An Roinn Iompair
Department of Transport

Cumann Lucht Bainistíochta Contae agus Cathrach
County and City Management Association

RSTG Conference 2024 15th May - Day 1

Networking\Exhibition & Coffee Break

We will resume at 16.00 pm

Session 4- Green Public Procurement & Nature Based Solutions

Chair Marcus O'Connor

16.00-16.20	Green Public Procurement	Aoife Sugrue - Cork County Council
16.20-16.40	Nature Based Solutions	Averil Gannon - DHLGH

Join the Q&A session at Slido.com and enter 5812867
Or via the QR Code

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ROADS Services Training Group

LOCAL AUTHORITY ROADS CONFERENCE and EXHIBITION - 2024

Sligo Radisson Hotel, Sligo, May 2024

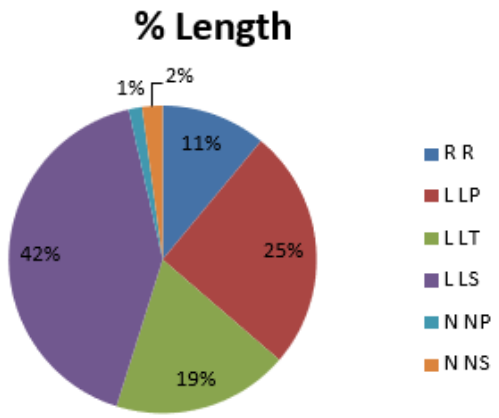
Day 1-Session 4- Presentation 1
Green Public Procurement Pilot Project

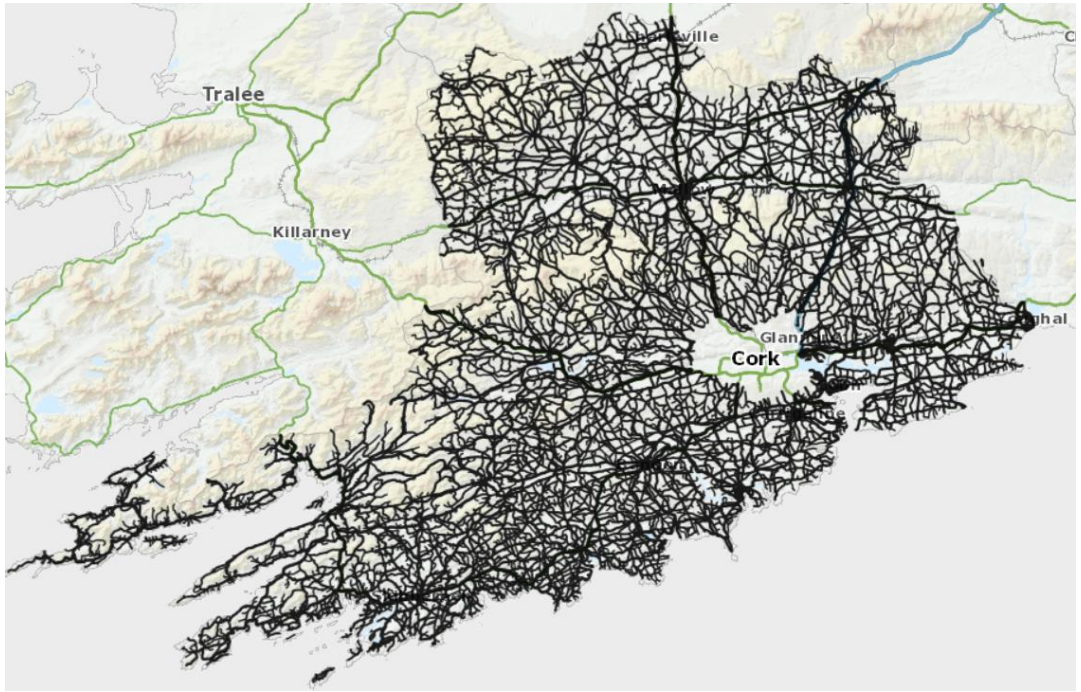
Liam Ahearn
Senior Engineer
Cork County Council

Aoife Sugrue
A/Senior Executive Engineer
Cork County Council

Introduction – Cork County Council Road Network

Row Labels	% Length	Length (km)
R	**11.02%**	**1,343**
R	11.02%	1,343
L	**85.42%**	**10,408**
LP	25.28%	3,081
LT	18.55%	2,260
LS	41.59%	5,067
N	**3.56%**	**434**
NP	1.42%	173
NS	2.14%	261
Grand Total	**100.00%**	**12,186**





- **Cork County** - 12,000KM roads (12% of national road network)

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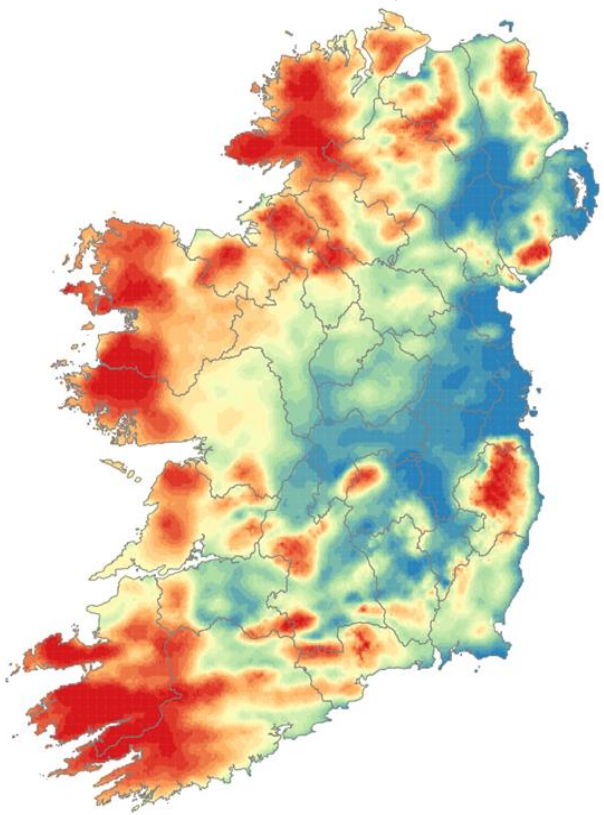
Introduction

- **2024 DOT Funding-** €83M R&L Roads – (€13 million severe weather)
- **CARO**- Cork County Council Lead Authority in ASBS Region
- **RMO-** Cork County Council is the Lead Authority for the South-West Region in the Public Lighting Energy Efficiency Project
- **2020 DOT Funded Project-** Cork Co Co & CARO Prioritisation Methodology for Climate Change Adaptation and Resilience Works
- **Strongly Positioned to Lead Pilot Project on GPP & Carbon Reduction of Road Maintenance**



Our Climate is Changing – Storm Babet October 2023

…..& Impacting our Road Network

Our Climate is Changing

- Extreme weather events (Rainfall/Snow/Ice) have taken an unprecedented toll on Cork roads.
- In the last 6 months, 40% more rainfall than average has been experienced in Cork.
- The County's varied topography and underlying ground conditions also contribute to road surface degradation.

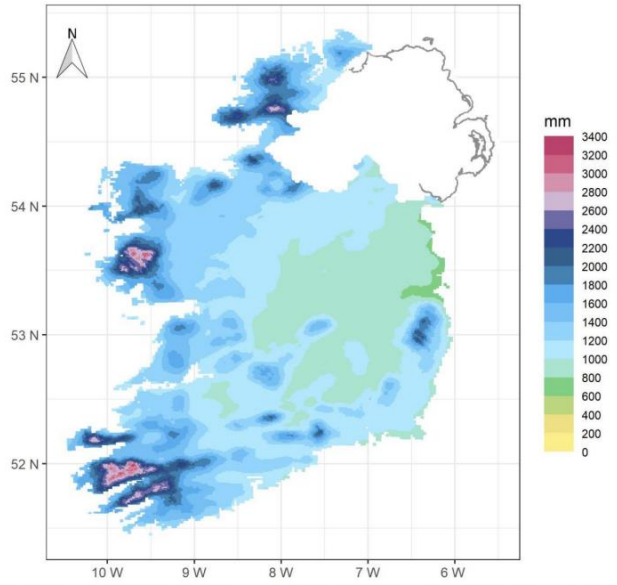


Figure 1: Mean annual rainfall (mm) for the climate normal 1991 – 2020 in the Republic of Ireland.

…..& Impacting our Road Network

CCC Regional & Local Roads Design Office

- The Regional & Local Roads Design Office (R&LRDO) has a key role in the maintenance and improvement of regional & local roads serving the County under following headings

    1. Strategic Roads
    2. Bridge Rehabilitation/Replacement
    3. Restoration Improvement Programme
    4. Local Improvement Schemes
    5. Safety Improvement Schemes
    6. Other Improvement Works

- Our team is made up of 24 dedicated staff, including engineers, technicians & clerks of works. The R&LRDO has offices at County Library Building, Skibbereen & Mallow to serve the entire County.

- In 2023, our team approached the Dot re a Pilot Project to examine methods of reducing the carbon footprint of the regional & local road maintenance programmes and applying these learnings across the roads sector nationally.

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Pilot Project Alignment with National Objectives

Memorandum on Grants for Regional & Local Roads

- Pilot projects that contribute to climate adaptation & sustainable road networks
- Projects that adapt current standards & practices to achieve sustainable outcomes
- Projects that are achieved at a reasonable cost & reduced carbon footprint

National Development Plan

- Investment targeted at improved road network to ensure connectivity between communities
- Social and economic development achieved in a sustainable manner

Climate Action Plan

- 51% GHG reduction by 2030 for Public Bodies & Transport Sector-**Net Zero** by 2050
- Inclusion of GPP in public contracts- Specify 'low carbon construction methods'

What is Green Public Procurement (GPP)?

Green Public Procurement (GPP) is where **'public authorities seek to source goods, services or works with a reduced environmental impact'**

Why GPP in LA Roads Maintenance?

- Requirement - Public Bodies to include GPP in all contracts by 2023
- Climate Targets- 51% CO_2 reduction by 2030, 100% by 2050
- Significant Budget Holders -Influence Market & Encourage Innovation

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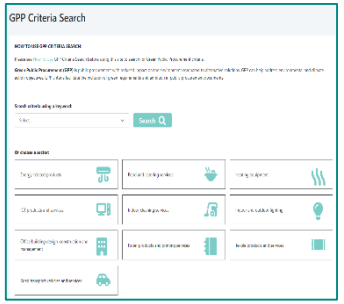
GPP Tools & Guidance

EU	**Green Public Procurement Criteria and Requirements** https://green-business.ec.europa.eu/green-public-procurement/gpp-criteria-and-requirements_en **14 Categories- Roads Maintenance Included**
EPA	**Green Public Procurement-Guidance for the Public Sector** https://www.epa.ie/publications/circular-economy/resources/green-public-procurement-guidance.php **10 Categories- Road Construction & Maintenance not currently Included**
OGP	**Green Public Procurement Online Search Tool** https://gppcriteria.gov.ie/
LANSTG Training	**Local Authority Services National Training Programme- GPP & Climate Action** https://www.lasntg.ie/climateaction
DECC	**Green Public Procurement Strategy & Action Plan 2024-2027** Appendix III Minimum Environmental Criteria for Public Procurement of Goods & Services



Market Engagement

Engage with suppliers & contractors to:

- Determine availability of green low carbon solutions
- Identify methods to incentivise 'greening' of the market
- Ascertain most appropriate procurement method

Stakeholder Engagement

- DOT, CARO, LGMA, TII, LGOPC, EPA, CCC Projects Office, OPC, RMO etc
- Research maintenance techniques in other Local Authorities & other jurisdictions
- Liaise with CCC Area Engineers & Climate Action Team
- Engage with Academic Institutes and Research Bodies regarding similar projects.

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GPP Methods : Considerations

Selection Criteria

- Supporting Documents (EMS)
- Previous Experiences in GPP/Sustainability

Technical Specification

- Minimum performance requirements based on technical specifications (ECO Labels, EPDs)
- Must allow equivalents

Award Criteria

- Award marks for specific proposal to address env impact
- % & weightings must be included clearly in documents
- Must be linked to subject matter
- Verification requirement

Contract Clauses

- Include specific env commitments with timelines, monitoring & reporting,
- Provide incentives for env performance & penalties for non-performance

Cork Co Co GPP Initiatives 2023

1	**Restoration Improvement (RI) Contracts 2023**	• **5% Award Criteria** marks for Green Initiatives in Road Improvement Contracts • Use of Reclaimed Pavement, Energy Mgt System/Other Environmental Initiatives
2	**In-Situ Recycling**	• Countywide In-Situ Recycling contract on 7 sites- **Technical Specifications**
3	**Warm Mix Trial**	• Warm Mix Trial on Regional Road under Road Improvement Contract
4	Micro-surfacing	• Countywide micro-surfacing contract on 6 sites- Technical Specifications
5	Retexturing	• Hydro-retexturing on 2 roads in North Cork (strip excess binder, improve skid resistance)
6	Supplygov.ie	• All Road Improvement Contracts utilising national frameworks on supplygov.ie • Flexibility to include GPP

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1. Restoration Improvement Contracts 2023 (Award Criteria)

Green/Sustainable Practices :- 50 Marks

There shall be a maximum of 50 marks awarded for technical merit which demonstrates green/sustainable practices having regard to one or all of the following:

1. Use of Reclaimed Asphalt Plannings (RAP) in the AC binder course. Candidates must submit a Type Test report showing % of RAP proposed to be used in this contract.

2. Demonstration of a recognised Energy Management System. Candidates must provide valid energy management system certifications for the current operations of plants they propose to use for material supply or those they have operated over the previous three years.

21

022

derers – Restricted/ Negotiated/ Competitive Dialogue Procedure for Works Contractors

3. Demonstration of other sustainable technologies or practices proposed during the contract. For example, but not limited to: use of low. emissions vehicles, water pollution controls, waste minimisation plans etc). Candidates must provide a methodology (2 page maximum) outlining how their proposal will contribute to reducing their environmental impact over the lifetime of the contract.

Green/Sustainable Practices

50 Award Criteria Marks

5 Separate Contracts (North/South/West/East & Mid)

- 4/5 Contractors proposed Reclaimed Asphalt
- 3/5 Contractors had EMS in place
- 5/5 Contractors demonstrated sustainable initiatives (WMP etc)

- Most suppliers have ‘green’ capability/ currently investing in green measures

- Future Contracts- Increase award criteria marks to 10%

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2. Cold In-Situ Recycling Countywide Contract (Technical Specifications)

R579 Kanturk Castle

1500m Cold in-situ recycling to a depth of 100mm, with 40mm Cl804 , bitumen emulsion @ 5 litres/m^2 and 1% cement addition. Double Surface Dressed.

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2. Cold In-Situ Recycling (Technical Specification)

Characteristics:

- Solution for roads showing signs of structural failure
- Need good depth of existing granular/asphalt material
- Road sampling and laboratory analysis are carried out to determine the suitability of the road for recycling and to inform the design

Procurement:

- Tender Specifications as per IAT Best Practice Advice for Cold In-Situ Recycling of Low Traffic Volume Roads/ SPW-00900
- 70/30 Price Quality Ratio- 30% quality marks were allocated for successful demonstration of previous experience in the field of road recycling and surface dressing

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2. Cold In-Situ Recycling (Technical Specification)

Environmental Benefits

- Carbon savings of up to 50% can be made using in-situ recycling compared to conventional method:
  - Cold Applied – Reduction in energy
  - Reduction in the disposal of waste products to off-site locations & associated truck movements
- Reduction in VOCs (smoke) – better air quality on site
- Circular Economy- Reduction in virgin resources, re-using existing road pavement

Costs

- ~20%/30% lower cost compared to than traditional overlay
- Reduction in haulage and quantities of material required & energy

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3. Warm Mix Trial R580 (Cork Co Co & Breedon)

Lisgriffin- Buttevant Rd R580

1600m length

- **800m warm-mix**
- **800m hot-mix**
- **25% RAP in both**

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3. Warm Mix Trial R580 (Cork Co Co & Breedon)

What is Warm Mix Asphalt (WMA)?

- WMA is manufactured at a lower temperature when compared with traditional Hot Mix Asphalt (HMA)
- Manufactured using the same asphalt plant as HMA, same aggregates, fillers & bituminous binders
- Only difference : **Additive** is introduced to reduce viscosity of binder & enable compaction at lower temperature

- **TII's *Road Pavements – Bituminous Materials CC-SPW-0900:***

'WMA are produced at lower temperatures, typically 20-40°C lower, compared to Hot Mix Asphalts (HMA) but always above 100°C. WMA can either be produced using chemical additives or organic additives'

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3. Warm Mix Trial R580 (Cork Co Co & Breedon)

Testing & Analysis:

TII requirement		Air void content	Air void content refusal	Water sensitivity	Resistance to permanent deformation		Temperature	
Mixture	AC	V_{max} 7,0	V_{min} 0,5	*ITSR*$_{70}$	*WTS*$_{AIR}$ 1,3	*PRD*$_{AIR}$ 14,0	*Discharge*	*Rolling*
AC 20 dense bin 40/60 inc 25% RA	HMA	✓	✓	✓	✓	✓	165	136
	WMA	✓	✓	✓	✓	✓	131	121

Source: Breedon

Additional CCC Testing:

- FWD - Pre Works, Post Works and on annual FWD Schedule
- Soluble binder content and particle size distribution

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3. Warm Mix Trial R580 (Cork Co Co & Breedon)

Environment Benefits:

- Reduced Carbon (15%) - Lower temperature manufacture
- Reduced VOCs on site using lower temperature
- Circular Economy- Reduction in resources, using reclaimed asphalt

Procurement:

- SPW-00900 specifies the addition of the letter "W" to the mixture designation for mixtures produced with a Warm Mix Asphalt additive which can be incorporated into the tender documents e.g ***AC 20 Dense Bin 70/100 rec W***
- SPW-00900 specifies WMA permitted in binders and surface bituminous mixes except for Hot Rolled Asphalt (HRA) and Porous Asphalt (PA).
- Since 2021, Highways England has been requesting all those involved in the construction and/or maintenance of the strategic road network, to use warm mix asphalts (WMAs) as part of its Net Zero Plan.

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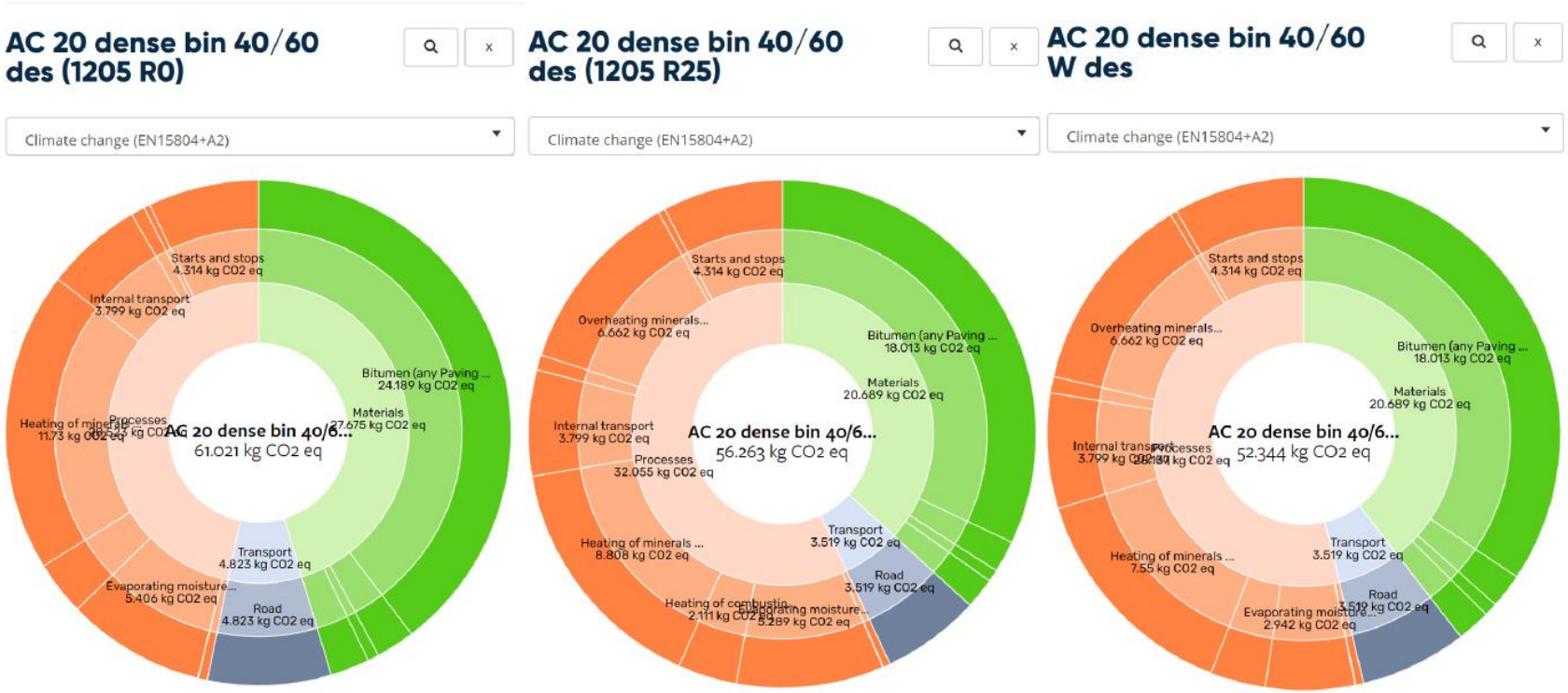
Carbon Savings: Warm Mix Trial



HMA No RA

HMA 25% RA

WMA 25% RA

14.4% carbon saving

Source: Breedon

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GPP Summary

- **Market Engagement-** Engage with supplier base to ascertain what low carbon technologies are available & inform market of GPP inclusion

- **Introduce GPP Gradually-** Give both market & Local Authorities time to adapt & innovate
  - Use Tools & Guidance Available (EPA, OGP & GPP Strategy, Other LAs)
  - Propose 5% Award Criteria Marks initially
  - Generic GPP criteria in **Green Public Procurement Strategy & Action Plan 2024-2027**

- **Start with Existing Tried & Tested Technologies**
  - **Warm Mix, Reclaimed Asphalt, In-Situ Recycling**
  - TII Series 900 Specifications in Place- Insert into Tender Docs
  - Carbon Measurement (EPD/LCA)

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Thank You

Questions to be entered through SLIDO when entering your question please direct it to **<<enter your name here>>** and they will be addressed at the end of the session:

Slido.com and enter 5812867
Or via the QR Code

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ROADS Services Training Group

LOCAL AUTHORITY ROADS CONFERENCE and EXHIBITION - 2024

Day 1-Session 4-Presentation 2

Averil Gannon

Sligo Radisson Hotel, Sligo, May 2024

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

Nature-based Solutions

Averil Gannon, CEng, MIEI

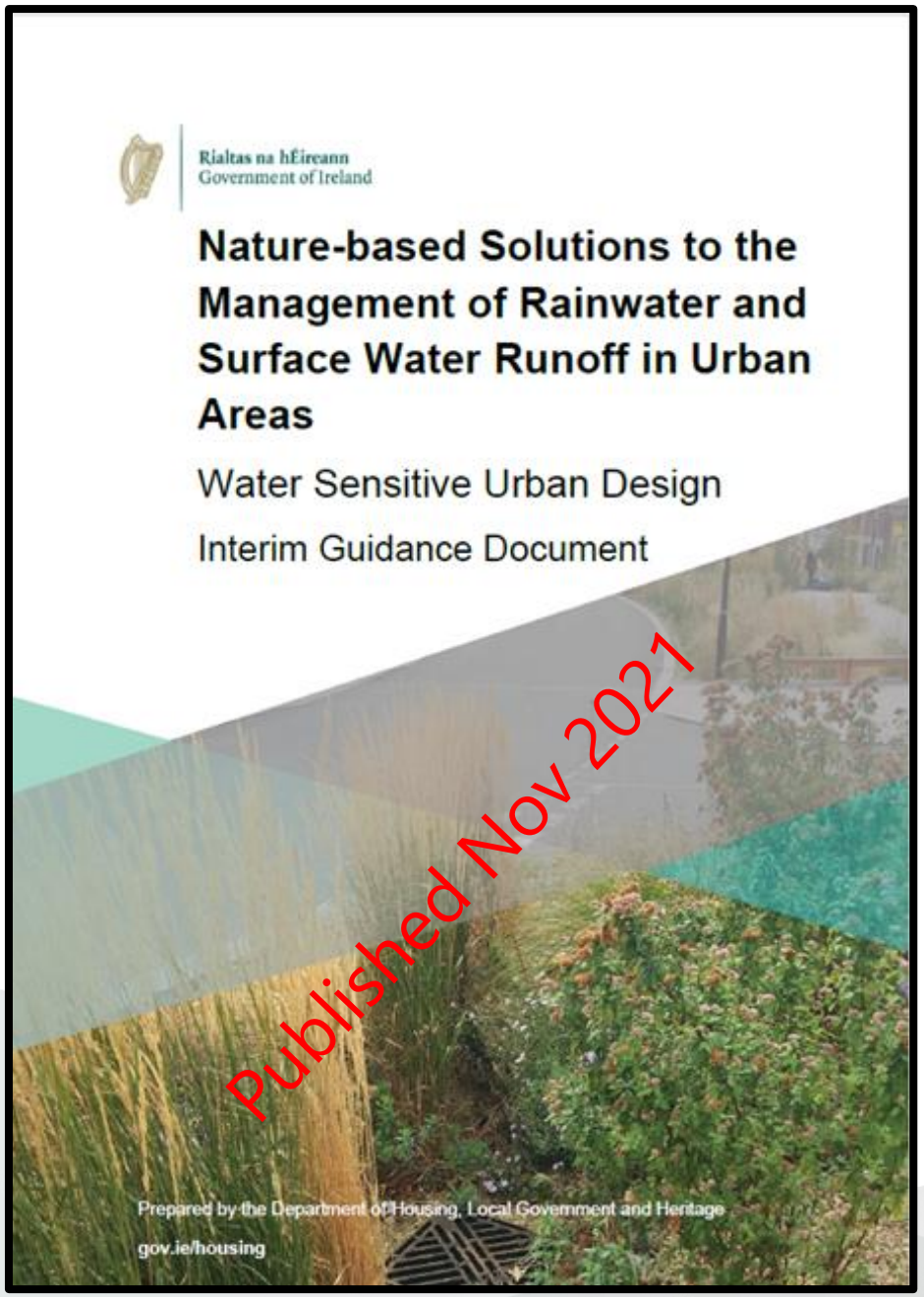
15th May 2024

Nature-based Solutions Update

- Nature-based Solutions to the Management of Rainwater and Surface Water Runoff in Urban Areas - Interim Guidance Document
- DMURS Advice Note 5: Road and Street drainage using nature-based solutions
- NTA Greening and nature based SuDS for active travel schemes
- Regional and Local road network
- National Implementation Strategy
- Rainwater Management Planning – Guidance for Local Authorities
- Implementation Phase – ongoing Projects

Image: Cork County Council

Interim Guidance Document



- Definition and concepts
- Managing Rainfall through Three-Dimensional Planning & Design
- A Plan and Design-Led Multidisciplinary Approach
- Multiple Use of Urban Spaces, Public Realm, Open Spaces, Amenity Areas, Car Parks
- Climate Adaptive and Resilient Urban Design

Information Webinars

- Launch of **Interim Guidance Document** - Nov 2021 Approx. 500 attendees
- Project Managers in **URDF** and **RRDF** schemes – March 2022. Approx. 300 attendees
- **Active Travel** teams – May 2022. Approx. 230 attendees
- CPD presentation for **DHLGH Planners** – May 2022 –approx. 20 attendees
- **Engineers Ireland Webinar series** – May 2023 – 4 webinars with over 1200 registered for each webinar. 1st webinar attended by over 1500 people

Image: Front of St Peter and Pauls Church, Clonmel, Fran Igoe

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

Section 1 – Background

Section 2 – Introduction

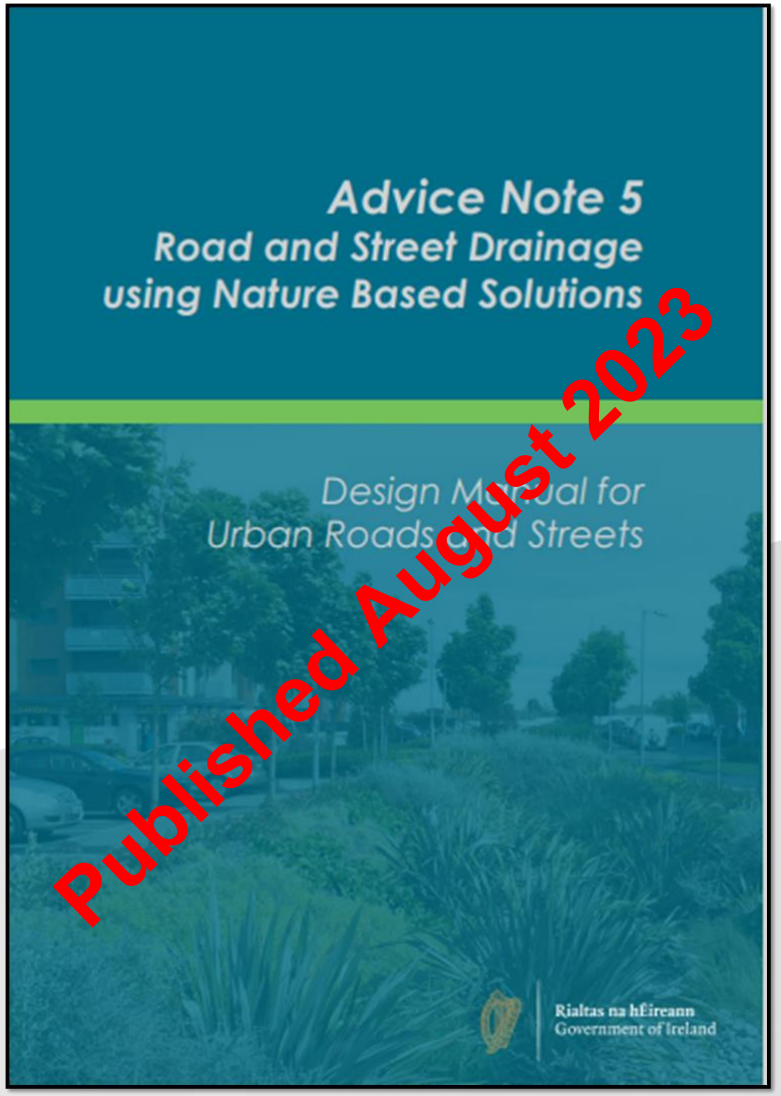
Section 3 – Integration with DMURS

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

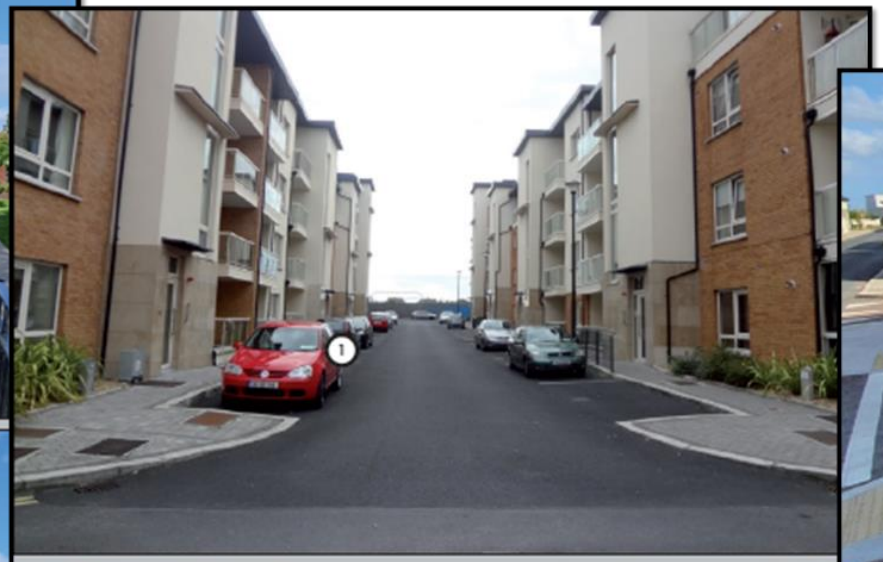
Section 5 – Implementing Nature-based Solutions as part of an Urban Project through Integrated Planning & Design

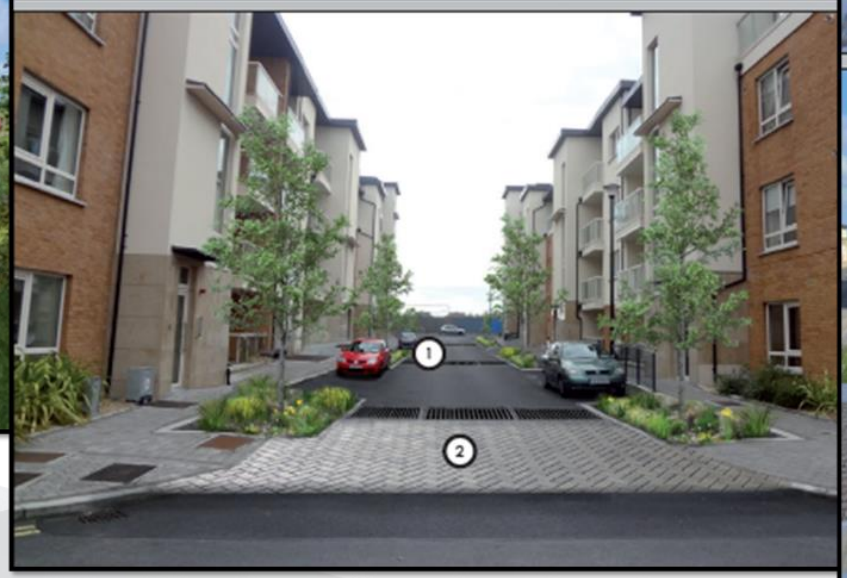
Section 6 – Care and Maintenance

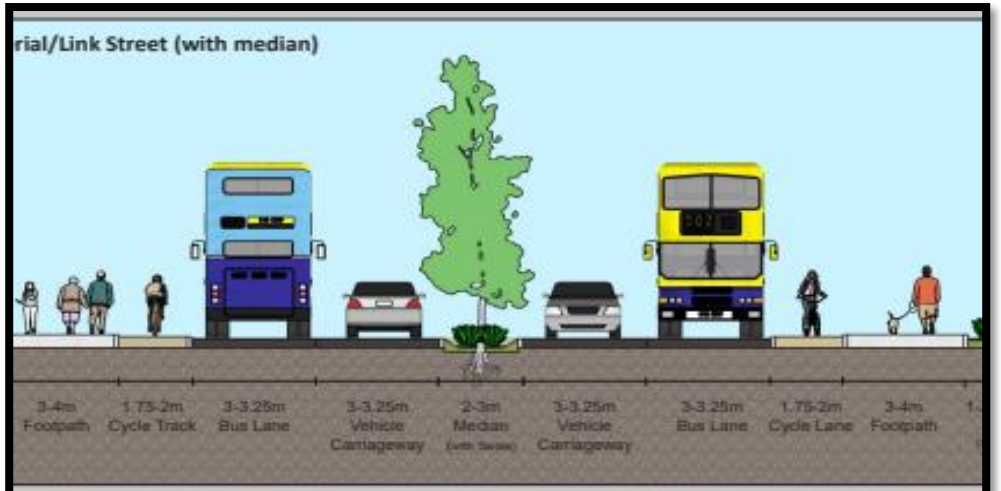
Appendix 1 –
Water Sensitive Urban Design

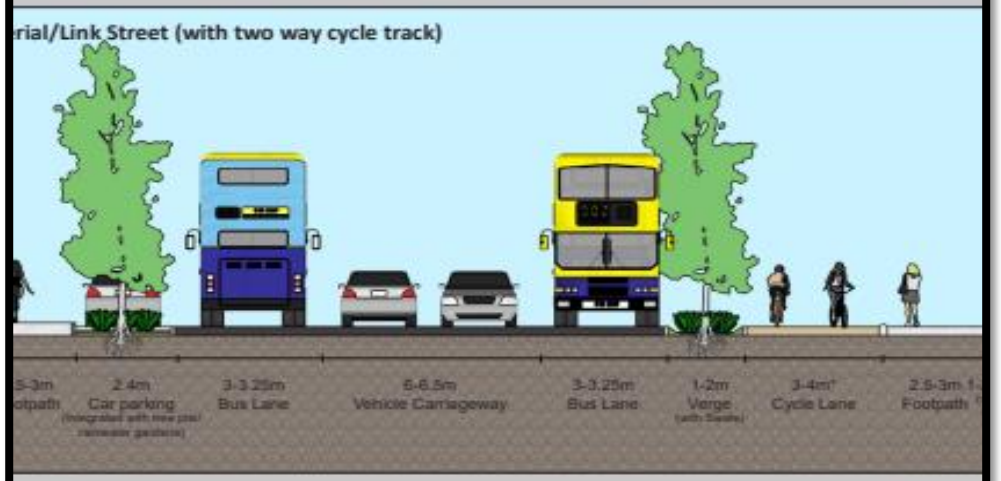


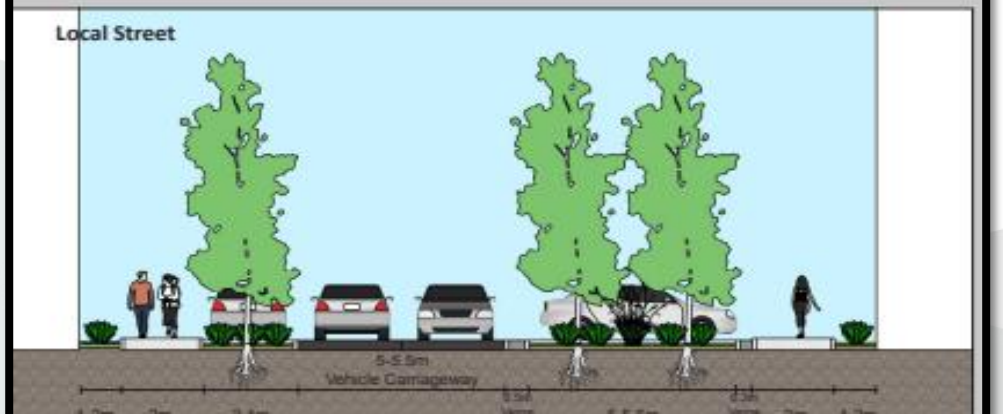
Design Manual for Urban Roads and Streets (DMURS) Advice Note 5 – Road and Street Drainage using nature-based solutions



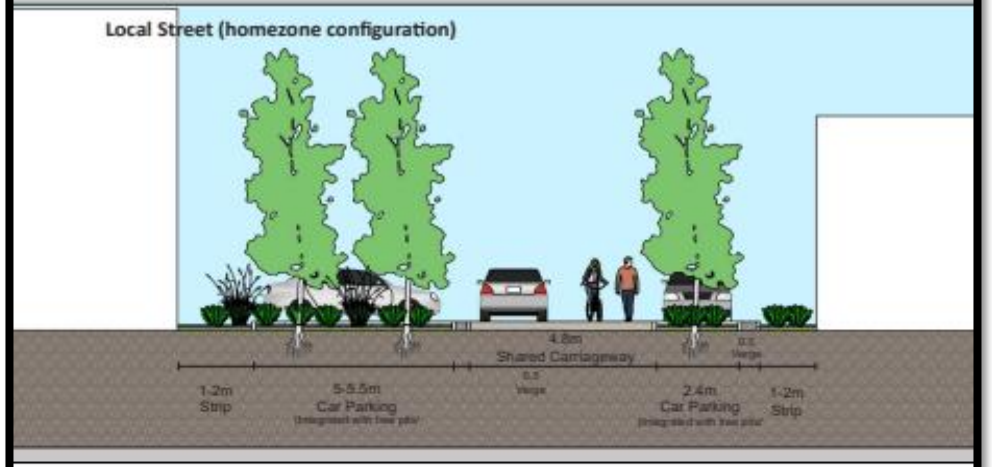




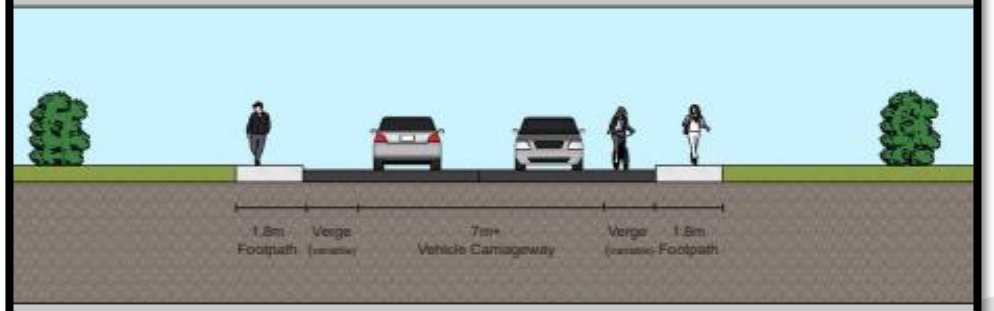




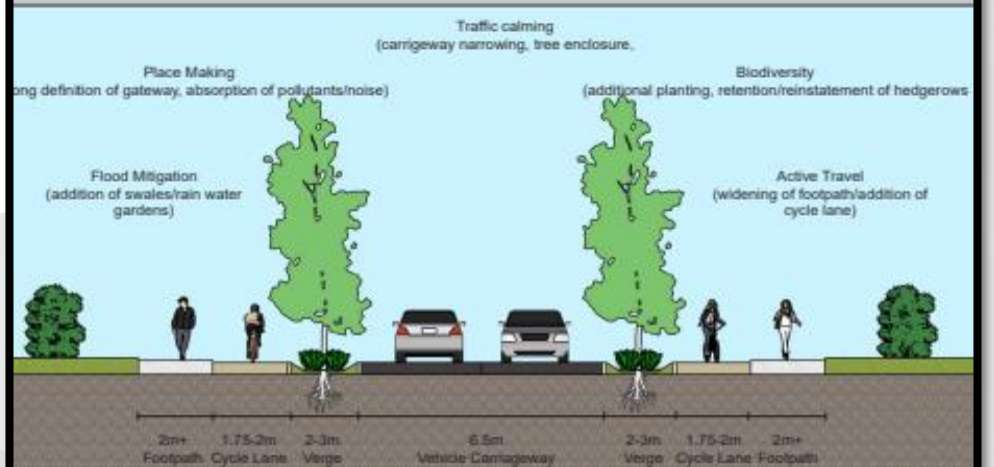
streets of differing functions/configurations



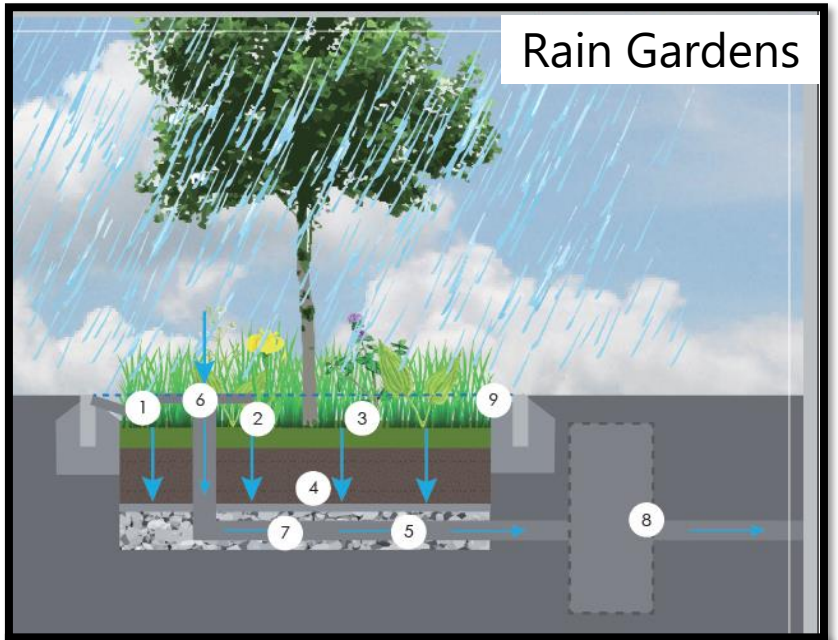
e 3.6: Transition zone incorporating landscape/SUDs features which reinforce a gateway to reduce le speeds upon entry to an urban area.

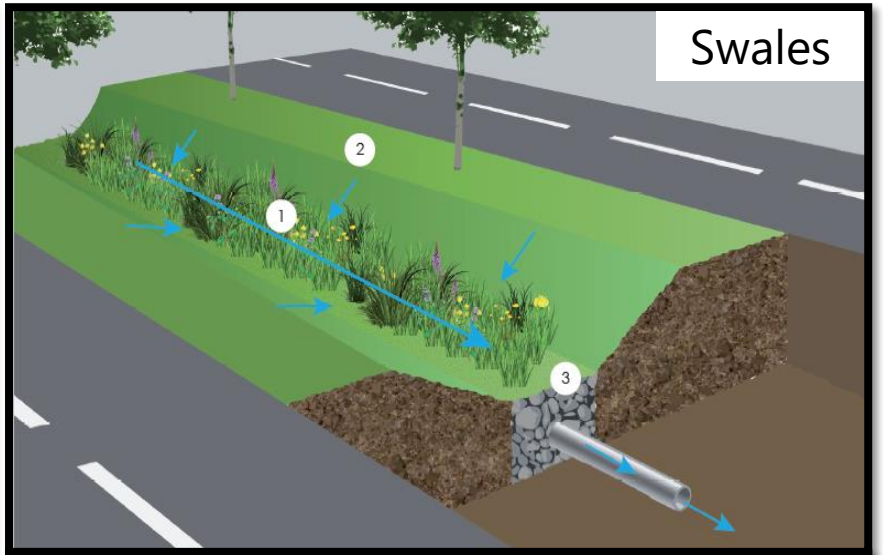


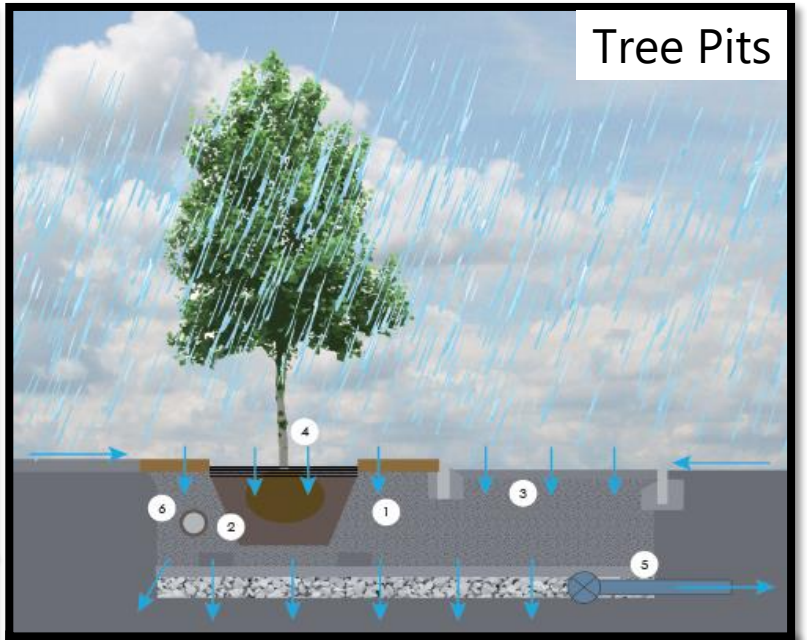
typical section in Transition Zone - predominantly hard surfaces with limited Active Travel



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







Appendix 1 – Water Sensitive Urban Design

Water Sensitive Urban Design (WSUD) is an approach to design that delivers greater harmony between the water cycle, the environment, and communities.

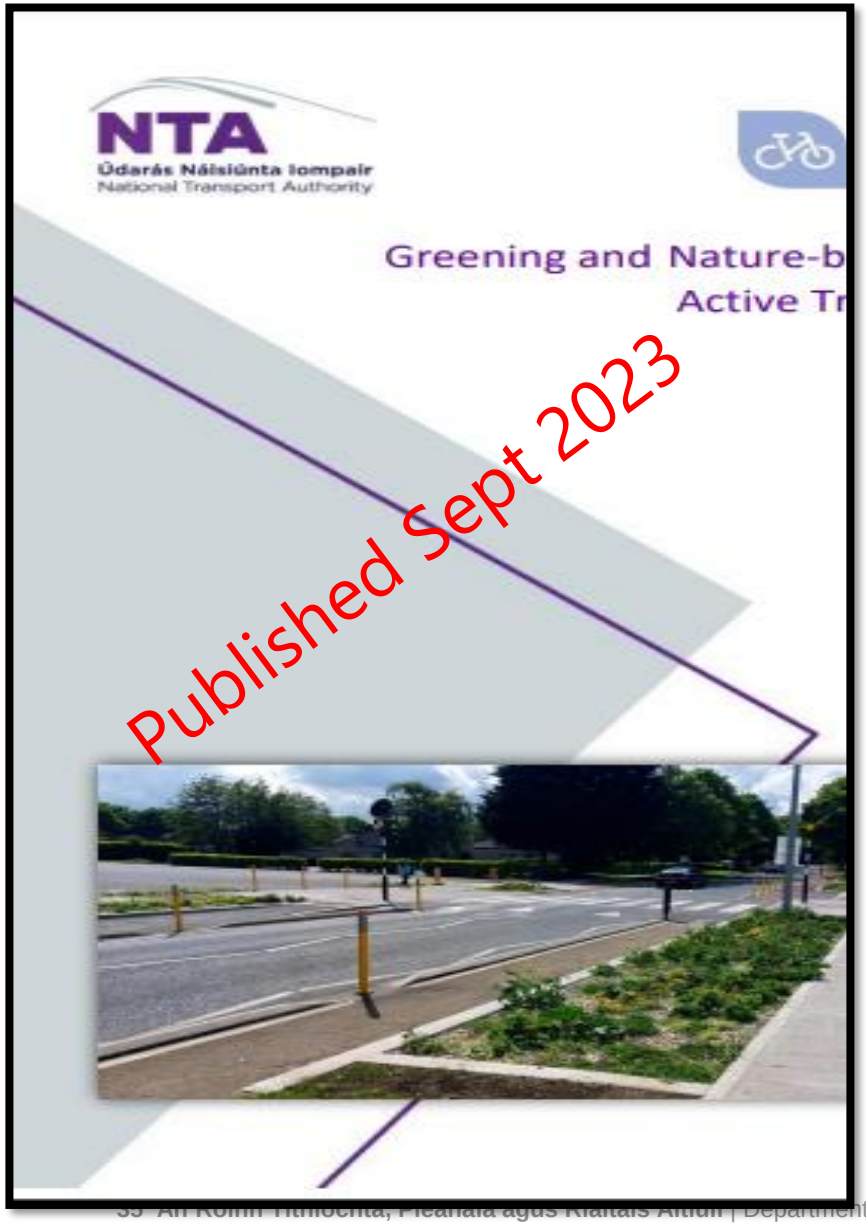
Image: Flowstobay.org

WSUD & Nature-Based Rainwater Management – Design Features:

Rain Gardens and **Trees and Tree Pits**

Image: researchgate.net

NTA Greening and Nature-based SuDS for Active Travel Schemes



Images from NTA Advice note on Greening and NBS SuDS at Active Travel Schemes

Tree species selection

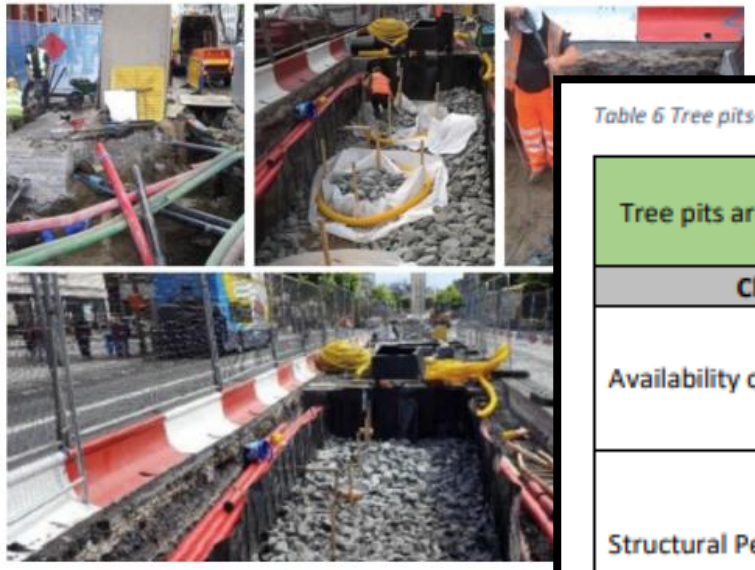


Figure 25 Stockholm tree pit system under construction in O'Connell Stre

Figure 26 Completed scheme for the Stockholm tree pit system in O'Connell Street Dublin

Table 6 Tree pits- Challenges and Solutions

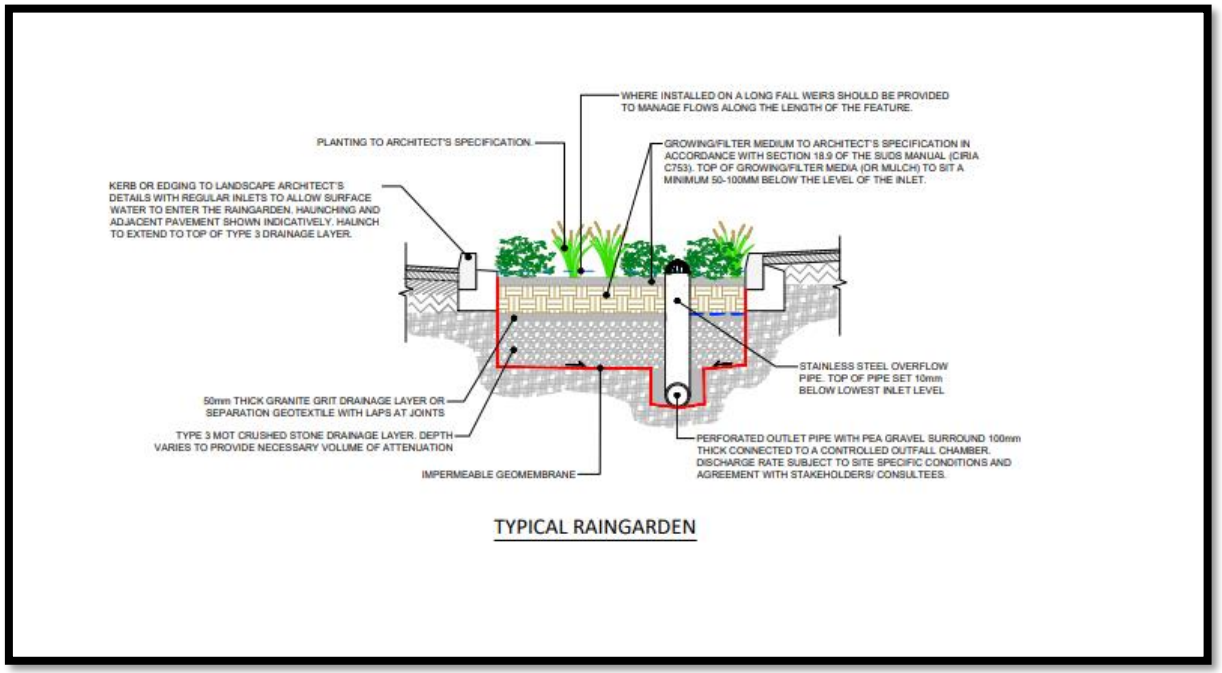
SuDS Tree Pits (TP): Tree pits are constructed to attenuate Surface Water runoff by exploiting the natural void within the tree soil rooting zone and is contained within an underground tree pit	
Challenges	**Solutions**
Availability of space	The ideal soil volume for a tree pit will be dependent on the species of tree as su… suit the specific con… GreenBlueUrban - S…
Structural Performance	As the tree pit and … adjacent pavement … to ensuring that the … can be utilised whic… stone
Root protection	Root barrier system … of root growth and … structures and utilit…

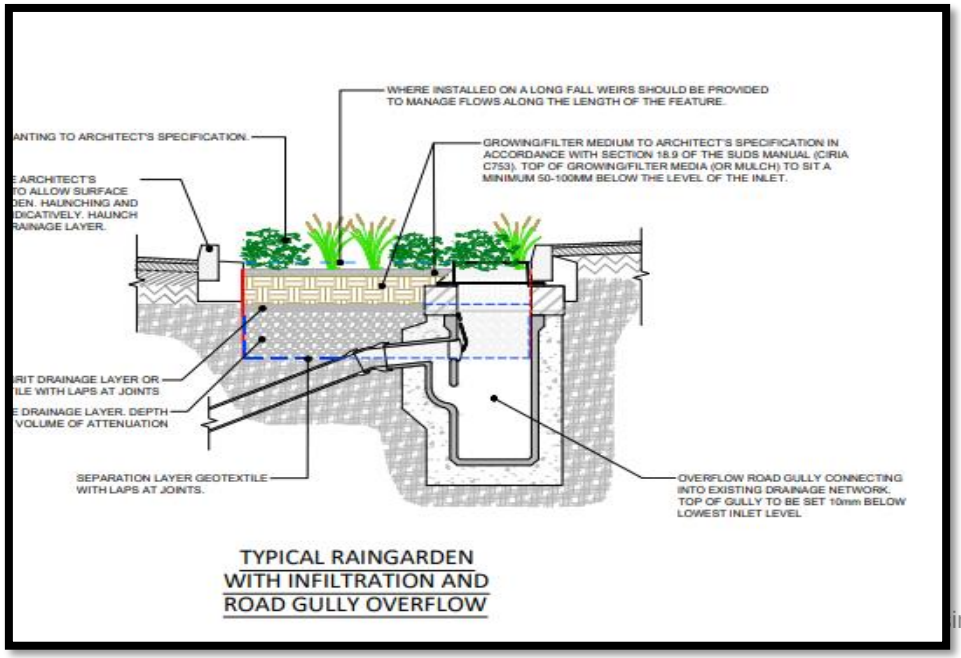
Table 9 Example Species list and basic SuDS information

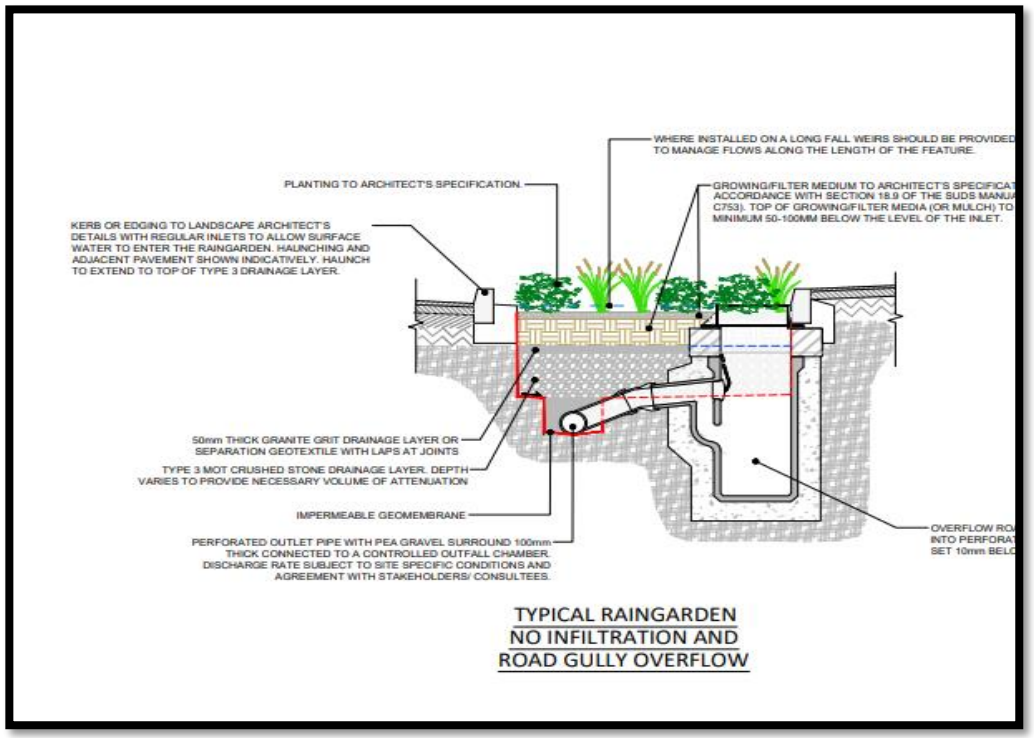
Example Species List			
Latin Name	**Common Name**	**Form**	**SuDS Tolerance**
Acer campestre 'Elsrijk'	Field Maple	Medium tree, Dense conical shaped crown	Good tolerance with drought and saturated conditions. Suitable for Paved and soft SuDS. Yellow leaves in autumn
Liquidambar styraciflua	Sweetgum	Large tree, Conical Shape, Standard or Feathered	Good to moderate tolerance with drought and saturated conditions. Tolerant of Light and shade conditions. Suitable for paved and soft SuDS.
Alnus x spaethii	Spaeth Alder	Large tree, Conical-Ovoid crown, standard or feathered,	Good tolerance with drought and saturated conditions. Tolerant of Light and low tolerance of shade conditions. Suitable for paved and soft SuDS.
Platanus x acerifolia	Fastigiate Plane	Large tree, Conical shape, large tree, Standard	Good tolerance with drought and saturated conditions. Tolerant of Light and low tolerance of shade conditions. Suitable for paved and soft SuDS.
Acer saccharinum	Silver Maple	Large tree, An open globe crown,	Good tolerance with drought and saturated conditions. Tolerant of Light, moderate tolerant of shade conditions. Suitable for paved and soft SuDS.
Malus (many cultivars)	Crab Apple	Small tree, Ovoid / open crown. Standard	Good Tolerance with drought and only short-lived saturated conditions. Tolerant of Light, moderately tolerant of shade conditions. Suitable for paved and soft SuDS.

Images from NTA Advice note on Greening and NBS SuDS at Active Travel Schemes

Standards details for rain gardens







Images from NTA Advice note on Greening and NBS SuDS at Active Travel Schemes

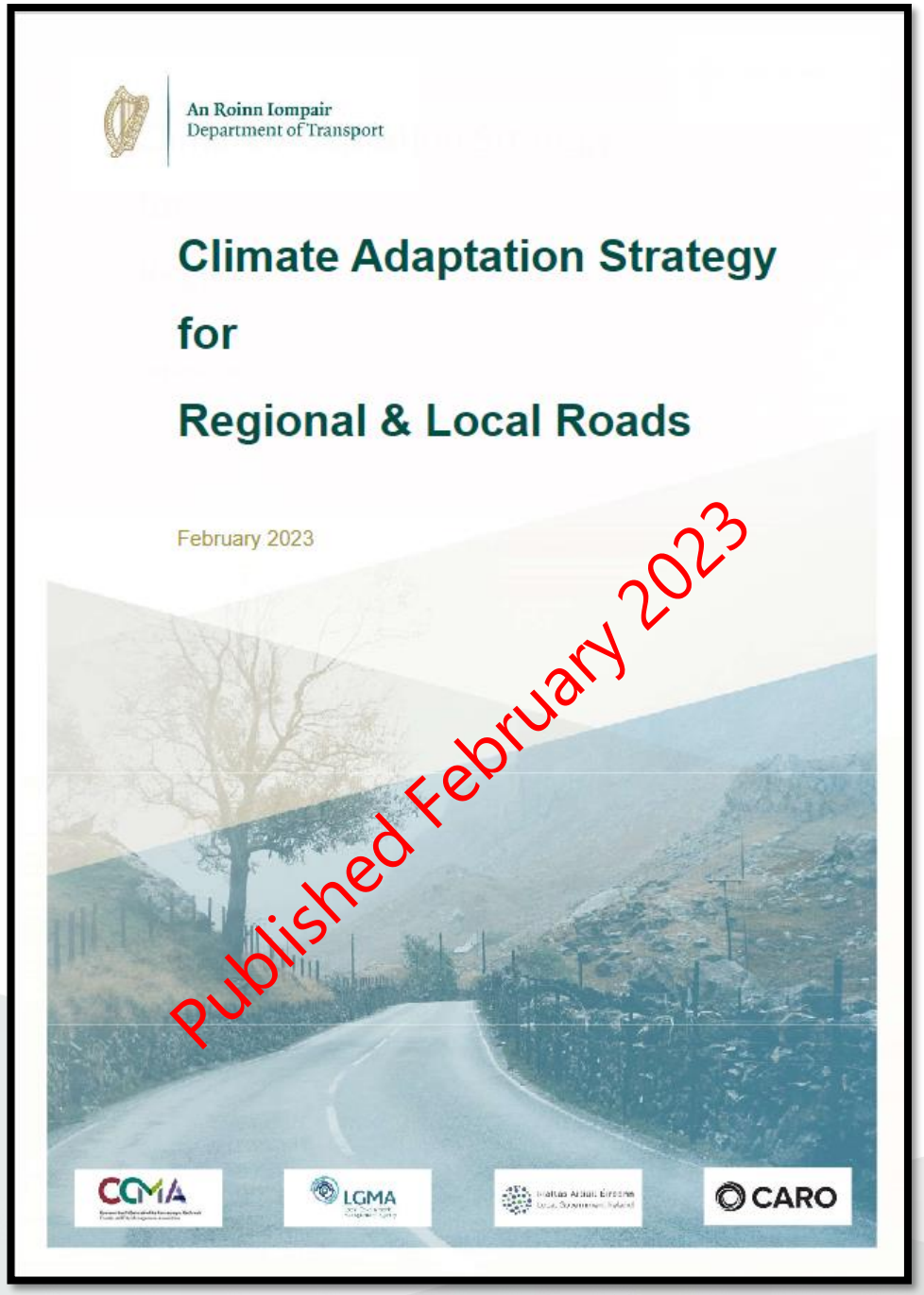
Regional and Local Road Network

Regional and Local road network in Ireland consists of approximately 96,000 kms of roads

The network carries almost 55% of all road traffic nationally

Regional and Local road network is made up of a large variety of asset types such as bridges, pavements, cuttings, embankments, drainage systems, signs, barriers, and fencing;

Regional and Local Road Network



Common failure types

Discipline	Common Failure Type	Predicted Climate Change	Description	Probability	Impact	Overall Risk	Adaptation Action	Notes
	/ Drainage	due to blocked drainage.	precipitation patterns with substantially more frequent heavy rainfall events.	have operated well with minimal maintenance in the past are now a cause of flooding due to more frequent / severe heavy rainfall events.				caused by previous flooding events. Adopt a preventative approach to maintenance which is based on records of historical flooding.	

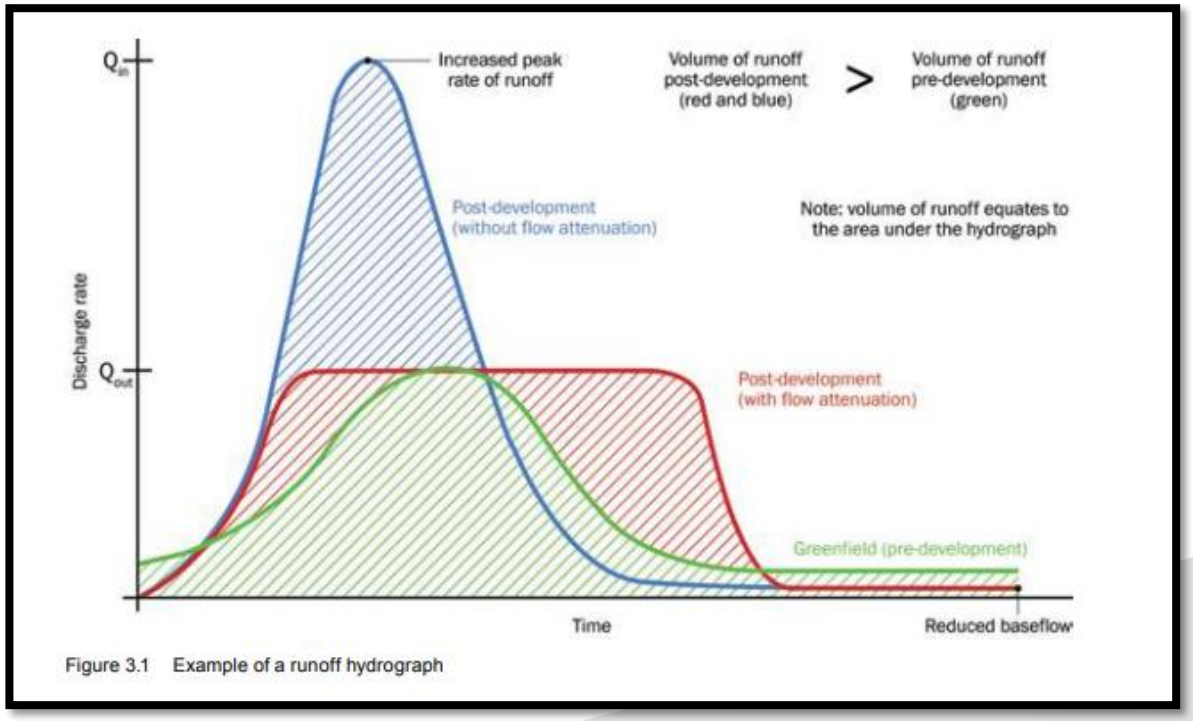
Ref	Discipline	Common Failure Type	Predicted Climate Change	Description	Probability	Impact	Overall Risk	Adaptati
5	Pavement / Drainage	Road flooding due to inadequate drainage or no drainage system.	More variable precipitation patterns with substantially more frequent heavy rainfall events.	Capacity of the original drainage system has been gradually overtaken by increasing rainfall intensities due to climate change.	Medium	Medium	Medium	Identify s the netw are vulne flooding l records o occurren Develop s new or in drainage these are are desig current s

Runoff Volume Control

Attenuation, where provided controls the peak runoff rate but not the runoff volume

More hard surface means greater water volume and potentially increased flooding extents

Attenuation alone is not sufficient to mitigate the risk of flooding



The SuDS Manual Figure 3.1 example of runoff hydrograph

Runoff Volume Control – catchment scale

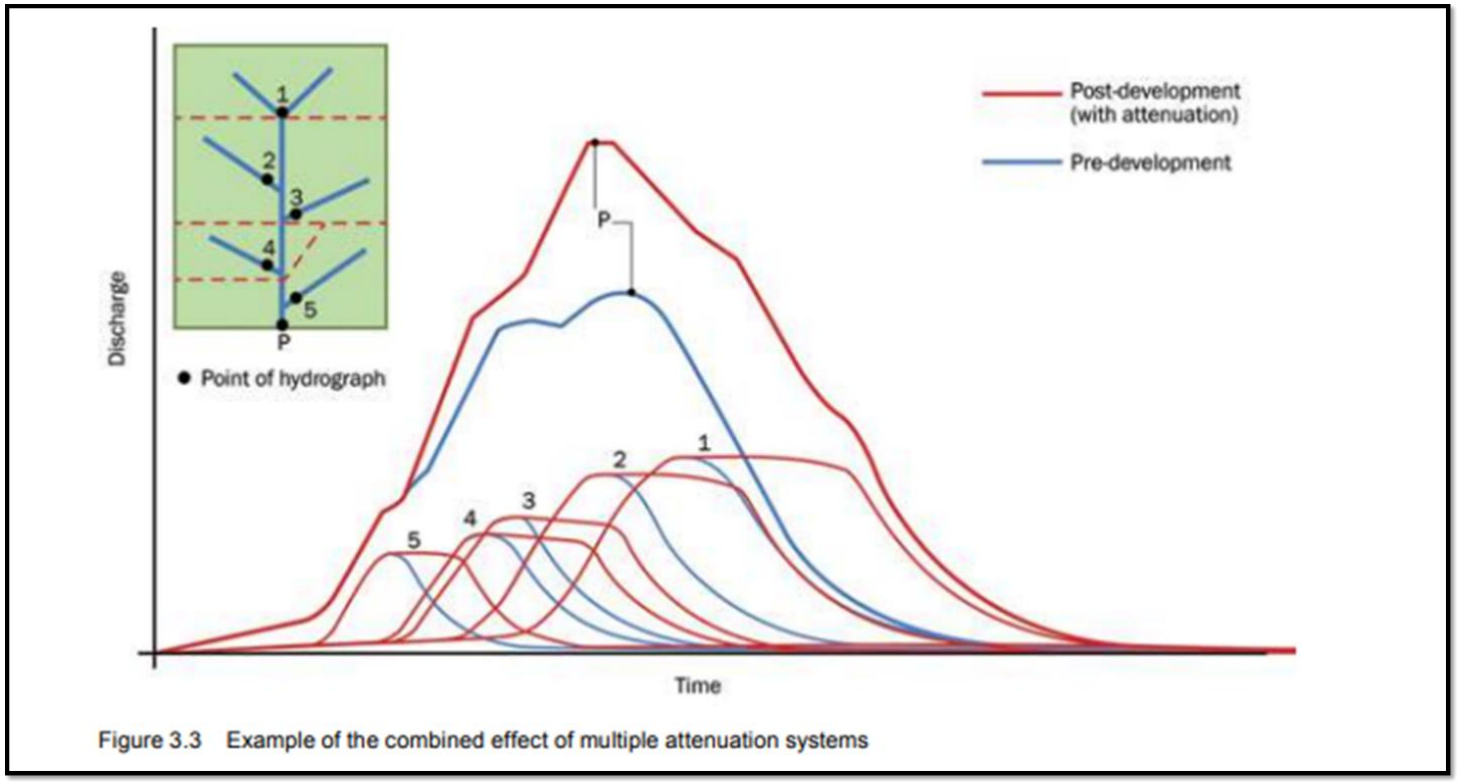


Figure 3.3 Example of the combined effect of multiple attenuation systems

The SuDS Manual Figure 3.3 example of combined effect of multiple attenuation systems

- At catchment scale, we can see there that downstream the peak flow will continue to rise due to greater total volumes being discharged from each sub-catchments.
- Therefore the likelihood of flooding downstream increases.

Nature-based solutions drainage

- This is where we can use Nature-based solutions in all scheme as a treatment train to **collect, slow, treat and convey water**
- Nature-based solutions used for segregation
- Remove kerbs and use grass surface water channels
- Put active travel feature by fence line

Image: Fran Igoe, LAWPRO

Case study

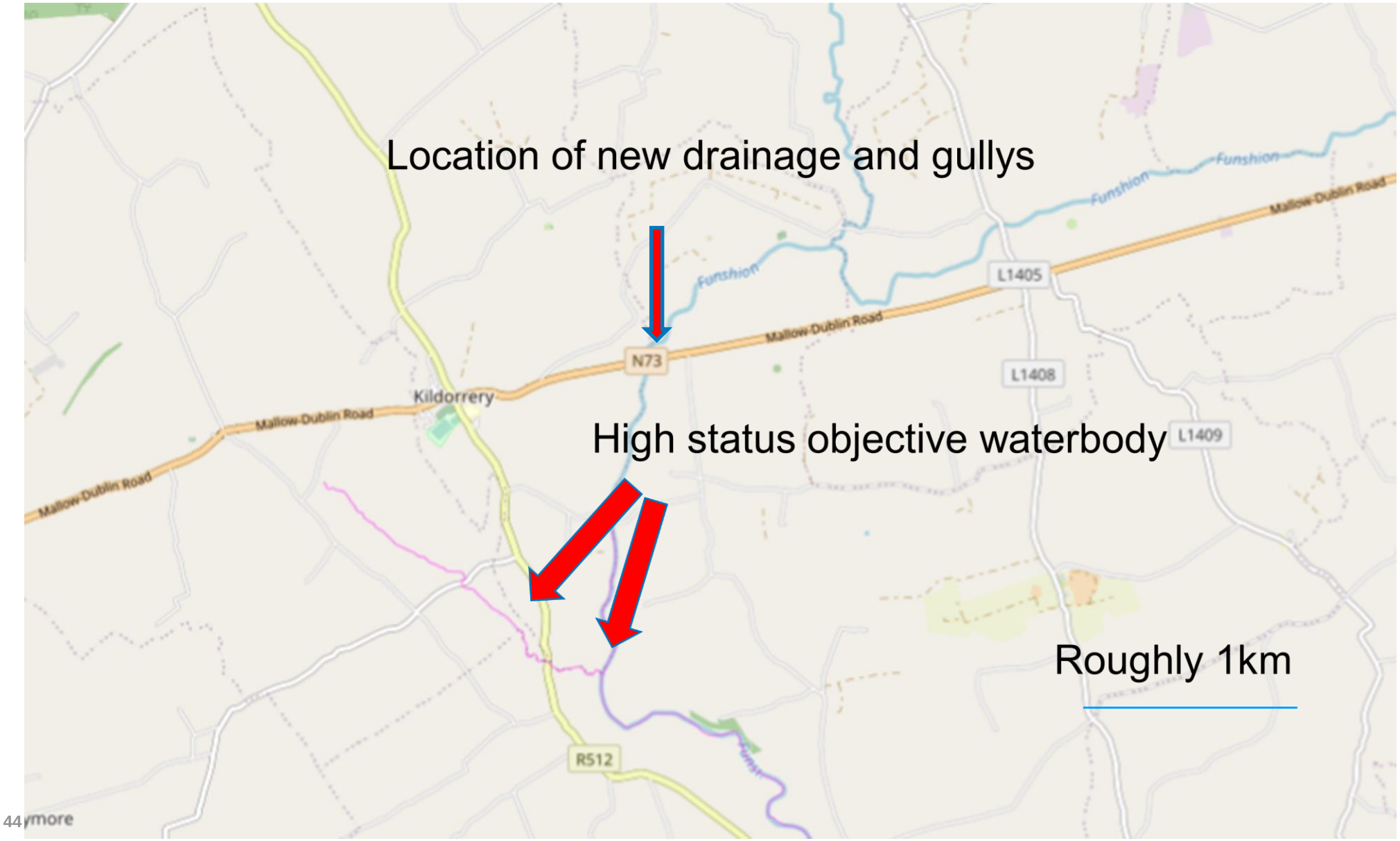
Before:

- No active travel scheme
- Limited or no drainage
- Narrow carriageway

After:

- Active travel scheme included
- Increased hard surface area
- No segregation
- Kerb and gully drainage

N73 new road drainage works




KILDORRERY
Strictly
Fly Fishing Only
No Czech Nymphs,
Gold Heads or Beads
Size Limit 10" - Bag Limit: 6 Trout
Membership From
087-8240655 087-0904646
Season 15th Feb. - 30th Sept
Respect
Land Owners
Property
TROUT ANGLING CLUB

National Implementation Strategy for Urban Nature-based Solutions

Measure in the Water Action Plan 2022-2027

Image by Jason Taylor, Sydney

National Implementation Strategy for Urban Nature-based Solutions

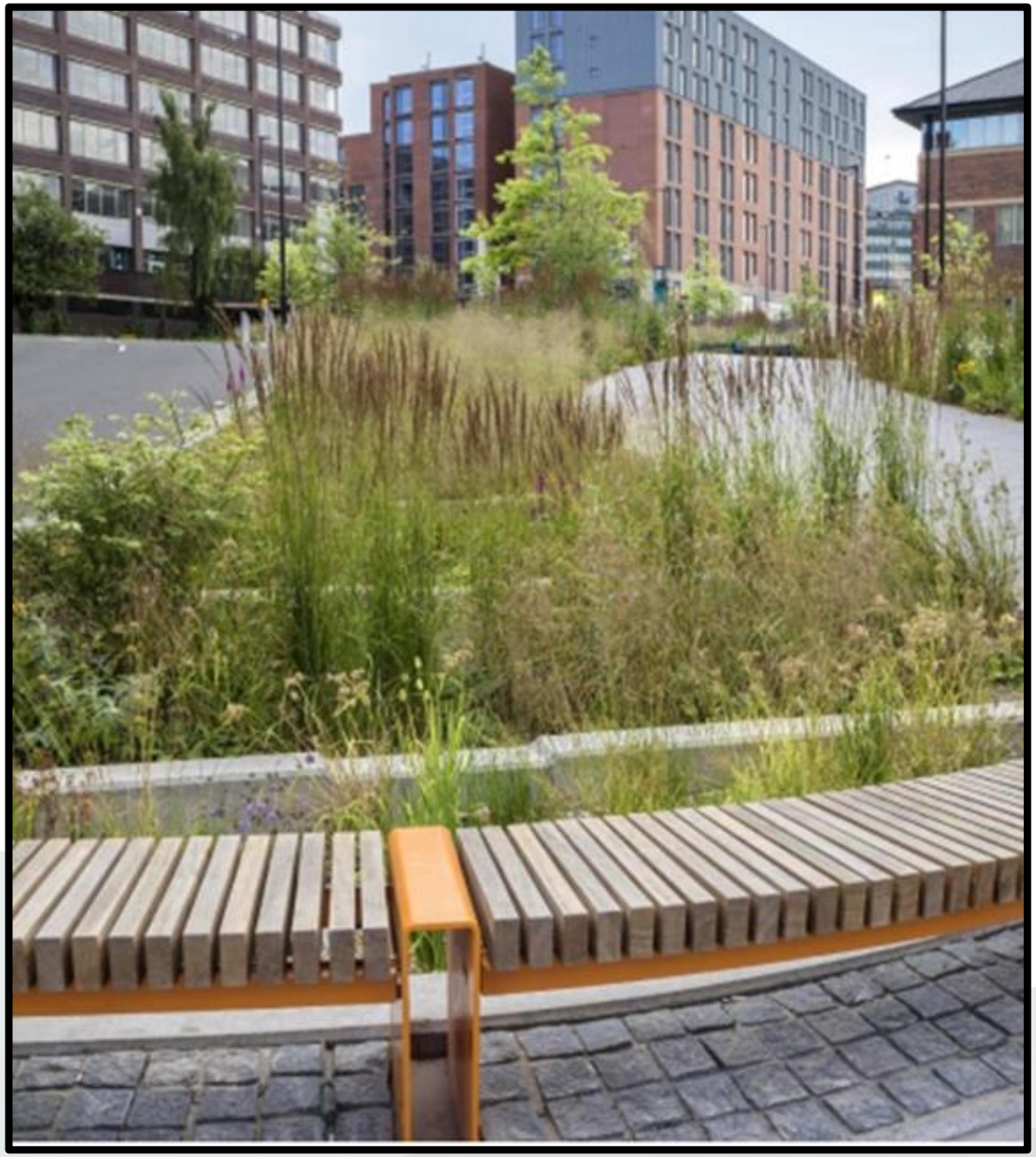


Image: Urban Design London

- Working Group members:

  Dept. Environment, Climate and Communications,
  Dept. of Transport,
  NTA
  Uisce Éireann,
  LAWPRO,
  Dept. of Housing, Local Government and Heritage. (Planning and Water Advisory Unit)
  EPA

Commenced Q4 2023

8 Proposed Strategies

- Climate Adaption
- Planning
- Uisce Éireann
- Roads, Streets and Transportation
- Funding and Capital Appraisal
- Education and Training
- Community Engagement and Communications
- Public Health and Wellbeing

Image: Front of St Peter and Pauls Church, Clonmel, Fran Igoe

Strategy for Roads, Streets and Transportation

Identified 4 areas of concern:

- Pavement integrity
- Road space allocation
- Specialist design and construction
- Taking in charge and maintenance

Image: South Dublin County Council, Chris Galvin

7.5 Indicators and Targets (Table)

Indicator	Definition	Current Baseline	End 2025 Target	End 2027 Target	End 2040 Target
DMURS Advice Note 5	Mandatory for all urban roads and streets	Advice Note introduced in 2023 (NGS Circular 1 of 2023, DoT)	All urban project teams to be aware of requirement.	All urban projects to implement Advice Note 5	All urban projects to implement Advice Note 5 (following a review and updating)
Approved Technical Specifications for Nature Based Urban Rainwater Management Features	Necessary to enable design and construction teams to deliver nature-based features.	Reliant on UK / CIRIA specifications	Brief prepared to procure consultants to draft national specifications	Specification to be adopted and in use.	Following a five yearly review, specifications, and codes of practice etc. to be updated and in use.
Preliminary Design Stage	Funding / Approval Agency Review at Preliminary Design Stage	Review process and Peer review carried out but not necessarily including NBS / Advice Note 5	Funding Agency to review to ensure compliance with Advice Note 5 and agency's own standards.	All urban projects to be compliant with Advice Note 5 at Preliminary Design stage	All urban projects to be compliant with Advice Note 5 at Preliminary Design stage
Planning Stage	Planning Application Documents	Policy supporting nature based SuDS in place but not always enforced.	Ensure Planning documents incorporate NBS	Ensure Planning documents incorporate NBS	Ensure Planning documents incorporate NBS
Construction Stage	Tender Documents	NBS not sought	Ensure tender documents incorporate NBS.	Develop appropriate tender rates for NBS to improve estimation.	Ensure tender documents incorporate NBS
Taking in Charge	LA Taking in Charge Procedures	NBS not accommodated in TIC	Cross Departmental Discussions underway	Agreed TIC and Maintenance procedures in use.	TIC and maintenance procedures updated and effective.

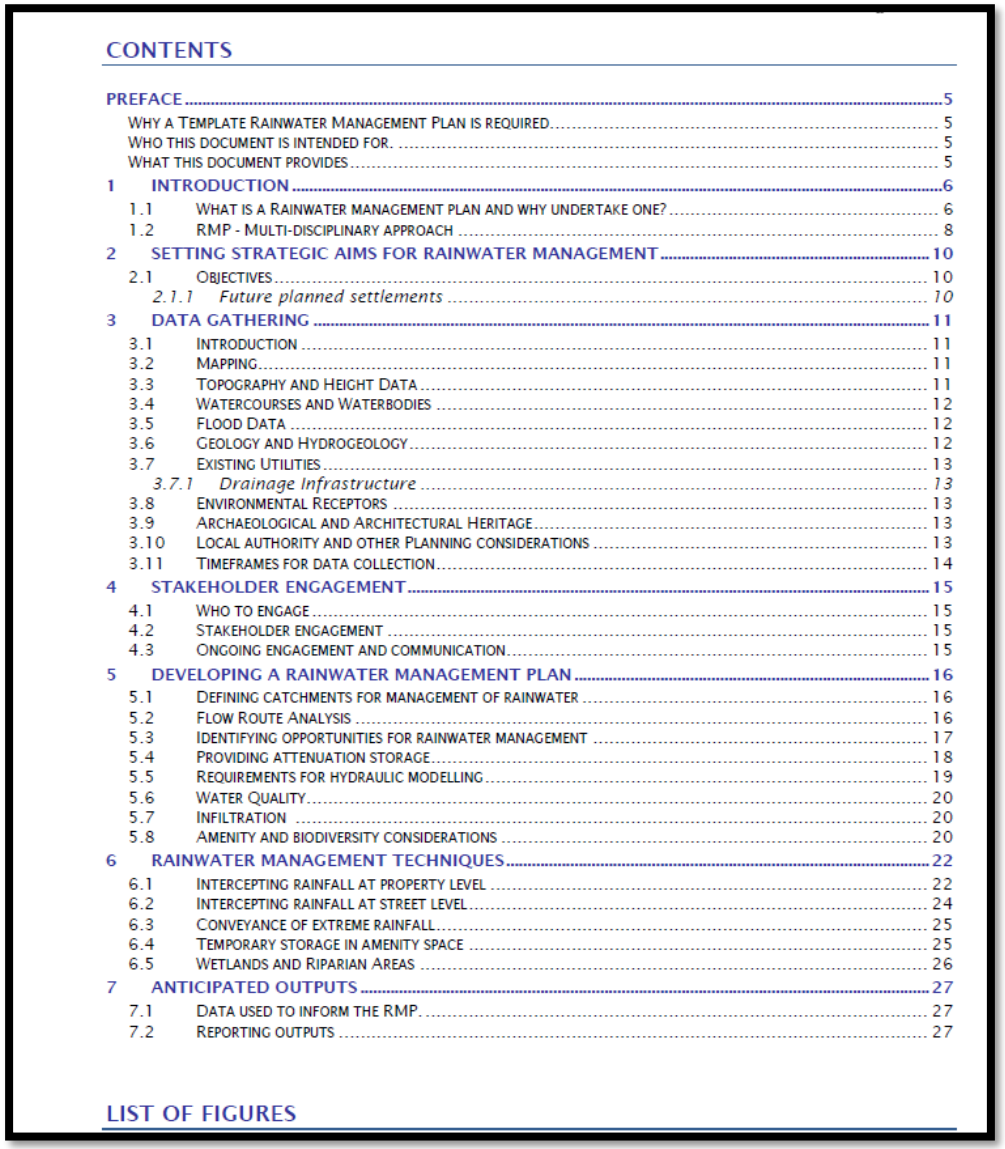
Strategy for Roads, Streets and Transportation

- Proposed actions in the short, medium and long term to main stream the use of nature-based solutions as a drainage method where possible

Rainwater Management Planning – Guidance for Local Authorities

Expected publication Q2 2024

Rainwater Management Planning - Guidance for Local Authorities



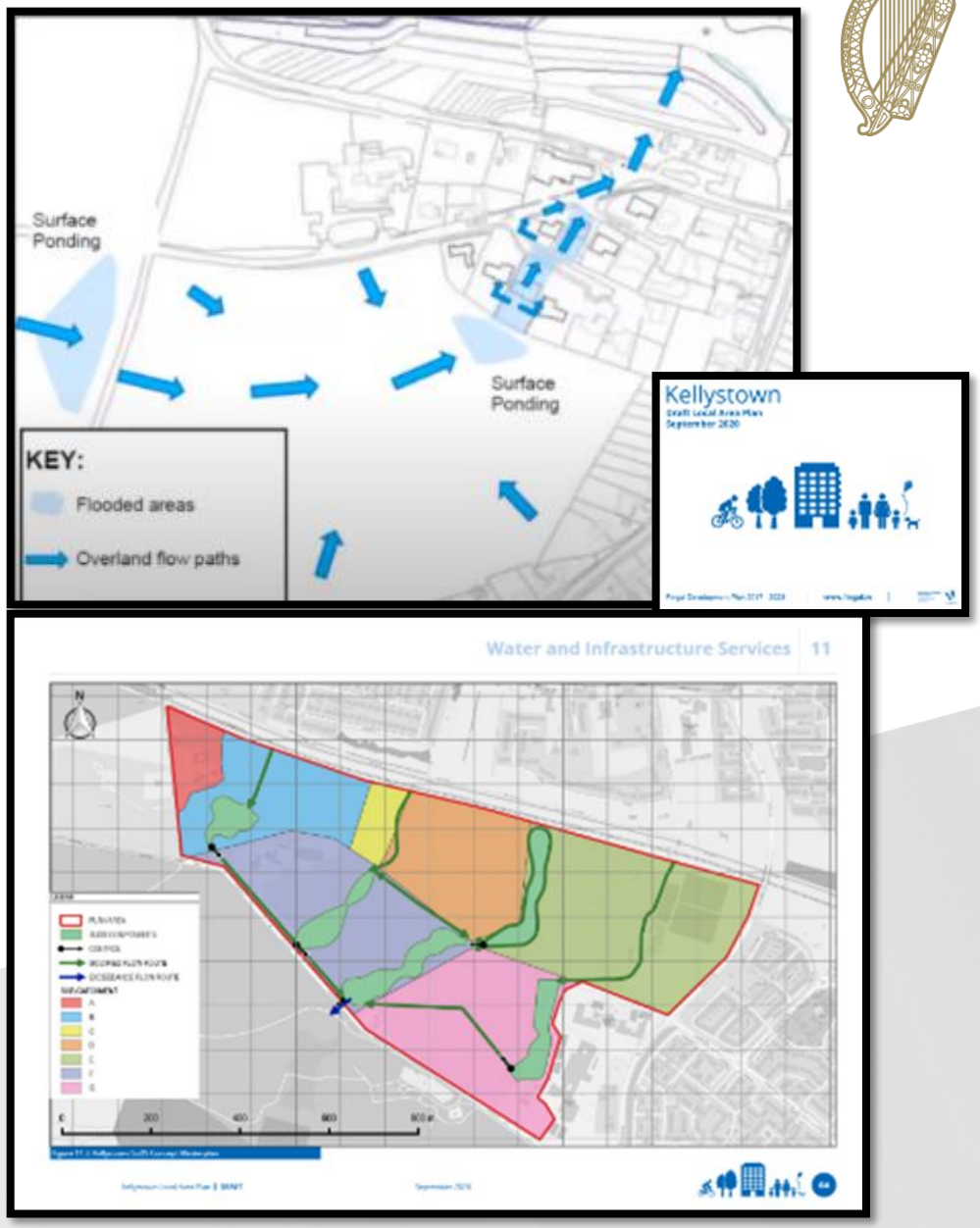
CONTENTS

LIST OF FIGURES

- Data gathering
- Stakeholder engagements
- Developing a rainwater Management plan
- Rainwater Management techniques
- Inclusion of Carrigtwohill Rainwater Management Plan in Appendix for information

Rainwater Management Planning - Guidance for Local Authorities

- Will become more important from Climate Change perspective (pluvial flooding, cloud bursts etc).
- Integration of water sensitive urban design concepts including development of Rainwater Management Plans
- Guide location, type, scale and integration of nature-based solutions
- *Working with Cork City and County, Wexford, Offaly, Kildare, Fingal and Wicklow County Councils*



Nature-based Solutions Pilot Projects

- 3rd River Basin Management Plan – measure includes two pilot projects in Dublin City and Cobh, Co. Cork to look at Nature-based Solutions in Ireland
- Research including monitoring into NBS infrastructure in Ireland
- These projects commenced in 2023

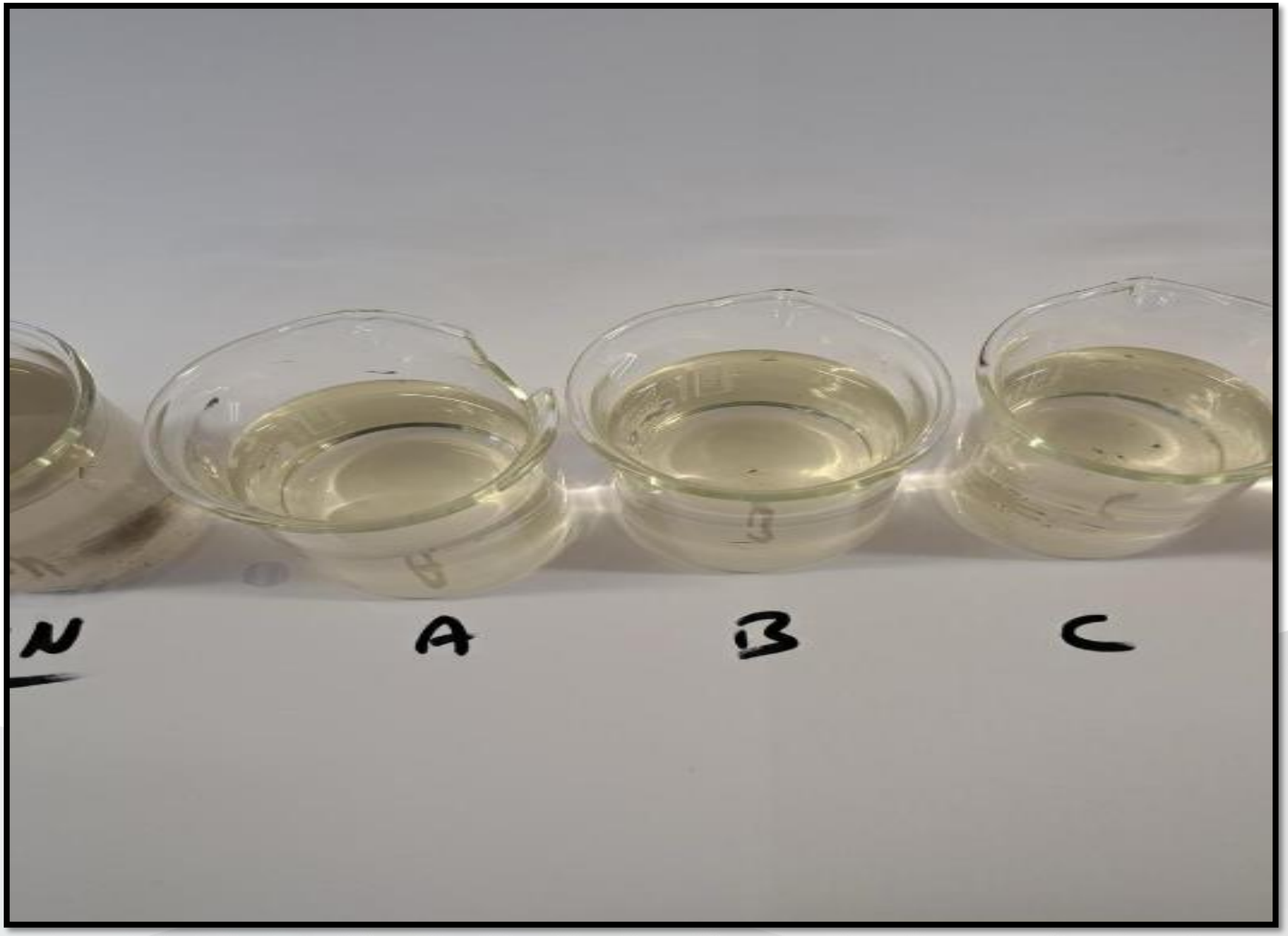
Image: NBS Demonstrator project Cobh, Cork Co Co

Nature-based Solutions Pilot Projects

Image: NBS Demonstrator project Cobh, Cork Co Co

- Monitoring different soil types and different plant types to determine best combination in Irish context
- Using this information to design rain gardens and tree pits in larger public realm scheme
- Winner of Social Impact Award at the National Property Awards

Nature-based Solutions Pilot Projects



Nature-based Solutions Pilot Projects

Images: Ribh Road, Rainscapes Project, Dublin City Council

Inclusion of rain gardens, permeable paving and tree pits after consultation and monitoring

Images from Rainscape project: Ribh Road and McAuley Park, Santry, Dublin

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

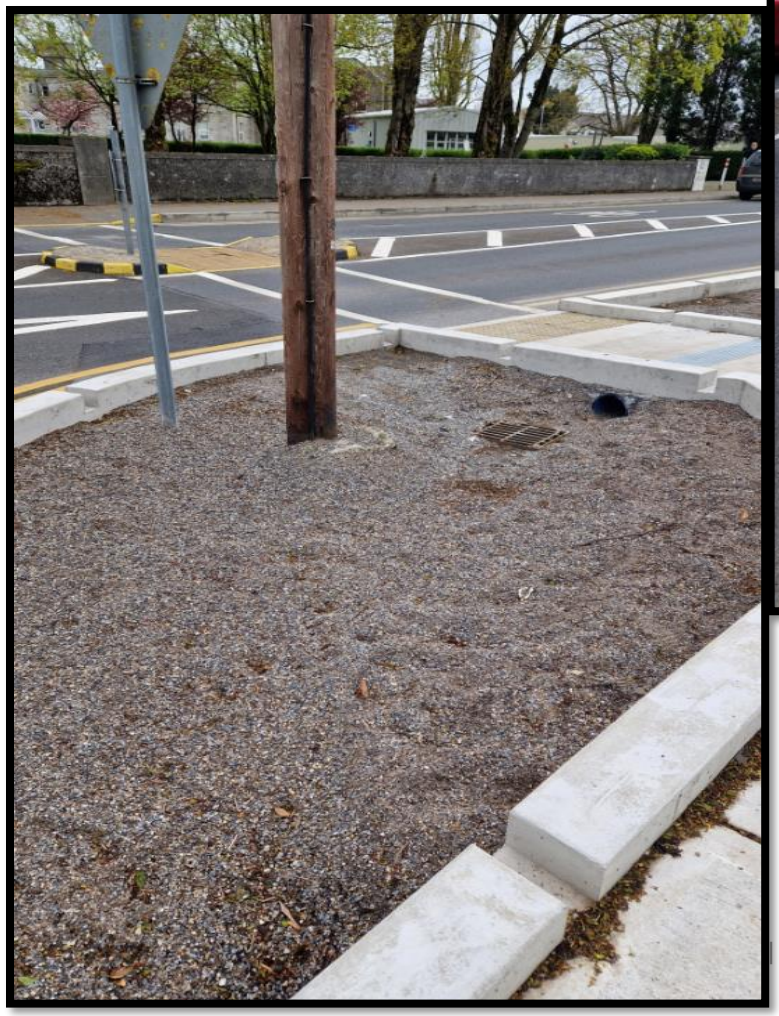
Bioretenion Areas (Rain Gardens) – Pollerton Road/Green Lane Junction

Courtesy P. Gorman, Carlow CoCo

Before and after picture

Courtesy P. Gorman, Carlow CoCo

In progress - Carlow Co. Co. raingardens at junction of Railway road and Dublin road.



Images: Thomas Brennan, LAWPRO

Questions to be entered through SLIDO when entering your question please direct it to **Averil Gannon**

Slido.com and enter 5812867
Or via the QR Code

Thank you

Email: Averil.Gannon@housing.gov.ie

An Roinn Iompair
Department of Transport

Cumann Lucht Bainistíochta Contae agus Cathrach
County and City Management Association

RSTG Conference 2024 15th May - Day 1

Networking\Exhibition & Coffee Break

Gala Dinner 7:00pm

The first session tomorrow starts at 9.45am

Chair Tom Brennan

Subject Active Travel Considerations

09.45-10.05	Section 38 of Road Traffic Act	John McCarthy - DoT & Joe Seymour - NTA
10:05-10.25	Cycle Design Manual	Joe Seymour - NTA
10.25-10.45	National Cycle Network	Richard Bowen - TII