Comhairle Cathrach & Contae Phort Láirge
Waterford City & County Council

URBAN PLANNING AND NATURE BASED SURFACE WATER MANAGEMENT: FROM THEORY TO PRACTICE

A Planers Perspective

Presentation by Hugh O'Brien, Waterford City & County Council. 09.11.20

IRISH PLANNING INSTITUTE
Institiúid Pleanála Na hÉireann

Local Authority Waters Programme

An Roinn Tithíochta, Rialtais Áitiúil agus Oidhreachta
Department of Housing, Local Government and Heritage

ENGINEERS IRELAND
CPD APPROVED EVENT

Presentation Overview

- Policy context
- Our Experience:
  - Private projects
  - Public projects
- Thoughts on how theory might meet practice:
  - Bioregional approach
  - Practical actions

Waterford County & Dungarvan Town Development Plan Policy Context

Surface Water Drainage Policy INF 20

The Council will require compliance with best practice guidance for the collection, reuse, treatment and disposal of surface waters for all future development proposals. Development proposals must demonstrate adequate **water conservation, water quality protection, and surface water run-off** rate regulation measures to prevent the increase of flooding issues in the catchment.

Policy narrative refers to **SuDS & GDSDS**....stormwater attenuation of **1 in 100 year** event and **minimising use of impermeable surfaces.**

Waterford City Development Plan Policy Context

Drainage Policies:

In the newly developing neighbourhoods all surface and storm water discharges shall be attenuated and sustainable urban drainage systems utilised. Attenuation schemes may be **combined with the provision of public amenity areas through the provision of water features, wildlife refuges** and other desirable elements. (POL 11.5.18)

Flood Risk Mitigation:

The use of Sustainable Urban Drainage Systems (SUDS) to **manage surface water runoff**.

Variation No. 1 of Development Plans.

Flood Risk Mitigation of Development:

The use of Sustainable Urban Drainage Systems (SUDS) to manage **surface water run-off**. For further detail on the above refer to Appendix B of the Planning Guidelines – The Planning System and Flood Risk Management Guidelines for Planning Authorities – Technical Appendices, November 2009.

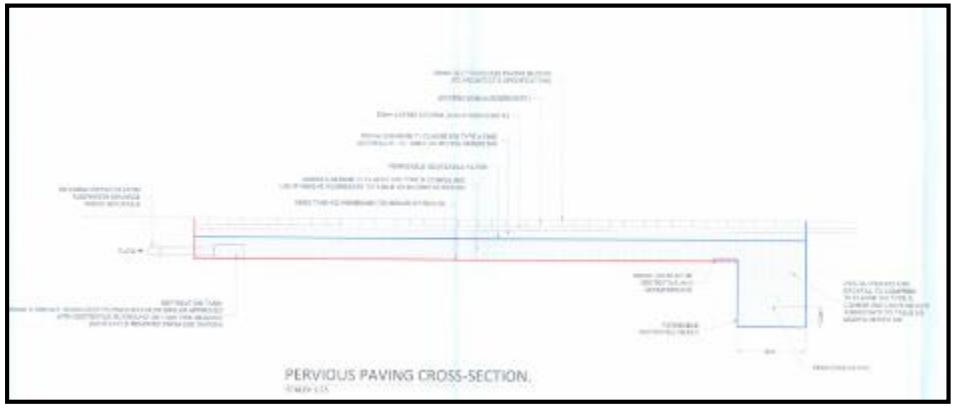
South Tipperary County Development Plan 2009 - 2015

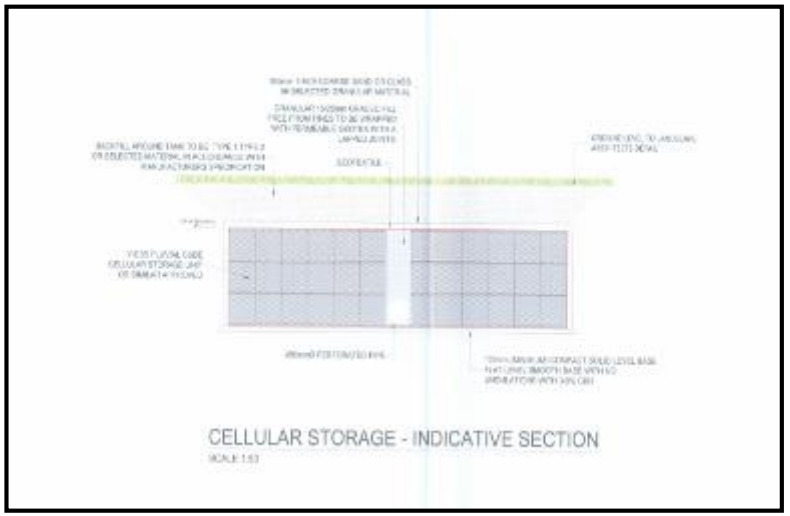
Surface Water: The Council will seek the implementation of **rainwater harvesting, SUDS** and best practise guidance for the collection and reuse or disposal and treatment of surface water reflective of the scale of the development. Such systems will be required to **conserve water, protect water quality and regulate the rate of surface water run-off** so as not to cause or exacerbate flooding on the relevant site or elsewhere.

Flooding: The Council will require a comprehensive risk assessment for proposals in an area at risk of flooding, adjoining same or where **cumulative impacts** may result in a flood risk elsewhere, in low lying areas and in areas adjacent to streams.

Our Experience: Private Projects

- Traditional preoccupation with green field rate of runoff/hydrobrakes.
- Dominance of cellular underground tank solutions.
- Interceptors (if considered necessary!)
- Movement towards source reduction and site/regional control measures.
- Predominant concern with quantity and not quality of runoff. We need a greater focus on alternatives such as soakaways, infiltration basins, ponds, wetlands, bio-retention, rainwater harvesting, filter strips, filter drains, green roofs, proprietary treatment systems, attenuation storage tanks, rain gardens, vegetation/trees.
- Examples:


PERVIOUS PAVING CROSS-SECTION.


CELLULAR STORAGE - INDICATIVE SECTION

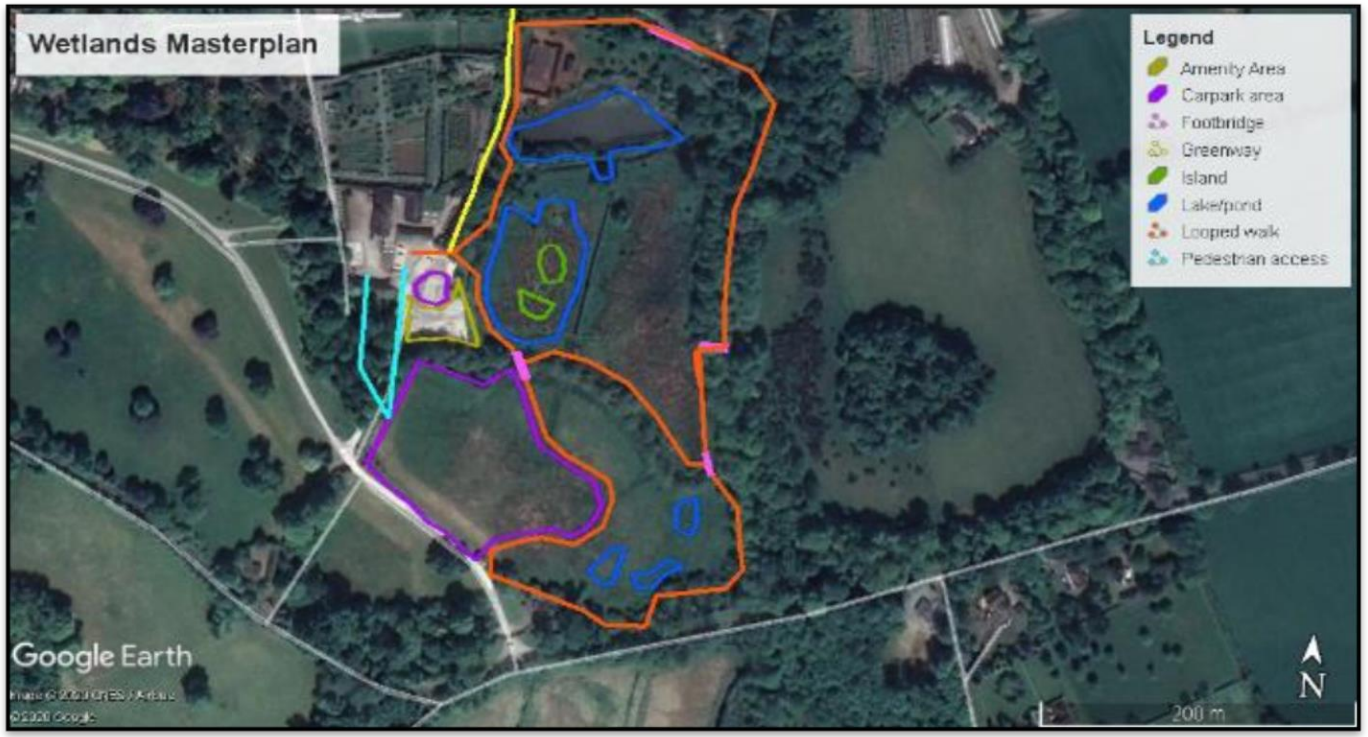

PROTECTED STREAMSIDE VEGETATION ZONE
STREAM REHABILITATION ZONE

Our Experience: Public Projects

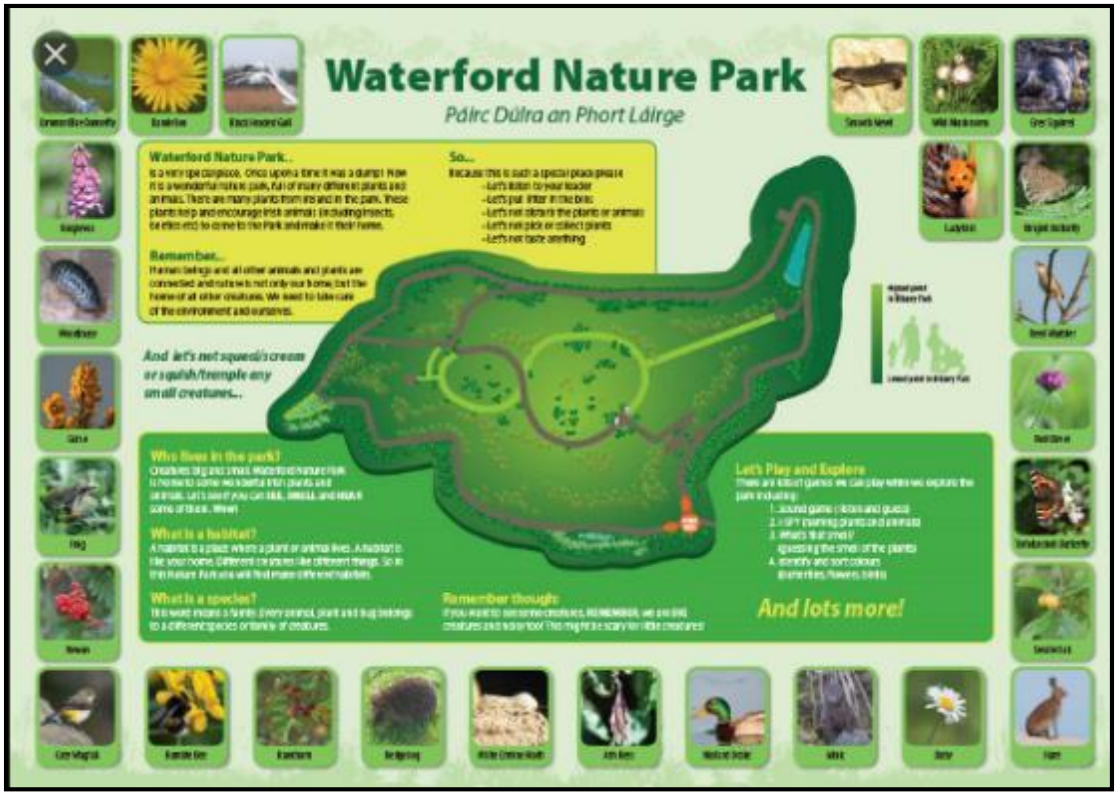
Principle Elements:

- PM approach.
- Baseline data and assessments.
- External expertise.
- Budget.
- Strategic, transformative projects.
- Legacies.
- Examples:

ICW and Stormwater wetlands.



De-combining sewers and Habitat restoration.



Theory meets Practice: Water (Quality) Strategy?

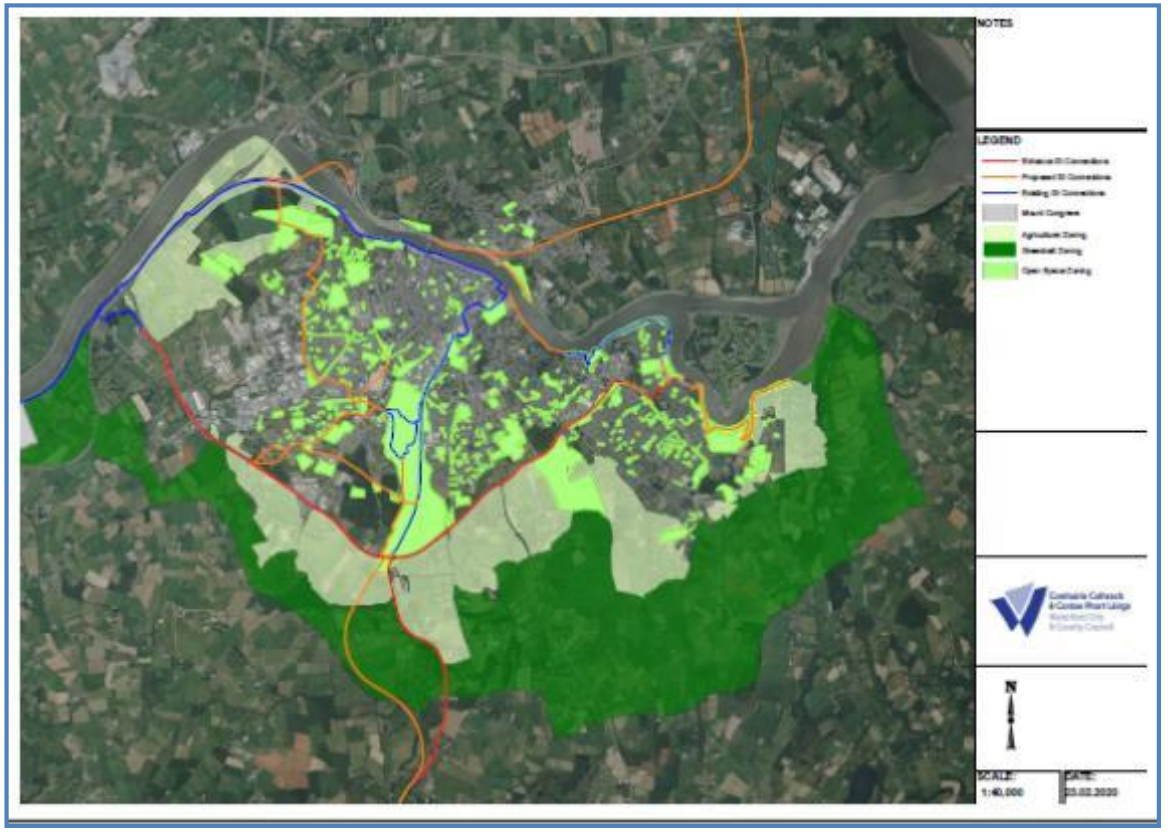
1 Underpinning a Strategy:

- NBS address complex and important environmental constraints for our society. The constituents require full consideration individually prior to any collective approach .. flooding, climate change, amenity, biodiversity , health & wellbeing, etc.
- The message for SuDS should be refocused on **water quality**.
- Drop the “U”....look outside the urban context.
- Create a basis for informed decision making recognising the fundamental unity and interdependence of culture, society, economy and our environment and the necessity to adapt the former within the constraints of the latter .

2 The Strategy....Survey-Analysis-Plan! (MONITOR)

Catchment Level Strategy...

- Policy Context NPF/RSES/Agenda 2030,
- Water quality data/RBMP,
- Sensitive sites and water bodies,
- DAP,
- Infrastructural constraints,
- Flood zones,
- Amenity and GZTs,
- Habitat maps,
- Tree cover data,
- Opportunity sites for NBS/SuDS.

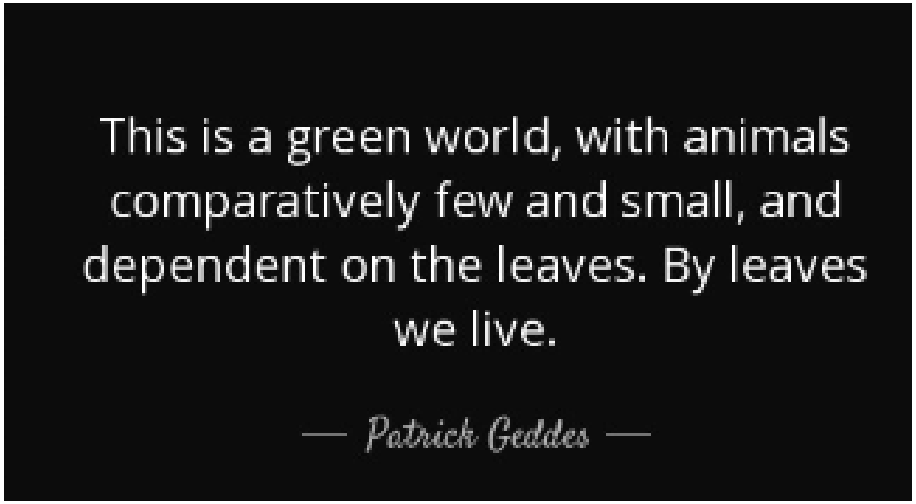


3 Practical Actions.

- Utilise opportunities arising from new obligation on the local government sector to **plan for** and manage surface water....utilise the **plan led and infrastructure led** approach incorporating SEA/AA/SFRA ...structured approach to drive best practice.
- Utilise a PM approach to deliver larger scale public **transformational projects** but focus must be on **incremental interventions.**
- Utilise **collaborative** responses to other challenges i.e. resources/ **capacity building** (technical expertise, funding)**.**
- Specific local policy objectives/standards to **inform scheme design from the outset,** based on a water quality strategy.
- Use planning application procedures/validation ....screening and raising profile.

Bioregionalism approach to water quality where our planning system and policies are informed by detailed knowledge about the ecological, social, geological, cultural and hydrological conditions of the particular area. Only then can we be instrumental in facilitating the emergence of a sustainable society which is adapted to its environmental context and constraints.

It is only when we have fully informed strategies on the constituent components of NBS can we move towards an integrated approach to delivery of sustainable development patterns.



Thank You