Our rising transport emissions are closely linked to the economic and employment growth that Ireland is experiencing.

With population and employment growth set to continue over the next two decades, the NPF needs to align with existing relevant strategies including the Department of Transport's policy '*Smarter Travel: A Sustainable Transport Future - A New Transport Policy for Ireland 2009-2020'* which sets out a series of overriding policy objectives, summarised as follows:

1. Future population employment growth will predominantly take place in sustainable compact forms which reduces the need to travel for employment and services;
2. 500,000 more people will take alternative means to commute to work to the extent that the total share of car commuting will drop from 65% to 45%;
3. Alternatives such as walking, cycling and public transport will be supported and provide to the extend that these will rise to 55% of total commuter journeys to work:
4. The total kilometers travelled by the car fleet in 2020 will not increase significantly from current levels;

Our land-use and settlement patterns will play a major role in the transition to a low carbon economy and society. The benefits of consolidated nucleated settlement patterns will facilitate a reduction in transport congestion; vehicle miles travelled and transport generated emissions. The establishment of strong consolidated population centres would reduce energy demand; support local energy solutions; harness bio-regional resources; sustain re-localised circular economies; underpin regional development and produce more resilient, convivial and healthy places to live. Proposals for new fossil fuel dependent

[4] http://www.epa.ie/newsandevents/news/pressreleases2016/name,61471,en.html
[5] https://www.epa.ie/pubs/reports/air/airemissions/2020_GHG_Projections_2016_Bulletin.pdf

infrastructure, such as motorways, risk becoming stranded assists and contribute to induced demand for car-dependency and unsustainable sprawl.

2.4.3 Building Standards

It has been highlighted in the issues paper that will be a need for an absolute minimum of a half a million new homes, which is at least 25,000 additional homes, every year. All new builds should be built to a 'nearly zero energy' standard.

Although improvements have been made in recent years, 'Ireland's housing stock has been identified as being amongst the least energy efficient in Northern Europe'.[6]

Buildings accounted for 35% of total final energy consumption and around 59% of electricity consumption in Ireland in 2014, making it the second largest energy end-use sector behind transport. Furthermore the building sector has been consistently identified as a major potential source of cost effective energy efficiency improvements at international level by bodies such as the IEA and at national level. (SEAI – Energy Efficiency 2016 report)

According to the Greenhouse Gas Emissions Projections to 2020 EPA update report, residential sector emissions are projected to increase by 1% under the 'with measures scenario' by 2020. Under the 'with additional measures scenario' emissions are projected to decrease by 13% by 2020. The latter scenario includes savings associated with Sustainable Energy Authority of Ireland's Better Energy Homes (residential retrofit) scheme and proposed future amendments to building regulations.

In order to curb our emissions generated in the building sector, higher standards of building regulations are required including efficiency standards for all heating and ventilation systems; standards for all energy systems appliances and installations in all sectors; and thermal performance installation building materials installation standards inspection and certification to meet progressive energy efficiency targets.

The floorsize of a given house is a factor which determines associated energy use and costs per dwelling. House sizes impact on the amount of energy demanded in the residential sector as bigger dwellings tend to have a larger demand for heating due to their greater wall surface area and therefore higher heat loss. The number and size of large one off or non-estate dwellings that have been built in recent years are contributing to our high demand for energy. In 2015, the average floor area of non-estate houses granted permission was 243 square metres, compared to 143 square metres for houses in estates and 95 square metres for flats[7] New builds should take account of landform, orientation, and massing in order to minimise energy consumption.

Given the relatively high energy costs for households, particularly in rural Ireland, there will be quantitative monetary benefits from improving the energy efficiency of our homes and businesses. New approaches to heating will be required including small-scale heat projects and retrofitting. No new development should not be permitted without reaching 'nearly zero energy' building standard. Improving the energy performance of the national

[6] http://arrow.dit.ie/cgi/viewcontent.cgi?article=1035&context=engschcivart
[7] http://www.seai.ie/Publications/Statistics_Publications/Energy_in_Ireland/Energy-in-Ireland-1990-2015.pdf

building stock should not be a matter of personal preference, but a fundamental public policy imperative.

It is clear that Ireland is currently facing significant challenges in meeting emission reduction target in the coming decades.

If urgent action and policy implementation does not occur, Ireland will continue to see the impacts of sea level rise and intense storms and rainfall - increasing river and coastal flooding. Water shortages and water quality impacts will prevail and changes in the distribution of plant and animal species will continue to occur.

Strong policies are required to ensure that Ireland can achieve a low carbon, climate resilient, sustainable economy. The NPF needs to align with the overall objectives of the Climate Action and Low Carbon Development Act 2015 and must be integrated with the National Climate Mitigation and Adaptation Plan and provide measured targets to reduce transport emission; energy demands; sea level rise; flood risk; and infrastructure vulnerability. A positive approach to identifying suitable areas for renewable energy generation and its supporting infrastructure, and by maximising the opportunities for community-led and decentralised energy production must be encouraged.

2. Society's Health and Well-being

The design and layout of our built environment has a major influence on our everyday lifestyle choices.

2.1 Health of our Nation

Our current settlement pattern and expected shift in Ireland's demographics is and will continue to contribute to serious health issues.

The negative health impacts being experienced can be associated with our current development pattern, our urban design and high car dependency. Such health impacts include obesity, cardiovascular disease and asthma.

Ireland's current settlement pattern is not supporting a healthy lifestyle. The Issues Paper has outlined that in 2011 nearly one in ten workers spend one hour or more commuting to work, while 69% of commuters travelled to work by car. Car dependency and long commutes have several health impacts.

- Firstly development sprawl is associated with high levels of driving, driving contributes to air pollution and air pollution causes morbidity and mortality.(Frumkin, 2002)
- Secondly, high car dependency and long commutes is decreasing leisure time available to us and contributes to sedentary lifestyles, this lifestyle has long been associated with physical health consequences such as obesity, cardiovascular disease and mental health impacts including anxiety or depression.
- Thirdly, increased vehicle miles travelled and increased car dependency heightens the chances of road traffic accidents, fatalities and injuries.

The way we shape our built environment can influence our everyday lifestyle choices that affect our own personal health.

A number of studies and Action Plans over recent years outlines Ireland's general health and our participation in physical activity. Key finding of these are outlined below.

2.2 Physical Activity Levels

With regards to our physical activity, research has concluded that a high proportion of the Irish population are not meeting recommended physical activity levels. Only 32% of adults are meeting the national physical activity recommendations. The number of children reaching the recommended target for physical activity is worrying less with only 19% of primary and 12% of post primary school children meeting the recommended physical activity target. (Dept. of Health, 2016)

Of particular note regarding children's activity level are figures indicating the number of children who cycle to school. The number of primary school children cycling to school in 1986 was 23,635. This figure has dramatically dropped to 6,252 (2011) indicating a 73.5% decrease. The number of secondary school children cycling to school in 1986 was 50,648, similarly this figure has also dramatically decreased to 6,692 (2011) indicating a 87% decrease.

The World Health Organisation (WHO) have outlined the use of 'passive' modes of transport to be associated with increased inactivity levels as well as poor air quality, traffic congestion, lack of adequate walking and cycling infrastructure and social infrastructure including sports and recreation facilities. (WHO, Global Strategy on Diet, Physical Activity and Health)

As regards investment, as per the government's plan *Building on Recovery: Infrastructure and Capital Investment 2016-2021*, just €100 million (out of €10 billion allocated to transport – i.e. 1%) was committed to active travel (walking and cycling). This needs to change radically in order to secure adequate walking and cycling infrastructure that would promote healthy lifestyle choices and contribute to a reduction in our transport generated GHG emission. The United Nations Environment Programme has called on countries to '*invest at least 10% of their transport budgets in walking and cycling infrastructure to save lives, reverse pollution and reduce carbon emissions.*' (United Nations, 2016).

2.3 Obesity and Associated Risks

A correlation can be made between the physical inactivity levels in Ireland and the level of our population that are over overweight or obese.

The Department of Health (2016) have highlighted that only 40% of the Irish population have a healthy weight. If this trend continues, Ireland will face an increase in chronic diseases associated with obesity.

Obesity levels in all age groups have increased throughout Ireland. The Irish Universities Nutrition Alliance 'Nutrients Survey' (2011) highlighted that '*the prevalence of obesity in 18-64 year old adults has increased significantly since 1990 from 8% to 26% in men, and from 13% to 21% in women, with the greatest increase observed in men aged 51-64 years. These results highlight that obesity remains a major public health problem in Ireland*'.

Data indicates that 1 in 4 children, 6 in 10 adults and 3 in 4 adults over 50 are overweight or obese. (A Healthy Weight for Ireland, Obesity Policy and Action Plan 2016, The Department of Health)

Findings from a safefood funded research into the cost of over overweight and obesity on the island of Ireland has estimated the annual cost to be €1.64 billion euros (€1.13billion Republic of Ireland; €510 million Northern Ireland). 35% of total costs (€398 million) represented direct healthcare costs i.e. hospital in-patient; out-patient; GP and drug costs. However, (65%) of the economic costs were indirect costs in reduced or lost productivity and absenteeism and amounted to €728 million. (Safefood 2012)[8]. (Safefood, 2012)

If Ireland does not take action to curb our high level of inactivity, overweight and obesity, we will face an increase in chronic diseases associated with obesity.

Obesity is a major risk factor for some of the leading causes of mortality in Ireland, including cardiovascular disease.

According to the CSO '2015 Vital Statistics' diseases of the circulatory system accounted for 9,249 deaths, or an annual rate of 2.0 per 1,000 population. Of these, 4,417 were due to ischaemic heart disease and 1,902 to cerebrovascular disease. (CSO, 2015)

Physical inactivity and obesity are modifiable risk factors for many chronic diseases (Hacken, 2009). The current trend of inactivity and obesity is worrying. If enforceable policies are not put in place to support opportunities for physical activity, Ireland will face an unhealthy and costly future.

We need to reshape our built environment in order to reverse our inactivity levels. The NPF needs to set out a clear strategy and policies to coincide with existing strategies and frameworks that promote a built environment that would encourage opportunities for physical activities including 'Smarter Travel', 'The National cycle Policy Framework', 'A Healthy Weight for Ireland, Obesity Policy and Action Plan', 'A Framework for Improved Health and Wellbeing 2013-2025' and 'Get Ireland Active! National Physical Activity Action Plan for Ireland'.

Recommendations

- We need to reshape our built environment in order to reverse our inactivity levels – we need a built environment that would encourage walking and cycling as opposed to car dependency. We need more compact towns and cities where distances between origins and destinations are shorter with walking, cycling and public transport prioritized.
- The NPF needs to set our clear strategy and policies to coincide with existing strategies and frameworks which promote a built environment that encourages opportunities for physical activities including 'Smarter Travel', 'The National Cycle Policy Framework', 'A Healthy Weight for Ireland, Obesity Policy and Action Plan', 'A Framework for Improve Health and Wellbeing 2013-2025' and 'Get Ireland Active! National Physical Activity Action Plan for Ireland'.
- Ensure that the planning, development and design of our towns, cities and schools encourages a shift from car-orientated urban patterns (cul da sacs) to walkable, transit orientated development patterns.
- The 'National Cycle Policy Framework' needs to be referenced in the NPF together with its implementation. The 19 Objectives within the NCPF should be captured in the NPF.

- Create environments that are needed to support 'The National cycle Policy Framework' and 'Get Ireland Active! National Physical Activity Action Plan for Ireland'. The rolling our of 30kph zones in urban areas, particularly town centres, residential estates and in the vicinity of schools and places.
- Update and give effect to the six location test standards for community integration for new housing outlined in Box 5.2 of the NSS. Unlike sustainability/quality of life indicators, these should be threshold standards without which no development should be permitted. This requires that zoning and decision by local authorities and An Bord Pleanala for new housing be conditional on integration with existing communities, affordibility and mix of housing types, walking and cycling access to local services and schools, public transport acccess to employment locations and availability of recreation facilities. The application of these criteria should be overseen by an independent Office of the Planning Regulator (OPR).

2.4 Social Isolation

As highlighted in the Issues Paper, the current spatial pattern of development represents a challenge for improving both social cohesion and healthy lifestyles. The figures which have been presented in relation to our inactivity represents a clear need to better integrate people with services and amenities and promote sustainable smarter travel (walking and cycling).

A large proportion of our population and economic growth has not occurred in tandem with factors that are of relevance in promoting a healthy, sustainable environment including: affordable housing, proximity to public transport facilities, safe walking and cycling infrastructure; adequate green space; mix of land-use and social infrastructure including schools and community provision. These factors are contributing to the social isolation of our population.

The Issues Paper has outlined '*an increasing concentration of population and economic activity east of the country*''. An example of this unsustainable growth is particularly evident in East Meath (Stamullen, Julliendsotwn and Mornington-Laytown-Bettystown [including suburbs and environs]). These areas all indicate continuous population growth without adequate facilities to promote health and well-being. The tables below indicate the rate of growth that has occurred based on census results.

Stamullen	
2002	779
2006	2,487
2011	4,696
2016	5,001

Julienstown	
2006	8,098
2011	9,606
2016	10,139

Morningtown-Laytown-Bettystown (incl. Suburbs and Environs)	
2002	5,597
2006	8,978
2011	10,889

In total, the population of East Meath in 2011 (Stamullen, Julienstown, Morningtown-Laytown-Bettystown and St. Mary's Parish) was 35,960.

Housing affordability is a major driving force in social isolation. In order to access more affordable housing options, people are being forced to locate in areas that are disconnected from necessary social infrastructure, adequate public transport, and are often disconnected from strong social supports (i.e family members). The result of this is that our first time buyers are locating further away from their immediate family network, to places where housing is not developed in tandem with necessary social and educational provision, and are often subject to long commutes and car dependency. The distance that a person has to commute on a daily basis plays a major role in ones lifestyle. 2011 CSO data indicated that 22,201 commuters were leaving County Meath for employment in Dublin. (Hourigan, N – Rule Breaker). According to sociologist Robert Putnam '*each ten additional minutes in daily commutes cuts involvement in community affairs by 10%*'.

Compact, walkable communities that provide key social infrastructure can foster casual social interactions, promote a sense of place and encourage community involvement. The importance of nucleated settlements, connectivity and social cohesion is not just an idealistic notion, it is a solution to number issues that face Irish society including public health and well being, environmental sustainability and vitality of town towns and cities.

Our expected shift in demographics and house size reduction is a key factor that needs to be addressed. Over the next two decades it is expected that there will be an increase in people living alone.

Life expectancy across a number of EU member stated has seen a rise from 74.2 years in 1990 to 80.9 years in 2014. According to OECD publication 'Health at a Glance: Europe 2016', since 1990, there have been significant gains in life expectancy at age 65 in all EU member states, Ireland and Portugal achieving the largest gains (more than 4.5 years). Looking ahead, the life expectancy for people at age 65 is expected to continue to increase

in the coming decades by 4.7 years for men and 4.5 years for women on average between 2013 and 2060 according to Eurostat projections.(OECD, 2016)

The Department of Health's report 'Health in Ireland, Key Trends 2015' highlights that life expectancy in Ireland in now above the EU average. Data outlined in the report indicates a significant projected increase in the population for people 65+ and 85+. It is expected that by 2031, the population for people 65+ will reach c.1 million, which represents an increase of 86.4% from 2011 levels. The population of 85+ is expected to reach 136,000, which represents an increase of 132.8% from 2011 levels.

Research demonstrates that the prevalence of people feeling lonely 'sometimes' or 'often' is amongst the highest for those in mature adulthood and old age'. (Respond! Housing Assoiciation, 2016)

Loneliness is often associated with feelings of isolation. Contributing factors to loneliness and isolation in the aging population include distance between family members (children and grandchildren moving further away) and loss of friends and families. The way we shape our built environment can also play a role alieving feelings of isolation. The Issues Paper highlights that *our settlement and employment patterns have seen a physical move to locations out of main town and city centres. This has resulted in the decline of areas, loss of trade and footfall and vitality*. In order to create socially cohesive communities, it is imperative that the NPF address the revitalization of our rural towns and villages and city centres, which will play a key role in providing independence for the aging population.

Suburban housing and one-off dispersed housing can be socially isolating for the aging population. Housing within strong vibrant communities with convenient transport links and good public services (health care, libraries etc.) will contribute to continued independence and social involvement rather than social isolation and loneliness.

Recommendations:

- Ensure affordable housing types are a priority in appropriate locations to support community vitality and inclusivity.
- Update and give effect to the six location test standards for community integration for new housing outlined in Box 5.2 of the NSS. Unlike sustainability/quality of life indicators, these should be threshold standards without which no development should be permitted. This requires that zoning and decision by local authorities and An Bord Pleanala for new housing be conditional on integration with existing communities, affordability and mix of housing types, walking and cycling access to local services and schools, public transport acccess to employment locations and availability of recreation facilities. The application of these criteria should be overseen by an independent Office of the Planning Regulator (OPR).
- Priortise the revitalization of our rural towns and villages and city centres, which will play a key role in providing independence for the aging population.

2.5 Air Quality and Our Health

Our built environment and physical spaces not only influences our daily lifestyle choices, but can also expose citizens to harmful pollutants.

Air pollution is a clear marker for sustainable development, as sources of air pollution also produce climate pollutants. (WHO, 2016)

The World Health Organisation (2016) have highlighted the impacts of poor air quality, stating that *to date, air pollution – both ambient (outdoor) and household (indoor) – is the biggest environmental risk to health, carrying responsibility for about one in every nine deaths annuall*y. Health risks associated with poor air quality include stoke, heart disease, lung cancer and chronic and acute respiratory diseases, including asthma (US EPA, 2015).

The World Health Organisation (2016) estimated that in 2012, *72% of outdoor air pollution-related premature deaths were due to ischaemic heart disease and strokes, while 14% of deaths were due to chronic obstructive pulmonary disease or acute lower respiratory infections, and 14% of deaths were due to lung cancer*.

It is estimated that more than 400,000 premature deaths are related to air quality in Europe per-year. In relation to Ireland, the number of premature deaths attributed to our air quality is estimated to be 1,200 people annually (WHO, 2016).

WHO have identified ischaemic heart disease to be the leading cause of pre-mature death as a result of poor air quality. Research carried our by the US EPA (2015) show that air pollution can trigger heart attacks, stroke, and irregular heart rhythms – especially in people who are already at risk for these conditions. The United States EPA (2015) have caterogised 'at risk' people to be those who have existing heart related disease, chronic lung disease, males over 45, female over 55, family history of heart disease, high blood pressure or high cholesterol, overweight or smoke cigarettes.

Having regard to Ireland's current level of obesity, heart disease and aging population, and given that air pollution can trigger associated risks, it is important that Ireland limits the level of air pollution.

In relation to respiratory diseases such as asthma, Ireland has the forth highest prevalence of asthma in Ireland. Data from the Asthma Society of Ireland show that 7.1% of 18+ population have asthma, 18.9% of 13-15 year olds have asthma and 38.5% of 13-15 year olds reported wheezing. In Ireland, more than 1 person a week dies from asthma.

Sharon Cosgrove, CEP of the Asthma Society of Ireland stated that:

> *People with chronic respiratory disease like asthma are more vulnerable to the effects of air pollution. It is vital we do everything we can to limit the levels of air pollution we expose our citizens to and have accurate information on the actual quality of our air.*(Cosgrove, 2015)

The main pollutants that are of concern are NO_x (Oxides of Nitrogen), PM_{10} and $PM_{2.5}$ (Particulate Matter), O_3 (Ground Level Ozone) and PAHs (Polycyclic Aromatic Hydrocarbons). These pollutants have serious adverse health impacts. The European Environment Agency (EEA) has stated that *'Particulate matter, nitrogen*

dioxide and ground-level ozone, are now generally recognised as the three pollutants that most significantly affect human health. Long-term and peak exposures to these pollutants range in severity of impact, from impairing the respiratory system to premature death. Around 90 % of city dwellers in Europe are exposed to pollutants at concentrations higher than the air quality levels deemed harmful to health. For example, fine particulate matter ($PM_{2.5}$) in air has been estimated to reduce life expectancy in the EU by more than eight months.'

Pollutant	Source	Associated Adverse Health Impacts
Oxides of Nitrogen (NO_x)	Vehicle exhausts & high temperature combustion sources	Respiratory impacts
Particulate Matter PM_{10} – Particles with a diameter of less than 10 micrometres PM 2.5 – Prticles with a diameter of less than 2.5 micrometres	Urban Areas: Diesel fuelled vehicular traffic Rural Areas: Domestic use of solid fuel	Cardivascular and respiratory disease Cancers WHO have identified a close quantitative relationship between PM levels and increased mortality and morbidity. When PM is reduced, associated mortality will decrease in line. (WHO, 2016)
Polycyclic Aromatic Hydrocarbons (PAHs)	Traffic generated emissions Domestic use of solid fuel	Irritation of the breathing passage (high exposure)
Ground Level Ozone (O_3)	Secondary Pollutant – Chemical reaction of NO_x (Oxides of Nitrogen) and VOC (Volatile Organic Compound) and sunlight	Respiratory impacts (More harmful to people with existing conditions such as bronchitis and asthma)

The high level of car dependency in Ireland, combined with our continued use of solid fuel for heating is contributing to high levels of NO_x, PM_{10}, $PM_{2.5}$ and PAH which have detrimental impacts on our health and well-being.

While Ireland does not currently exceed EU target values, we have exceeded WHO guidelines which are more stringent. The 2016 EPA 'State of the Environment' report states that '*in urban areas such as Dublin and Cork, levels of nitrogen dioxide are close to the specified EU limit values for air quality as a result of exhaust emissions from vehicles*'. PM_{10}, $PM_{2.5}$ and PAH levels from domestic solid fuel use are highest in rural towns and villages.

The high levels of $PM_{2.5}$ have been highlighted by EPA who have stated that '*Ireland faces many challenges in order to meet new air quality standards for fine particulate matter ($PM_{2.5}$) concentrations by 2020*' (EPA, 2016)

Ireland needs to achieve heathy standards in accordance with WHO guidelines. The EPA have stated that Ireland should adopt the more stringent WHO values, particularly for PM and O_3 emission levels stating that '*with the increased understanding of the science of air quality and its impact on health has come the realisation that compliance with EU air quality limit values is not enough to protect the health of Irish from the negative effects of poor air quality*'.

Recommendations

- Significant reduction in road vehicle use, combined with fuel efficiency and land use policies to reduce transport demand and achieve significant modal shift from private passenger vehicle to public transport, with walking and cycling for short journeys and road freight to rail. This approach would reduce our expose to transport generated GHG emissions along with the ancillary benefit of curtailing pollutant air particle emissions, urban sprawl and congestion.
- In order to curb the high levels of harmful pollutants in rural areas, the nationwide smoky coal ban needs to be rolled out.
- Adopt more stringent targets in line with the World Health Organisation
- Establish a high standard extensive air quality monitoring system throughout the country, reporting air quality in real time. Reliable estimates and data pertaining to air quality are imperative in order to better inform policy.
- Enforceable regulations on large scale wood burning and peat

2.6 The Benefits of our Natural Environment

The Institute for European Environmental Policy (IEEP) recently explored the links between access to nature and health inequalities in Europe'. In their 2017 report titled 'Nature for Health and Equity' it was found that a '*lack of access to nature and natural areas contributes to health inequality and improving it is key to tackling these challenges*'.

This point has been reiterated by the EPA 2016 report 'Health Benefits from Biodiversity and Green Infrastructure which states that '*human health and wellbeing depends on a healthy environment; therefore, management of such a key natural resource has (1) strategic importance for human health (Wolch et al., 2014) and (2) the potential to contribute to the Irish economy (Bullock et al., 2008; EPA, 2012a; EPA, 2016)*'

Biodiversity is a critical ecosystem resource that provides a free service to human well-being, our society and our economy, which is not inexhaustible and is under consistent and sustained pressure.

Green Infrastructure (GI) is rapidly becoming a very important concept in land use planning. The GI approach should be increasingly incorporated into the planning and development process and will should become the accepted way to plan and manage urban spaces, reversing the trend of urban societies becoming disconnected from the natural environment.

GI can be defined as the physical environment within and between our cities, towns and villages. It is a network of multi-functional open spaces, including formal parks, garden, woodlands, green corridors, waterways, street tree and open countryside. It comprises all environmental resources and contributes towards sustainable resource management. This includes a holistic approach to developing the landscape inclusive of other influences such as ecological development, improving air, water and soil quality, flood protection, access provision and linkages, climate change/amelioration, pollution control and quality of life issues, in a sustainable and ongoing manner. GI is important in informing the decision making process on promoting interaction of government departments on the direction and focus of future development.

GI can also play an important part in fulfilling Ireland's obligation under the EU Habitats Directive to ensure provision is made to adequate linkages between Natura 2000 sites arresting habitat fragmentation.

In 2012 the UK's National Trust published Natural Childhood, a report by Stephen Moss, which examines the phenomenon known as 'Nature Deficit Disorder' and gathers current thinking on establishing a connection between children and the natural environment. The benefits of developing a healthy relationship with nature at a young age are manifold and fall broadly into four categories: health, education, communities and environment.

Health benefits include a decreased risk of childhood obesity, improved physical fitness, improved mental health and even longevity. In one study, 'exposure to nature improved symptoms of ADHD in children threefold compared with staying indoors' (Taylor, 2001). Exposure to the natural environment can reduce stress and aggressive behavior in all children, and give them a greater sense of self-worth (William, 2007). Even short term 'doses' of nature can make a marked impact on mental health – indeed, as little as five minutes of 'green exercise' can improve mood and self-esteem by a significant margin (Thompson Coon *et al*. 2001). From an educational perspective, child psychologist Aric Sigman (2007) concluded that "children exposed to nature scored higher on concentration and self-discipline; improved their awareness, reasoning and observational skills; did better in reading, writing, math, science and social studies; were better at working in teams; and showed improved behavior overall."

Nearly two-thirds of the services provided by nature to humankind are in decline worldwide and the global ecosystem is close to collapse. Ireland's ecosystem services in terms of their productive output and human utility are estimated to be over 2.6 billion euro per year. This very conservative estimate omits other significant services for example waste assimilation provided by aquatic biodiversity and benefits to human health, social health and environment benefits. Similar to all critical resource, they must be carefully managed to ensure it is sustained as a renewable resource into the future.(Department of Environment, Heritage and Local Government, 2008)

Recommendations:

- Public open space must be located so as to create useful but also meaningful form that is an integral part communities.
- The GI approach should be increasingly incorporated into the planning and development process and will should become the accepted way to plan and manage urban spaces.

3. A Place Making Strategy

3.1 While the National Spatial Strategy contained a good overarching policy on sequential development and six community test requirements for new housing, including access to schools and public transport, these were in large ignored by decision makers. The impacts can be seen by the level of car based commuter housing and out of town retail permitted and the continued proliferation to one off housing. The NPF should update and give effect to the six location test standards for community integration for new housing outlined in Box 5.2 of the NSS. Unlike sustainability/quality of life indicators these should be threshold standards without which no development should be permitted. This requires that zoning and decision by local authorities and An Bord Pleanala for new housing be conditional on integration with existing communities, affordability and mix of housing types, walking and cycling access to local services and schools, public transport access to employment locations and availability of recreation facilities. The application of these criteria should be overseen by an independent Office of the Planning Regulator (OPR).

The NPF needs to be the focus for all sectors and levels of governance to engage in the actions needed to meet the needs of a climate stressed future, provide a framework for regional development, and above all create more resilient and less car-based and resource consuming communities.

It needs to provide an overarching land use and transport strategy with climate mitigation and adaptation, biodiversity and human health and well being at its core. Climate must permeate all aspects of the NPF with the reduction of transport and energy demand, including more energy efficient buildings.

The overarching spatial objective for the NPF should be clear, namely to promote the development of the four regional cities as a counter magnet to the growth of Dublin. The capacity or potential of the planning system to deliver this is limited, so that integration required with all other areas of public policy and, including the targeting of IDA supported investment.

The strength and critical mass of Dublin in generating further growth must be recognised. Long distance communing is undesirable on social grounds, in undermining the creation of integrated communities, on time consumption, and generation of congestion and emissions. The NPF needs clear policies to curtail further commuter housing from the Greater Dublin Area (GDA) spreading into the surrounding counties. The issues raised in the March 2016 ESRI Report on housing supply constraint in the Dublin area have to be faced up to and the renewal of pre-economic crash development of long distance commuter housing needs to be stopped.

A range of well-considered fiscal and market interventions including a Site Value Tax to constrain land hoarding, are needed in parallel with enhanced public transport investment.

The same consideration in restricting sprawl and car based development are required for the four regional cities, with Limerick and Galway currently presenting particular challenges.

The NPF will also need an effective rural development strategy for the country at large. This would be best achieved by policies to strengthen the status of towns and villages as the

social, economic and development focus for the hinterlands, and recognise that scattering car based one off housing, is not in the interest rural communities.

The effectiveness of the new statutorily based NPF will be dependent on general Government policy and spending, with legally enforceable climate proofing, spatial, planning and transport policy principles.

3.2 Consolidation of our Rural Towns and Villages

As outlined in the Issues Paper, many rural areas and small-medium size towns have not proven resilient to ongoing structural changes. These include the decline of traditional rural industries, the shifting nature and location of employment as well as the physical form of retail and commercial development.

The changing distribution of our rural areas has long term impacts on the vitality and viability of communities with a continued loss of transport, health services and social infrastructure throughout many rural towns and villages. Smart growth strategies are required to rejuvenate our rural areas. We need to make our declining rural towns and villages an attractive place to live in order to attract investment and employment. Our dispersed settlement pattern disconnected from towns and villages is contributing to their demise as well as out of town retail and commercial activity.

The only true sustainable form of rural housing development is the village/small town cluster, which allows for the efficient delivery of services and infrastructure; enhances social capital, provides a compact walkable community; and the protection of the natural environment.

OECD (2009) and Western Development Commission research shows that opportunities for development exist in all regions, including lagging rural regions, and that greater development occurs when regions are able to mobilise their own local assets and indigenous resources to capitalise on their specific comparative advantages, rather than depending on national transfer and subsidies.

3.2.1 Reverse our dispersed settlement pattern and rejuvenate our towns and villages

3.2.1.(a) In order to bolster the strength of our rural towns and villages, counter-urbanisation and the movement of the population to surrounding hinterlands must be curtailed. Scattered commuter-driven rural housing is not a sustainable, efficient or viable strategy for rural regeneration.

Dispersed housing externalises very significant hidden costs to society at large. If the true costs were accounted for, settlement in isolated locations would be generally unaffordable for most households. Dispersal also considerably increases environmental pressures and heightens the vulnerability of rural householders to cost inflation (e.g. transport fuel, carbon taxes and 'septic tank' charges), service withdrawals and infrastructure downgrades (e.g. hospitals, ambulance services, roads, schools, post offices etc.). The Health Information and Quality Authority (HIQA) in their review of nationwide ambulance coverage and response times for 2014 referred directly to this issue, stating that: '*the long distance that crews need to travel to patients, coupled with the pattern of one-off housing in rural areas also makes the universal attainment of rapid response times difficult*'.

3.2.1(b) Implement a 'Serviced Sites Initiative' in rural towns and villages as an alternative to scattered housing

An Taisce recognises that there is a significant demand for self-build dwellings which are tailored to individual preferences as an alternative to purchasing homes in multiunit schemes, which can often of be of poor quality. This demand is currently being met through uncontrolled ad hoc building in the countryside.

An Taisce instead recommends the introduction of a national 'Serviced Sites Initiative' supported by government. Land in serviced settlements, such as small towns and villages, could be purchased either directly by local authorities or via private initiatives and the required physical infrastructure put in place (e.g. sewers, water, roads, communications etc.). Individual plots would then be sold at a reasonable cost to people who wish to build their own dwelling, subject to certain design parameters. Such an initiative would provide the advantages of a one-off dwelling but in a serviced location, that supports the development of nucleated, walkable communities.

Crucially, in order to be a successful, a Serviced Sites Initiative must be buttressed by corresponding planning and fiscal policies that fully remove the current hidden subsidies and perverse incentives towards self-building in unserviced, isolated locations. While such a proactive initiative would have up-front costs to the Exchequer, it would yield very significant long-term savings, increase the property tax base of local authorities and support wider policies aimed at rural renewal. It would further serve as an important mechanism for achieving the political acceptance of the need for new restrictive housing policies in unserviced rural areas.

3.2.1(c) Rural Ireland is a critical resource for a post-carbon world

The scientific evidence on man-made global warming is unequivocal. By the end of this century, the use of fossil fuels must cease requiring the complete decarbonisation of our transport and energy systems. In any event, by the middle of this century the global demand for fossil fuels will outstrip supply resulting in significant energy price inflation, particularly for transport. This requires a complete transition to sustainable modes of transport and a transformation in how we use energy.

Planning for the transition must start now. In rural areas, over 90% of all trips are made by private car and the effective provision of alternative public transportation is impossible due to the highly dispersed origin and destination of journeys. As a result, thinly spread car-dependent rural communities are particularly vulnerable to fuel price inflation for transport, home-heating and the measures that will be necessary to achieve international climate change obligations, such as increased road user charging and carbon taxes.

An Taisce believes that rural areas can be Ireland’s most precious resource for a post-carbon world in terms of sustainable local food production, energy efficiency and decentralised energy generation through, for example, small-scale wind, hydro, biomass, geothermal, combined heat and power, and solar. If planned correctly, this opportunity could be a significant boon for rural communities, help increase their resilience and to buffer them from the vulnerabilities of global uncertainty and energy price inflation.

However, the current widespread commuter-driven suburbanisation of our finite rural land is creating multiple land-use conflicts.

The NPF should plan for a postcarbon future based around a polycentric network of small nucleated, walkable settlements that support self-reliant, relocalised economies while leaving sufficient space for other essential land-uses such as local food, forestry and energy production.

New 'one-off' dwellings should be strictly regulated and new housing demand instead directed to nucleated settlements through a plan-led approach. In principle, there should be a strong general presumption against all new dwellings outside locations where the services and infrastructure required by citizens cannot be effectively and efficiently delivered at a reasonable cost.

Only households with a clearly verifiable 'rural need' (i.e. immediately and directly involved in agriculture, forestry or other rural based primary employment in the locality) should be permitted to build outside of serviced settlements and only after demonstrating that no alternative existing dwellings are available to meet their needs. In practice, this requires a review of the Sustainable Rural Housing Guidelines 2005 that are so vague so as to permit them to be routinely ignored, reinterpreted and selectively applied by local authorities. As a result, they have achieved little in stemming the proliferation of unsustainable rural settlement patterns.

3.2.2 Directing Retail and Commercial Activity into our Town and Village Centres

A key facet of town centre vitality and function lies in retail, and one of the major trends that has contributed to the demise of our towns and villages has been the decentralisation of retail development from our of town and village centres. (Astbury, G., & Thurstain-Goodwin, M, 2014)

Over the past decade there has been sustained pressure from multiple operators for out-of-town big box retailing and to circumvent the ‘Sequential Approach’. The key drivers of this trend is convenient access to publicly subsidised road networks, increased price competition and the ability to provide significant amounts of free surface car-parking.

The approach to permitting out-of-town retailing throughout Ireland has resulted in the decimation of historic town centres and the loss of many long established local retailers. This in turn has a knock-on impact for built heritage, social capital and quality of life. A recent report from GEODirectory (2017) indicates the a growing level of commercial vacancy rates in Ireland which have increased, from 12.6% in Q2 2015 to 13.1% in Q2 2016. It was found that 28,615 of the 219,176 commercial address points in Ireland were vacant.

A multifaceted approach must be taken to ensure the vibrant town centres that support strong businesses, employment and cultural enhancement. The following measures need to be introduced to address the increase level of vacancy and decline being experienced:

- Limit large scale, car dependent out of town retailing and priortise town centre development. The prohibition of out-of-town retailing and the much need support of

community based retailing would have environmental, social and economic benefits. (Maughan and O'Driscoll. A, 2011)

- Car parking provision, particularly if free, reinforces car dependence, urban sprawl, wasteful land use, exacerbate congestion, generates traffic demand as well as undermining the physical, social and economic base of both urban centres and rural areas. These issues have been analysed within the United States where they are most acute. One of the most influential commentators is Donal Shoup in :The High Cost of Free Parking" (Updateed Edition 2011). This shows that free parking far from being a benefit, fuels wasteful land use, congestion and sprawl. The concept of free parking must be curtailed with a charging regime to incentivise modal shift against car use.
- Create compact walkable settlements. The creation of pedestrian friendly towns with investment in cycle infrastructure is fundamental for the facilitation of enhanced footfall, economic growth and vitality.
- Stricter retail planning guidelines which restricts large-floor plate multiples and favour smaller floor place local shops.
- Give communities a voice – Local Economic and Community Plans have a key objective to promote a more integrated and targeted approach to addressing the strategic social, community and economic issues in a way that meets the priority needs of the community. LECPs will be required to integrate with the NPF, similarly the NPF should be integrated with the fundamental objectives of LECPs.

'Realising our Rural Potential' (Dept. of Arts, Heritage, Regional, Rural and Galetacht Affairs, 2017) is an encouraging indication of government commitment to addressing the decline of rural communities and economies. The NPF needs to align with the strategic initiatives and recommendations set out in the plan to ensure regional and rural communities are given the opportunity to reach their fullest potential.

3.3 Effective Regional Development

The National Spatial Strategy 2002 failed to promote effective regional development. It designated an excessive number of Gateways and Hubs undermining the potential to focus on the enhancement of the critical mass of the regional cities. The NSS also contained the misguided concept of "clusters" linking Gateway or Hub centres providing a recipe for sprawl and dispersed development .

The overarching spatial objective for the NPF should be clear, namely to promote the development of the four regional cities as a counter magnet to the growth of Dublin. The capacity or potential of the planning system to deliver this is limited, so that integration required with all other areas of public policy and, including the targeting of IDA supported investment.

Attention should be paid to the various innovative approaches taken by other European cities, such as Copenhagen.

The 5-Finger Plan governing regional and urban development in Copenhagen has allowed for the city and greater Copenhagen area to develop over the last number of decades in such a way as to control urban development to allow for access to open space, parks and

undeveloped, natural areas on a regional level. It has varied since its conception in 1947 but the principles have remained essentially the same.

The 5 finger plan entails that Copenhagen is organised based on an overall regional structure, whereby urban development is concentrated along city fingers, which are linked to the rail system and radial road networks, separated by green 'wedges' which are kept exempt from urban development. This approach has allowed for the population of Copenhagen to access recreational facilities, while providing easy access to the city centre from the greater Copenhagen area. The city is divided into the core urban region ("the palm of the hand"), the peripheral urban region ("the city fingers"), the green wedges and the rest of the Greater Copenhagen area.

The Plan allows for the possibility that, in parts of green wedges not allocated for transport corridors, facilities for climate change adaptation could be established, once recreational and nature-based criteria are met to the fullest extent possible.

The plan also aims to ensure good business development, trying to match locations with future needs while also ensuring the right business is located in the right place, in terms of proximity to appropriate transport connections and networks.

The emphasis of the NPF should be on the properly planned investment in and expansion of the 4 Regional cities of Cork, Limerick, Waterford, and Galway through:

1. Identifying and meeting need for major social, quality of life and public transport investment.
2. Directing focus of investment in economic activity into areas supported by an complementary to specialties by the Universities and ITs in those locations.
3. Making support for the cultural enhancement of the historic urban centres a key objective.
4. Identify new initiatives such as promoting one of the cities as an international centre for low carbon energy, research and development

The need for an all-island Spatial Plan is becoming more indisputable with the emerging planning issues that have cross-jurisdictional considerations, such as transport infrastructure, energy, agriculture, environment and employment. Cross boarder employment commuting flows indicate number of settlements on each of the boarder have functional relationships with urban centres in the adjoining jurisdiction. The north western region in particular has some dependency on employment and linking to Northern Ireland

The degree of spatial integration between the Republic and Northern Ireland and between the main urban development areas of Dublin and Belfast and the potential role of Letterkenny/Derry as a city in the North-West is highly uncertain in the wake of Brexit. It is vital that the NPF give consideration to this. The implications of Brexit remain to be seen, but from an environmental and planning perspective, the island of Ireland must be considered as a single entity. It is essential that the NPF seek to identify areas where collaboration with government bodies and authorities in Northern Ireland can assist competitiveness and facilitate balanced economic development across the island of Ireland.

4. Environment

4.1 As highlighted in '*Our Sustainable Future, a Framework for Sustainable Development for Ireland*', increasing prosperity, in Ireland and across the world, has allowed many people to enjoy the benefits of goods and services which were once available to just a few. While this shared prosperity represents huge progress, it does so at a cost of increasingly less sustainable patterns of consumption and production. The pressures on resources - raw materials, minerals, metals, food, water, soil, biodiversity, air, biomass and ecosystems - continue to increase. This enduring, negative trend endangers the availability of natural resources and impacts negatively on the quality of our environment and on human health and biodiversity, both within Europe itself and globally. (DOE, 2012)

Seto et.al (2011) highlights that the conversion of Earth's land surface to urban uses is one of the most irreversible human impacts on the global biosphere. Ireland's sprawling nature of development and settlement pattern is a driving force for habitat fragmentation, biodiversity loss, agricultural land loss and is having detrimental impacts on Climate Change.

4.2 Biodiversity

Biodiversity is a critical ecosystem resource that provides a free service to human well-being, our society and our economy, which is not inexhaustible and is under consistent and sustained pressure. Nearly two-thirds of the services provided by nature to humankind are in decline worldwide and the global ecosystem is close to collapse. Ireland's ecosystem services in terms of their productive output and human utility are estimated to be over 2.6 billion euro per year. This very conservative estimate omits other significant services for example waste assimilation provided by aquatic biodiversity and benefits to human health, social health and environment benefits. Similar to all critical resource, they must be carefully managed to ensure it is sustained as a renewable resource into the future. (Department of Environment, Heritage and Local Government, 2008)

Despite these benefits and the importance of biodiversity for our population, pressures cause by human activity is causing major biodiversity loss.

The NPF needs to set our clear strategy for the protection of our biodiversity in order to ensure that we meet the EU Commissions overarching objective of no net biodiversity loss by 2020.

Ireland has a poor record when it comes to protecting the natural environment. An example of this is the fact that the European Commission has brought infringement proceeding against Ireland in a number of cases involving breaches of EU environmental law relating to nature.

Ireland hosts fifty-nine habitat listed under Annex I and twenty-six species listed in Annex II of the Habitats Directive. It is clear from the NPWS Article 17 and Article 12 reports on the conservation status of annexed habitats and species under the Habitats and Birds Directive respectively that current and future conservation threats and pressures on habitats and species are well known (An Taisce, 2017).

According to the Department of Arts, Heritage and the Gaeltacht (2013) report on the Conservation Status of Ireland Habitats and Species only:

- 9% of the habitats examined had a 'favourable' status'
- 50% of the habitats examined were 'inadequate'; and
- 41% of the habitats examined assessed were 'bad'.

Of the sixty-one species examined:

- 52% were assessed as 'favourable';
- 20% were assessed as 'inadequate';
- 12% were assessed 'bad'; and
- 16% were assessed 'unknown'

In particular many species of waders and bird's associated with lowland farmland have suffered shocking declines of over 80% in their population over the proceeding decades A third of Irelands wild bees are threatened with extinction. It is likely that many species will follow the corn bunting towards national extinction in the coming decades unless urgent steps are taken to address biodiversity loss.

The European Environmental Agency have identified urbanisation, in combination with land abandonment and intensification of agricultural production to have resulted in the decline of our natural and semi-natural habitats. EEA (2015) have suggested that in order to halt further loss and fragmentation, land take incentives for land recycling and compact urban development should be perused.

The NPF needs to align with the EU Birds and Habitats Directive, EU Water Framework Directive, UN Biodiversity Convention and the Marine Strategy Framework Directive.

4.3 Peatlands

Peat soils comprise 20% of the Irish land area, and 75% of organic soil carbon. While extensive through damaged areas of blanket bog remain, raised bogs have been increasingly and severely damaged by decades of peat extraction and drainage and are constituted a rare European habitat.

The hydrological services of Irish peatlands have been highlighted in the BOGLAND report. Peatlands provide a wide range of hydrological functions. Peatlands play a water storage and filtering role. Peatlands can buffer water supplies during short droughts. Peatlands can moderate runoff and reduce the risk of flooding and the hundreds of millions worth of damage that go with it (Renou-Wilson et al., 2011). The unsustainable utilisation of our peatlands has undermined their ability to fulfil their numerous ecosystem services (Renou-Wilson et al., 2011). Current estimates suggest that only c. 15% of Irish peatlands are in a natural state, with the remainder being either moderately or severely damaged. (Douglas et al., 2008).

The removal of large expanses of peatlands by mechanical excavation has inevitably had a major impact on the environment. Both domestic and industrial scale utilisation of peat require that extensive drains be dug to drain these wetlands. Drainage leads to the lowering

of the water table and, by exposing the upper layers to the air, results in the drying out of the peat and alters the vegetation it supports (EPA, 2008). The channels left by machine cutting also act as drains, further increasing water removal from the ecosystem. The drainage of peatlands has serious impacts on water quality. The main impacts of peatland drainage on water quality are related to the loss of particulate peat into the aquatic environment.

The wider systematic failure to apply the EIA Directive and regulate industrial horticultural extraction and domestic cutting is also causing degradation and run-off affecting lakes and rivers.

Peat is a finite resource and one that is quickly diminishing. Given the multitude of negative impacts that peat extraction and combustion is having on the environment we must now act to stop the degradation of our peatlands and restore them wherever possible.

The unsustainable nature of peat based industries must be recognised. These industries have no long-term future and the massive environmental and climate impact of those open mining operation is currently externalised.

An exit date and strategy must be set for all peat based industries and subsidies be redirected to reskill employees in sustainable industries.

There is a need to ensure the full application of the Habitats Directive and conservation management of all Natura 2000 protected peatlands; to provide for the integration of peatland management with carbon management and agricultural and forestry policy. All continued peat cutting for all end uses including horticultural domestic cutting should be subject to EIA and planning control. All peat cutting in or affecting Natura 2000 sites should be subject to Appropriate Assessment.

4.4 Marine Ecosystem

Ireland, as one of Europe's leading maritime countries and with a marine jurisdiction ten times the land area, should be setting an exemplary standard in the implementation of the Marine Strategy Framework Directive.

Ireland has a legal obligation under EU law to provide an effective and compliant strategy to (i) meet the obligations of the Marine Strategy Framework Directive, (ii) to maintain the Good Environmental Status of the marine ecosystem, (iii) to apply the precautionary and polluter pay principles in achieving this, and (iv) to set out environmental targets and indicators to achieve and maintain the Good Environmental status of the marine environment by 2020.

This should be a key part of Ireland's wider role in promoting action on the overriding threats to the global marine environment through climate change, ocean warming, ocean acidification, overfishing, marine litter waste and pollution, both through national initiative, through membership of the EU and taking a proactive role in the UN IPCC process, OSPAR, ESOO and other international structures.

Major leadership is required to reduce carbon emissions in order to reverse ocean acidification as much as climate warming. The most recent UN data highlights the converging impact on anthropogenic greenhouse gas on increasing ocean temperatures, and

the inability of the ocean to absorb additional CO_2, causing acidification and the accelerated damage to the marine ecosystem.

The restoration of fish stocks is also key to restore declining populations of internationally important breeding colonies of birds around our coasts.

There is a major opportunity for Ireland to take up one of the key provision of the MSFD in the designation of Marine Protected Areas. These protected sites should have site specific management plans which protect marine ecosystems from unsustainable practices. Public participation should be promoted so that Marine Protected Areas can provide alternative forms of income for coastal communities as well as helping to restore depleted fish stocks.

4.5 Water

Human activities have led to deterioration in water quality over many years. Ireland faces an immense challenge in achieving 'good' status in all water bodies. The achievement of our Water Framework Directive obligations will have linked benefits in the protection and enhancement of biodiversity, combating climate change, improving human health, protecting landscape and creating more sustainable settlement patterns.

According to the EPAs Water Quality in Ireland Report 2010-2012 (2015), 47% of rivers, 58% of lakes and 55% of transitional water were not of good status for the period 2010-2012. The two most important suspected causes of pollution in rivers are agriculture and municipal sources, accounting for 53% and 34% of cases respectively. There was for example also a 5% reduction in satisfactory quality lakes (10 lakes) compared to 2007-2009 (EPA, 2015)

4.5.1 Agriculture

Agriculture is also one of the main land uses in high status catchments and is as a result one of the most important pressures and threats on these extremely sensitive waterbodies. The percentage number of high quality sites had almost halved in the 22 years between 1987 and 2012 (EPA, 2015). Only 11.5% of rivers, 9% of lakes and 3.6% of transitional waters were considered to be of high status for the 2010-2012 period (EPA, 2015). The smallest pressure can impact on high status. Small increases in the amount of P and N (Nitrogen) can damage the sensitive ecology associated with these sites (Ní Chatháin et., 2012). Identified pressures include land-use changes associated with agriculture such as field drainage and fertilisation, animal access to waters, and sheep dip pesticides (Ní Chatháin et., 2012).

Livestock manures and slurries, and access to watercourses by cattle and sheep, can lead to significant losses of bacteria, viruses and protozoa to drinking, bathing and shellfish waters. This can affect the amenity value of the water environment and pose a risk to human health (Mawdsley et al., 1995; SEPA, 2007). Plants, soil and ultimately water courses which may subsequently be used as catchments for public water supplies may all be affected. (Mawdsley et al., 1995; SEPA, 2007).

The ongoing intensification of agriculture in areas with high status water bodies is a major concern and has been addressed (EPA, 2015; Forest-Service, 2015).

4.5.2 Municipal and Urban Wastewater

According to the EPAs most recent water quality assessment the most widespread water quality problem in Ireland continues to be elevated nutrient concentrations (EPA, 2015). These water quality problems are noted to be greatest where there is intensive agriculture and where population densities are highest due to wastewater discharges to waters.

After agriculture, wastewater discharges to water from human settlements, including towns, villages and rural houses was the biggest source of water pollution. In 2012, the relative contribution of nitrogen and phosphorus to surface waters was 5% of nitrogen and 30% of phosphorus from wastewater discharges. The Implementation Review County Report issued by the European Commission highlighted Ireland's position stating *there are substantial implementation issues in Ireland when it comes to the Urban Waste Water Treatment Directive*. (EC, 2017)

Municipal sources of pollution accounted for 28% of the river and canal sites with slight pollution. The majority of these cases were due to suspected nutrient losses from municipal wastewater treatment plants. Municipal wastewater accounted for 39% of the moderate pollution in our rivers and canals. Municipal wastewater treatment plants are the suspected cause of pollution for eight of the 13 seriously polluted river sites (bad ecological status). Serious pollution resulting from urban wastewater and industrial pollution was reduced to 17 km of river channel length. This was down from 53 km in 2009. Urban wastewater treatment (UWT) also accounted for 4.9% of N and 28.7% of P in the marine environment (EPA, 2015). Wastewater discharges, emergency discharges from storm water outfalls, and drainage from domestic wastewater systems are the greatest issue for bathing water quality in Ireland. In 2014 there were 27 incidents related to sewage pollution (EPA, 2015). Waste water discharges were considered a contributing factor to the poor classification of all 7 of the 136 EU identified bathing waters which failed to comply with minimum water quality standards and were classified as 'poor' in 2014. These pollution incidences have serious impacts on the environment, human health and tourism.

Some of the key finding of the EPA's report (2015) were:

Infrastructure

- 12 (7%) large urban areas did not meet the European Union Directive requirement to provide secondary (biological) treatment.
- 7 large urban areas did not comply with the European Union Directive requirement to provide infrastructure to reduce nutrients and discharged effluent which did not meet nutrient quality standards.
- Untreated sewage was discharged from 45 areas, 27 of which are located in counties Cork, Donegal and Galway.

Effluent Quality

- 143 (82%) large urban areas complied with the mandatory European Union effluent quality and sampling standards.
- Just 24% of the waste water load discharged into sensitive areas from large towns and cities complied with mandatory European Union nutrient quality standards, up from 17.5% in 2013. Dublin and Cork were the major contributors to this low rate of compliance.

Water Quality

- The number of seriously polluted river sites where pollution is attributed to urban waste water discharges is down from 9 in 2009 to 1 in 2014.
- Waste water discharges contributed to poor water quality at 7 of Ireland's 136 identified bathing waters.

Incidents:

- 72% of the 1,294 incidents reported to the EPA related to breaches of discharge quality standards.
- 42% of incidents were attributed to insufficient treatment capacity and 21% of incidents were attributed to operational and management practices

Due to investment there have been improvements in wastewater treatment infrastructure and monitoring. However there is still significant non-compliance with the statutory timelines specified in waste water discharge licences for completion of improvement works and some important infrastructural works necessary to improve waste water discharges and comply with the European Union Directive requirements are still overdue. Approximately 46% of the improvement works due between 2009 and 2014 were reported as complete at the end of 2014, with the remainder still outstanding. Irish Water must address these matters and ensure compliance with licence requirements. Ireland's failures in relation to wastewater discharges are well documented with as case currently open in the European Court of Justice against Ireland on the UWTD and case 2013/2056.

Given the scale of the problem the level of investment being made by Irish Water into waste water treatment plants needs to continue and grow. Investment in infrastructure, monitoring and a reversal in the recent decline in capital expenditure are essential to provide the waste water treatment necessary to protect receiving waters and meet obligations under EPA authorisations and European Directives. The targets set out in Irish Waters 25 years Water Services Strategic Plan, are not ambitious enough.

Point sources of pollution need to be eliminated. The elimination of all raw sewage discharges needs to happen as soon as possible. The discharge of poorly treated sewage is also not acceptable and needs to be addressed. All wastewater infrastructure must be in compliance with the requirements of the Urban Waste Water Treatment Directive and waste water discharge authorisations.

Sensitive areas as defined by the Urban Waste Water Treatment (Amendment) Regulations as waters that are eutrophic or may become eutrophic unless protected. The emphasis on eutrophic status is too narrow and is indicative of the fixation on the achievement of "good status". A broader environmental perspective must be considered when the need for investment is being made. The need to protect high status sites and designated aquatic habitats must be considered. Priority should also be given to waters designated under the Habitats and Birds Directives. Top priority should be given to eliminating point source discharges and wastewater discharges from important freshwater pearl mussels, Atlantic salmon and shellfish waters.

The quantum of zoned land must be carefully matched and phased with the existing and/or planned Population Equivalent capacity of the local waste water treatment plan. Where there is no commitment in the Water Services Investment to fund additional waste-water

treatment capacity, surplus zoned land should be dezoned in accordance with the sequential approach.

4.5.3 Private Waste Water Treatment

Despite the proliferation of dispersed settlement, much of the soil conditions throughout Ireland are unsuited to private on-site waste water disposal. The legacy of this inappropriate development will be a significant challenge for the achievement of our binding Water Framework Directive targets.

Ireland has binding legal obligations under the European Communities Environmental Objectives (Groundwater) Regulations 2010 and European Communities Environmental Objectives (Surfacewater) Regulation 2009.

4.6 Re-Energising Ireland

4.6.1 The renewable sector will continue to become more central to meeting our national energy demands. There is a need for a co-ordinated approach as to how these projects will be delivered.

The existing approach to on-shore wind energy can sometimes prove unsatisfactory and inefficient, creating multiple conflicts and grid connection issues.

Due to our dispersed settle pattern in the Irish countryside, less than one-quarter of Ireland's territory is more than 500m from a dwelling. Locations which are more than 1,000m from dwellings typically comprise of ecologically and visually sensitive mountainous landscapes. Any additional mandatory setback distances would onshore wind energy development in many places in the short-term. It is imperative that for the post-2020 period the dispersed nature of housing is not continued.

4.6.2 Solar technology is making a critical breakthrough and will play a significant role in Ireland over the next decade to a level that cannot yet be projected. To date a number of planning applications have been made for solar parks on lands in many parts of the country.

A strategic National and Regional Strategy is required for solar array development to ensure optimum site suitability is selected, protecting biodiversity, sensitive areas, archaeological heritage and good tillage land. All applications will need consideration on an individual level with Environmental Impact Assessment in line with European Directives.

4.6.3 It has been highlighted in the issues paper that will be a need for an absolute minimum of a half a million new homes, which is at least 25,000 additional homes, every year. All new builds should be built to a 'nearly zero energy' standard.

Although improvements have been made in recent years, 'Ireland's housing stock has been identified as being amongst the least energy efficient in Northern Europe' (Ahern et/al 2013)

Buildings accounted for 35% of total final energy consumption and around 59% of electricity consumption in Ireland in 2014, making it the second largest energy end-use

sector behind transport. Furthermore the building sector has been consistently identified as a major potential source of cost effective energy efficiency improvements at international level by bodies such as the IEA and at national level. (SEAI – Energy Efficiency 2016 report)

In order to curb our emissions generated in the building sector, higher standards of building regulations are required including efficiency standards for all heating and ventilation systems; standards for all energy systems appliances and installations in all sectors; and thermal performance installation building materials installation standards inspection and certification to meet progressive energy efficiency targets.

The floorsize of a given house is a factor which determines associated energy use and costs per dwelling. House sizes impact on the amount of energy demanded in the residential sector as bigger dwellings tend to have a larger demand for heating due to their greater wall surface area and therefore higher heat loss. The number and size of large one off or non-estate dwellings that have been built in recent years are contributing to our high demand for energy. In 2015, the average floor area of non-estate houses granted permission was 243 square metres, compared to 143 square metres for houses in estates and 95 square metres for flats[9] New builds should take account of landform, orientation, and massing in order to minimise energy consumption.

Given the relatively high energy costs for households, particularly in rural Ireland, there will be quantities monetary benefits from improving the energy efficiency of our homes and businesses. New approaches to heating will be required including small-scale heat projects and retrofitting. No new development should not be permitted without reaching 'nearly zero energy' building standard. Improving the energy performance of the national building stock should not be a matter of personal preference, but a fundamental public policy imperative.

If urgent action and policy implementation does not occur, Ireland will continue to see the impacts of sea level rise and intense storms and rainfall - increasing river and coastal flooding. Water shortages and water quality impacts will prevail and changes in the distribution of plant and animal species will continue to occur.

Strong policies are required to ensure that Ireland can achieve a low carbon, climate resilient, sustainable economy. The NPF needs to align with the overall objectives of the Climate Action and Low Carbon Development Act 2015 and must be integrated with the National Climate Mitigation and Adaptation Plan and provide measured targets to reduce transport emission; energy demands; sea level rise; flood risk; and infrastructure vulnerability. A positive approach to identifying suitable areas for renewable energy generation and its supporting infrastructure, and by maximizing the opportunities for community-led and decentralized energy production must be encouraged.

[9] http://www.seai.ie/Publications/Statistics_Publications/Energy_in_Ireland/Energy-in-Ireland-1990-2015.pdf

5. Physical and Social Infrastructure

The relationship between housing demand, supply, location and supporting physical and social infrastructure is essential in achieving sustainable development. Future growth needs to be directed towards centres with existing infrastructural capacity. Additional housing must be built in tandem with the required social infrastructure (schools, shops etc). A better alignment between population growth and housing requirement is needed.

Our current settlement pattern, if continued, will put further pressure on transport demand. There is overwhelming evidence that our heavy reliance on cars for travel is detrimental not only to our environment but to our own personal health and well-being. We need a renewed effort to implement Smarter Travel – A Sustainable Transport Future (2009). The document, which was the subject of extensive public consultation, includes five ke goals – (i) to reduce overall travel demand, (ii) to maximise efficiency of the transport network, (iii) to reduce reliance on fossil fuels, (iv) to reduce transport emissions and (v) to improve accessibility to transport.

The targets included in the Smarter Travel policy to significantly increase sustainable modal choices and reverse car dependency are challenging but urgently required. The NPF needs to outline clear strategy that would translate Smarter Travel into tangible action.

In the context of land use planning, the most effective means to achieve these objectives is to prevent inefficient and unsustainable car-based development sprawl i.e. planning for the best use of land to benefit from investment of public fund in physical infrastructure including public transport infrastructure.

Changing trends in where people live are not matched by equivalent changes in the location of employment. Small-scale local industrial/commercial zones proximate to existing or proposed residential areas should deliver local employment opportunities rather than promoting large scale industrial/warehouse parks.

In accordance with the Sustainable Residential Development Guidelines in Urban Areas, there should be a clear policy that would prohibit large-scale suburban type development proposals. Only development proposals commensurate with local physical infrastructure and social capital carrying capacity should be permitted.

We need to establish resilient nucleated walkable settlements. Land zoned for residential development must be located in close proximity and/or be well connected by public transport corridors (rail or bus) to existing and/or proposed services (e.g schools, retail, community/health centres, sports/amenity facilities etc.) and employment sites. The design, layout and siting of residential/mix-used development need to have the 12 criteria of sustainability at its core (context, connecting, inclusivity, variety, efficiency, distinctiveness, layout, public realm, adaptability, privacy and amenity, parking and detailed design).

As regards investment, as per the government's plan *Building on Recovery: Infrastructure and Capital Investment 2016-2021*, just €100 million (out of €10 billion allocated to transport – i.e. 1%) was committed to active travel (walking and cycling). This needs to change radically in order to secure adequate walking and cycling infrastructure that would promote healthy lifestyle choices and contribute to a reduction in our transport generated

GHG emission. The United Nations Environment Programme has called on countries to '*invest at least 10% of their transport budgets in walking and cycling infrastructure to save lives, reverse pollution and reduce carbon emissions.*' (United Nations, 2016). Increased investment in cycling and walking would have major environmental, social and economic benefits. Continued investment in road infrastructure in creating induced demand for car dependency and car-dependent development. This needs to be reversed in the coming years if we are to create a sustainable, healthy society.

The 5-Finger Plan governing regional and urban development in Copenhagen has allowed for the city and greater Copenhagen area to develop over the last number of decades in such a way as to control urban development to allow for access to open space, parks and undeveloped, natural areas on a regional level. It has varied since its conception in 1947 but the principles have remained essentially the same.

The 5 finger plan entails that Copenhagen is organised based on an overall regional structure, whereby urban development is concentrated along city fingers, which are linked to the rail system and radial road networks, separated by green 'wedges' which are kept exempt from urban development. This approach has allowed for the population of Copenhagen to access recreational facilities, while providing easy access to the city centre from the greater Copenhagen area. The city is divided into the core urban region ("the palm of the hand"), the peripheral urban region ("the city fingers"), the green wedges and the rest of the Greater Copenhagen area.

The Plan allows for the possibility that, in parts of green wedges not allocated for transport corridors, facilities for climate change adaptation could be established, once recreational and nature-based criteria are met to the fullest extent possible.

The plan also aims to ensure good business development, trying to match locations with future needs while also ensuring the right business is located in the right place, in terms of proximity to appropriate transport connections and networks.

6. Conclusion

The principal driver of the NPF should be properly planned investment in, and expansion of, the four Regional cities of Cork, Limerick, Waterford, and Galway. In particular, development of sprawl from Dublin in Meath Wicklow and Kildare, and beyond, and of one-off housing that is not for those living and working on the land need to be curtailed because they are unsustainable and because they undermine more sustainable and balanced region growth.

There is a serious danger that over-emphasis on the economic agenda will lead national government to favour development of Dublin. Sustainable societies aim to give people the option of remaining in the area where they grew up.

Smart growth and spatial planning that supports economic, social and environmental sustainability should be the key focus of the NPF. Spatial development and land use that

reduces are car dependency will not only have clear environmental impacts through emission reductions and improved air quality but would also have measured benefits for the health and wellbeing of Irish society.

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