

Section 4 Effects of Alternative Scenarios and the Plan

4.1 Alternative Scenarios

Three different alternative scenarios for the overall development plan approach were considered during the preparation of the Plan. The scenarios were identified early in the Plan-preparation/SEA process and developed further with various iterations passing to and from the Planning and SEA teams.

The alternatives provide the basis for the comparative evaluation of the likely environmental effects of each plan (summarised in Section 4.2), which in turn serves the purpose of identifying which features of plans and policies are likely to be sensitive or robust over the widest range of circumstances. For the purpose of this assessment, no particular alternative is preferred over the other, indeed the chosen strategy combines elements from each alternative considered.

Scenario A: Restructuring the Current Housing Pattern

Scenario A includes some 'densification' by restructuring the utilisation of current housing stock as well as the provision of new higher density units on extensive and smaller 'pocket' greenfield sites. This aims to make the current housing stock use land and services more efficiently by increasing the occupancy of units. The approach seeks to influence and manage population densities in existing units through incentives to increase household occupancy in the County therefore reducing the need for housing growth. According to the 2011 census, 23% of the current housing stock is occupied by one inhabitant; often these units have the capacity to facilitate a greater number of inhabitants. The Housing Agency forecast that by 2018 in the Dublin Region that 57% of all households are likely to be for one and two person households.

Scenario A would facilitate opportunities to rehouse the population within the planned higher density areas of the County [such as Cherrywood] as well as by using incentives e.g. such as encouraging small apartment buildings within or near mature residential enclaves, or more suitable types of 'empty-nester' developments, thus freeing up other existing underutilised housing stock with the capacity for higher population density. The policy would aim to achieve one quarter of new housing through incentives to facilitate densification of existing areas combined with achieving the remainder in greenfield areas such as Cherrywood.

The scenario would focus on urban hubs within the County and along existing or planned public transport corridors. Priorities would be placed on protecting the residential amenity and character of established residential areas by providing opportunities to rehouse the current population in the same community. This would ensure a sustainable mix of population and employment and increase the critical mass of activity required to sustain an integrated public transport network for the County. The method also facilitates a more sustainable approach to the current housing pattern by using the existing housing stock and associated existing social and physical services more efficiently.

Scenario B: Demographic Alternative - Phased Zoning

Scenario B seeks to focus development on demographic growth within the County over the lifetime of the Plan. Using this approach, additional lands would be prioritised and zoned on a phased basis over the lifetime of the Development Plan using demographic alternatives based on high, medium and low growth. The development would also take into account factors including demand, economic growth and availability of funding and priorities for infrastructure and service provision.

There is an emerging pattern where the population are increasingly choosing to live within the M50 in areas like Dún Laoghaire-Rathdown that have a high amenity and recreational value. However, the

development of additional lands increases the risk to amenities and environmental sensitivities. By employing the method of phased zoning, Dún Laoghaire-Rathdown County Council will be able to incrementally facilitate different levels of demographic growth while ensuring the protection of environmental sensitivities - including green corridors and areas of high amenity and recreational value.

The scenario would ensure that areas currently zoned and serviced by foul water and water supply schemes are prioritised and developed/redeveloped initially - including Cherrywood which is designated as a 'Strategic Development Zone' and smaller sites throughout the County that are presently available and serviced with infrastructure, followed by zoned areas south of the County that are waiting for funding to be made available for provision of foul drainage or water supply.

By selecting zones on a phased basis for development/redevelopment to accommodate growth as it occurs, this scenario allows for a greater degree of coordination of development through a plan-led approach in sync with the relevant planning strategies. This scenario needs to be viewed as requiring alternative scenarios of phasing/sequencing to take account of the reality that implementation will be determined by the priorities and budgets of external factors such as Irish Water.

Scenario C: Market-Led Growth

Alternative Scenario C facilitates an evaluation of the consequences of allowing the location and nature of development to respond to likely market demand or land availability with applications being evaluated on a case by case basis – especially where developments are proposed on green belt/sports areas or rural areas.

For evaluation purposes, it assumes that the areas proposed for development would occur on lands at the edge of currently developed areas – which have poor public transport links, and little or no current infrastructure capacity – such a water supply or foul drainage.

A pattern of opportunistic, but potential non-conforming, applications – of this type – are an historically persistent feature of development during periods of economic recovery or expansion and, as such, constitute a realistic alternative that needs to be assessed. This is particularly relevant during a period of rapidly changing demand – such as is currently emerging – where developments for specialist residential accommodation – such as units for single persons, student housing and housing for 'down-sizing, empty-nesters' may give rise to un-met needs that have not been adequately anticipated by current housing policies.

This scenario needs to be given equal evaluation to determine whether – notwithstanding potential non-conformity with national and regional planning policies – it could produce options that are environmentally advantageous.

4.2 Evaluation of Alternative Scenarios

The table overleaf summarises the evaluation of environmental effects of the alternative scenarios that is provided in the SEA Environmental Report.

The provisions of the alternatives are evaluated using compatibility criteria in order to determine how they would be likely to affect the status of the SEOs (these are all detailed under Section 3.13). The SEOs and the alternatives are arrayed against each other to identify which interactions - if any - would cause effects on specific components of the environment. Where the appraisal identifies a conflict with the status of an SEO the relevant SEO code is entered into the conflict column - e.g. B1 which stands for the SEO likely to be affected - in this instance 'to ensure compliance with the Habitats Directive with regard to the protection of Natura 2000 Sites and Annexed habitats and species'.

The interactions identified are reflective of likely significant environmental effects⁸;

- Interactions that would be likely to improve the status of a particular SEO would be likely to result in a significant positive effect on the environmental component to which the SEO relates.
- Interactions that would potentially conflict with the status of an SEO and would be likely to be mitigated would be likely to result in potential significant negative effects however these effects could be mitigated (for the chosen alternative these effects will be mitigated by measures which have been integrated into the Plan).

⁸ These effects include secondary, cumulative, synergistic, short, medium and long-term permanent and temporary, positive and negative effects.

Table 4.1 Evaluation of Alternative Scenarios against SEOs

	Likely to Improve status of SEOs	Probable Conflict with status of SEOs- unlikely to be mitigated	Potential Conflict with status of SEOs- likely to be mitigated
Scenario A: Restructuring the Current Housing Pattern	<p>By planning higher density areas, providing incentives to facilitate densification of existing areas and providing development along existing or planned public transport corridors, Scenario A would:</p> <ul style="list-style-type: none"> • Avoid the need for unnecessary greenfield development in certain locations thereby contributing towards the protection of many environmental components SEOs B1 B2 B3 PHH1 S1 W1 W2 W3 M1 M2 M3 CH1 CH2 L1 • Help to maximise the uptake in smarter, more sustainable modes of transport and minimise transport related emissions. SEOs C1 PHH1 • Enable development to be served by existing water services and drainage infrastructure, subject to capacity being provided. SEOs M1 M2 W1 W2 W3 B1 B2 B3 S1 PHH1 		<p>By providing for infill within existing developed areas, this scenario would potentially result in a localised intensification of effects upon the protection of cultural heritage, protection of biodiversity and flood risk (cumulative loss of storage) in urban areas. SEOs CH1 CH2 B1 B2 B3 W3</p> <p>Potential adverse environmental effects arising would be present during the implementation of this scenario however it would be possible to mitigate them and residual adverse effects would be likely to be non-significant. SEOs B1 B2 B3 PHH1 S1 W1 W2 W3 M1 M2 M3 C1 CH1 CH2 L1</p>
Scenario B: Demographic Alternative - Phased Zoning	<p>By providing for phasing, Scenario B would:</p> <ul style="list-style-type: none"> • Delay the piecemeal replacement of non-artificial surfaces with artificial surfaces in areas which are not prioritised for development thereby delaying potential effects and contributing towards the protection of many environmental components SEOs B1 B2 B3 PHH1 S1 W1 W2 W3 M1 M2 M3 CH1 CH2 L1 • Help to maximise the uptake in smarter, more sustainable modes of transport and minimise transport related emissions by concentrating in development in specific, considered locations already served by public transport SEOs C1 PHH1 • Enable development to be served by existing water services and drainage infrastructure, subject to capacity being provided SEOs M1 M2 W1 W2 W3 B1 B2 B3 S1 PHH1 		<p>The phasing of zoning provided for by the Plan would facilitate the development of the Plan area and therefore would potentially conflict with a number of environmental components. It would be possible to mitigate potential adverse effects arising and residual adverse effects would be likely to be non-significant. SEOs B1 B2 B3 PHH1 S1 W1 W2 W3 M1 M2 M3 C1 CH1 CH2 L1</p>
Scenario C: Market-Led Growth	<p>Under this scenario, infilling of existing developed areas would be significantly less likely to occur. Consequently, in urban areas, there would be potential for beneficial effects to occur with regard to the protection of cultural heritage, biodiversity and flood risk in urban areas. SEOs CH1 CH2 B1 B2 B3 W3</p>	<p>Because the areas proposed for development would occur on lands at the edge of currently developed areas - which have poor public transport links, have little or no current infrastructure capacity, such a water supply or foul drainage, and have low levels of development or are previously undeveloped, it would be difficult to mitigate potential adverse effects. It is likely that implementation of a Plan which evolves from this scenario would result in significant residual adverse effects on various environmental component SEOs B1 B2 B3 PHH1 S1 W1 W2 W3 M1 M2 M3 C1 CH1 CH2 L1</p>	

4.3 The Selected Alternative Scenario for the Plan

The alternative scenario for the County Development Plan which has emerged from the planning/SEA process is a mixture of Scenarios A and B (see evaluations provided above). The evaluation of the combination of Scenarios A and B against the SEOs is provided on Table 4.2 below.

Elements of Scenario A which have been integrated into the Plan include:

- planned higher density areas
- incentives to facilitate densification of existing areas
- focus on urban hubs
- development along existing or planned public transport corridors
- protecting the residential amenity and character
- a sustainable mix of population and employment

Elements of Scenario B which have been integrated into the Plan include:

- taking into account factors including demand, economic growth and availability of funding
- ensuring the protection of environmental sensitivities
- ensuring that areas currently zoned and serviced by foul water and water supply schemes are prioritised

The Plan was developed by the Planning Team, placed on public display as the Draft Plan and eventually adopted by the Elected Members having regard to both:

1. The environmental effects which are summarised in this section; and
2. Planning - including social and economic - effects which also considered by the Council.

By complying with appropriate mitigation measures - including those which have been integrated into the Plan - potential adverse environmental effects which could arise as a result of implementing this scenario would be likely to be avoided, reduced or offset. Section 5 of this report summarises how the Plan was informed by environmental considerations.

Table 4.2 Evaluation of Selected Alternative Scenario against SEOs

	Likely to Improve status of SEOs	Potential Conflict with status of SEOs- likely to be mitigated
The Selected Alternative Scenario	<p>By planning higher density areas, providing incentives to facilitate densification of existing areas and providing development along existing or planned public transport corridors in a manner which is generally phased, the Plan would:</p> <ul style="list-style-type: none"> • Avoid the need for unnecessary greenfield development in certain locations thereby contributing towards the protection of many environmental components SEOs B1 B2 B3 PHH1 S1 W1 W2 W3 M1 M2 M3 CH1 CH2 L1 • Help to maximise the uptake in smarter, more sustainable modes of transport and minimise transport related emissions. SEOs C1 PHH1 • Enable development to be served by existing water services and drainage infrastructure, subject to capacity being provided. SEOs M1 M2 W1 W2 W3 B1 B2 B3 S1 PHH1 	<p>By providing for infill within existing developed areas, this scenario would potentially result in a localised intensification of effects upon the protection of cultural heritage, protection of biodiversity and flood risk (cumulative loss of storage) in urban areas. SEOs CH1 CH2 B1 B2 B3 W3</p> <p>Potential adverse environmental effects arising would be present during the implementation of this scenario however it would be possible to mitigate them and residual adverse effects would be likely to be non-significant. SEOs B1 B2 B3 PHH1 S1 W1 W2 W3 M1 M2 M3 C1 CH1 CH2 L1</p>

4.4 Evaluation of Individual Plan Provisions

The **overall findings** (in addition to those detailed in preceding sections) are that:

- The Council have integrated all recommendations arising from the SEA and AA processes into the Plan (these are summarised in Section 5 of this report);
- Some Plan provisions would be likely to result in significant positive effects upon all of the environmental components; and
- Some provisions would have the potential to result in significant negative environmental effects (these are described below) however these effects will be mitigated by the mitigation measures which have been integrated into the Plan (these are summarised in Section 5 of this report).

Environmental impacts which occur, if any, will be determined by the nature and extent of multiple or individual projects and site specific environmental factors. The **potentially significant adverse environmental effects** arising from implementation of the Plan are summarised on Table 4.3 below. Avoidance of conflict with SEOs and the environment is dependent upon compliance with the mitigation measures which have emerged through the SEA, AA and SFRA processes and which have been integrated into the Plan. Section 5.1 summarises the measures that will mitigate the potential effects that are likely to arise as a result of implementing the Plan.

Table 4.3 Potentially Significant Adverse Environmental Effects arising from the Plan

Environmental Component	Potential Effect
Biodiversity and Flora and Fauna	<ul style="list-style-type: none"> ○ Loss of biodiversity with regard to Natura 2000 Sites and Annexed habitats and species ○ Loss of biodiversity with regard to ecological connectivity and stepping stones ○ Loss of biodiversity with regard to designated sites including Wildlife Sites and listed species
Population and Human Health	<ul style="list-style-type: none"> ○ Spatially concentrated deterioration in human health
Soil	<ul style="list-style-type: none"> ○ Damage to the hydrogeological and ecological function of the soil resource
Water	<ul style="list-style-type: none"> ○ Adverse impacts upon the status and quality of water bodies, including bathing waters ○ Increase in the risk of flooding
Material Assets	<ul style="list-style-type: none"> ○ Failure to provide adequate and appropriate waste water treatment (water services infrastructure and capacity would be needed to ensure the mitigation of potential conflicts) ○ Failure to comply with drinking water regulations and serve new development with adequate drinking water that is both wholesome and clean (water services infrastructure and capacity would be needed to ensure the mitigation of potential conflicts) ○ Increases in waste levels
Air and Climatic Factors	<ul style="list-style-type: none"> ○ Failure to contribute towards sustainable transport and associated impacts
Cultural Heritage	<ul style="list-style-type: none"> ○ Effects on entries to the Record of Monuments and Places and other archaeological heritage ○ Effects on entries to the Records of Protected Structures and other architectural heritage
Landscape	<ul style="list-style-type: none"> ○ Occurrence of adverse visual impacts

Residual adverse effects likely to occur - considering the extent of detail provided by the Plan and assuming that all mitigation measures are complied with by development - are identified for each of the environmental components on Table 4.4 below.

Table 4.4 Residual Adverse Environmental Effects arising from the Plan

Environmental Component	Residual Adverse Effects
Biodiversity and Flora and Fauna	Loss of an extent of non-protected habitats arising from the replacement of semi-natural land covers with artificial surfaces
Population and Human Health	None
Soil	Loss of an extent of soil function arising from the replacement of semi-natural land covers with artificial surfaces
Water	Flood related risks remain due to uncertainty with regard to extreme weather events
Air and Climatic Factors	None
Material Assets	Residual wastes to be disposed of in line with higher level waste management policies
Architectural Heritage	Potential alteration to the context and setting of architectural heritage (Protected Structures) however these will occur in compliance with legislation
Archaeological Heritage	Potential alteration to the context and setting of archaeological heritage (Recorded Monuments) however this will occur in compliance with legislation Potential loss of unknown archaeology however this loss will be mitigated by measures integrated into the Plan
Landscape Designations ⁹	None

⁹ The Plan contributes towards the protection of landscape designations. The county's landscapes will change overtime as a result of natural changes in vegetation cover combined with new developments.