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Green Infrastructure: A 'How To' Guide for Disseminating and Integrating the Concept into Spatial Planning Practice

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Comhshaol, Pobal agus Rialtas Áitiúil
Environment, Community and Local Government

www.epa.ie

ENVIRONMENTAL PROTECTION AGENCY

The Environmental Protection Agency (EPA) is responsible for protecting and improving the environment as a valuable asset for the people of Ireland. We are committed to protecting people and the environment from the harmful effects of radiation and pollution.

The work of the EPA can be divided into three main areas:

Regulation: *We implement effective regulation and environmental compliance systems to deliver good environmental outcomes and target those who don't comply.*

Knowledge: *We provide high quality, targeted and timely environmental data, information and assessment to inform decision making at all levels.*

Advocacy: *We work with others to advocate for a clean, productive and well protected environment and for sustainable environmental behaviour.*

Our Responsibilities

Licensing

We regulate the following activities so that they do not endanger human health or harm the environment:

- waste facilities *(e.g. landfills, incinerators, waste transfer stations)*;
- large scale industrial activities *(e.g. pharmaceutical, cement manufacturing, power plants)*;
- intensive agriculture *(e.g. pigs, poultry)*;
- the contained use and controlled release of Genetically Modified Organisms *(GMOs)*;
- sources of ionising radiation *(e.g. x-ray and radiotherapy equipment, industrial sources);*
- large petrol storage facilities;
- waste water discharges;
- dumping at sea activities.

National Environmental Enforcement

- Conducting an annual programme of audits and inspections of EPA licensed facilities.
- Overseeing local authorities' environmental protection responsibilities.
- Supervising the supply of drinking water by public water suppliers.
- Working with local authorities and other agencies to tackle environmental crime by co-ordinating a national enforcement network, targeting offenders and overseeing remediation.
- Enforcing Regulations such as Waste Electrical and Electronic Equipment (WEEE), Restriction of Hazardous Substances (RoHS) and substances that deplete the ozone layer.
- Prosecuting those who flout environmental law and damage the environment.

Water Management

- Monitoring and reporting on the quality of rivers, lakes, transitional and coastal waters of Ireland and groundwaters; measuring water levels and river flows.
- National coordination and oversight of the Water Framework Directive.
- Monitoring and reporting on Bathing Water Quality.

Monitoring, Analysing and Reporting on the Environment

- Monitoring air quality and implementing the EU Clean Air for Europe (CAFÉ) Directive.
- Independent reporting to inform decision making by national and local government *(e.g. periodic reporting on the State of Ireland's Environment and Indicator Reports).*

Regulating Ireland's Greenhouse Gas Emissions

- Preparing Ireland's greenhouse gas inventories and projections.
- Implementing the Emissions Trading Directive, for over 100 of the largest producers of carbon dioxide in Ireland.

Environmental Research and Development

- Funding environmental research to identify pressures, inform policy and provide solutions in the areas of climate, water and sustainability.

Strategic Environmental Assessment

- Assessing the impact of proposed plans and programmes on the Irish environment *(e.g. major development plans)*.

Radiological Protection

- Monitoring radiation levels, assessing exposure of people in Ireland to ionising radiation.
- Assisting in developing national plans for emergencies arising from nuclear accidents.
- Monitoring developments abroad relating to nuclear installations and radiological safety.
- Providing, or overseeing the provision of, specialist radiation protection services.

Guidance, Accessible Information and Education

- Providing advice and guidance to industry and the public on environmental and radiological protection topics.
- Providing timely and easily accessible environmental information to encourage public participation in environmental decision-making *(e.g. My Local Environment, Radon Maps).*
- Advising Government on matters relating to radiological safety and emergency response.
- Developing a National Hazardous Waste Management Plan to prevent and manage hazardous waste.

Awareness Raising and Behavioural Change

- Generating greater environmental awareness and influencing positive behavioural change by supporting businesses, communities and householders to become more resource efficient.
- Promoting radon testing in homes and workplaces and encouraging remediation where necessary.

Management and structure of the EPA

The EPA is managed by a full time Board, consisting of a Director General and five Directors. The work is carried out across five Offices:

- Office of Environmental Sustainability
- Office of Environmental Enforcement
- Office of Evidence and Assessment
- Office of Radiological Protection
- Office of Communications and Corporate Services

The EPA is assisted by an Advisory Committee of twelve members who meet regularly to discuss issues of concern and provide advice to the Board.

Integrating Ecosystem Approaches, Green Infrastructure and Spatial Planning

(2012-B-DS-5)

EPA Research Report

Prepared for the Environmental Protection Agency

by

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DISCLAIMER

The EPA Research Programme addresses the need for research in Ireland to inform policymakers and other stakeholders on a range of questions in relation to environmental protection. These reports are intended as contributions to the necessary debate on the protection of the environment.

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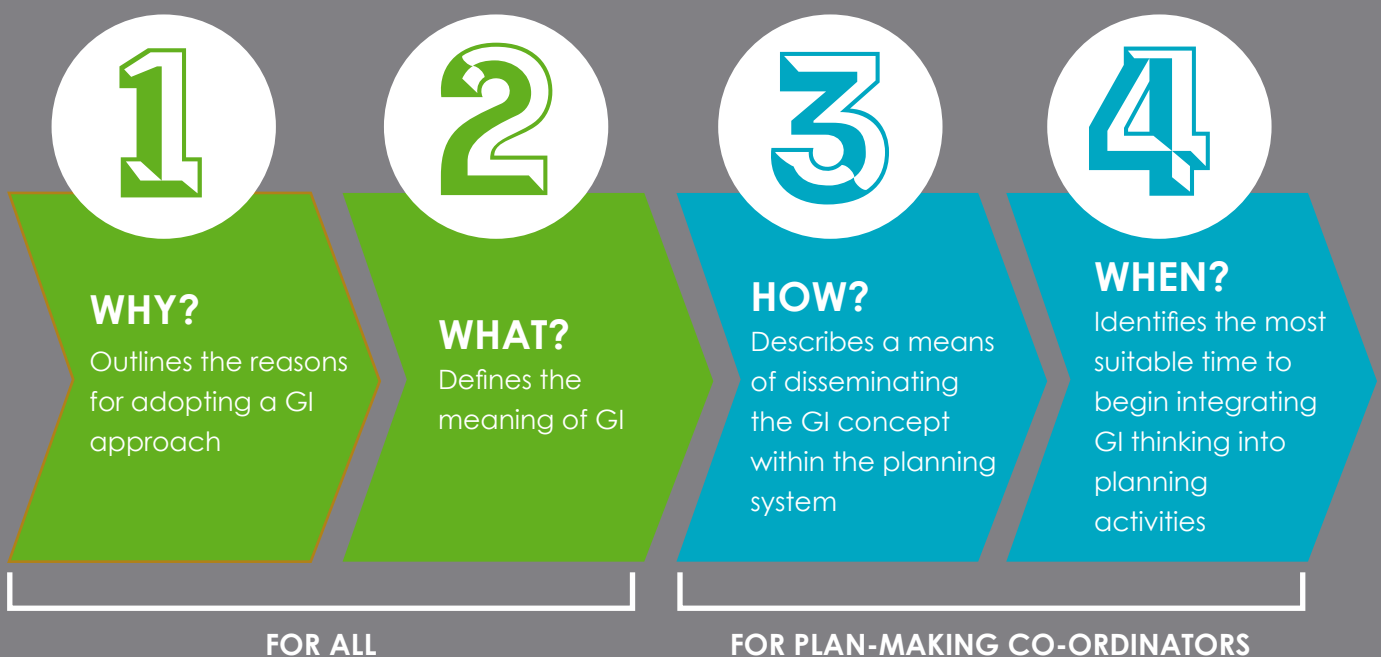Email: karen.foley@ucd.ie

Contents

INTRODUCTION

In recent years the Irish planning system has been reshaped in response to the challenges posed by such pressing issues as climate change, flooding, threats to biodiversity and the need to improve water quality. There is enormous pressure on planners and allied professionals to respond to such pressing issues when formulating spatial plans. This short document seeks to relieve such pressures for those involved in the formulation of spatial plans by presenting a "How To" guide on disseminating and integrating the *green infrastructure* (GI) concept – an approach that addresses multiple issues in an environmentally sensitive manner by promoting spatial connectivity and multifunctionality.

This guide forms part of a suite of GI planning resources available at www.ecoplanresearch.org and www.epa.ie/researchandeducation/research/safer including downloadable presentation and concept dissemination material, national and international best practice case studies, an annotated bibliography of relevant literature and a detailed report entitled *Integrating Ecosystems Approaches, Green Infrastructure and Spatial Planning*. This concept dissemination and integration guide complements guidance produced by Comhar and the Urban Forum on potential methods that may be employed when seeking to develop a GI strategy for a county or city development plan, local area plan or site master plan.[1]

The document is divided into four sections. Sections 1 and 2, respectively, outline "why" the GI approach should be adopted and "what" GI means. These two sections are aimed at all planners and allied professionals involved in spatial planning. Sections 3 and 4, respectively, outline "how" to disseminate the GI concept and "when" is the most suitable time to begin integrating GI thinking into planning activities. While all planners and allied professionals involved in spatial planning will benefit from reviewing Sections 3 and 4, these two sections are specifically aimed at those co-ordinating the formulation of spatial plans.

1 WHY?
Outlines the reasons for adopting a GI approach

2 WHAT?
Defines the meaning of GI

3 HOW?
Describes a means of disseminating the GI concept within the planning system

4 WHEN?
Identifies the most suitable time to begin integrating GI thinking into planning activities

FOR ALL   **FOR PLAN-MAKING CO-ORDINATORS**

1 Comhar SDC, 2010.

1-WHY?

PRESSURES

Few would deny that we live in a world of declining biodiversity, anthropogenic climate change and a host of related issues resulting from human influence on the environment. Indeed, the pressures placed on the planet by human activities pose some of the most complex and demanding challenges facing societies and policymakers across the globe, requiring integrated and innovative policymaking to build resilient social-ecological systems that foster more sustainable relationships between humanity and the environment. Observed increases in storm intensity[2] and the challenges faced in seeking to preserve the quality of our environment while advancing socio-economic development[3] illustrate that Ireland is subject to such pressures and, therefore, shares in the responsibility to address them.

PRESSURES > POLICIES

At a global level, the United Nations Framework Convention on Climate Change (UN, 1992a) and the Convention on Biological Diversity (UN, 1992b) have both highlighted the need for action and specified the broad contours of a transition pathway to more sustainable forms of human interaction with the environment. Such global initiatives are given national representation in the National Climate Change Adaptation Framework (DECLG, 2012a) and the National Biodiversity Plan (DAHG, 2011), which are being implemented "on the ground" through local development plan policies on climate change and via the production of Biodiversity Action Plans.

This interconnectivity is also reflected in the activities of the European Union (EU) which has been in the vanguard in responding to complex environmental issues by producing a series of targeted directives, such as the Strategic Environmental Assessment (SEA) Directive concerning the assessment of the potential impacts of plans and programmes; the Birds and Habitats Directives regarding the identification, designation and protection of species and habitats, as well as the assessment of potential impacts from proposed developments on such species and habitats; the Water Framework Directive concerning the protection of all high-status waters, prevention of further deterioration of all waters and the restoration of degraded surface and ground waters to a good status; and the Floods Directive concerning the management of flooding risks. These have been transposed in Irish legislation and policy by an array of initiatives that include, but are not limited to, such initiatives as the formulation of Site-Specific Conservation Objectives for the enhancement of biodiversity and the production of River Basin Management Plans to improve water quality.

Complementing this EU-driven environmental policy has been policy leadership in Ireland regarding a host of associated issues. Such nationally instigated initiatives include, but are not limited to, promoting a modal shift to less carbon-intensive modes of transport (DoT, 2009), advancing high quality design in the consideration of environmental issues (DECLG, 2012b, 2013), and ensuring that the recreational needs of young people are met through the development of youth-friendly safe environments (DoHC, 2007).

2 DECLG, 2012a.
3 EPA, 2012.

This growing number of policies has been integrated into planning at the local level, with several local authorities showing considerable initiative in promoting innovative approaches to accommodating a broadening range of policy objectives. Much of this has been undertaken within a resource-constrained working environment. However, while planners and allied professionals have demonstrated commitment to enhancing the quality of Ireland's built and natural environment, the volume and complexity of policy objectives now weighing upon the planning system have made it a challenge to effectively meet the range of goals emanating from a variety of sources at international, EU, national and local levels.

PRESSURES > POLICIES > SOLUTIONS

This document outlines how the GI approach can help planners and allied professionals respond to this challenge by fostering positive synergies through the planning, design, implementation and management of connected multifunctional spaces. In essence, the GI approach enables those working within the planning system to meet a diverse range of complicated objectives that often seem to conflict. This document outlines how this can be achieved by simply enhancing certain existing working practices to better facilitate a more context-sensitive form of planning which has a range of mutually reinforcing social, economic and environmental benefits. Importantly, the GI approach is a cost-effective approach that supplies solutions in a resource-restricted administrative environment.

A GI APPROACH TO PLANNING OFFERS THE FOLLOWING SOLUTIONS

» It enables planning authorities to meet a wide range of objectives in an integrated manner focused on ecologically sound development outcomes, including drainage management; habitat provision; ecological connectivity; landscape conservation and management; health, well-being and community development; recreation space; sustainable transport; climate change (mitigation and adaptation); and economic development.

» It enables local authorities to meet a range of environmental obligations under European and national legislation, including, but not limited to, SEA; Environmental Impact Assessment (EIA); Appropriate Assessment (AA, i.e. Natura Impact Assessment); and Flood Risk Management.

2-WHAT?

> Green Infrastructure can be broadly defined as a strategically planned network of high quality natural and semi-natural areas with other environmental features, which is designed and managed to deliver a wide range of ecosystem services and protect biodiversity in both rural and urban settings. More specifically GI, being a spatial structure providing benefits from nature to people, aims to enhance nature's ability to deliver multiple valuable ecosystem goods and services, such as clean air or water.
>
> *(EC, 2013, p. 7)*

A key advantage of the GI approach is its emphasis on positive synergies between several functions in the same area. Thus, in contrast to much conventional planning activity which focuses on a single functional objective, the GI approach advances a **multifunctional and spatially connected land use perspective** that promotes **"win–win" combinations that deliver mutual benefits** to both nature and society. For example, a conventional approach may seek to designate an area simply as a floodplain. However, a GI approach would seek to explore the positive synergies that such a designation may have with other land uses. Here, it may be discovered that a suitably designed programme of deciduous tree planting and relatively inexpensive unsealed pathway provision could provide riparian bank stabilisation, enhance the area's aesthetic appearance, supply habitat connectivity between Natura sites, improve pedestrian and cycle connectivity, while a series of robust sunken play spaces designed for use outside flood periods could be employed to improve flood alleviation by providing water detention areas during times of heavy rainfall.

FOUR CORE PRINCIPLES UNDERLIE THE GI APPROACH
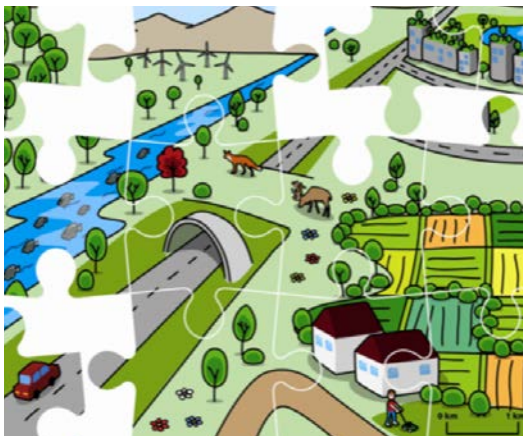
1. Respect Context

Understanding, emulating and enhancing local ecological, topographical and cultural distinctiveness is the starting point for a GI approach to plan formulation.

2. GI Assets are Fundamental Infrastructure

Planning for the conservation and enhancement of valuable GI assets and functions should precede the allocation of lands for development. GI assets include, but are not limited to, woodlands, public open green spaces, riparian corridors, hedgerows, conservation areas, non-motorised transport routes, and sustainable urban drainage systems.

Images courtesy of the European Commission (EC, 2016)

4
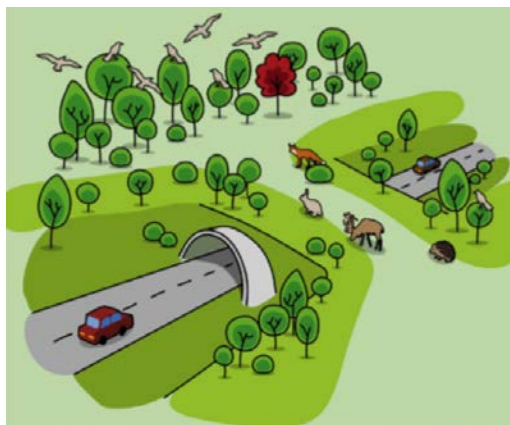
3. Spatial Connectivity

Promoting spatial connectivity assists nature conservation by connecting habitats and thereby enabling species mobility. Spatial connectivity also involves identifying and planning for the interrelated roles played by different types of spaces that are connected across different spatial scales. For example, the different, yet interrelated, roles played by a spatially connected suburban hedgerow, an urban park, and a woodland located on an urban periphery.

4. Multifunctionality

A focus on how planning may enhance mutually beneficial social-ecological interactions by orientating spatial planning towards an emphasis on improving positive synergies between abiotic, biotic and social systems. By emphasising positive multifunctional synergies, a central value of the GI approach is that it supplies a resource-efficient means to effectively respond to the increasing scope, volume and complexity of issues and policy pressures that must be addressed in spatial planning, design and management activities.
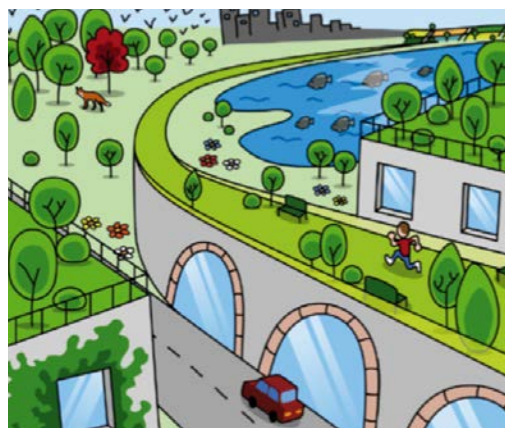

EXAMPLE OF THE GI PLANNING APPROACH

An example of how to operationalise the GI planning approach is illustrated in the innovative and interlinked local area plans produced by Fingal County Council (FCC, 2013) for the contiguously located areas of Baldoyle-Stapolin and Portmarnock South. Both plans were adopted in 2013 and are effective for the 6-year period 2013–2019. These plans employ a GI approach to holistically frame and integrate policy initiatives concerning landscape aesthetics, biodiversity, sustainable urban drainage, archaeology and built heritage, as well as open spaces and recreation. Through a detailed and iterative environmental assessment process, both documents show **respect for context** by negotiating the development constraints posed by various conservation designations (SPA, SAC, Shellfish Waters) in a manner that aims to sensitively accommodate both urban expansion and environmental protection. The plans emphasise that **GI assets are fundamental infrastructure** rather than an ancillary design issue by seeking that all new residential areas are fully integrated with parkland, sustainable urban drainage schemes, non-motorised transport routes and spaces for "urban farming". **Spatial connectivity** underpins the layout of the plans such that permeability is maximised for pedestrians, cyclists and a range of species, as well as motorists. Both plans also promote the **multifunctionality** of spaces, with, for example, parkland recreational spaces designed to provide habitats for wintering birds and enhance the appearance of the area. A key feature of these plans is, therefore, how they employ the GI approach to work synergistically in facilitating high quality urban extensions to the Baldoyle and Portmarnock urban areas while concurrently protecting the ecological integrity of the Baldoyle Estuary.

See: http://www.fingalcoco.ie

Images on this page courtesy of the European Commission (EC, 2016)
Images (overleaf) for Baldoyle-Stapolin and Portmarnock South LAPs courtesy of Áit (Urbanism + Landscape)

Location of the Baldoyle-Stapolin and Portmarnock South LAP lands showing main greenway connections (green arrows)
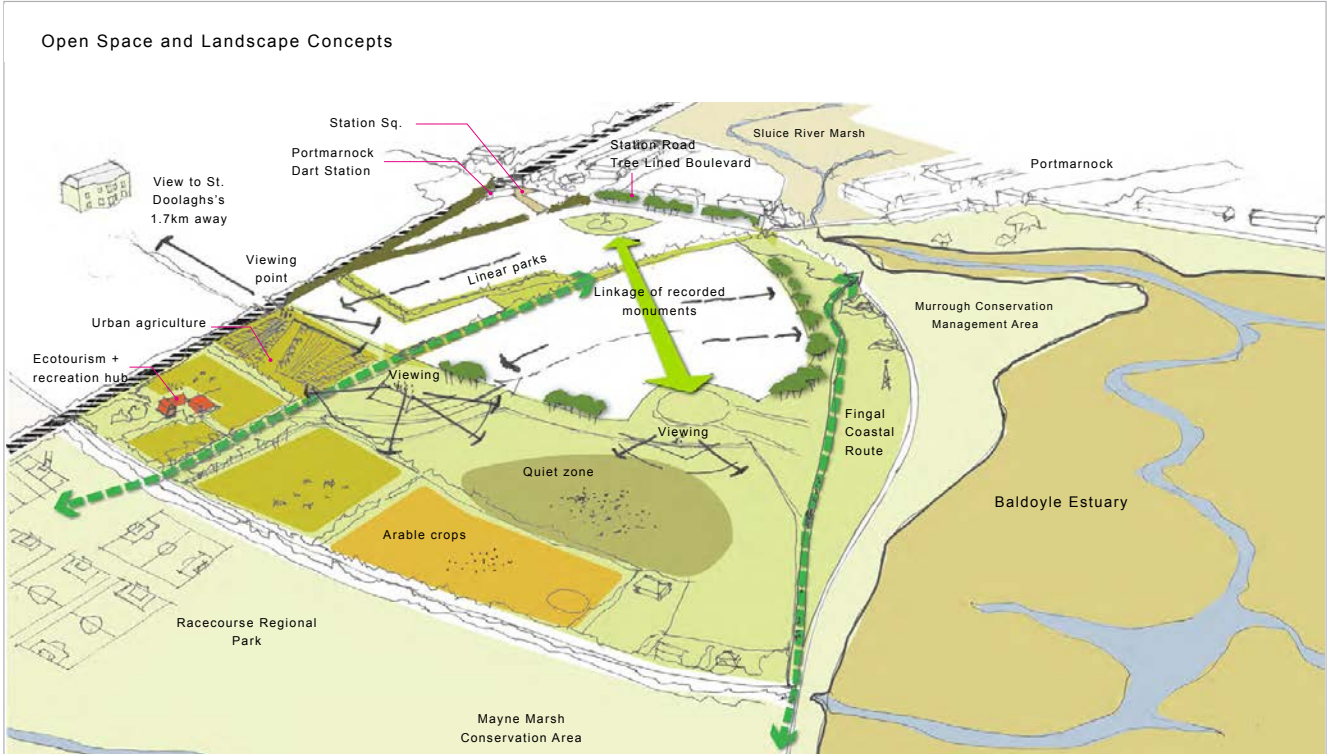
Green Infrastructure Concepts for the Portmarnock South LAP

Legend:

- Recorded Monument and buffer zone
- Proposed open space - predominantly amenity grassland
- Proposed open space - predominantly meadow
- Proposed Quiet Zone for migratory birds
- Proposed Arable crops for migratory and native birds
- Proposed small holding urban farming
- Proposed paddocks, food cultivation / parkland
- Proposed Mayne Marsh and Murrough Conservation Management areas
- Existing ponds
- Existing watercourses
- Proposed open space - predominantly hard landscape
- Existing hedgerows, woodland and tree groups
- Proposed new hedgerow boundaries
- Proposed new planting of predominantly broadleaf parkland species
- Proposed coastal copses - Pine and Hawthorn
- Proposed screen planting to pumping station
- Proposed Greenroute - pedestrian and cycle
- Proposed path through open space
- Proposed mown grass path through Quiet Zone (Summer Only)
- Moyne House - proposed Ecotourism and Recreation Hub
- Primary view lines from within urban development
- Proposed local playground (Py)
- Proposed SuDS features (Sd)
- Proposed viewing point (V)
- Proposed Pocket Park (Pk)

Map labels:

- Portmarnock Dart Station
- The Links
- Station Rd.
- Sluice River Marsh Ecological Buffer Area
- to Portmarnock Village Centre
- Drumnigh Wood
- Clongriffin
- Station Sq.
- Local Centre
- RMP-DU015:014
- Proposed Pumping Stn.
- Murrough Conservation Management Area
- Baldoyle Estuary SPA/SAC/Natura site
- Coast Rd. R106
- view line to shore
- view line to south
- RMP-DU015:055
- Moyne House
- Moyne Rd.
- Moyne Park
- Racecourse Regional Park
- Mayne Marsh Conservation Area
- Fingal Coastal Route
- to Baldoyle
- Dublin-Belfast Rail-line
- to Clongriffin

Scale 1:4000

0   100   200m

Green Infrastructure and Landscape Strategy for the Portmarnock South LAP

7

FOR PLAN-MAKING CO-ORDINATORS

Sections 3 and 4
"How" to disseminate the GI approach
&
"When" to integrate GI thinking into the plan-making process

European Landscape
Convention

SEA and EIA
Directives

Habitats Directive
Birds Directive
(also Ramsar)

The GI Approach

Sustainable
mobility

Water Framework
Directive

Floods Risk Directive

Public open
space
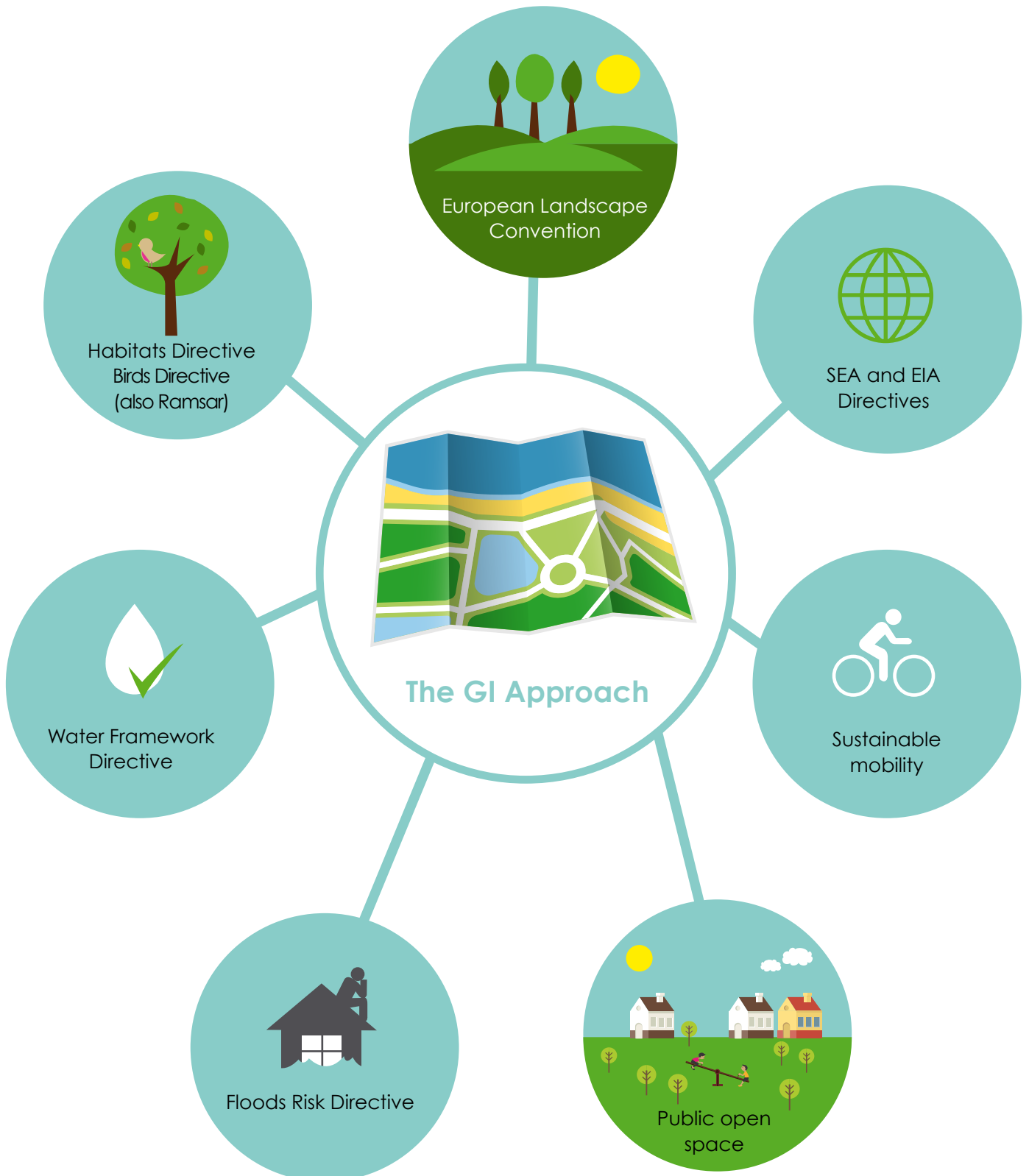
3-HOW?

In line with the principle of multifunctionality, a GI approach necessitates collaborative working between a broad spectrum of professional disciplines in order to realise positive functional synergies in a spatially connected network. Consequently, a continuing professional development workshop was carefully devised to encourage GI thinking and collaborative problem-solving in order to simulate real world planning dilemmas. This interactive workshop employs a group-based methodology centred on a board game called "GI Quest". This deliberative toolkit was specially produced to disseminate the GI concept and foster positive interdisciplinary collaboration on resolving complex planning issues at a range of scales. The description below provides an outline of the GI Quest workshop for plan-making co-ordinators so that they can gauge its usefulness for disseminating GI thinking among their colleagues during the plan-making process. Detailed guidance on how to run this workshop and the materials necessary to do so are available online (www.ecoplanresearch.org and www.epa.ie/researchandeducation/research/safer).
The workshop lasts approximately 3 hours and 30 minutes, inclusive of a 20-minute comfort break.

THE WORKSHOP IS ORGANISED INTO FIVE PHASES:

PHASE 1: FAMILIARISATION

» A 25-minute PowerPoint presentation is delivered.

» This presentation outlines the rationale and principles of the GI approach, as well as discussing a range of internationally sourced best practice examples to illustrate the successful deployment of the approach in solving complex planning issues.

PHASE 2: IDENTIFICATION OF GI ASSETS

» This phase of the workshop is approximately 40 minutes in duration.

» The participants are separated into clusters of four or five and physically grouped into small working teams.

» Each team is allocated a separate table.

» Importantly, participant inclinations towards habitual disciplinary groupings should be countered by requesting that officers with a range of disciplinary backgrounds comprise each group.

» This creates the necessary conditions for interdisciplinary interaction.

» Located on each table is an A1 size aerial photograph of a fictional coastal town called "Ballystewart", a series of coloured markers and tracing paper.

» The participants are informed that the fictional local authority for the town intends to formulate a local area plan for the settlement that employs the GI approach to inform the planning and design of both strategic policies and specific proposals.

» The participants are then provided with further contextual information in the form of a number of A4 sheets of texts and illustrations. Information is also provided concerning local political and planning aspirations for a number of urban extensions to the town.

» The participants are tasked with examining the aerial photograph and contextual information supplied to identify possible GI assets (parks, rivers, wooded areas, cycleways, conservation sites etc.) and explore potential opportunities for enhancing green space connectivity and multifunctionality by employing the GI approach.

» Using the tracing paper and coloured markers provided, each team is requested to record in tracings, sketches and summary text their collaboratively derived planning and design objectives for consolidating and enhancing the area's existing green infrastructure.

» Participants are also tasked with providing some outline ideas on how to manage the local authority's aspiration for urban expansion.

PHASE 3: GAME PLAY

» This phase of the workshop occupies approximately one hour and builds upon the nascent interdisciplinary collaboration of the preceding phase.

» At this juncture, the participants have familiarised themselves with the context and formulated a series of planning and design ideas.

» The workshop facilitators now distribute a series of colour-coded cards, dice and some place markers.

» The attention of the participants is then directed to the series of coloured blocks bordering the aerial photograph and informed that each block corresponds to a different set of cards.

» These cards address a variety of themes, namely "ecology", "hydrology", "sustainable mobility", "cultural heritage", "recreation" and "wildcard" – the last theme addresses miscellaneous issues, such as unforeseen political interference and lottery bursaries.

» Associated with the cards are a series of posters displayed around the room that address issues specifically referenced on the cards, such as protected views, flooding

zones and the location of sites designated for ecological conservation.

» Many of these posters also provide useful supplementary context information.

» Participants are instructed to rest their place marker on the block identified as "Start" and roll the dice to commence their passage along the coloured boxes, drawing the corresponding colour-coded card to the box they land on.

» Each card presents the team with a new challenge which they must negotiate through collaboratively, revising the outline plans and designs they formulated in Phase 2 of the workshop.

» The cards are designed to simulate issues that may emerge in devising a site masterplan or local area plan. For example, an "ecology" card may specify that a recent ecological assessment has identified the presence of an internationally protected animal within a certain area with consequent implications concerning development limitations and conservation requirements.

» The game cards are designed to encourage participants to consider the potential for enhancing spatial connectivity and the multifunctional potential of sites.

» Therefore, participants are encouraged throughout to reflect on both "what" the GI approach entails and on "how" it can be operationalised through the planning system.

» Several game cards also require participants to reflect upon their understanding of GI by obliging them to develop a "communication strategy" outlining the benefits of the approach to elected politicians and the broader public.

» The game thereby provides an opportunity for a range of professionals from different disciplines to collaboratively formulate and rehearse arguments that can be taken away from the workshop and later deployed in their workplace when seeking to advance the GI approach.

» The participants finish their passage around the coloured boxes by landing on the large red circular shape identified as "GI".

PHASE 4: GI CHALLENGE

» The workshop facilitators now present each team with details concerning a planning application for a complex mixed-use residential, hotel and golf course development located adjacent to a nature conservation area and partially situated within an identified flood plain.

» Each team is tasked to once again pool their respective expertise in assessing the merits of this proposal against the GI-informed design and planning concepts they have formulated so far.

» This phase of the workshop lasts about 30 minutes and was specifically formulated to simulate the application of a GI approach in a development management context. This phase of the workshop involves a transition from simulating policy development to simulating policy implementation.

» At the end of this phase, the facilitator asks each team to outline the decision they reached and justify the reasoning underpinning this assessment.

» A brief discussion of each team's analysis then ensues, with particular attention paid to how the principles of the GI approach influenced the decision that was reached.

» The workshop concludes with an open discussion of about 35 minutes that provides a forum for participants to "reflect-on-action" what has been learned through "reflection-in-action".

» In this phase of the workshop, participants are invited to relate and identify the potential benefits and constraints of the GI approach to their own experiences.

» Participants are also asked to consider the possible barriers to applying the GI approach in their work and to offer suggestions on how such barriers could be overcome.

4-WHEN?

One of the core principles of the GI approach is that GI assets are seen as fundamental infrastructure. Accordingly, while recommending that a GI approach be advanced at all stages in policy formulation and development management processes, it is particularly important to integrate the GI concept into planning activities **from the outset**. Thus, it is recommended that the GI Quest workshop be run before producing the Issues Paper for a city or county development plan or local area plan. Should this not be possible, the concept dissemination and integration benefits of the workshop could also be fully realised if the workshop was run following the publication of the Issues Paper, but prior to the preparation of the draft plan. Running the workshop during the preparation of the draft plan or following the first public consultation display of the draft plan is less ideal for concept dissemination and integration. However, the benefits from running the workshop during this period of plan-making can still be realised. Such benefits include the dissemination of the GI concept for subsequent integration into specific (detailed) land use objectives within chapters of the plan as these are reviewed during production of the draft and/or following the review of submissions on the first public consultation display of the draft plan.

The workshop should be attended by all those involved in plan-making and development management processes within a local authority. This includes, but is not limited to, planners; drainage, transportation and water services engineers; parks professionals; community and economic development professionals; heritage officers; biodiversity officers; architects; housing officers; directors of services; municipal district managers; and councillors.

PLAN ADOPTION

2nd Public Consultation on Draft Plan

Preparation of Amended Draft Plan

1st Public Consultation on Draft Plan

Preparation of Draft Plan

Issues Paper Published

PRE-ISSUE PAPER
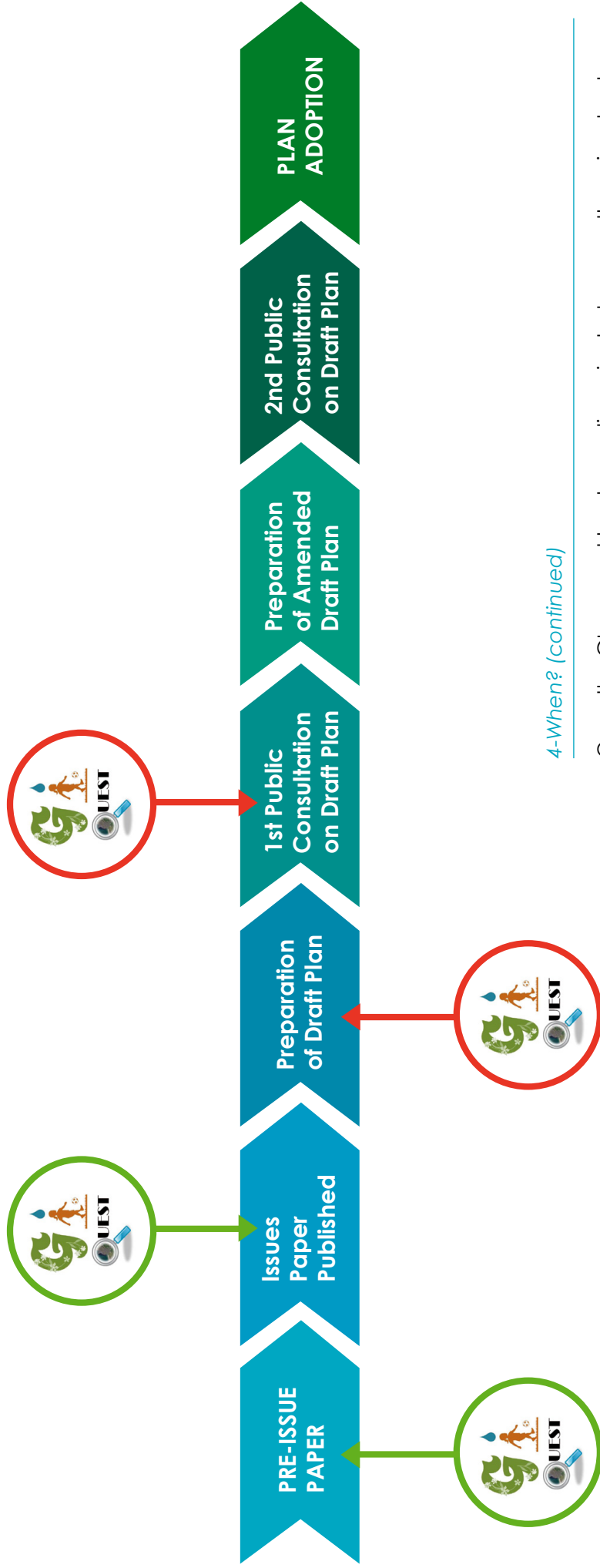
4-When? (continued)

Once the GI concept has been disseminated among those involved in the plan-making and development management processes in local authorities, it should be integrated into the SEA, AA and EIA processes that underpin the environmental assessment of plans, programmes and projects. In particular, the GI concept should be used to inform the formulation and assessment of alternative development scenarios and the mitigation measures that may be proposed in the SEA, AA and EIA processes. For example, alternative policy or zoning options, along with mitigation measures, should be informed by the GI concept with respect to the SEA process. Similarly, alternative locations or site-specific designs, along with mitigation measures, should be informed by the GI concept with respect to EIA. The flowchart diagram on the next page indicates when it is best to integrate GI thinking into the environmental assessment processes of SEA, AA and EIA.

◯ Optimal time to run GI Quest Workshop

◯ Less ideal but still viable time to run GI Quest Workshop

13

STRATEGIC ENVIRONMENTAL ASSESSMENT

Draft Plan/Programme

Plan/programme is reconsidered by proponent

Screening

Scoping

Baseline Environment (Flora and Fauna, including NHA, pNHA, Nature Reserves, Ramsar and flora/fauna protection orders as stepping stones for designated sites)

Baseline Environment (Human beings, Soils and geology, Air and climate, Water, Landscape, Heritage and Material assets)

SEOs (including protection of Natura 2000 and any other AA-related issues such as water quality)

Alternatives

Include AA ecological alternatives

Assessment of Impacts of Proposed Plan and AA Alternatives (including cumulative effects assessment)

Mitigation

Monitoring using habitats and species indicators (including status of Natura 2000)

Ensure compatibility

APPROPRIATE ASSESSMENT

Plan/programme/project reconsidered

Continue to SEA if AA does not flag potential for withholding consent

Continue to SEA (AA not required)

Stage 1: Screening Baseline Environment (Qualifying interests of designated sites – Natura 2000 only)

Viability of Plan (flag likelihood of plan, programme being withheld consent)

Ensure there is no conflict

Screening (Stage 1) Assessment of potential impacts of proposed Plan on Qualifying interests

Screen out

Screen in

Stage 2: AA Detailed Assessment (potential impacts of proposal on Natura2000 sites, including in-combination effects)

Ensure there is no conflict (particularly when potential impacts are anticipated on connecting features such as vegetation, water or air)

Stage 3: Alternatives (Ecological options and solutions)

Withhold consent on certain aspects of the plan/programme or project (likely adverse effects cannot be ruled out)

IROPI (Conditional consent)

Mitigation

ENVIRONMENTAL IMPACT ASSESSMENT

Project is reconsidered by proponent

Screening

Scoping

Baseline Environment (Flora & Fauna) Impact

Baseline Environment (Human beings, Soils and geology, Air and climate, Water, Landscape, Heritage and Material assets)

Viability of Plan (flag likelihood of project being withheld consent)

Continue to EIA (AA not required)

Continue to EIA if AA does not flag potential for withholding consent

Ensure there is conflict

Include AA ecological alternatives

Impact Assessment (including consideration of Alternatives)

Mitigation

Monitoring using habitats and species indicators (including status of Natura 2000)

Ensure compatibility

Draft Project

Documentation, Decision Making and Reporting (Incorporation of Natura Impact Assessment into SEA ER or EIS)

Boxes with bright red borders indicate the stages of SEA, AA and EIA where the GI concept can be best integrated into environmental assessment processes.

Note: green boxes indicate "common" procedural stages; yellow boxes indicate correlation between some of the processes; white refers to those stages solely applicable to one of the processes; and the orange highlights the primacy of this legislative process for refusing consent. Red arrows refer to the critical outcomes of screening for AA; grey dotted arrows link all the rest of the relevant stages; discontinuous grey arrows point to reconsideration of proposals in light of IROPI.

Flowchart adapted from EPA, 2013

GI WEB-LINKS

Global Links
- Convention on Biological Diversity (local authorities); www.cbd.int
- Greenroofs & Greenwalls; www.greenroofs.com
- ISOCARP Congress 2012 (portal to papers); www.isocarp.net
- Urban Habitats (free journal); www.urbanhabitats.org

European Community Links
- European Capitals of Biodiversity; www.capital-biodiversity.eu/2.html
- European Commission (GI pages); http://ec.europa.eu/environment/nature/ecosystems/
- European Commission (LIFE Programme); http://ec.europa.eu/environment/life/
- Green & Blue Space; www.interreg4c.eu/projects/project-details/?project=10-green-and-blue-space-adaptation-for-urban-areas-and-eco-towns&
- Greenstructure & Urban Planning; www.greenstructureplanning.eu
- SURF Nature; www.surf-nature.eu
- Sustainable Urban Fringes; www.sustainablefringes.eu/home/home.asp
- URGE (urban green environment); www.urge-project.ufz.de

European Countries Links
- CABE (UK, archived material); www.designcouncil.org.uk/our-services/built-environment-cabe
- DAC & CITIES (Denmark); www.dac.dk/en/dac-cities/
- Ecosystems Knowledge Network; http://ecosystemsknowledge.net
- Forestry Commission (UK); www.eforestry.gov.uk/forestdss/webpages/bgi/home.jsp
- Plurel (Pan-European); www.plurel.net/Project-4.aspx
- GreenSpace (UK); www.ourgreenspace.org.uk
- Green Infrastructure North West (UK); www.greeninfrastructurenw.co.uk/html/index.php
- GCV Green Network (UK); www.gcvgreennetwork.gov.uk
- Natural England; www.gov.uk/government/organisations/natural-england
- Online Green City (Pan-European); www.onlinegreencity.com
- The Wildlife Trusts (UK); www.wildlifetrusts.org
- Town and Country Planning Association (UK); www.tcpa.org.uk
- Trees & Design Action Group (UK); www.tdag.org.uk

North America Links
- Centre for Green Infrastructure (USA); www.gicinc.org
- Ecosystems Valuation (USA); www.ecosystemvaluation.org
- Green Infrastructure Ontario Coalition; www.greeninfrastructureontario.org
- Green Infrastructure Resources (USA); www.epa.gov/green-infrastructure
- Infrastructure Canada; www.infrastructure.gc.ca/prog/gif-fiv-eng.html
- Project for Public Spaces (USA); www.pps.org
- S.W.I.M. Coalition (USA); http://swimmablenyc.info
- The Conservation Fund (USA); www.conservationfund.org
- The Trust for Public Land (USA); www.tpl.org

Irish Best Practice
- Dublin City Development Plan (Dublin City Council); www.dublincity.ie/main-menu-services-planning/city-development-plan
- Naas Road Local Area Plan (Dublin City Council); www.dublincity.ie/main-menu-services-planning-urban-development-plans-local-area-plans/naas-road-lands-local-area-plan

- George's Quay Local Area Plan (Dublin City Council); www.dublincity.ie/main-menu-services-planning-urban-development-plans-local-area-plans/george's-quay-local-area-plan
- Liberties Local Area Plan (Dublin City Council); www.dublincity.ie/main-menu-services-planning-urban-development-plans-local-area-plans/liberties-local-area-plan
- Clongriffin-Belmayne Local Area Plan (Dublin City Council); www.dublincity.ie/clongriffin-%E2%80%93-belmayne-north-fringe
- Fingal County Development Plan (Fingal County Council); www.fingalcoco.ie/planning-and-buildings/development-plans-and-consultations/fingal-development-plan/
- Portmarnock South Local Area Plan (Fingal County Council); www.fingalcoco.ie/planning-and-buildings/development-plans-and-consultations/adopted-local-area-plans/portmarnock-local-area-plan/
- Baldoyle-Stapolin Local Area Plan (Fingal County Council); www.fingalcoco.ie/planning-and-buildings/development-plans-and-consultations/adopted-local-area-plans/baldoyle-stapolin-local-area-plan/
- Barrysparks Local Area Plan (Fingal County Council); www.fingalcoco.ie/planning-and-buildings/development-plans-and-consultations/adopted-local-area-plans/barrysparks-local-area-plan/
- Ballyboghil Local Area Plan (Fingal County Council); www.fingalcoco.ie/planning-and-buildings/development-plans-and-consultations/adopted-local-area-plans/ballyboughil-local-area-plan/
- Galway City Recreation and Amenity Needs Study (Galway City Council); www.galwaycity.ie/AllServices/Planning/Publications/
- Loughmacask Local Area Plan (Kilkenny Borough Council); www.kilkennycity.ie/eng/Services/Planning/Local_Area_Plans/Loughmacask_Local_Area_Plan/
- Fortunestown Local Area Plan (South Dublin County Council); www.sdcc.ie/services/planning/local-area-plans/existing-lap
- Newcastle Local Area Plan (South Dublin County Council); www.sdcc.ie/services/planning/local-area-plans/existing-lap
- Towards a Liffey Valley Park (OPW & ERM); http://kildare.ie/CountyCouncil/LeisureServices/LiffeyPark/

Irish Research
- Green Infrastructure: A Quality of Life Issue (Urban Forum); www.ecoplanresearch.org/IrishResearch/URBAN%20FORUM_Green%20Infrastructure_A%20Quality%20of%20Life%20Issue_2010.pdf
- Park Atlantic: Action Plan Main Report (Mid-Eastern Regional Authority); www.ecoplanresearch.org/IrishResearch/MERA%20&%20CSR_2012_PARK%20ATLANTIC%20Action%20Plan%20Main%20Report.pdf
- Green City Guidelines (Fingal County Council, Dun Laoghaire Rathdown County Council, UCD); www.ecoplanresearch.org/IrishResearch/FCC&DLRCC&UCD_Green%20City%20Guidelines_2008.pdf
- Preliminary Study of the Needs Associated with a National Ecological Network (EPA, Tubridy, O'Rian); www.ecoplanresearch.org/IrishResearch/EPA_Tubridy%20O%20Rian_2002_ecological_network_full%20report.pdf
- The Economic & Social Aspects of Biodiversity; Benefits & Costs of Biodiversity in Ireland (Department of Environment, Heritage and Local Government); www.ecoplanresearch.org/IrishResearch/DoEHLG_The%20Economic%20&%20Social%20Aspects%20of%20Biodiversity;%20Benefits%20&%20Costs%20of%20Biodiversity%20in%20Ireland_2008.pdf
- Creating Green Infrastructure for Ireland (Comhar Sustainable Development Council); www.heritagecouncil.ie/fileadmin/user_upload/Planning/LCA_CPD/LCA_CPD_Sep_2011/Reports/Comhar_Green_infrastructure_report_final.pdf

References

Comhar SDC (Comhar Sustainable Development Council), 2010. *Creating Green Infrastructure for Ireland. Enhancing Natural Capital for Human Wellbeing.* Dublin, Ireland. Available online: http://www.heritagecouncil.ie/fileadmin/user_upload/Planning/LCA_CPD/LCA_CPD_Sep_2011/Reports/Comhar_Green_infrastructure_report_final.pdf (accessed 29 June 2016).

DAHG (Department of Arts, Heritage and the Gaeltacht), 2011. *National Biodiversity Plan*. Dublin, Ireland. Available online: http://www.npws.ie/legislation/national-biodiversity-plan (accessed 29 June 2016).

DECLG (Department of the Environment, Community and Local Government), 2012a. *National Climate Change Adaptation Framework. Building Resilience to Climate Change*. Dublin, Ireland. Available online: http://www.environ.ie/sites/default/files/migrated-files/en/Publications/Environment/ClimateChange/FileDownLoad,32076,en.pdf (accessed 29 June 2016).

DECLG (Department of the Environment, Community and Local Government), 2012b. *Local Area Plans. Guidelines for Planning Authorities*. Dublin, Ireland. Available online: http://www.environ.ie/sites/default/files/migrated-files/en/Publications/DevelopmentandHousing/Planning/FileDownLoad,33557,en.pdf (accessed 29 June 2016).

DECLG (Department of the Environment, Community and Local Government), 2013. *Manual for Local Area Plans*. Dublin, Ireland. Available online: http://www.environ.ie/sites/default/files/migrated-files/en/Publications/DevelopmentandHousing/Planning/FileDownLoad,30516,en.pdf (accessed 29 June 2016).

DoHC (Department of Health and Children), 2007. *National Recreation Policy for Young People*. Dublin, Ireland. Available online: http://www.dcya.gov.ie/documents/Publications/TEENSPACE_Report_ENG.pdf (accessed 29 June 2016).

DoT (Department of Transport), 2009. *Smarter Travel. A Sustainable Transport Future*. Dublin, Ireland. Available online: http://www.smartertravel.ie/sites/default/files/uploads/2012_12_27_Smarter_Travel_english_PN_WEB%5B1%5D.pdf (accessed 29 June 2016).

EC (European Commission), 2013. *Building a Green Infrastructure for Europe*. Brussels, Belgium. Available online: http://ec.europa.eu/environment/nature/ecosystems/docs/green_infrastructure_broc.pdf (accessed 29 June 2016).

EC (European Commission), 2016. *Illustrations of the Green Infrastructure Concept*. Brussels, Belgium. Available online: http://ec.europa.eu/environment/nature/ecosystems/illustrations.htm (accessed 29 June 2016).

EPA (Environmental Protection Agency), 2012. *Ireland's Environment. An Assessment*. Johnstown Castle, Ireland. Available online: https://www.epa.ie/pubs/reports/indicators/00061_EPA_SoE_2012.pdf (accessed 29 June 2016).

EPA (Environmental Protection Agency), 2013. *Integrated Biodiversity Impact Assessment. Streamlining AA, SEA and EIA Processes: Practitioner's Manual*. Johnstown Castle, Ireland. Available online: https://www.epa.ie/pubs/reports/research/biodiversity/Integrated%20Biodoversity%20Impact%20Assessment%20-%20Streamlining%20AA,%20SEA%20and%20EIA%20Processes%20-%20Practicioner's%20Manual.pdf (accessed 29 June 2016).

FCC (Fingal County Council), 2013. *Portmarnock South Local Area Plan: July 2013.* Available online: http://www.fingal.ie/media/Adopted%20Portmarnock%20South%20Local%20Area%20Plan%20Document.pdf (accessed 29 June 2016).

UN (United Nations),1992a. *United Nations Framework Convention on Climate Change*. Kyoto, Japan. Available online: http://unfccc.int/files/essential_background/background_publications_htmlpdf/application/pdf/conveng.pdf (accessed 29 June 2016).

UN (United Nations), 1992b. *United Nations Convention on Biological Diversity*. Rio de Janeiro, Brazil. Available online: https://www.cbd.int/doc/legal/cbd-en.pdf (accessed 29 June 2016).

Abbreviations

AA   Appropriate Assessment

EIA   Environmental Impact Assessment

EIS   Environmental Impact Statement

ER   Environmental Report

EU   European Union

GI   Green infrastructure

IROPI   Imperative reasons of overriding public interest

LAP   Local area plan

NHA   Natural Heritage Area

pNHA   Proposed Natural Heritage Area

SAC   Special Area of Conservation

SEA   Strategic Environmental Assessment

SEO   Strategic Environmental Objective

SPA   Special Protection Area

AN GHNÍOMHAIREACHT UM CHAOMHNÚ COMHSHAOIL

Tá an Ghníomhaireacht um Chaomhnú Comhshaoil (GCC) freagrach as an gcomhshaol a chaomhnú agus a fheabhsú mar shócmhainn luachmhar do mhuintir na hÉireann. Táimid tiomanta do dhaoine agus don chomhshaol a chosaint ó éifeachtaí díobhálacha na radaíochta agus an truaillithe.

Is féidir obair na Gníomhaireachta a roinnt ina trí phríomhréimse:

Rialú: *Déanaimid córais éifeachtacha rialaithe agus comhlíonta comhshaoil a chur i bhfeidhm chun torthaí maithe comhshaoil a sholáthar agus chun díriú orthu siúd nach gcloíonn leis na córais sin.*

Eolas: *Soláthraímid sonraí, faisnéis agus measúnú comhshaoil atá ar ardchaighdeán, spriocdhírithe agus tráthúil chun bonn eolais a chur faoin gcinnteoireacht ar gach leibhéal.*

Tacaíocht: *Bímid ag saothrú i gcomhar le grúpaí eile chun tacú le comhshaol atá glan, táirgiúil agus cosanta go maith, agus le hiompar a chuirfidh le comhshaol inbhuanaithe.*

Ár bhFreagrachtaí

Ceadúnú

Déanaimid na gníomhaíochtaí seo a leanas a rialú ionas nach ndéanann siad dochar do shláinte an phobail ná don chomhshaol:

- saoráidí dramhaíola *(m.sh. láithreáin líonta talún, loisceoirí, stáisiúin aistrithe dramhaíola)*;
- gníomhaíochtaí tionsclaíocha ar scála mór *(m.sh. déantúsaíocht cógaisíochta, déantúsaíocht stroighne, stáisiúin chumhachta)*;
- an diantalmhaíocht *(m.sh. muca, éanlaith)*;
- úsáid shrianta agus scaoileadh rialaithe Orgánach Géinmhodhnaithe *(OGM)*;
- foinsí radaíochta ianúcháin *(m.sh. trealamh x-gha agus radaiteiripe, foinsí tionsclaíocha)*;
- áiseanna móra stórála peitril;
- scardadh dramhuisce;
- gníomhaíochtaí dumpála ar farraige.

Forfheidhmiú Náisiúnta i leith Cúrsaí Comhshaoil

- Clár náisiúnta iniúchtaí agus cigireachtaí a dhéanamh gach bliain ar shaoráidí a bhfuil ceadúnas ón nGníomhaireacht acu.
- Maoirseacht a dhéanamh ar fhreagrachtaí cosanta comhshaoil na n-údarás áitiúil.
- Caighdeán an uisce óil, arna sholáthar ag soláthraithe uisce phoiblí, a mhaoirsiú.
  - Obair le húdaráis áitiúla agus le gníomhaireachtaí eile chun dul i ngleic le coireanna comhshaoil trí chomhordú a dhéanamh ar líonra forfheidhmiúcháin náisiúnta, trí dhíriú ar chiontóirí, agus trí mhaoirsiú a dhéanamh ar leasúchán.
- Cur i bhfeidhm rialachán ar nós na Rialachán um Dhramhthrealamh Leictreach agus Leictreonach (DTLL), um Shrian ar Shubstaintí Guaiseacha agus na Rialachán um rialú ar shubstaintí a ídíonn an ciseal ózóin.
- An dlí a chur orthu siúd a bhriseann dlí an chomhshaoil agus a dhéanann dochar don chomhshaol.

Bainistíocht Uisce

- Monatóireacht agus tuairisciú a dhéanamh ar cháilíocht aibhneacha, lochanna, uiscí idirchriosacha agus cósta na hÉireann, agus screamhuiscí; leibhéil uisce agus sruthanna aibhneacha a thomhas.
- Comhordú náisiúnta agus maoirsiú a dhéanamh ar an gCreat-Treoir Uisce.
- Monatóireacht agus tuairisciú a dhéanamh ar Cháilíocht an Uisce Snámha.

Monatóireacht, Anailís agus Tuairisciú ar an gComhshaol

- Monatóireacht a dhéanamh ar cháilíocht an aeir agus Treoir an AE maidir le hAer Glan don Eoraip (CAFÉ) a chur chun feidhme.
- Tuairisciú neamhspleách le cabhrú le cinnteoireacht an rialtais náisiúnta agus na n-údarás áitiúil *(m.sh. tuairisciú tréimhsiúil ar staid Chomhshaol na hÉireann agus Tuarascálacha ar Tháscairí)*.

Rialú Astaíochtaí na nGás Ceaptha Teasa in Éirinn

- Fardail agus réamh-mheastacháin na hÉireann maidir le gáis cheaptha teasa a ullmhú.
- An Treoir maidir le Trádáil Astaíochtaí a chur chun feidhme i gcomhair breis agus 100 de na táirgeoirí dé-ocsaíde carbóin is mó in Éirinn.

Taighde agus Forbairt Comhshaoil

- Taighde comhshaoil a chistiú chun brúnna a shainaithint, bonn eolais a chur faoi bheartais, agus réitigh a sholáthar i réimsí na haeráide, an uisce agus na hinbhuanaitheachta.

Measúnacht Straitéiseach Timpeallachta

- Measúnacht a dhéanamh ar thionchar pleananna agus clár beartaithe ar an gcomhshaol in Éirinn *(m.sh. mórphleananna forbartha)*.

Cosaint Raideolaíoch

- Monatóireacht a dhéanamh ar leibhéil radaíochta, measúnacht a dhéanamh ar nochtadh mhuintir na hÉireann don radaíocht ianúcháin.
- Cabhrú le pleananna náisiúnta a fhorbairt le haghaidh éigeandálaí ag eascairt as taismí núicléacha.
- Monatóireacht a dhéanamh ar fhorbairtí thar lear a bhaineann le saoráidí núicléacha agus leis an tsábháilteacht raideolaíochta.
- Sainseirbhísí cosanta ar an radaíocht a sholáthar, nó maoirsiú a dhéanamh ar sholáthar na seirbhísí sin.

Treoir, Faisnéis Inrochtana agus Oideachas

- Comhairle agus treoir a chur ar fáil d'earnáil na tionsclaíochta agus don phobal maidir le hábhair a bhaineann le caomhnú an chomhshaoil agus leis an gcosaint raideolaíoch.
- Faisnéis thráthúil ar an gcomhshaol ar a bhfuil fáil éasca a chur ar fáil chun rannpháirtíocht an phobail a spreagadh sa chinnteoireacht i ndáil leis an gcomhshaol *(m.sh. Timpeall an Tí, léarscáileanna radóin)*.
- Comhairle a chur ar fáil don Rialtas maidir le hábhair a bhaineann leis an tsábháilteacht raideolaíoch agus le cúrsaí práinnfhreagartha.
- Plean Náisiúnta Bainistíochta Dramhaíola Guaisí a fhorbairt chun dramhaíl ghuaiseach a chosc agus a bhainistiú.

Múscailt Feasachta agus Athrú Iompraíochta

- Feasacht chomhshaoil níos fearr a ghiniúint agus dul i bhfeidhm ar athrú iompraíochta dearfach trí thacú le gnóthais, le pobail agus le teaghlaigh a bheith níos éifeachtúla ar acmhainní.
- Tástáil le haghaidh radóin a chur chun cinn i dtithe agus in ionaid oibre, agus gníomhartha leasúcháin a spreagadh nuair is gá.

Bainistíocht agus struchtúr na Gníomhaireachta um Chaomhnú Comhshaoil

Tá an ghníomhaíocht á bainistiú ag Bord lánaimseartha, ar a bhfuil Ard-Stiúrthóir agus cúigear Stiúrthóirí. Déantar an obair ar fud cúig cinn d'Oifigí:

- An Oifig um Inmharthanacht Comhshaoil
- An Oifig Forfheidhmithe i leith cúrsaí Comhshaoil
- An Oifig um Fianaise is Measúnú
- An Oifig um Cosaint Raideolaíoch
- An Oifig Cumarsáide agus Seirbhísí Corparáideacha

Tá Coiste Comhairleach ag an nGníomhaireacht le cabhrú léi. Tá dáréag comhaltaí air agus tagann siad le chéile go rialta le plé a dhéanamh ar ábhair imní agus le comhairle a chur ar an mBord.

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Identifying Pressures

Pressures placed on the planet by human activities pose some of the most complex and demanding challenges facing societies and policy-makers across the globe. Observed increases in storm intensity and the challenges faced in seeking to preserve the quality of our environment while advancing socio-economic development illustrates that Ireland too is subject to such global pressures and thereby shares in the responsibility to address them. In recent years the Irish planning system has been reshaped in response to the challenges posed by these issues. There now exists enormous pressure on planners and allied professionals to respond to such pressing issues when formulating land use plans.

Informing Policy

This document outlines how the 'green infrastructure' (GI) concept can help planners and allied professionals respond to the challenges posed by these pressures when formulating spatial plans. The GI concept addresses multiple issues in an environmentally sensitive manner by promoting spatial connectivity and multifunctionality. This document outlines how employing the GI concept enables those working within the planning system to meet a diverse array of complicated objectives that often seem to conflict. It describes how this can be achieved by simply enhancing certain existing work practices to better facilitate a more context sensitive form of planning that supplies a range of mutually reinforcing social, economic and environmental benefits.

Developing Solutions

This document seeks to assist planners and allied professionals involved in the formulation of spatial plans by presenting a 'How To' guide on disseminating and integrating the GI concept into spatial planning practice. This centres on the description of an interactive workshop that fosters novel perspectives on spatial policy formulation and new collaborative working arrangements between a range professionals. The materials and instructions for running this workshop are available from www.ecoplanresearch.org and www.epa.ie/researchandeducation/research/safer. This workshop material forms part of a suite of GI related resources produced and collated in this EPA funded project.