Environmental Services Training Group

LOCAL AUTHORITY ROADS CONFERENCE and EXHIBITION - 2023

Session 2-Water Quality

Clayton Galway, September 2023

LOCAL AUTHORITY ENVIRONMENTAL SERVICES TRAINING GROUP CONFERENCE– 2023

Session 2 Presentation 1

Water Quality Policy; the transition to 3rd Cycle

Gary O'Connell
Catchments Manager – Border Region

Local Authority Waters Programme (LAWPRO)

Local Authority Waters Programme

vibrant communities | catchment assessment | healthy waters

Director of Service

6 Head Office Staff

1 Blue Dot Scientist

Communities Team (2016)

- 12 Community Water Officers
- 4 Regional Co-ordinators

KEY ROLE:
Community engagement – encouraging communities to value water in their catchment and to participate in actions to **protect and restore** **all waters nationally**

Catchments Team (2018)

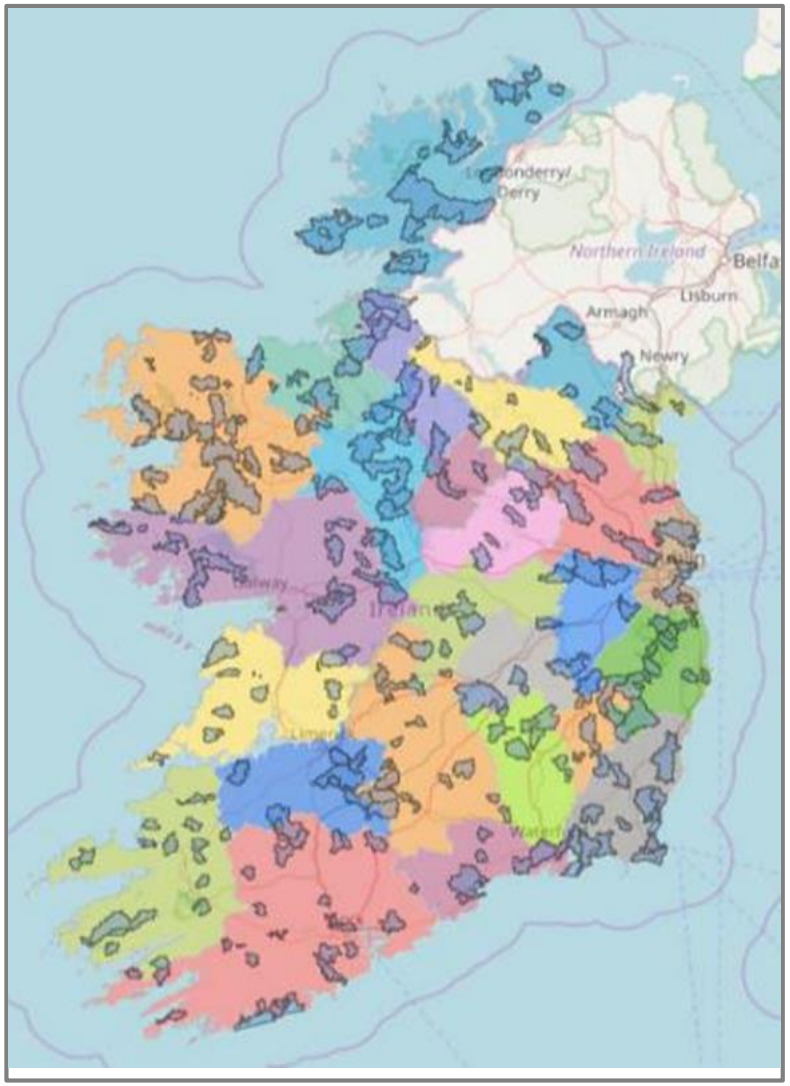
- 30 Catchment Scientists
- 5 Catchment Managers

KEY ROLE:
Scientific assessments – help identify the right measure in the right place to **improve water quality in Priority Areas for Action**

Pristine Natural Waters · bluedot · For our Wellbeing and Environment

RBMP 2018 - 2021

- 189 PAAs selected for Local Catchment Assessment
  - Built on EPA evidence and various selection criteria
  - All 31 Local Authorities and relevant public agencies involved in characterisation process
  - Prioritisation for workplans
  - Step by step process



An Roinn Comhshaoil, Aeráide agus Cumarsáide
Department of the Environment, Climate and Communications

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

LOCAL AUTHORITY Climate Action Training Programme

LASNTG

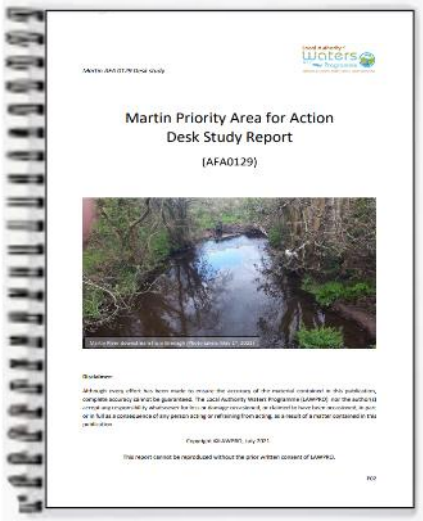
Local Authority Waters Programme
vibrant communities | catchment assessment | healthy waters

CCMA
Cumann Lucht Bainistíochta Contae agus Cathrach
County and City Management Association

epa Environmental Protection Agency
An Ghníomhaireacht um Chaomhnú Comhshaoil

Local Catchment Assessment Process

- **Priority Areas for Action**
- **Desk Study**
  - Water Quality
  - Local projects
  - Engagement activity
- **Conceptual understanding**
- **Communications**
  - Public Meeting
  - Radio/ Newspaper interviews
- **Field Investigations**
  - Kick sampling
  - WQ sampling
  - Stream walks
- **Identify cause of Significant pressures**
- **Measures**
  - Agreement
  - Resources
  - Timeline
- **Reporting**
  - WFD App
  - Area for Action Report

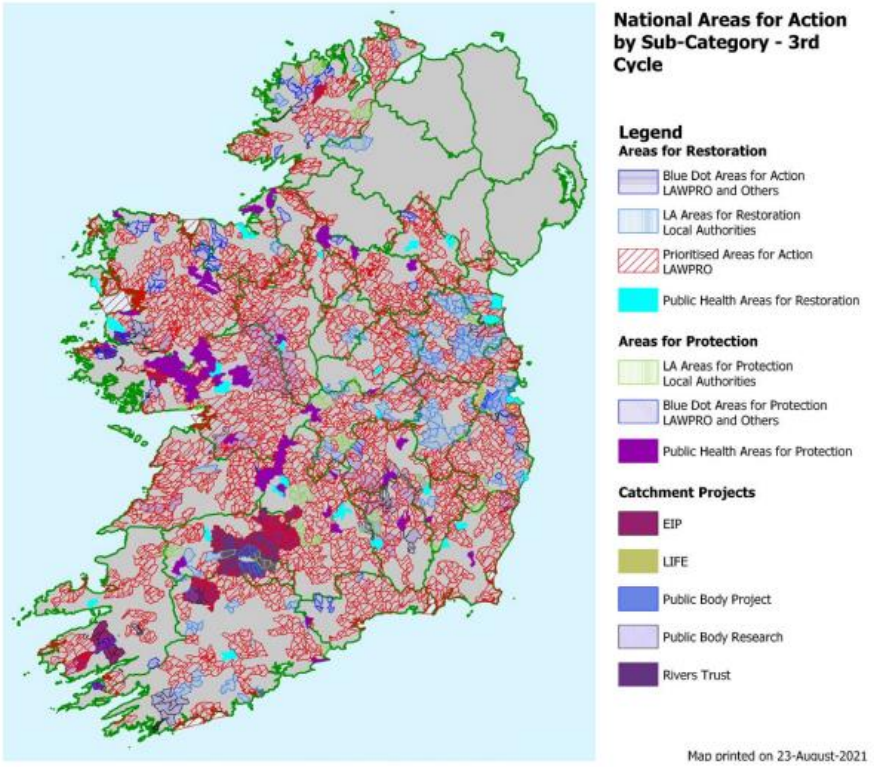


2nd Cycle Progress

- 189 desk studies (6 postponed until the third RBMP).
- Fieldwork and reporting are continuing in Cycle 2 PAAs.
- Working with ASSAP to finalise reporting in PAAs where they have concluded their work and upload to WFD App.
- 559 Ag-based referrals to ASSAP
- 63 to other agencies - local authorities, EPA, Uisce Eireann, Forest Service etc.
- PAAs where ASSAP continues to work in has been circulated to each LA, to facilitate RMCEI scheduling of 2023 inspection programme. (Risk-based inspections)

2nd Cycle Progress

- Catchment Science team continue to focus on completing local catchment assessments and issuing of significant pressure referrals to implementing bodies.
- Preparation for 3rd Cycle Priority Areas for Action work has commenced with a number of enabling actions being progressed. Review of:
  - characterisation methodologies,
  - deskstudy structure and content,
  - referral mechanisms and processes,
  - communication approaches on findings and outcomes.
- Work also underway in existing Priority Areas for Action which have been expanded for 3rd Cycle.



Water Quality in Ireland 2022

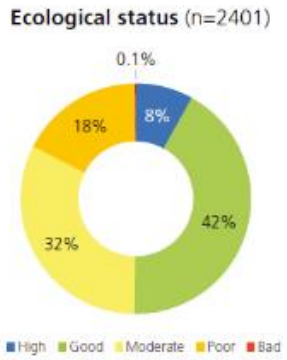
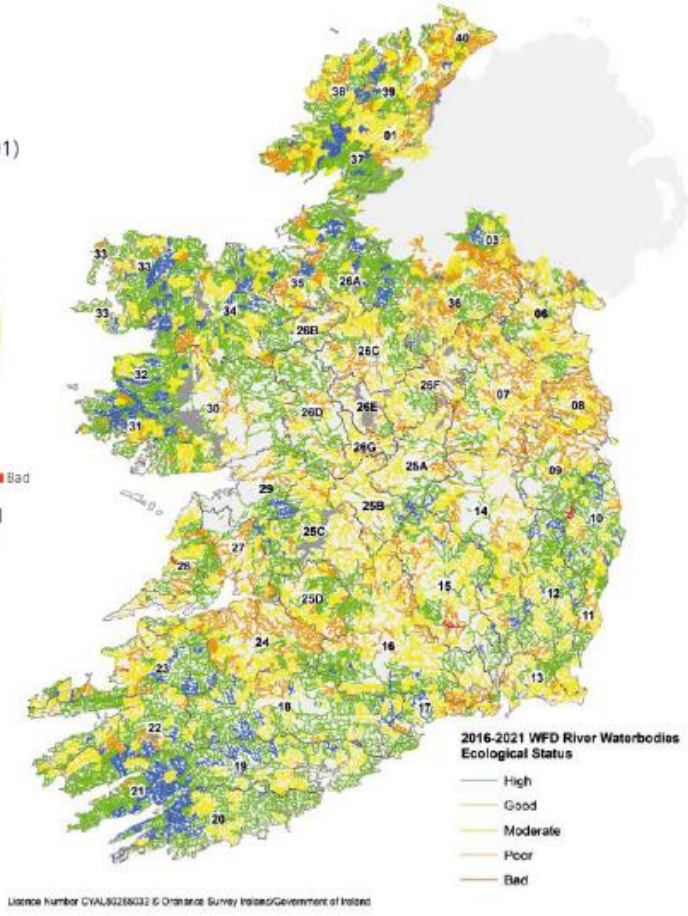
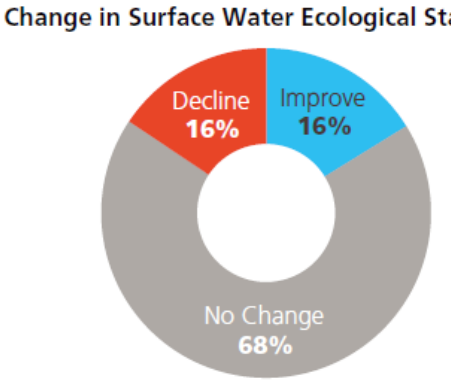


Figure 2.1 River ecological status 2016-2021

~50% Satisfactory

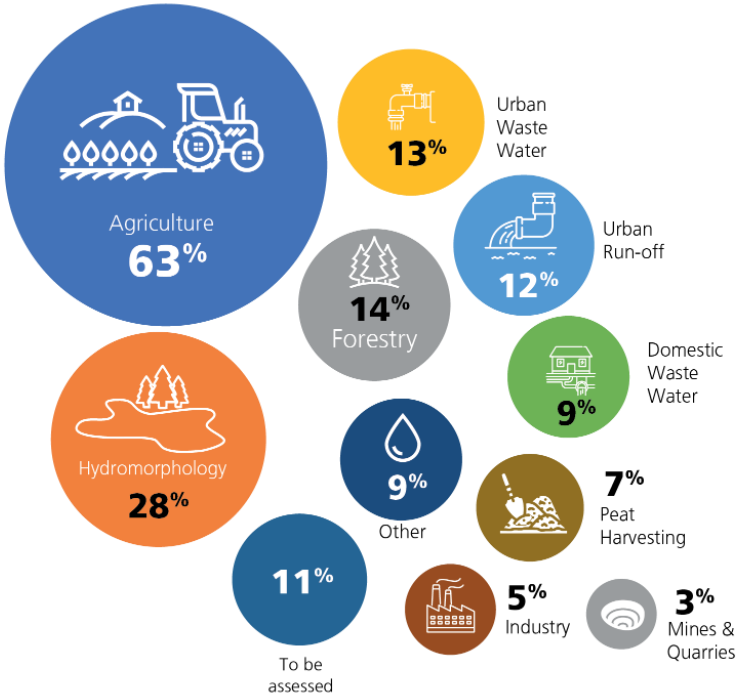


Map 2.1 The ecological status of river water bodies 2016–2021

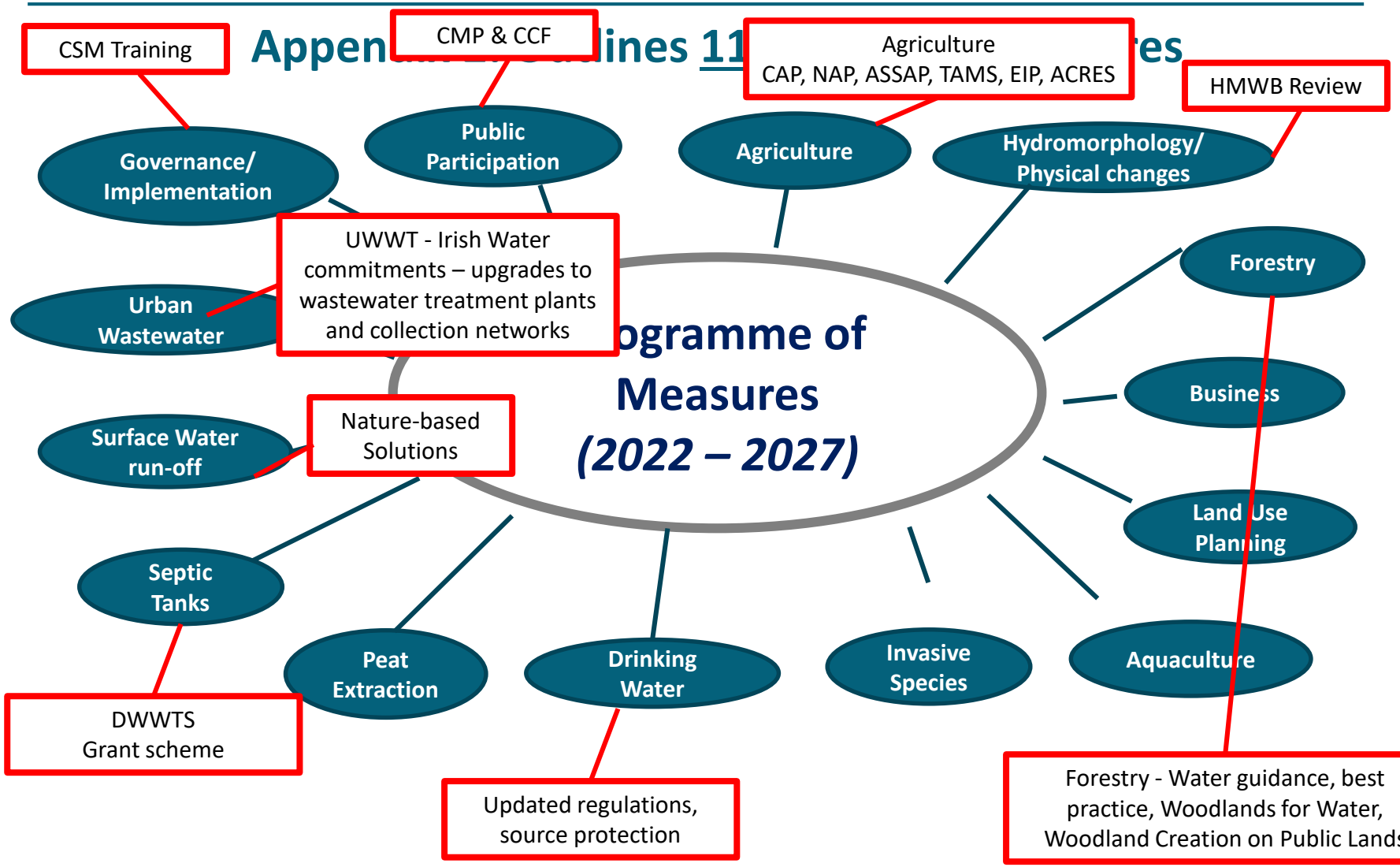


EPA Water Quality in Ireland 2016 - 2021
[Monitoring & Assessment: Freshwater & Marine Publications | Environmental Protection Agency (epa.ie)]

Water Quality & the Water Framework Directive



Source: EPA, 2022. Water Quality in Ireland 2016 – 2022 Summary Report


CSM Training
CMP & CCF
Agriculture
CAP, NAP, ASSAP, TAMS, EIP, ACRES
HMWB Review
Governance/ Implementation
Public Participation
Agriculture
Hydromorphology/ Physical changes
UWWT - Irish Water commitments – upgrades to wastewater treatment plants and collection networks
Urban Wastewater
Forestry
ogramme of Measures (2022 – 2027)
Business
Surface Water run-off
Nature-based Solutions
Land Use Planning
Septic Tanks
Peat Extraction
Drinking Water
Invasive Species
Aquaculture
DWWTS Grant scheme
Updated regulations, source protection
Forestry - Water guidance, best practice, Woodlands for Water, Woodland Creation on Public Lands

Catchment Science & Management Training

Action: The Local Authority Environmental Services National Training Group (LAESNTG) will provide a training programme for catchment assessment and Integrated Catchment Management for the staff of local authorities and all implementing bodies.

- ***Module 1 – Setting the Scene, Catchment Science and Pressures***
  - 190+ attendees, from LA and public body staff, plus new ASSAP advisors
  - Delivered via Zoom (recordings available on website - www.lawaters.ie)
  - Concentrates on fundamental aspects of catchment science and various pressures

Catchment Science & Management Training

- ***Module 2 (Summer '22) – Characterisation and Field Element***
  - Characterisation is critical to providing the understanding on which protection and mitigation actions/measures are based
  - Two full classroom days considering various desk-based steps, with field trip to consider field assessments

Understanding the receptor
- Biological indicators
- Water chemistry indicators
- HYMO indicators

Understanding the pathway
- Landscape indicators
- Available models
- Fieldtrip examples

Workshops
- Conceptual modelling
- Nutrient load apportionment
- WFD App

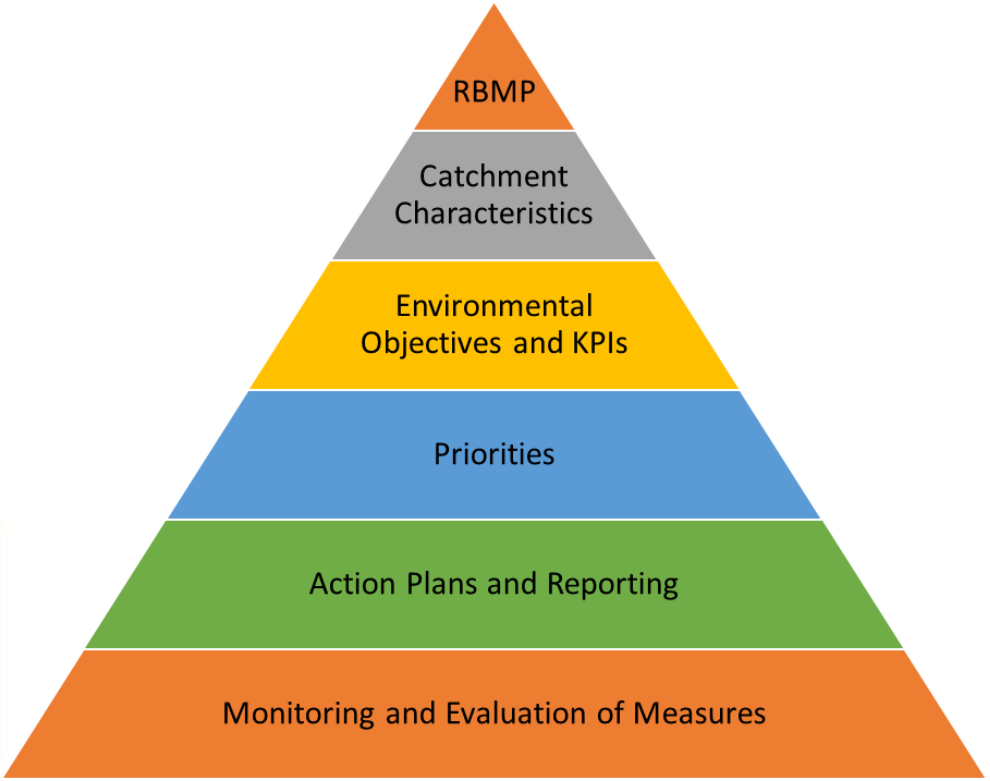
Catchment Science & Management Training

- ***Module 3 (2022/23) – Protection and Mitigation***
  - Outlines a recommended approach, with some examples, to decide on protection and mitigation strategies and measures/actions. In particular, it covers public engagement and collaboration.
  - **One day in training centre and one day in the field**

Catchment Plans

New Actions:

- Draft River Basin Management Plan
  - 46 Catchment management plans
  - County level implementation plans
- Increased public participation in River Basin Management

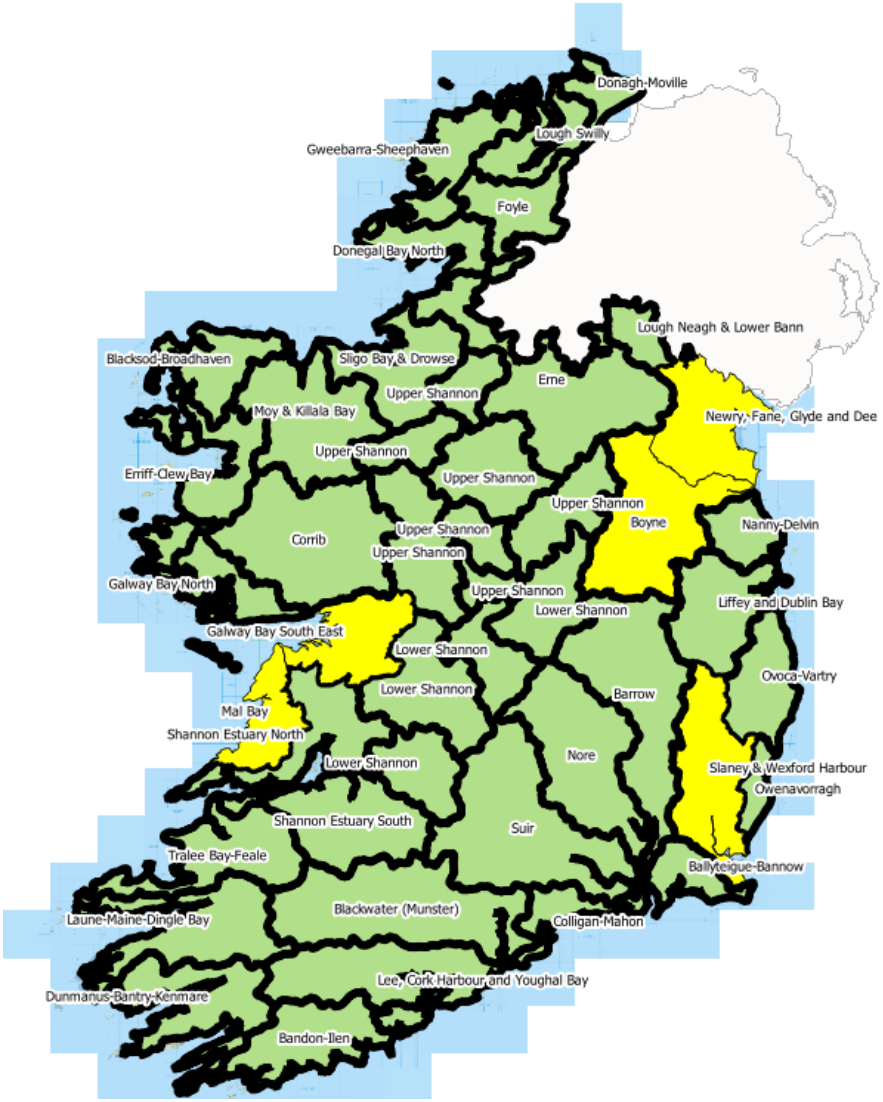


Action: LAWPRO, in consultation with stakcholdcrs, to producc tcmplatcs for the catchment management plans that will be put in place for each of the 46 hydrometric catchments.

Action: Examine ways in which further support can be provided for the formation and capacity building of local forums to help identify and implement measures.

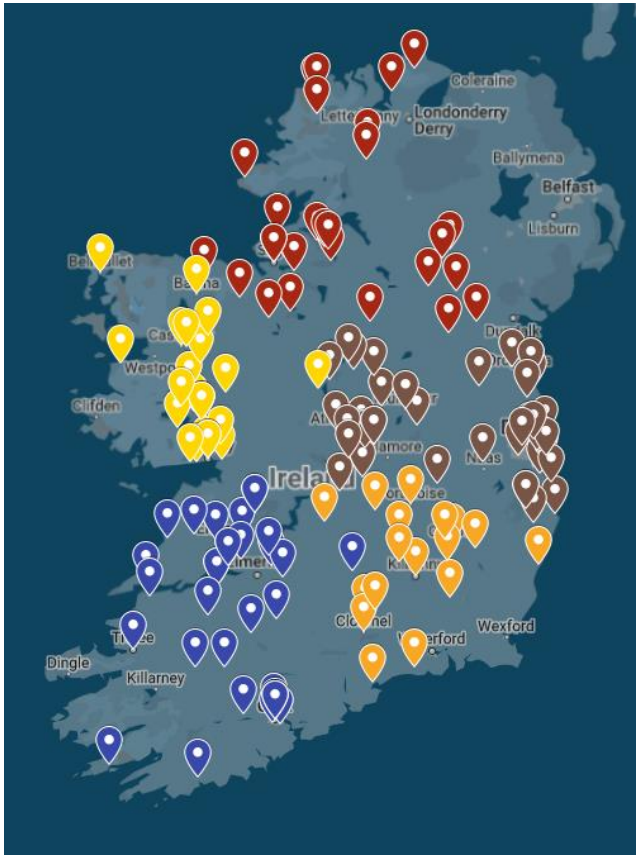
Pilot Catchments

1. Boyne (Meath, Cavan, Louth, Kildare, Offaly, Dublin)
2. Mal Bay (Clare)
3. Slaney (Wexford, Wicklow Carlow)
4. Galway Bay SE (Galway, Clare)
5. Newry Fane Glyde Dee (Cavan, Louth, Monaghan, Meath, Cross-border with NI)



Communities & the CMPs

- Communities are interested in understanding the local water quality issues and what was being done about them by implementing bodies.
- Communities are interested in finding out what individuals and groups can do to help bring about water quality improvements in their local areas or catchments.
- A lot of work happening that benefits water quality, biodiversity and communities supported by funding such as the Community Water Development Fund - €520,000 for 142 Project in 2023. But also Catchment Groups, Rivers Trusts and local community groups are carrying out increasingly more ambitious projects.
- LAWPRO would like to see community actions being mapped and tracked within the CMPs. Pilot process will examine the interactions, synergies etc.



Public Participation

The draft RBMP has proposed 5 Principal Actions in relation to public participation:

- Evaluate the outcome of the Resilience Project for Rivers Trusts to inform future community engagement initiatives (LAWPRO)
- **Examine ways in which further support can be provided for the formation and capacity building of local fora to help identify and implement measures (LAWPRO)**
- Increase the level of funding under the Community Water Development Fund (DHLGH)
- Explore opportunities for the development of a national citizen science programme (DHLGH)
- An Fóram Uisce to identify the optimum level of engagement with the implementation structures for the WFD as part of their strategic planning process

An additional action, under Structural/Societal Measures – Implementation /Governance

- Ensure further activation, development and support of local level initiatives (rivers trusts, catchment partnerships)

The Role of Local Fora

- Information sharing
  - Catchment science & Environmental Objectives
  - Catchment Management Plans & Local Knowledge
- Capacity building
  - Citizen Science
  - Climate, Biodiversity and Water Training
  - Other course delivery e.g., via i-Catch network
  - Water literacy/Water stewardship
  - etc
- Actions and Outcomes for Water
  - Vision
  - Community Action Plan via Catchment Groups?
  - Co-creation projects
  - Guiding principles/prioritisation
- Inform and Influence Policy
  - Maximise linkages with other relevant plans, programmes, and strategies, e.g. Biodiversity Action plan, Climate Action Plan. Translation of National to Local.
  - Catchment Management Plans
  - River Basin Management Plan

Action: Examine ways in which further support can be provided for the formation and capacity building of local forums to help identify and implement measures.

Discussion Document – available on LAWPRO Invitation to submit comments before 30th November 2023

Link - [Catchment Management Planning & Catchment Community Fora | Online Consultation Portal of the Waters and Communities Office]

Water EIP - Background

The need for **supplementary measures** in addition to statutory requirements under the Good Agricultural Practice for the Protection of Water Regulations has been recognised as a key requirement under the River Basin Management Plan 2018-2021.

The Agricultural Sustainability Support and Advisory Programme (ASSAP) was established in partnership with the Department of Agriculture Food and the Marine (DAFM), Department of Housing, Local Government and Heritage (DHLGH), Teagasc and the Dairy sector to work alongside the catchment science advice and provides a confidential service in which farmers can voluntarily participate.

What type of measures are we talking about? Riparian buffers, sediment traps, woodlands, wetlands, better nutrient management etc – important these are in addition to compulsory measures so vary depending on stocking rates (i.e., Derogation).

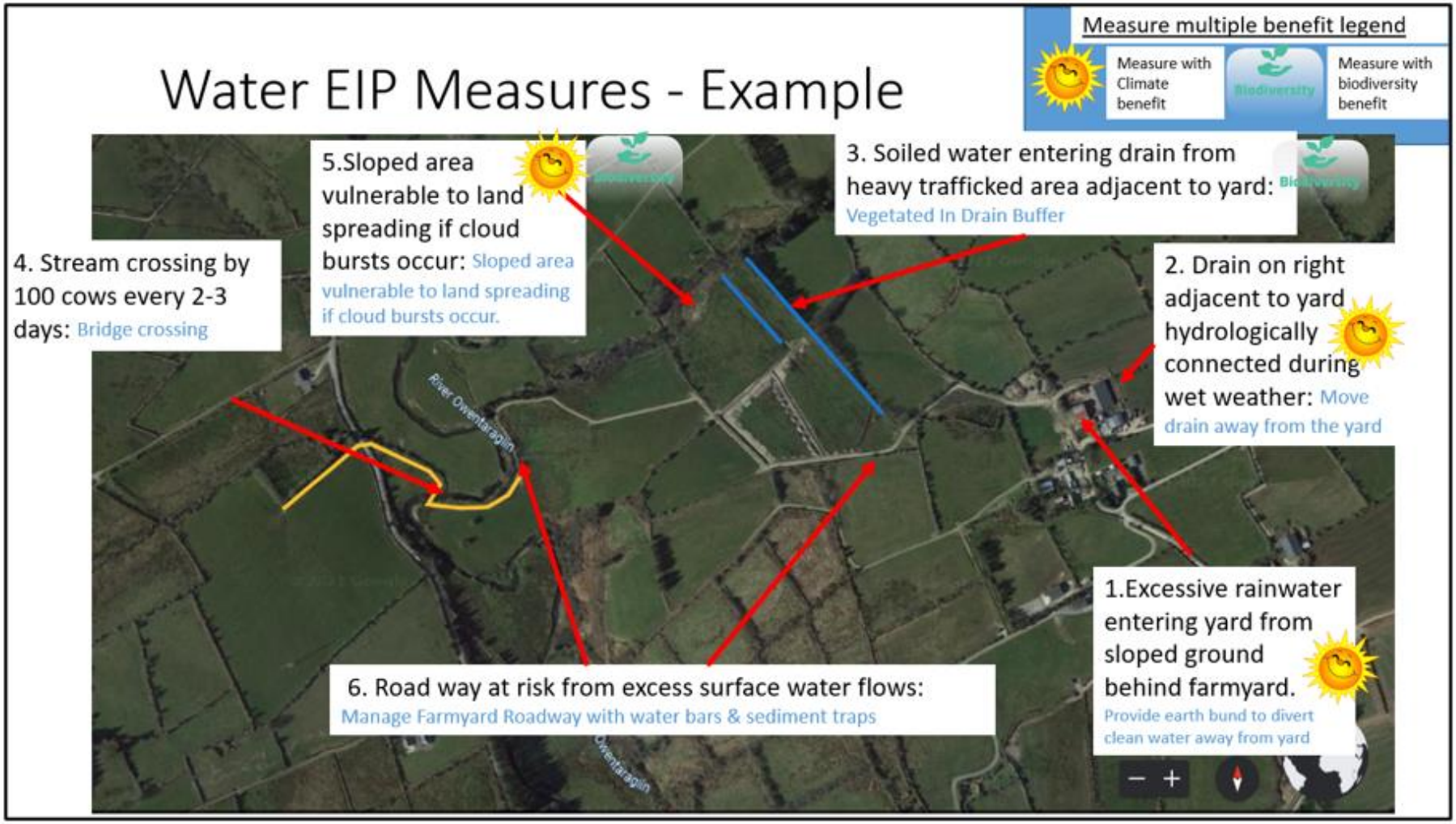
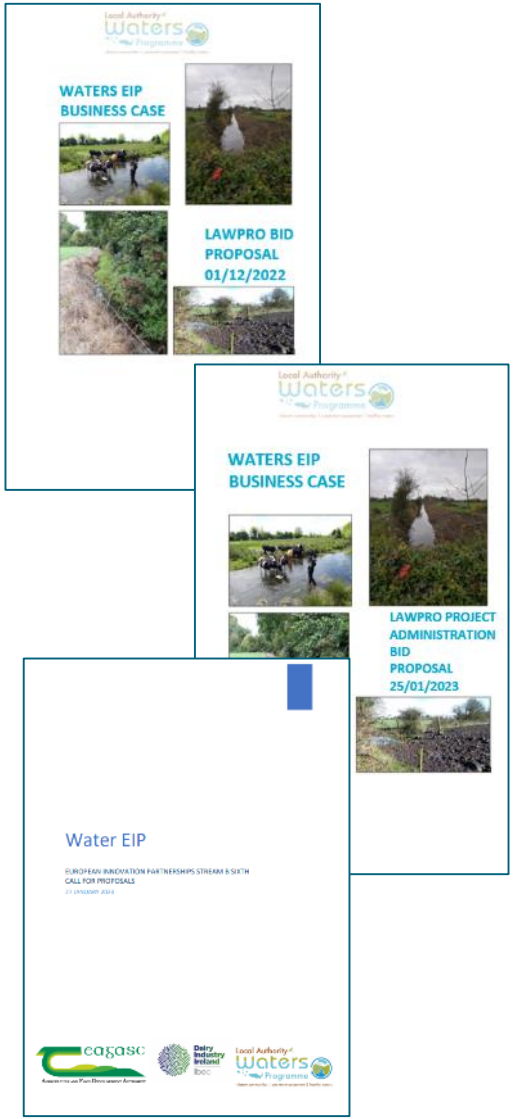


Figure 3: Example of measures recommended in real life case study farm.

Water EIP - Summary

- Largest EIP ever undertaken in the state.
- Advisor led, promoting “Water stewardship” with the farmer at the centre of decision making and mapping of measures.
- Following catchment science principles, local farm knowledge resulting in targeted actions.
- Focus on water quality but also multiple benefits including climate.
- Aim to target all Ag sectors (as much as possible)
- Aim to integrate with sustainability initiatives, draw in complimentary supports including additional partners (e.g., OPW)
- Wider public information campaign – to explain “the why” – i.e., Water Quality is a public resource underpinning all sectors and a healthy society
- Strong support from the industry and sectors will be necessary



Thank You

Questions may be asked through the SLIDO app using the QR code on the rear of your lanyard or go to

Slido.com and enter #2847552

LOCAL AUTHORITY ENVIRONMENTAL SERVICES TRAINING GROUP CONFERENCE– 2023

Session 2 Presentation 2
Nature Based Solutions

Dr Fran Igoe
Regional Coordinator

Local Authority Waters Programme (LAWPRO)

Nature-based Solutions

1. Looking to nature to inform solutions…
2. Working with nature at the core of solution delivery…

- Water – integrated approach
- Climate – resilience/cooling/adaptation & mitigation
- Biodiversity – continuous (non-fragmented)
- Health – water quality, cleaner air, combat heat island effect, (physical) mental health
- Place making – aesthetics, soften urban landscapes, acoustics/clean air & temp.

Types of Nature-based Solutions

Rain and Water quality in Urban Areas

Combined sewer networks

- Historically – get water off site as quickly as possible
- Combined sewers designed for small populations & more permeable surfaces
- Many combined sewers have inadequate capacity to take increased rainfall ingress
- Sewage treatment plants dealing with lightly contaminated water unnecessary
- Discharge directly into water course via Storm overflows

= significant pollution risk

Contaminated surface water

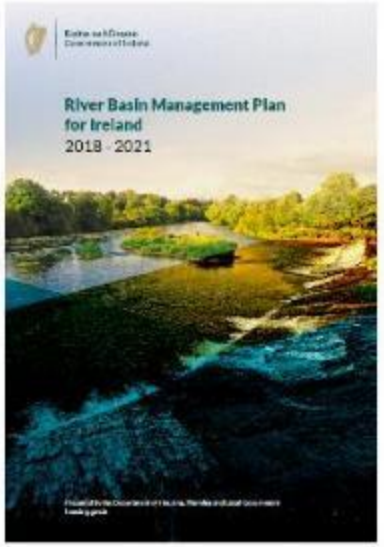
- Abraded tyres from vehicles,
- Hydrocarbon compounds (some carcinogens)
- Car window washer and cleaner
- Coolant, de-icer and other chemicals
- Abraded road surface and other materials
- Dog faeces

= significant pollution risk

Example of Stormflow impact on Clashawley River,
Fethard, Co. Tipperary during low flow river water levels, after a localised shower of rain in 2019.
Source J. Gilleran, EFO, IFI Clonmel

Background to Nature-based (SUDS) surface water management implementation strategy

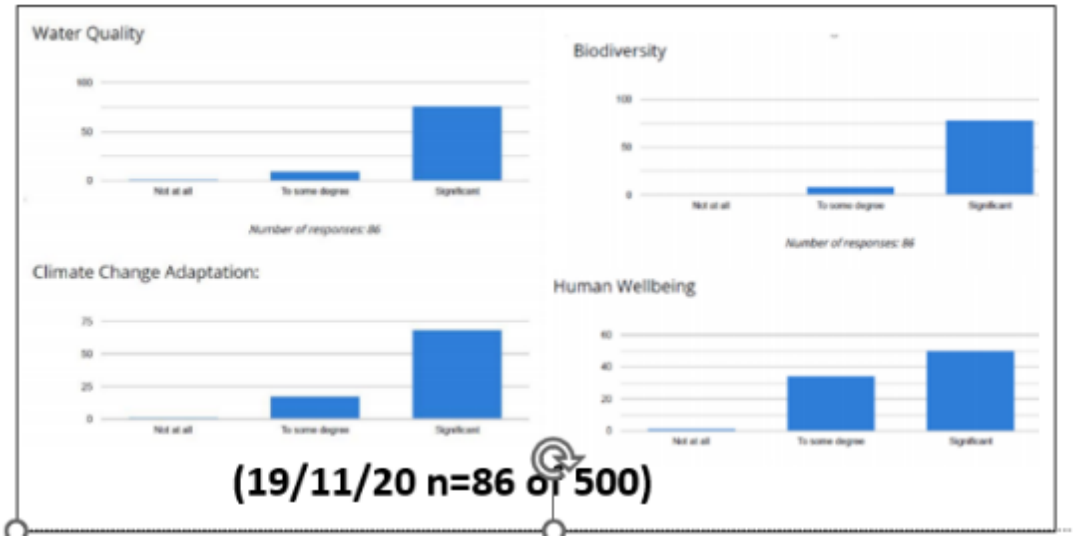
- River Basin Management Plan- (2015-2022) Regional Operational Committee meetings (WFD governance structure)
- Identified need for a focus on Nature Based Solutions & Green/Blue Infrastructure
- Specific request for support from engineers and planners following queries re developments
- Webinars commenced November 9th 2020



Local Authority and professional sector consultations to inform implementation in the Ireland

- Highlighted key gaps and opportunities
- Engaged internationally – experience from Netherlands, Australia, Denmark, US and specifically UK/Wales)
- Looked to develop for Irish context (climate, regulatory system etc)
- Worked with CARO training & Regional Assemblies (SEA)
- Animated via WFD regional structures

Key learnings from these consultations



Q. Are Nature based Sustainable Drainage Systems being adequately implemented in Ireland? 81% said no.

Q. Why? Policy, legislation, leadership, governance, technical guidance, training, local authority capacity, funding all need significant improvement *..(majority of respondents)*

1. ***Need for support "starting at the top!"***
2. ***What exactly are nature-based solutions? Green and blue infrastructure***
3. ***Highlighted the need for clear messaging to ensure Integration of water management – i.e. follow the water***

Rainwater Management Planning

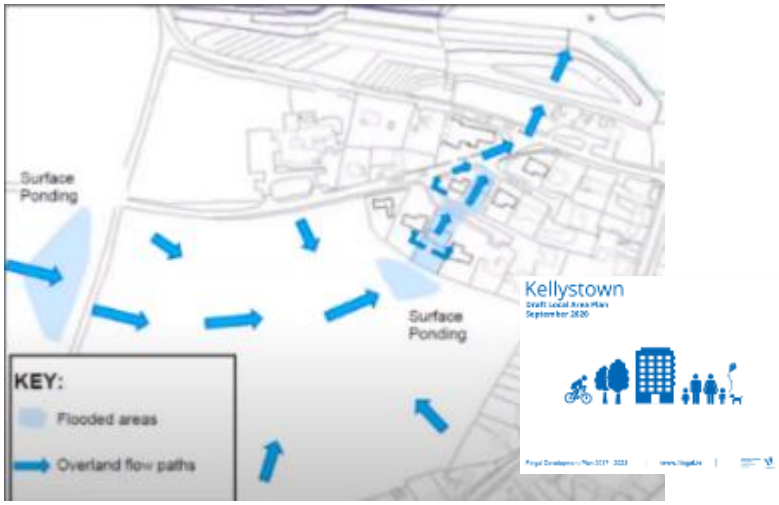
Integration of water sensitive urban design concepts including development of **Rainwater Management Plans** as part of settlement plans / Local Area Plans)

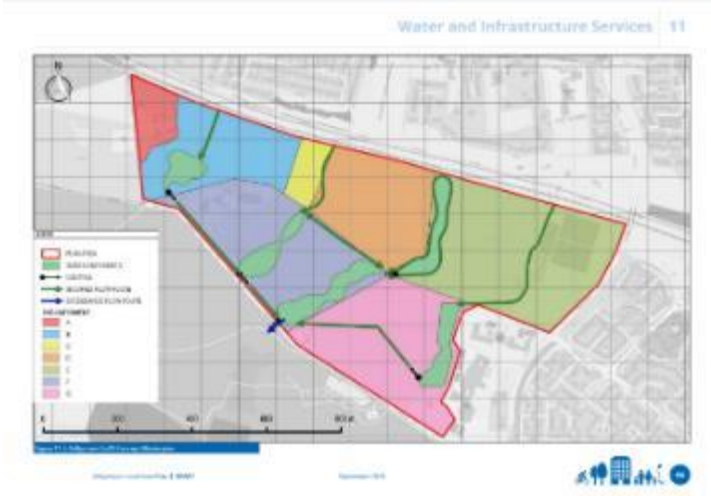
Follow water across the development landscape.

Will become more important from Climate Change perspective (pluvial flooding, cloud bursts etc).

Guide location, type, scale and integration of nature-based solutions

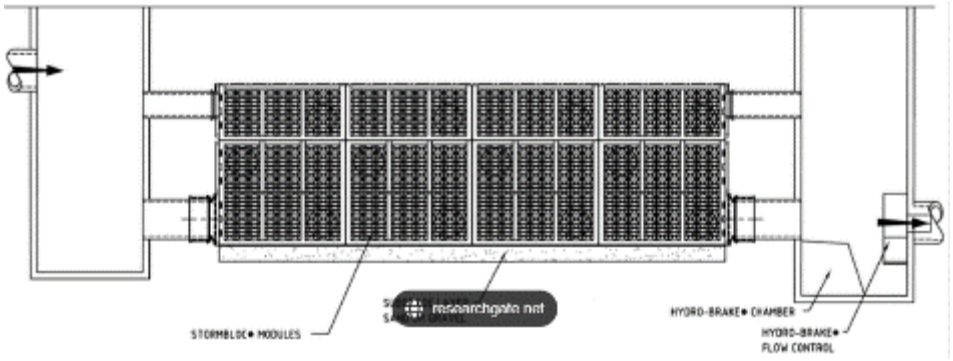
*Working with **Cork***, **Wexford**, Offaly, Kildare, Fingal CoCos on development of*





Developing **practical guidance** for development planners on what to look for in individual applications

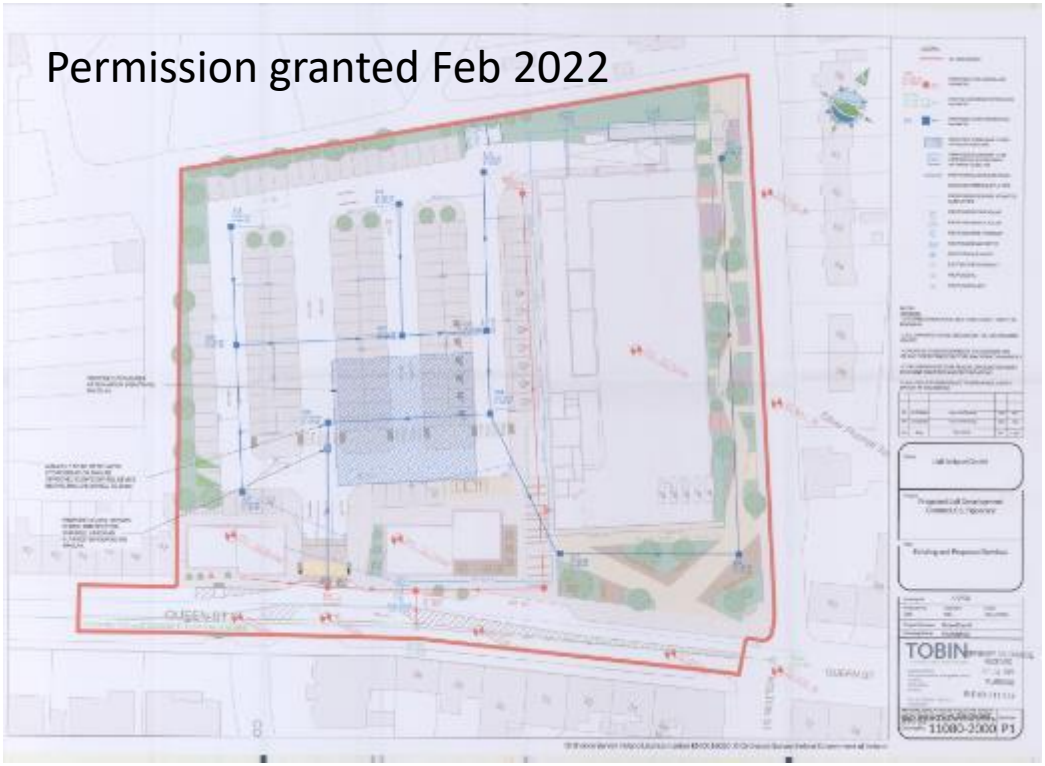
- Feedback is that expertise and familiarity not there in most LA planning sections
- Tendency for planning applicant designs following conventional (gully underground attenuation approaches)
- Sometimes Nature-based solutions removed on request
- Request for design scenario examples
- LAWPRO currently on developing guidance



As an example

e.g., Request from Tipp CoCo planning how nature Based Suds is integrated into different development types:

- Housing development (small, medium scale) on greenfield sites. An example on greenfield and brownfield sites would be beneficial.
- Urban infill. Small sites, mixed use development.
- Commercial development (edge of town) e.g. such as sites on Davis Road.
- Commercial/Industrial development-Greenfield sites.
- Schools



Same example integrated nature-based solutions

Building into Climate Action – Nature-based SUDS

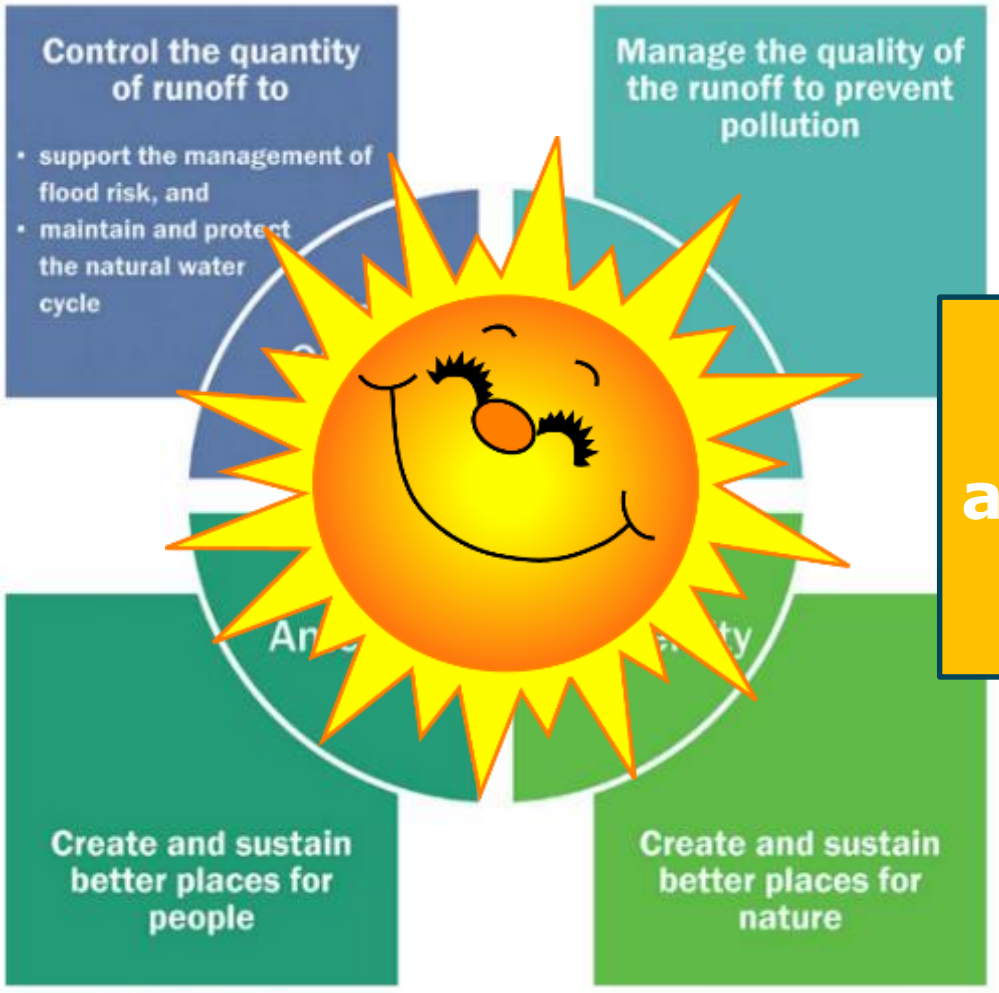


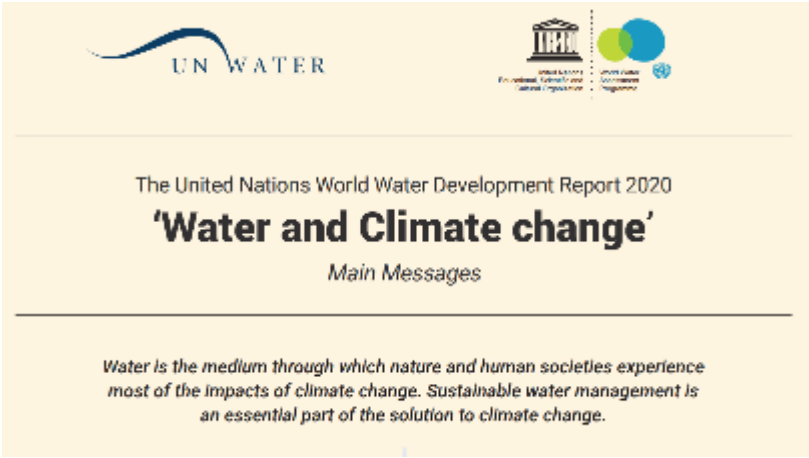
Figure 3: The four pillars of SuDS design

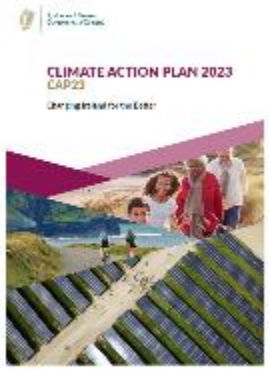
Support Climate adaptation and mitigation -resilience

The SuDS Manual (C753) 2015)

Climate action – integrating water into climate planning

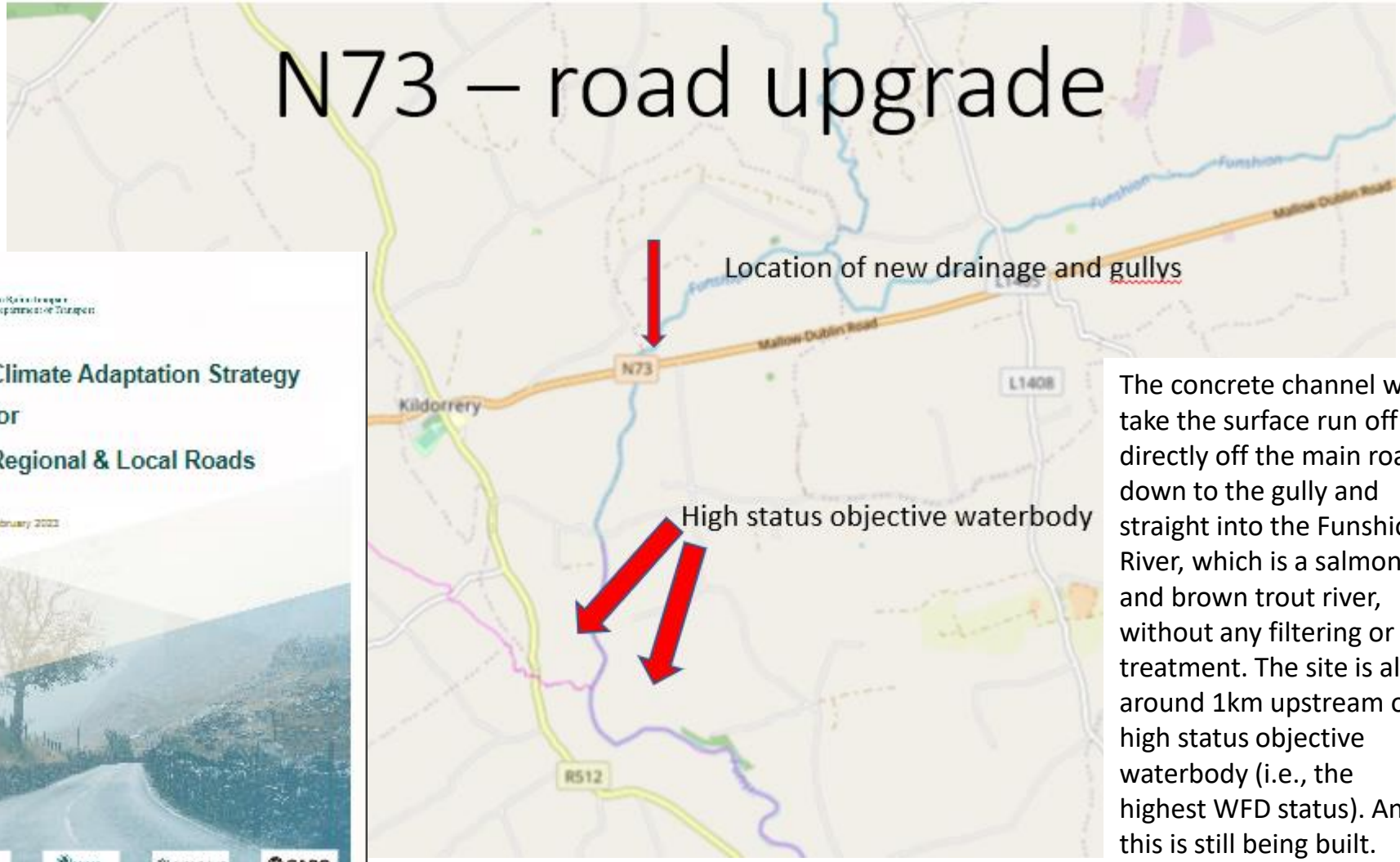
- Climate Action Regional Offices(planning) training
- Local Authority Climate Action Plans
  - EU Water Framework Directive objectives and plan for climate change risk)
  - Pollution control (aligning environmental inspections, environmental planning policy)
  - Planning (integration of water sensitive urban design concepts including development of Rainwater Management Plans as part of settlement plans / Local Area Plans)
  - Built infrastructure (integrate nature-based solutions into all projects to provide greater water water quality protection and reduce flood risk)
  - Biodiversity (understand local biodiversity requirements and plan for climate change)
  - Education (local education and awareness raising of the general public, staff and elected representatives)





The approach is to suggest actions that Local Authorities, with support from other stakeholders, can deliver within a wider framework that integrates water and climate issues. Therefore, where possible water focused actions should be given due prominence on account of water's importance in a climate

e.g., possible risk to water from climate action planning



The concrete channel will take the surface run off directly off the main road down to the gully and straight into the Funshion River, which is a salmons and brown trout river, without any filtering or treatment. The site is also around 1km upstream of a high status objective waterbody (i.e., the highest WFD status). And this is still being built.


KILDORRERY
TROUT ANGLING CLUB

PLANNING FOR WATERCOURSES IN THE URBAN ENVIRONMENT

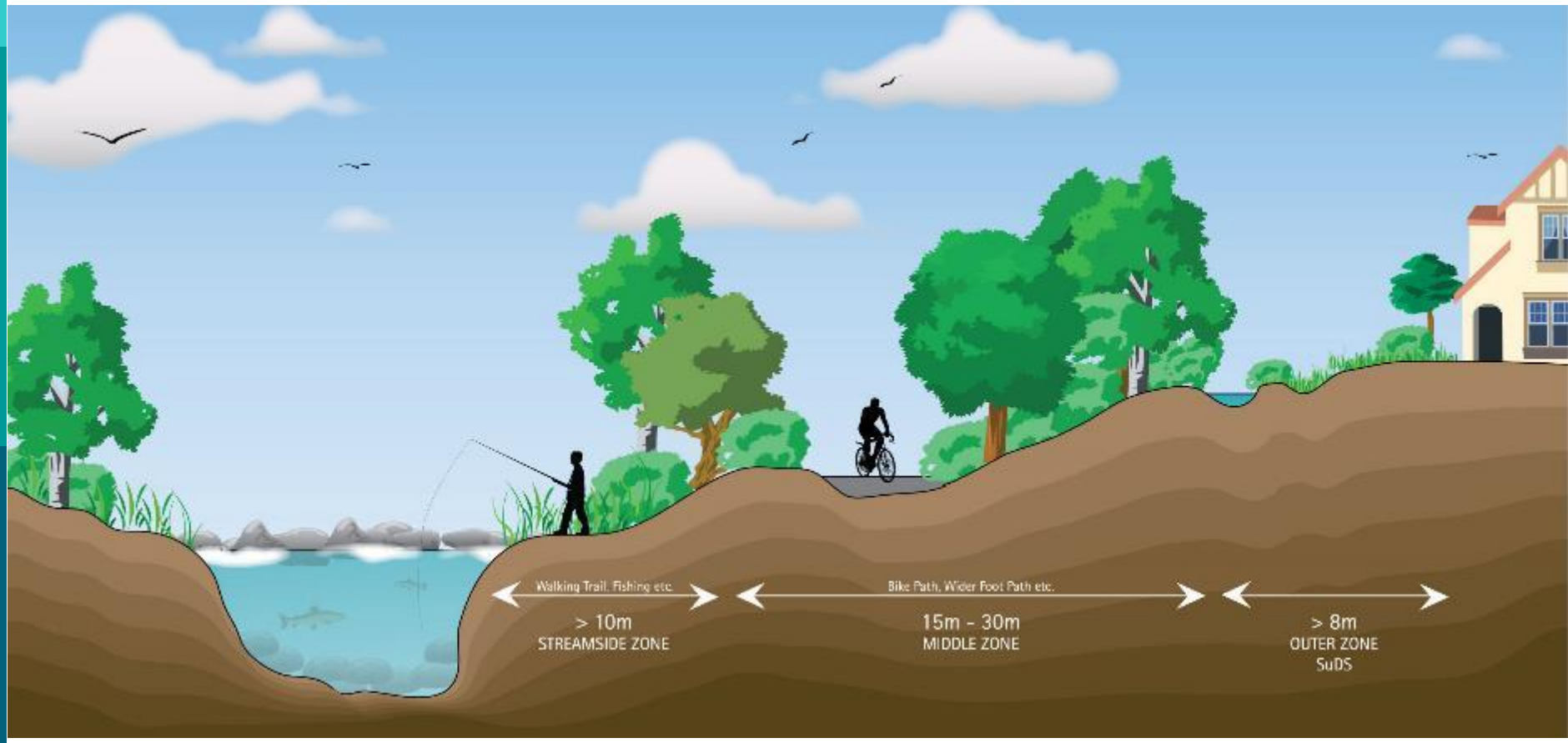
A Guide to the Protection of Watercourses through the use of Buffer Zones, Sustainable Drainage Systems, Instream Rehabilitation, Climate / Flood Risk and Recreational Planning

*Including one-off developments

Iascach Intíre Éireann
Inland Fisheries Ireland

A Guideline Developed by Inland Fisheries Ireland

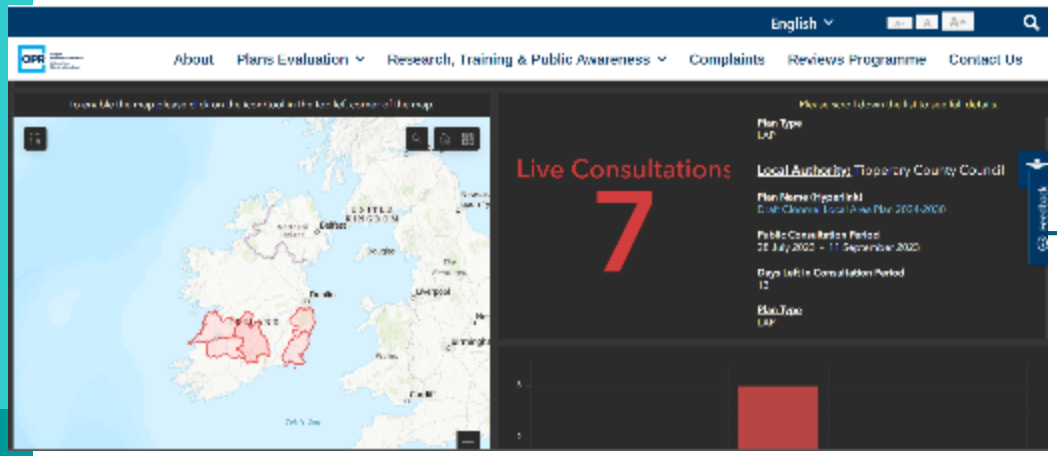
NBS bring multiple benefits



Greenways & riparian areas

- Urban growth will put pressure on existing riparian area
- Blueways, active travel routes etc already moving into these areas (e.g., above - before and after blueway development on the River Suir
- Hydromorphological pressure under WFD – issue for biodiversity also etc
- Leaving more space between the river and development– green zones can absorb some of this pressure

Local Area Plans



7.1 Natural Heritage

Clonmel is situated in the valley and on the banks of the River Suir in the northern foothills of the Comeragh Mountains and to the south west of Slievenamon. These natural assets provide a striking backdrop on approaches to, from and within Clonmel.

7.1.1 Watercourses and Riparian Zones

Clonmel is situated on the River Suir, one of the main rivers of Ireland, rising in the Devil's Bit just north of Templemore, flowing through Thurles, Cahir, Clonmel and into Waterford harbour.

The River Suir in Clonmel is a wonderful natural asset, lending a unique character to the town centre. In order to protect the riparian zone, an undisturbed edge or buffer zone shall be required between new developments and watercourses, to maintain the natural function of existing ecosystems and to enable sustainable public access.

7.1.2 Nature Based Solutions, Biodiversity and Urban Greening

The Council will seek to encourage nature-based surface water management solutions, biodiversity and urban greening measures as a natural part of new development and as a measure to support a low-carbon society and build resilience to climate change. These techniques will be required to be detailed at planning application stage by both public and private sector development and as part of public realm enhancement.

7.1.3 Blue and Greenways

The Council will continue to support investment and collaboration, feasibility studies and the design and planning process in the investigation of opportunities for new green and blueways

8.3 Sustainable Surface Water Management

The Council and Uisce Éireann are responsible for the on-going maintenance and monitoring of sustainable drainage systems and will seek to maintain drainage having consideration to Water Sensitive Urban Design and application of a nature-based Sustainable Urban Drainage Systems (SUDS) approach. It is the policy of Uisce Éireann to maximise the capacity of

[11] https://www.water.ie/connections/information/charges/

existing collection systems for foul water. Therefore, the discharge of additional surface water to combined (foul and surface water) sewers is not permitted. The removal of stormwater from combined sewers as part of roads, public realm, residential or other developments must be incorporated in new developments where feasible.

The Council will require new development in Clonmel to provide separate foul and surface water drainage systems and to incorporate water sensitive urban design and nature-based SUDS. The provisions of 'Nature-Based Solutions to the Management of Rainwater and Surface Water Runoff in Urban Areas' (water sensitive urban design) Best Practice Interim Guidance Document (DHLGH, 2001) and any review thereof, will apply.

The Buolic and Frenchman's Streams have routes through the urban area of Clonmel. The Buolic Stream enters the town from the north-west at Glenconnor, before merging with the Frenchman's Stream in the vicinity of Davis Road, and draining into the River Suir. Substantial sections of these watercourses have been undergrounded / culverted to facilitate development. Separately, the River Anner flows through the environs east of the town and drains into the River Suir east of the WWTP. The Council recognises important function of these watercourses for land drainage in the wider hinterland.

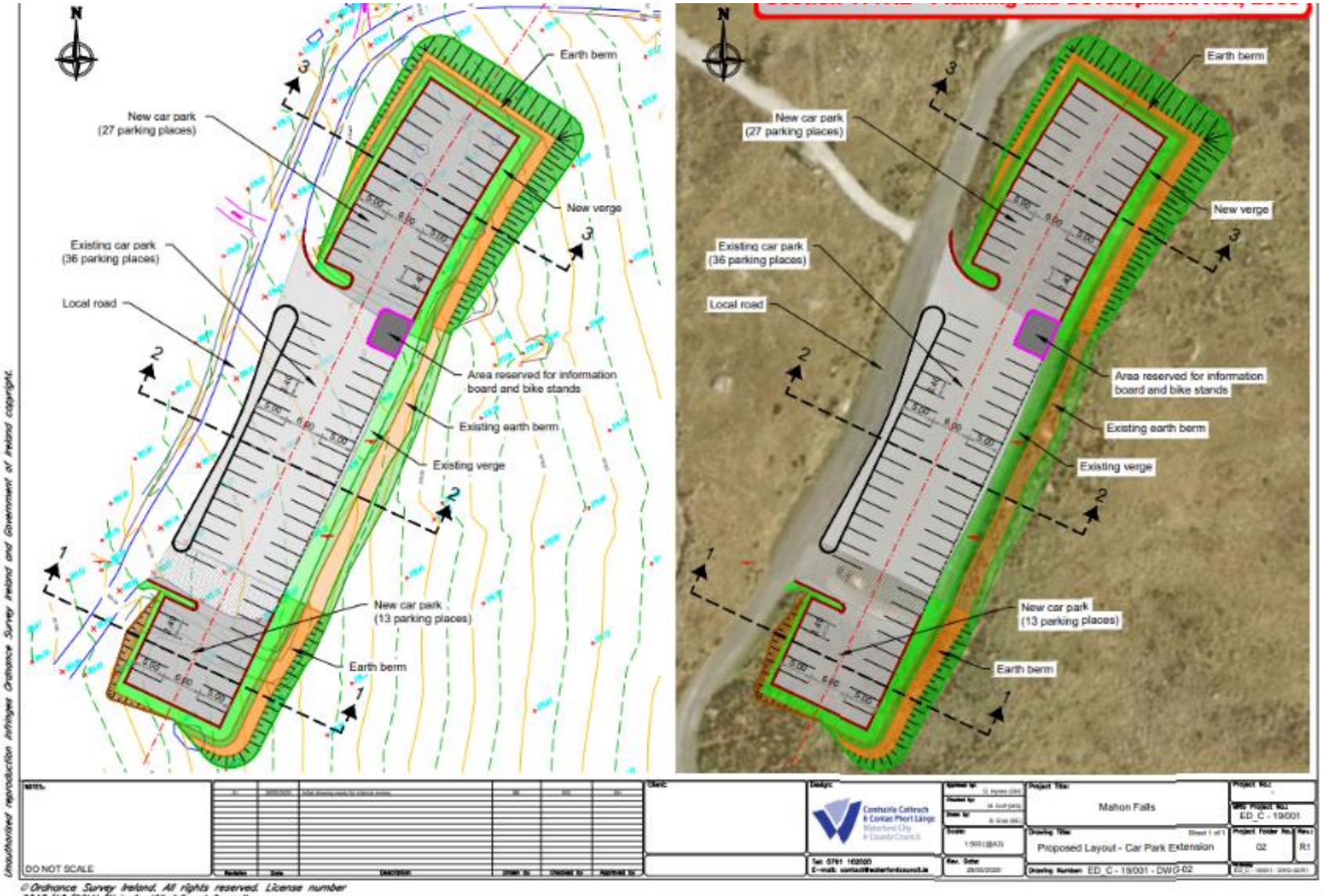
Working collaboratively with all WFD implementing bodies and stakeholders

e.g. ABP decision (17 Dec 2021) based on a Strategic Housing Development post NPWS submission

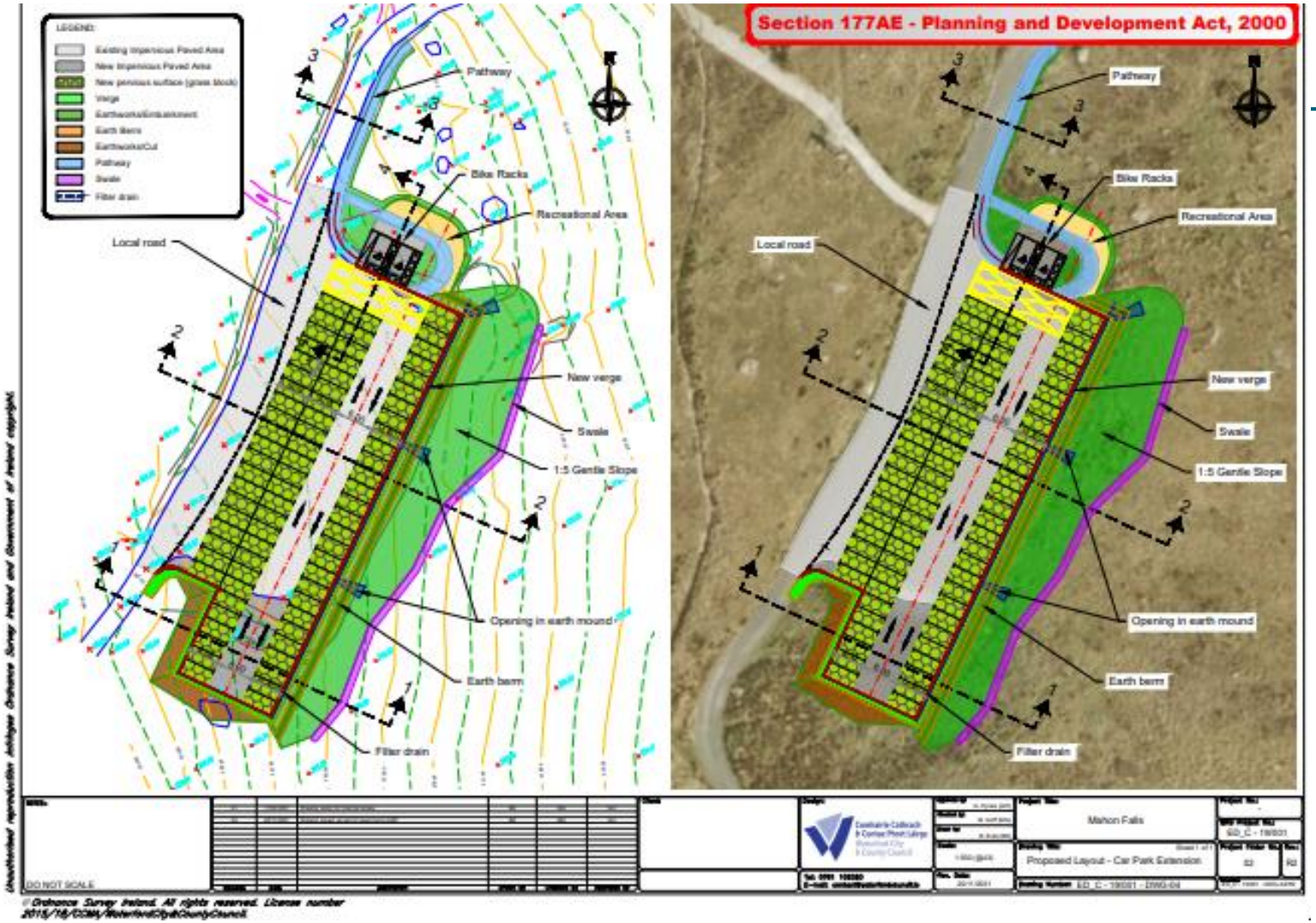
3. The proposed surface water outfall pipe to the Lower River Suir Special Area of Conservation (Side Code: 002137) shall be replaced by a nature based Sustainable Urban Drainage System to receive surface waters from the development, combined with a habitat management plan, which will enhance the biodiversity of the area and support the Conservation Objectives of the Lower River Suir Special Area of Conservation (Side Code: 002137). This revised surface water outfall shall be informed by a revised Site Specific Flood Risk Assessment and revised surface water drainage proposals for the residential development, all of which are to be submitted to the planning authority for agreement in writing prior to the commencement of development.

Reason: In the interests of maintaining the riparian zone and supporting the conservation objectives of the Lower River Suir Special Area of Conservation

Design into all Local Authority projects. E.g carpark design with no Nature-based SuDS.



Same carpark design with Nature-based SuDS.

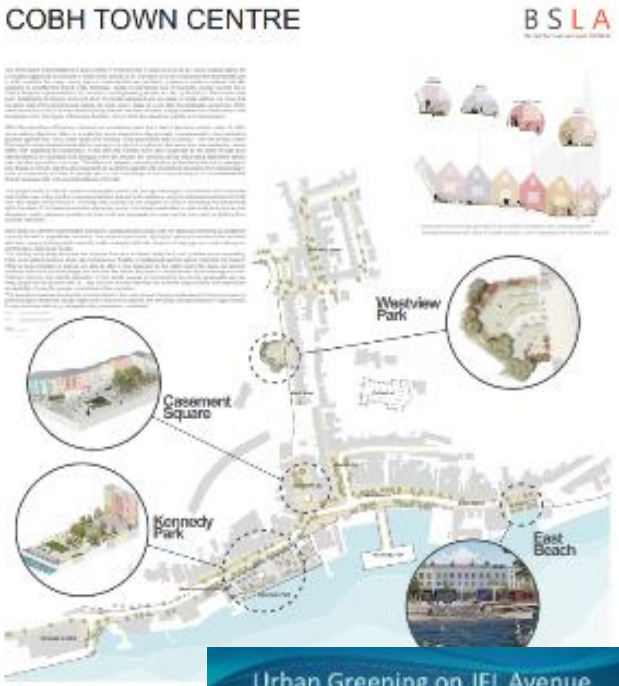


"b)To minimize impervious paved area WCCC propose to use pervious grass blocks as environmentally friendly surface materials for the car parking spaces. Grass block is a ground reinforcement grass paving system ideally suited to projects where a hard surface capable of supporting vehicle is required within in environmentally sensitive areas. It functions as a SuDS permeable pavement, controlling surface water at source by directing it to the sub-layers. As a part of detailed design process WCCC will explore feasibility to use some other environmentally friendly surface materials currently available at the market also. Details of Killeshal Grass Blocks attached."

Looking for opportunities

to build in Nature-based SuDs at scale in (public realm) URDF, Active travel and other Rural Schemes (ORIS, CLÁR, LIS, TVRS etc)

- Best practice to manage rainwater in project areas and to minimise impact on sensitive areas
- Protecting water quality and flood risk
- Protecting and enhancing biodiversity
- Building in Climate change resilience and benefits
- Potential to increase amenity value of project (additionality)
- Looking for multiple benefits
- Local Authority project teams and colleagues need to design them in at the earliest stage! Link in with Uisce Eireann and seek opportunities to reduce surface water flow to combined sewer networks!



Nature Based Solutions (NBS) Project, inter-visibility Group

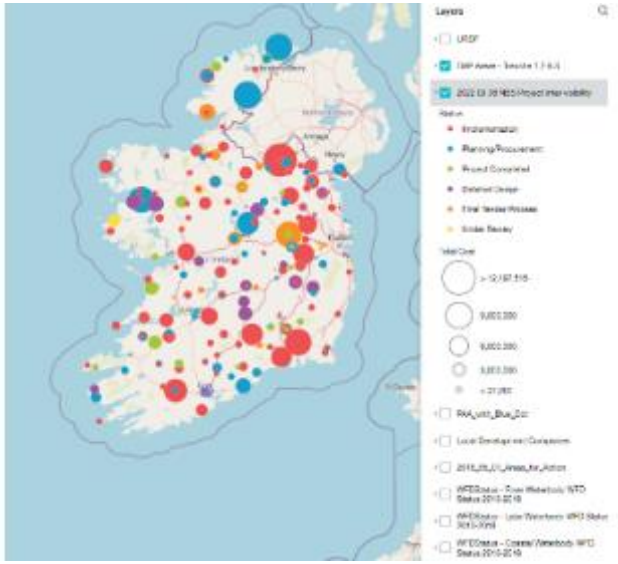
Objective: map out large scale public projects to identify opportunities to incorporate NBS to address rain/surface water runoff.

Focus currently on

1. RRDF (DRCD),
2. URDF (DHLGH),
3. Active Travel (NTA)
4. Drainage Area Plans (Uisce Eireann

RURAL REGENERATION DEVELOPMENT FUND PROJECTS

Information includes
- Location
- Date of commencement
- Description of project
- Phase of project
- Cost
- Local Authority Contact point



What is happening on the ground?

- Hard engineering solutions including gullies and underground attenuation for water storage still widely occurring
- Nature-based solutions include green roofs, raingardens, bioretention areas, wetlands etc need greater visibility
- Case studies and justification needed for wider uptake A
- Also lack of skills in the sectors
- Appears to be geographic difference across the country - more in east than west

Nature-based solutions – example of multiple benefits


1
Collapsed underground attenuation chamber

Bioretention wetland

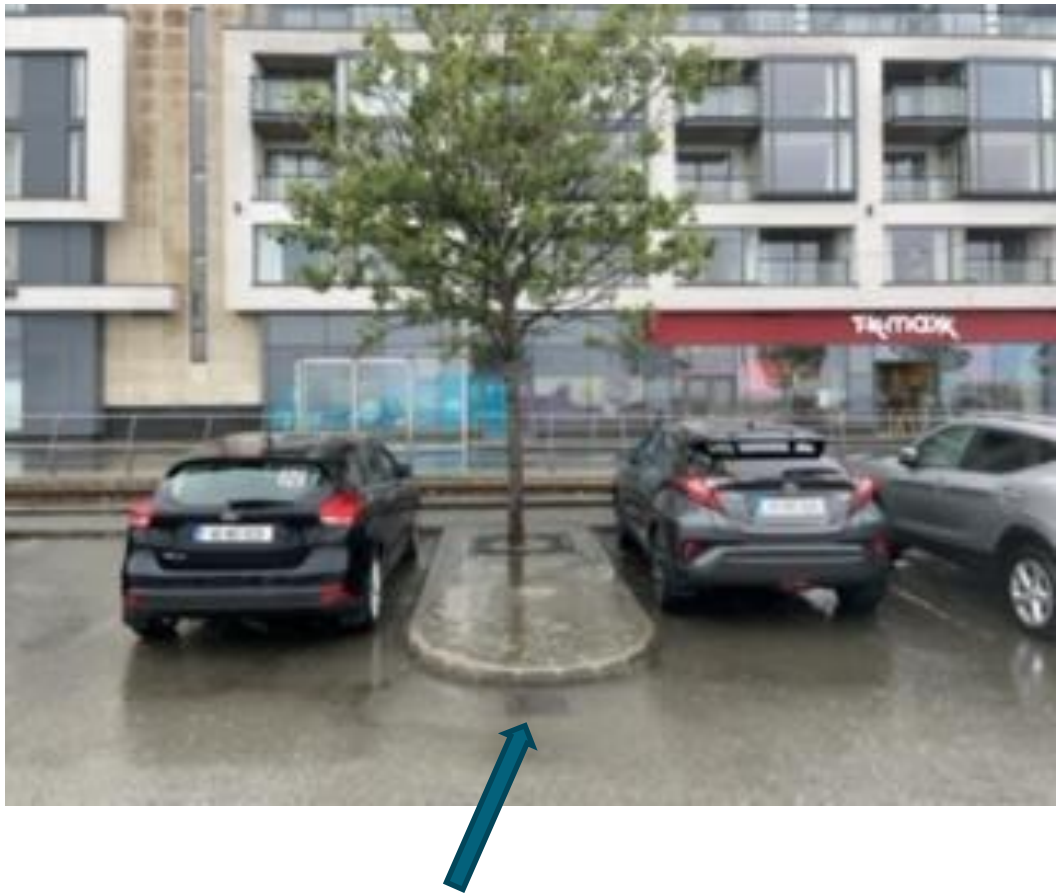
Look for opportunities in all projects (LA & third parties)

- lots of missed opportunities where water capture and filtration is not embedded.
- if done so, they would be self watering most of the time

Tree pits but not connected to surface water from the car park

Carpark adjacent to SPA

Carpark adjacent to SPA – during heavy rain 11/09/22



No treatment – via gully

Example of project delivery by a Local Authority using the supports / training provided by LAWPRO etc

Bioretenion Areas (Rain Gardens) – Pollerton Road/Green Lane Junction

Courtesy P. Gorman, Carlow CoCo

Courtesy P. Gorman, Carlow CoCo

Courtesy P. Gorman, Carlow CoCo

Courtesy P. Gorman, Carlow CoCo

The Nationalist

CARLOW TOWN HOSTS REGIONAL CONFERENCE ON WATER QUALITY

TUESDAY, AUGUST 15, 2023

Nature-based solutions (integrating water) - Wider public good/multiple benefits

- Nature-based solutions providing for better management of water in **public spaces**
- Reinforced grass for parking bays **reduces hard surface runoff** into conventional drainage network
- Swales allow for collection of water from hard surfaces, slow the flow and provide **biodiversity benefits**
- Bioretention area allows for **water attenuation**
- Meadow grass land, wildflowers and native trees also capture water, **sequester carbon**.
- All provide for a **better user experience**

Min Ryan Park, Wexford

Designing for biodiversity

Example from North Cork – pond draining a pitch and putt course. Surface water treatment. Diversity of plant and invertebrate life. IRD Duhallow –constructed 2014.


2015


2016


24 March 2022

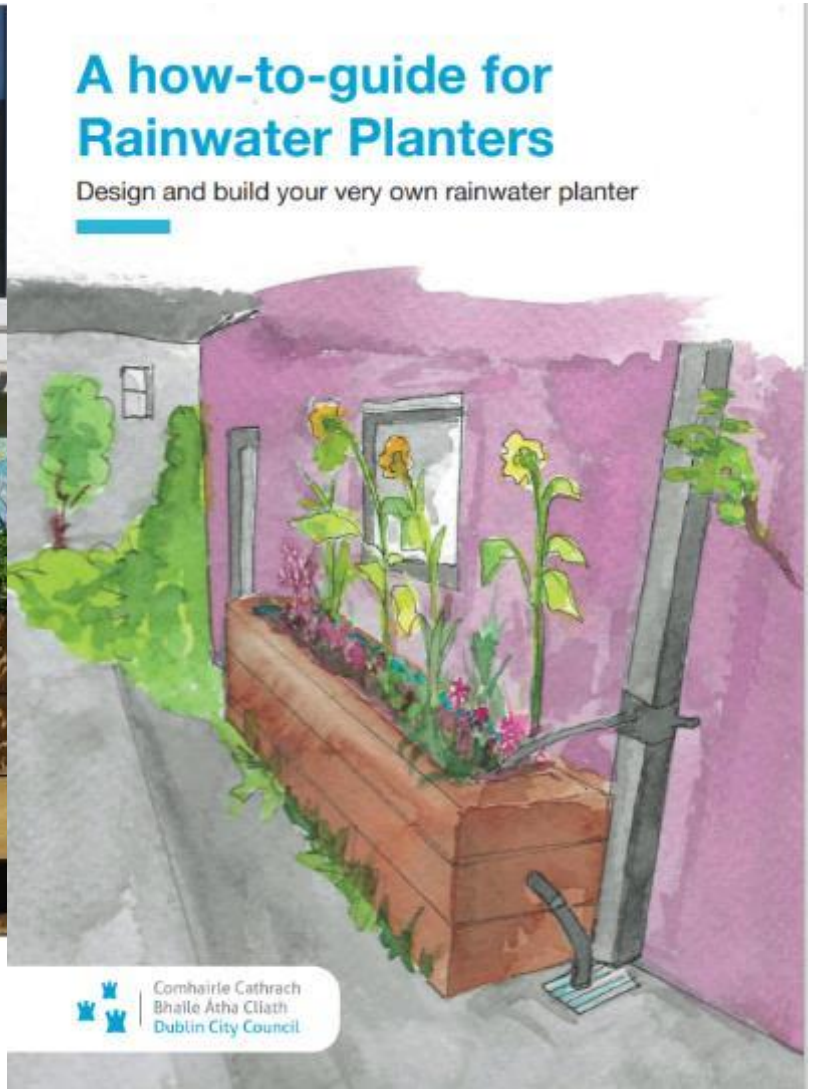
e.g., *Optimising nature:* Green roofs

- Effective 1st point of interception of rainwater
- Technology has moved on
- But still uneven distribution across the country
- Why?
  - Not considered important
  - Too costly – increase costs on developers and owners
  - Limit architectural design
- But can have significant nature benefits

Integrating with rural landscape (e.g., €60m WaterEIP)

Hedgerows: We need to look after existing features.
Hedgerows provide benefits to water quality by regulating surface flow across the landscape and into the ground,
provide significant biodiversity benefits, shelter for animals including livestock and of course sequester carbon.

Community support



Tidy Towns

Geashill, Tidy Towns, Co Offaly. Funded via LAWPRO. World Water Day planting of wetland

Location of shore and outfall relative to the swale

Outfall into swale

Wetland servicing surface water runoff

DMURS NBS Advise note 2023

DMURS Advice Note 5 – Road and Street Drainage using nature-based solutions

Published August 2023

Section 1 – Background

Section 2 – Introduction

Section 3 – Integration with DMURS

Section 4 – Design Issues in Context of DMURS and DMURS Advice Notes

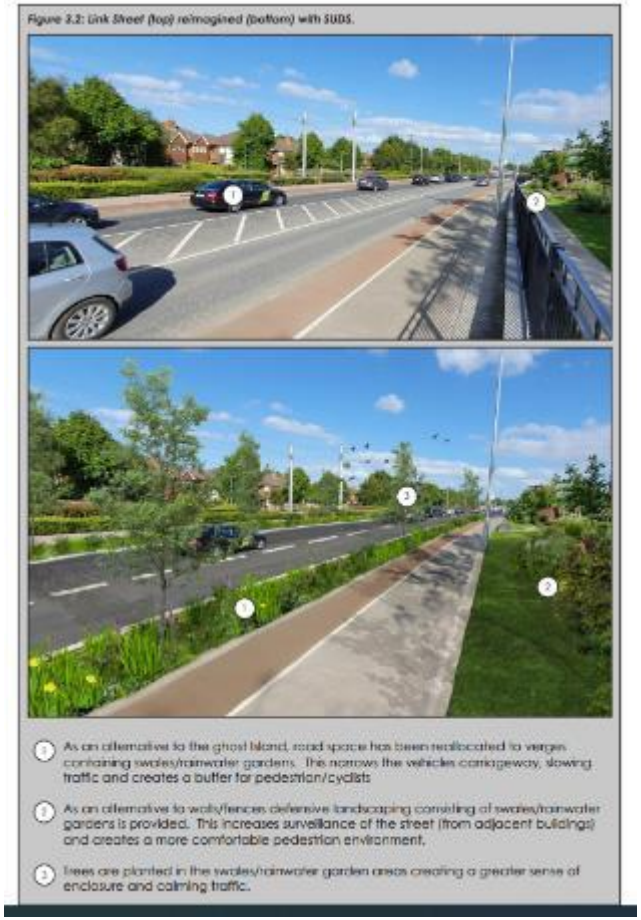
Section 5 – Implementing Nature-based Solutions as part of an Urban Project through Integrated Planning & Design

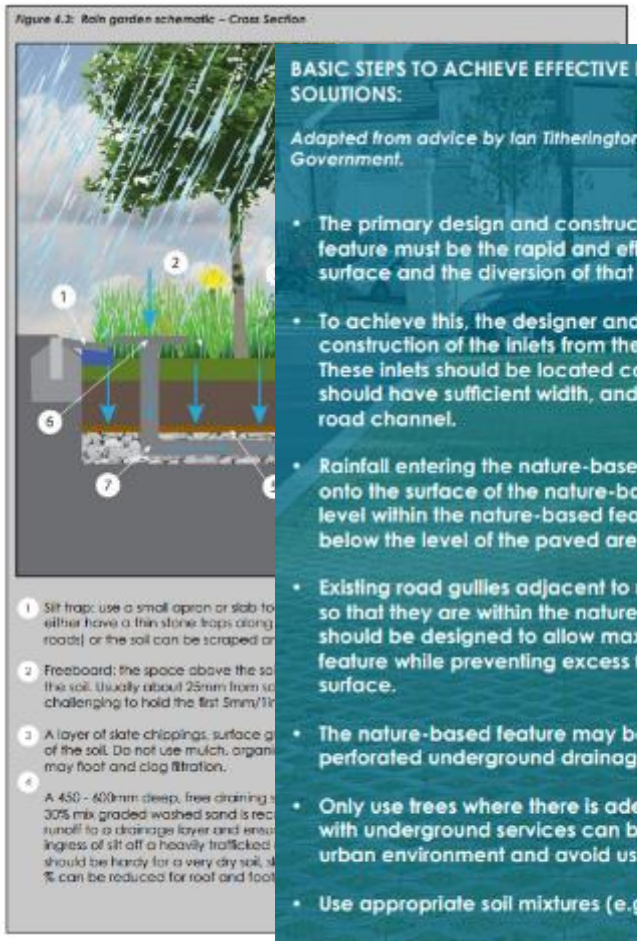
Section 6 – Care and Maintenance

Appendix 1 – Water Sensitive Urban Design

Image: South Dublin County Council, Chris Galvin

DMURS NBS advice note





BASIC STEPS TO ACHIEVE EFFECTIVE NATURE-BASED RAINWATER MANAGEMENT SOLUTIONS:

Adapted from advice by Ian Titherington, Senior Policy Adviser – Sustainable Drainage. Welsh Government.

- The primary design and construction criterion for any nature-based drainage feature must be the rapid and effective removal of rainwater from the pavement surface and the diversion of that flow into the nature-based feature.
- To achieve this, the designer and contractor must focus on the design and construction of the inlets from the pavement into the nature-based feature. These inlets should be located correctly (often at existing gully locations), should have sufficient width, and be appropriately graded from the adjacent road channel.
- Rainfall entering the nature-based feature must flow freely from the paved area onto the surface of the nature-based feature. Therefore, the highest finished level within the nature-based feature must be a specified depth (freeboard) below the level of the paved area.
- Existing road gullies adjacent to nature-based features should be relocated so that they are within the nature-based feature. The top level of the gully grid should be designed to allow maximum water storage within the nature-based feature while preventing excess flows overflowing back onto the pavement surface.
- The nature-based feature may be lined, if necessary, with appropriate perforated underground drainage to remove any excess water.
- Only use trees where there is adequate soil volume available and where conflict with underground services can be avoided. Use semi-mature trees suited to an urban environment and avoid using saplings as they can easily be vandalised.
- Use appropriate soil mixtures (e.g., engineered soils for raingardens).
- Choose the correct vegetation (this can vary depending on location and context). Look to use native plants as much as possible. Be aware of the ultimate height and spread of selected plants, given the space available. Always aim for low maintenance with resilient plants that can withstand the urban environment, periods of waterlogging and drought.

Key take home points

- "Water sensitive urban design" philosophy key to Nature-based surface water management
- LAWPRO are working with Local Authorities, DHLGH and professional bodies to develop best practice for Ireland
- Opportunities for Nature-based Solutions are everywhere – we just need to find them and action
- Resources and training being developed – Webinars, training, DHLGH interim guidance and implementation strategy
- DMURS Nature-based Advice note published in August, Rainwater Water Management Plans and guidance for planners under development
- Nature-based Solutions require a multidisciplinary approach (environment staff, engineers, planners, landscape architects, heritage/biodiversity officers etc etc)
- Public participation is important
- Finally – need to ramp it up"

Thank You

Questions may be asked through the SLIDO app using the QR code on the rear of your lanyard or go to

Slido.com and enter #2847552

LOCAL AUTHORITY ENVIRONMENTAL SERVICES TRAINING GROUP CONFERENCE– 2023

National Agricultural Inspection Programme

Valerie Doyle
Senior Inspector
Environmental Protection Agency

'The right measure in the right place'

Action: Local authorities and the EPA, through the NIECE network, will ensure that compliance assurance (including enforcement) actions for agricultural activities will be further enhanced and ensure that there is an increased targeting of inspections by local authorities based on water quality results, critical source areas and the EPA's PIP Maps.

Photo: Emma Quinlan

Catchment Programmes

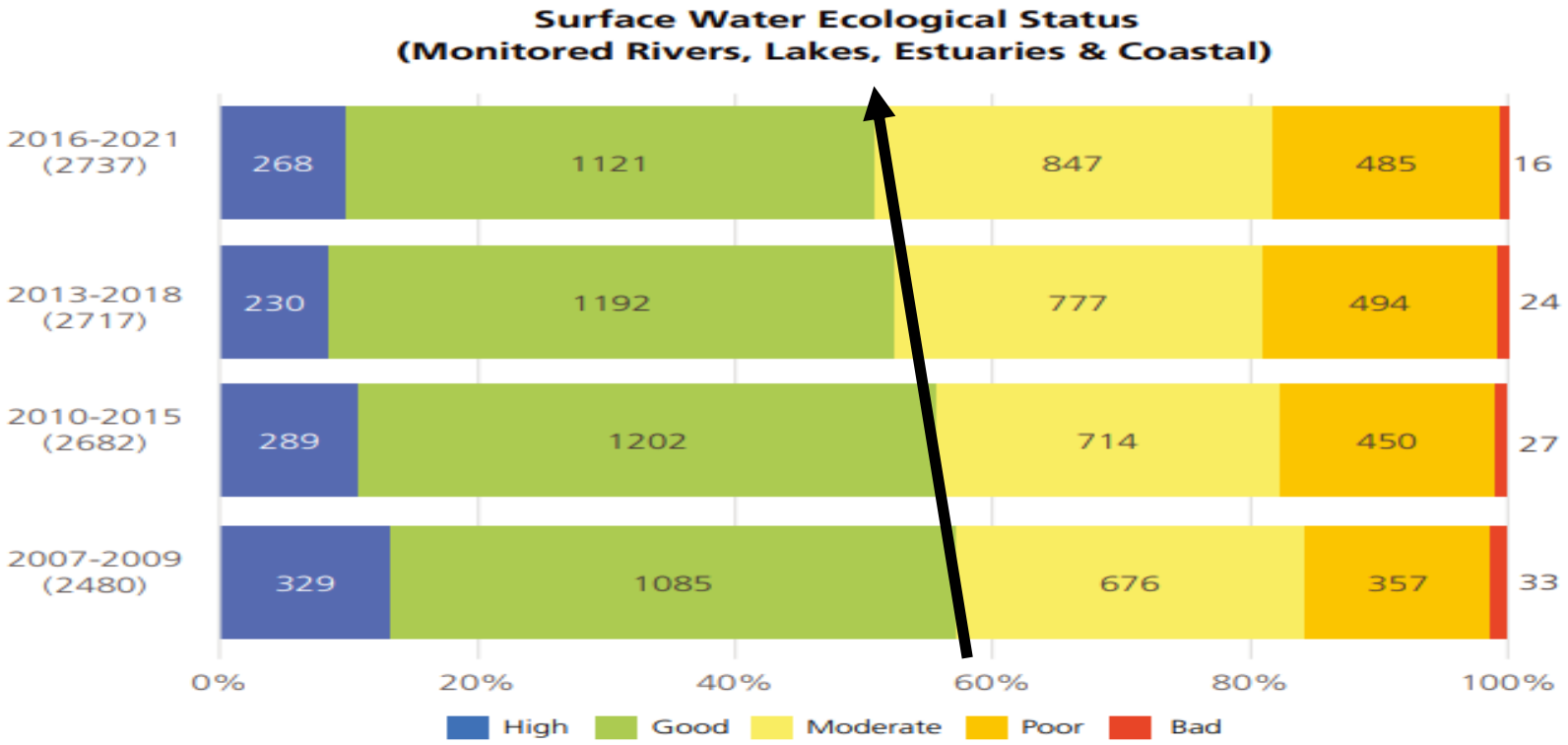
Agricultural Sustainability Support & Advisory Programme

WFD monitoring

Farm inspections

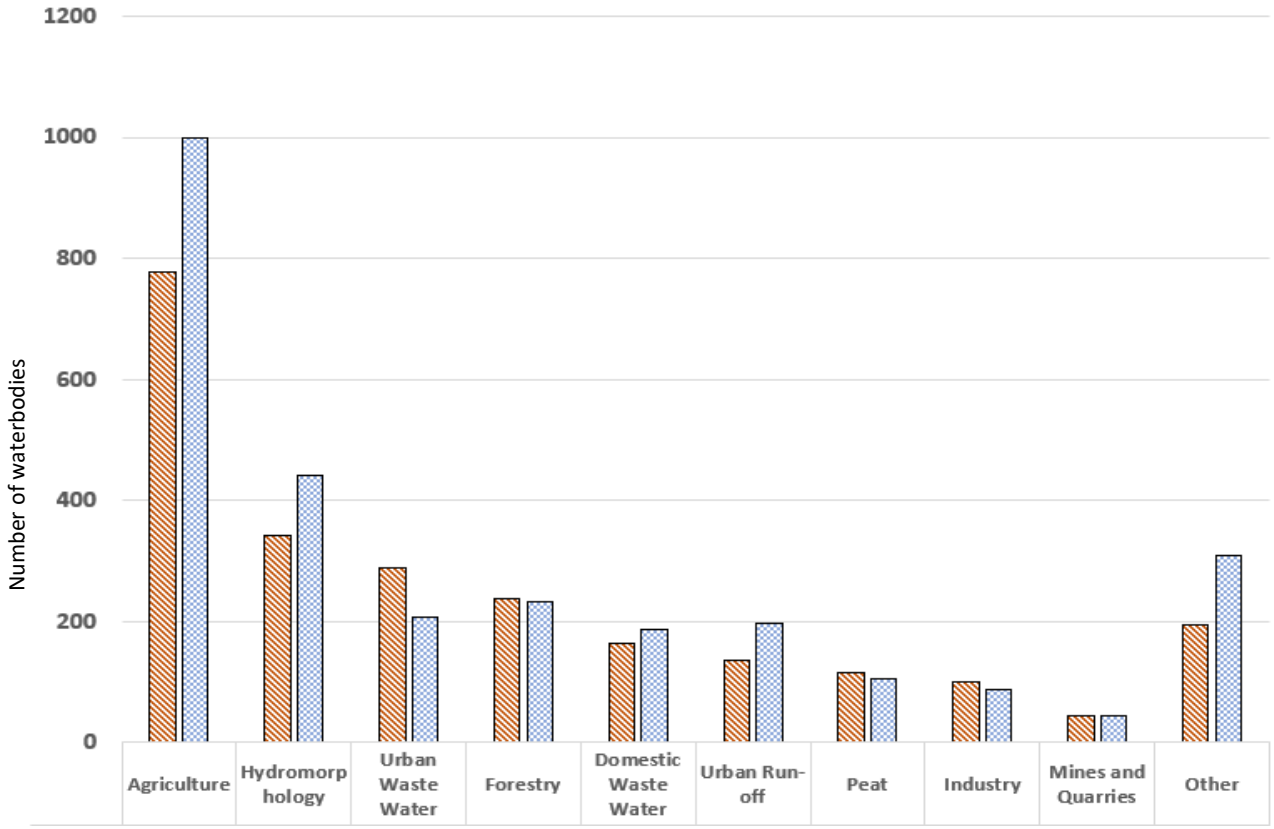
Cross compliance GAP Regulations Water Pollution Act

How healthy are our surface waters?



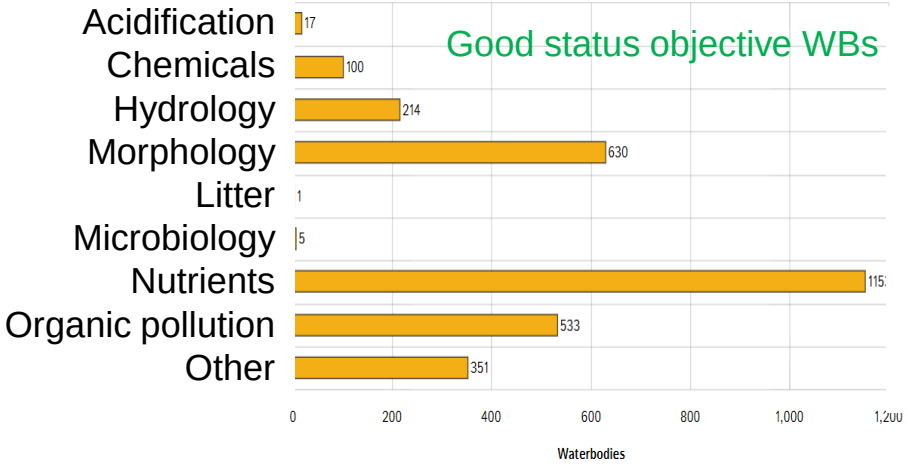
Pressures causing impacts on water quality

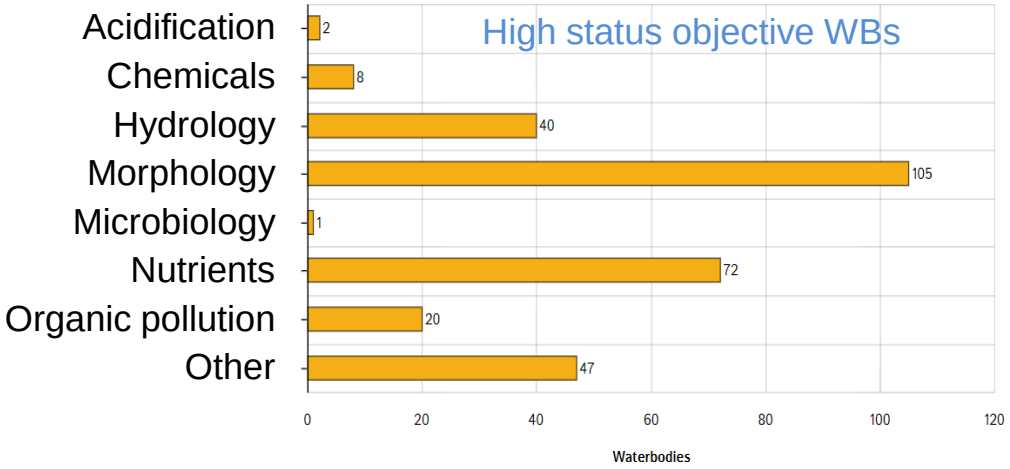
Change in numbers of waterbodies impacted by pressures between the 2nd cycle (orange) and 3rd cycle (blue)



epaCatchments
Healthy • Resilient • Productive
Valued water resources supporting vibrant communities

Impacts to waters that are At Risk





Excess nutrients, followed by morphology

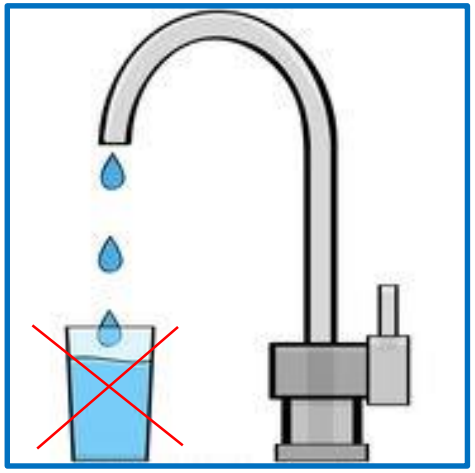
Morphological condition of habitats, followed by excess nutrients

Impacts of nutrients on water quality

Eutrophication (excess algae growth) in estuaries and coastal waters

Excess plant growth in rivers

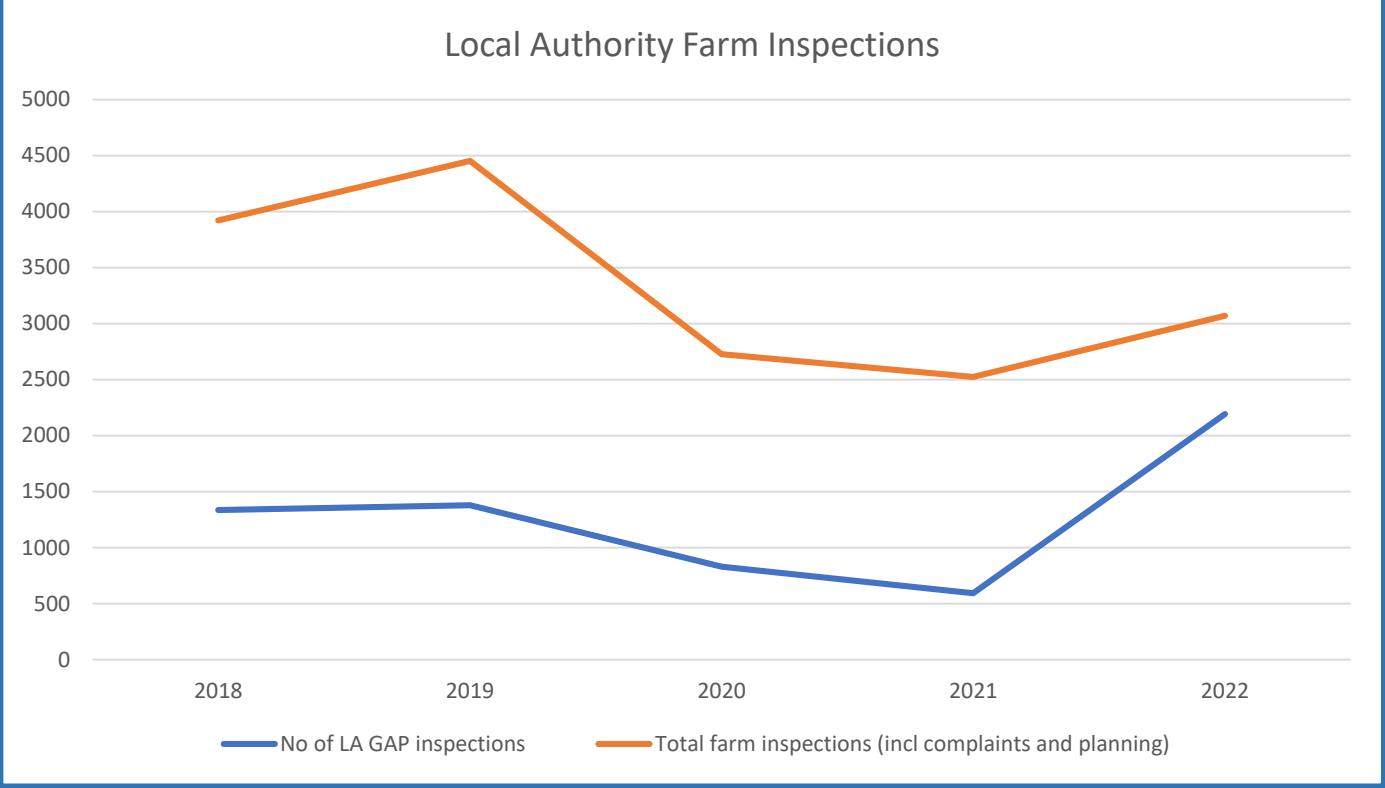
Ecosystems unhealthy



Drinking water quality impacted

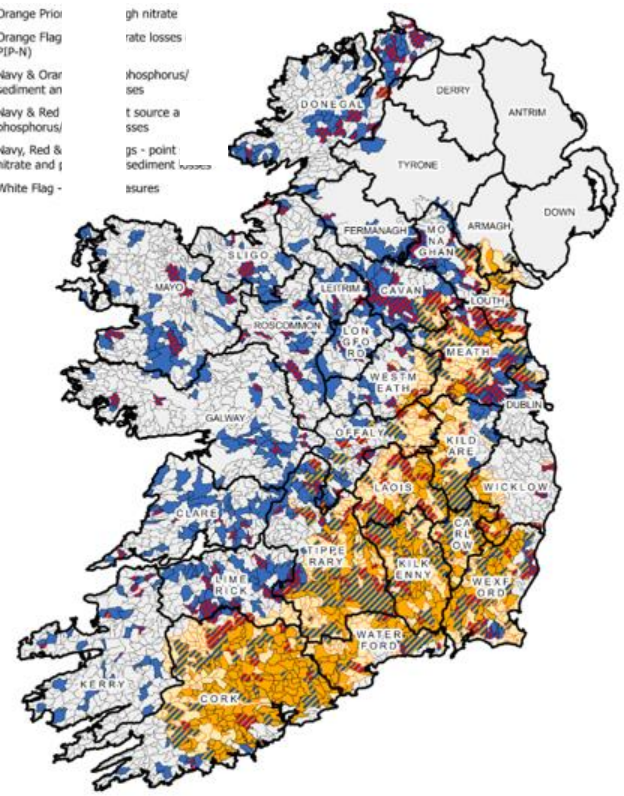
Public health

Local Authority Farm Inspections



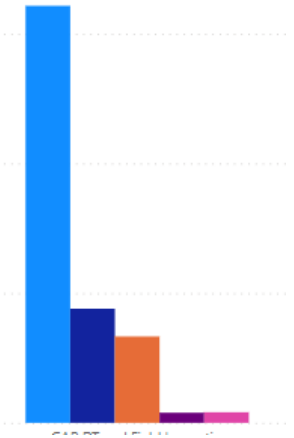
National Agriculture Inspection Plan

Where to Inspect ?



What to Inspect ?

What to Report?



N and P behave very differently in the landscape

High risk for **phosphorus** loss
Poorly draining soils
Overland flow dominant
Poor correlation with intensity
Need to break the pathway
Lag time weeks to months

Mattock catchment, Co. Louth. Photo: J Deakin

High risk for **nitrogen** loss
Freely draining soils
Groundwater pathway dominant
Strong correlation with intensity
Needs source control
Lag time months to years

Nuenna catchment, Co. Kilkenny. Photo: J Deakin

Where to Inspect?
Targeting Agricultural Measures

Navy Flag: Waterbody with measures to reduce phosphorus, sediment and chemical loss

- 'Break the pathway'

Red Flag: Waterbody with Measures to reduce ammonium losses / potential impacts from point sources

- Target Farmyard

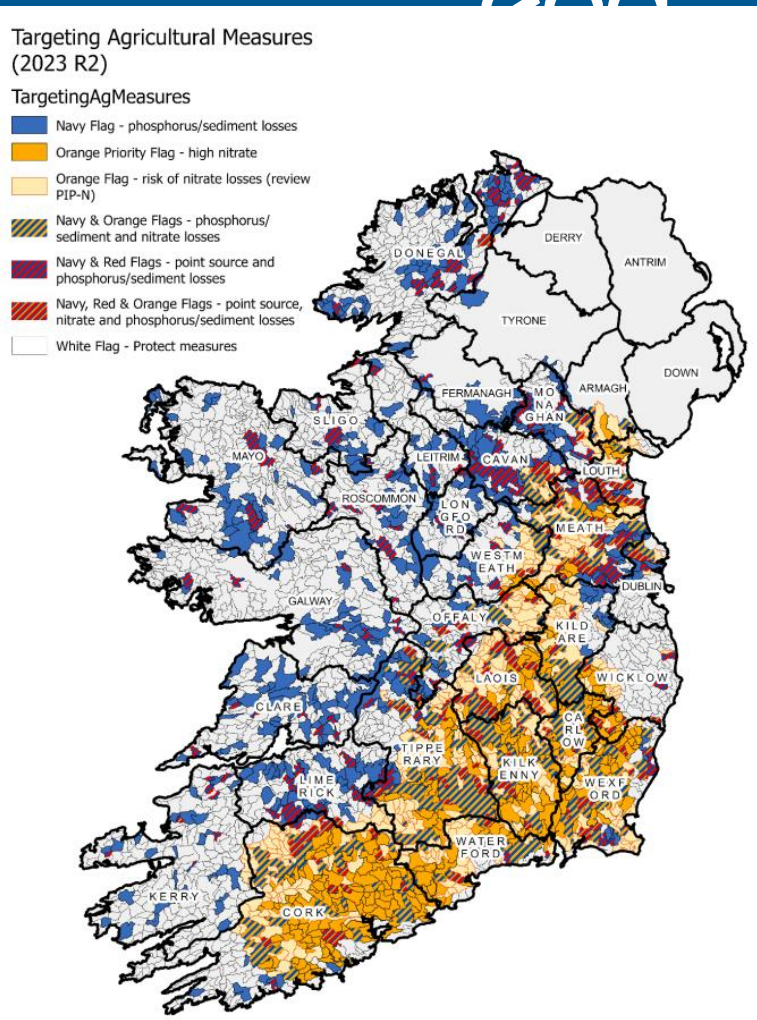
Orange Flag: Waterbody in areas with Measures to reduce nitrogen losses

- 'Control losses at source'

White Flag: Waterbody in the White areas that need measures to protect

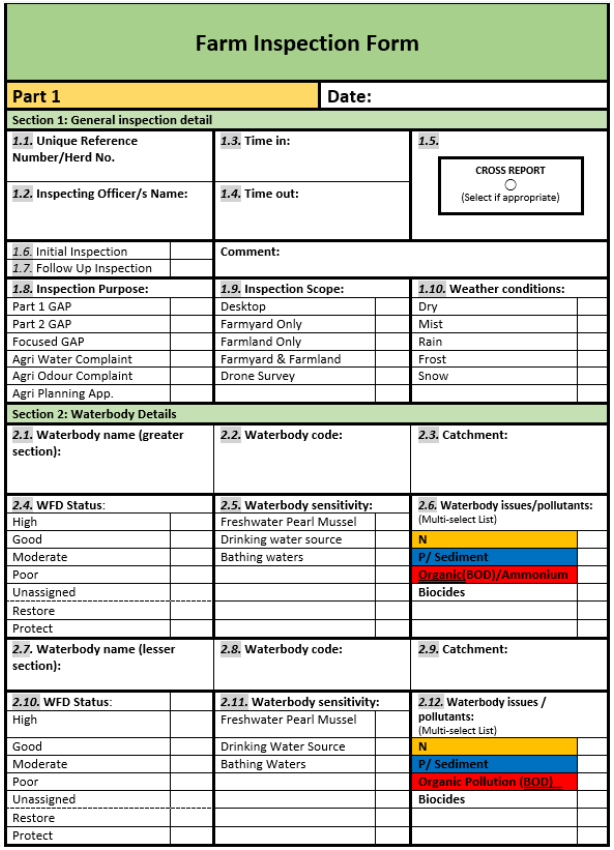
- These areas may be At Risk from other pressures

'The right measure in the right place'



What to Inspect?

- Purpose of Inspection
- Location and Waterbody Details
- Farm Activities and Infrastructure



Farm Inspection Form

Part 1	**Date:**

Section 1: General inspection detail

1.1. Unique Reference Number/Herd No.	**1.3. Time in:**	**1.5.** CROSS REPORT ○ (Select if appropriate)
1.2. Inspecting Officer/s Name:	**1.4. Time out:**	

1.6. Initial Inspection		**Comment:**
1.7. Follow Up Inspection		

1.8. Inspection Purpose:		**1.9. Inspection Scope:**		**1.10. Weather conditions:**	
Part 1 GAP		Desktop		Dry	
Part 2 GAP		Farmyard Only		Mist	
Focused GAP		Farmland Only		Rain	
Agri Water Complaint		Farmyard & Farmland		Frost	
Agri Odour Complaint		Drone Survey		Snow	
Agri Planning App.					

Section 2: Waterbody Details

2.1. Waterbody name (greater section):	**2.2. Waterbody code:**	**2.3. Catchment:**

2.4. WFD Status:		**2.5. Waterbody sensitivity:**		**2.6. Waterbody issues/pollutants:** (Multi-select List)	
High		Freshwater Pearl Mussel		**N**	
Good		Drinking water source		**P/ Sediment**	
Moderate		Bathing waters		**Organic(BOD)/Ammonium**	
Poor				**Biocides**	
Unassigned					
Restore					
Protect					

2.7. Waterbody name (lesser section):	**2.8. Waterbody code:**	**2.9. Catchment:**

2.10. WFD Status:		**2.11. Waterbody sensitivity:**		**2.12. Waterbody issues / pollutants:** (Multi-select List)	
High		Freshwater Pearl Mussel		**N**	
Good		Drinking Water Source		**P/ Sediment**	
Moderate		Bathing Waters		**Organic Pollution (BOD)**	
Poor				**Biocides**	
Unassigned					
Restore					
Protect					


ABBEY


CLAAS

Ref No.	Minimisation of Soiled Water	GPS Reading:	Y/N/NA NC/RFI	Action Y/N
7	Is there evidence that the farmer/occupier is not minimising the amount of soiled water produced on the holding?			
8	Is there evidence that clean water is not being segregated and diverted to a clean water outfall?			
9	Is there evidence that clean water is flowing onto soiled yard areas?			
10	Is there evidence that clean water is flowing into any facilities for the storage of: livestock manure; and/or other organic fertilizers; and/or soiled water; and/or effluents from dungsteads; and/or farmyard manure pits; and/or silage pits?			
11	Is there evidence that rainwater gutters and down pipes are not maintained and not in good working order as required for the purposes of **7** and **8**?			
12	Is there evidence of a direct run-off of soiled water from farm roadways to surface or ground waters?			

What to Report ?

General Information | Topic 1 | Topic 2 | Topic 3 | Topic 4 | Topic 5 | Topic 6 | Topic 7 | Topic 8

Farm Activities & Location

Nature of inspection

- **Slurry Collection and Storage**
- **Control of Soiled Water**
- **Spreading of Organic Fertilisers**
- **Spreading of Chemical Fertilisers**
- **Tillage - Ploughing and Green Cover**
- **Management of Farm Yard Manure**
- **Discharge with potential to impact water quality**
- **Other Issues with potential to impact water quality**

Compliance Status

Issues detected

Follow up measures

Progress status

Enforcement actions

Preliminary Findings for 2022

- GAP Regulation inspections - 600 (2021) to 2,200 (2022).
- About 1,600 farms were inspected under the GAP regulations.
- Of these, over 1,000 farms were inspected for the first time in 2022.
- Non-compliances ~ 30% of the farms inspected.
- Over 700 farms had follow-up visits.
- Formal advisory letters were issued in most cases.
- 40 farms receiving legal notices and 40 farms cross reported to DAFM.

The main issues reported by descending order

- Control of Soiled Water
- Discharge with potential to adversely impact water quality
- Slurry Collection & Storage
- Management of FYM storage
- Other potential water quality impacts
- Spreading of Fertilisers
- Tillage - Ploughing & Greencover

Benefits of the LA Farm Inspection programme

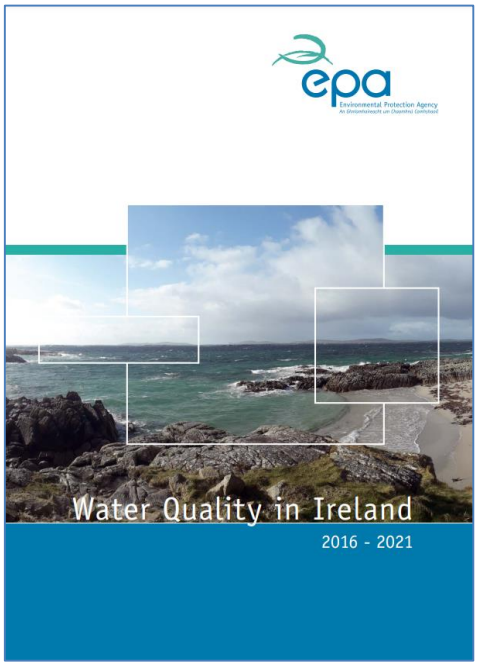
- More awareness.
- More data on level of compliance, issues and follow up actions.
- More information on measures implemented and effectiveness of measures.
- Consistency of approach.
- Ultimately Water quality maintained or improved.

Next steps

- Further evolution of the risk based plan.
- Further guidance on carrying out inspections.
  - Consistency of follow up actions.
  - Enforcement policy.
- Training.
- ICT requirements.
- Report results of measures taken to feed into next NAP cycle.

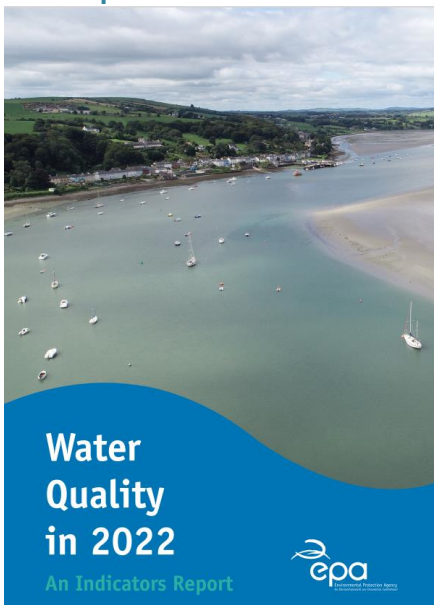
Every 3 years

Water quality in Ireland



Annual reports

Indicators report



N & P report

Ongoing

Data

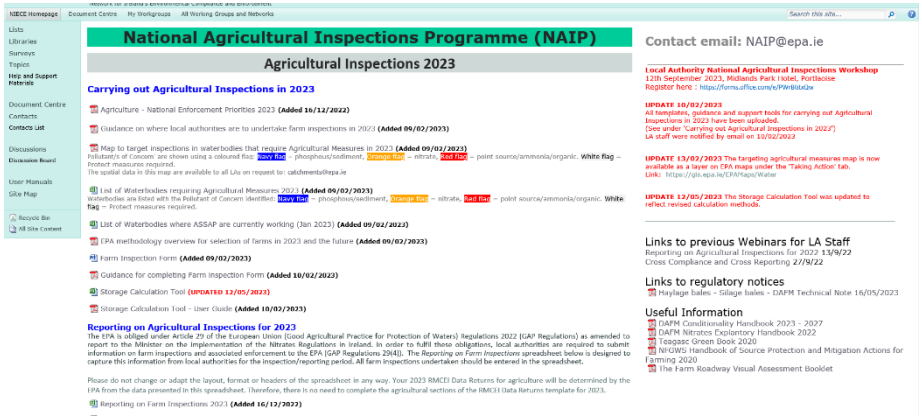
Data can be downloaded as soon as they are processed from:

https://gis.epa.ie/GetData/Download

And

https://www.catchments.ie/data/

All templates and guidance available on the NIECE portal – www.niece.ie



Any queries to: NAIP@epa.ie

Thank You

Questions may be asked through the SLIDO app using the QR code on the rear of your lanyard or go to

Slido.com and enter #2847552

ESTG Annual Conference 2023

14th September

Session 3- Water Management & The Circular Economy-14.30pm

Chair Louis Duffy Cork County Council

1st The Circular Economy

2nd Waste Management Plan for a circular Economy

Join the Q&A session at Slido.com

For more information on this conference please contact the Local Authority Services National Training Group.

T: 052 616 6260E: lasntg@tipperarycoco.ie | W: www.lasntg.ie