

Annex A: Consultation Questions

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| <p>QUESTION 1: Do you agree that Belfast is facing significant drainage and wastewater management issues?</p> | <p>YES</p> |
| <p><i>NIEL agrees that Belfast, like the rest of Northern Ireland, Ireland and the UK, is facing significant drainage and wastewater management issues. There are two main factors contributing to the pressures on the NI drainage and wastewater management system – the nature of the system and infrastructure and the predictions as to how our climate will change, especially in relation to precipitation patterns. For example, amongst other things, the UK Met Office has predicted that winter precipitation is expected to increase significantly and by 2070 NI winters could be 25% wetterⁱ and suggests significant increases in hourly precipitation extremes in the futureⁱⁱ. According to the Met Officeⁱⁱⁱ the most recent decade (2010–2019) has been on average 5% wetter than 1961–1990 and this increase is most pronounced for Scotland and Northern Ireland, which were 7% wetter than 1961–1990. It therefore seems clear that there is an ongoing, and likely increasing risk of flooding in NI. As the 2016 report ‘Sustainable Water: A Long-Term Water Strategy for Northern Ireland (2015-2040)’^{iv} said</i></p> <p><i>“Extreme weather resulting in flooding of properties and infrastructure is expected to be a significant long-term risk associated with climate change for Northern Ireland.”</i></p> <p><i>The department clearly understands the drainage and wastewater management issues in the Belfast area in relation to nature of the system and infrastructure and as outlined on page 9 of the consultation, is of the view that</i></p> <p><i>“Much of the drainage and wastewater infrastructure serving the greater Belfast area is in need of urgent upgrade and requires significant levels of investment.”</i></p> <p><i>However, NIEL members have expressed concern that the consultation ignores the Lagan and 95% of its catchment in terms of the flood risk and nutrient input into the river, inner lough and shellfish waters.</i></p> | |

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NIEL welcomes the department's recognition of the problems and hopes that the department will be given the level of funding necessary in order to remedy the various problems with the drainage and wastewater system.

NIEL has no comments to make on questions 5, 6, and 7, although the department appears to have addressed the main issues relating to the study areas listed in the consultation document.

QUESTION 2: Do you agree that we need to change the way we manage water flowing through our urban areas?

YES

There are many positive aspects to the management approach outlined in the LWWB consultation. NIEL supports the multi-agency, holistic and integrated approach outlined in the LWWB consultation as it is clear that managing our water resources will require an integrated and coordinated approach, and not just in terms of intra- and inter-departmental collaboration but as referred to in question 4, because the water that flows through our urban areas can not successfully just be dealt with in those urban areas, a whole catchment approach is necessary.

NEIL supports the more widespread use of SuDs and the policy proposal to make SuDS and blue/green infrastructure the preferred drainage solution in all new developments. If this can not be made mandatory NIEL would like to see clear targets set for SuDS and blue/green infrastructure rather than just being the preferred option. The trend towards urban gardens being replaced with concrete or tarmac is also exacerbating the drainage problems in urban area as the decreasing area of grass means more water will flow, more quickly on to the roads and/or in to the drainage systems. The Department could also explore working with councils on developing policy to discourage homeowners from removing their gardens.

One change NIEL would wish to see in the way water is managed is to make the management of our water resources much more sustainable and to use ecosystem services or, as the consultation describes it, natural flood management to a much greater extent. This builds upon the aim outlined in 'Sustainable Water: A Long-Term Water Strategy for Northern Ireland (2015-2040)' to

"Manage flood risk and drainage in a sustainable manner"

NIEL believes that applying an ecosystems based approach also fits with Outcome 2 (We live and work sustainably – protecting the environment) in the draft 2016-

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2021 Programme for Government and the approach in the UK Government's 25 year plan for nature 'A Green Future' in which the UK government committed^{vi} to

"using more natural flood management solutions where appropriate"

NIEL believes that NI needs to start planning now how to deal with the projected changes in precipitation in terms of both hard infrastructure and natural flood management, to help reduce the impact of flooding.

It is important to learn from examples of where utilising ecosystem services and natural flood management has had a positive impact on the management of water resources, for example, it has been shown that trees and pastureland can decrease peak flows by up to 60%^{vii}. Research^{viii} based on modelling of flow rates in Pontbren, Wales suggests that

"introducing optimally placed tree shelter belts to the current land use would reduce peak flow by 29 per cent and introducing full woodland cover would reduce flows by 50 per cent"

While tree planting is one of many useful options to reduce peak flow, NIEL believes that a whole catchment based approach, as taken in the EU Water Framework Directive^{ix} (WFD) (Directive 2000/60/EC) is essential. This is explored in more detail in response to question 4. NIEL therefore welcomes the £20 million allocated by the Minister to the blue/green infrastructure fund in 2020/21.

An essential part of implementing a natural flood management approach is ensuring that the Department has the necessary skill base and resources available in order to ensure the successful, widespread implementation of natural flood management practices. If this is not the case then the Department should seek input from other organisations, including those outside government, such as the Rivers Trusts and from bodies outside of Northern Ireland such as the Environment Agency, so as to ensure that the application of natural flood management is not restricted by a lack of appropriate resources as NIEL would

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like to see a reduction in hard engineering structures in NI's river systems where possible.

There is also concern among NIEL members in relation to the resourcing of monitoring of barriers to fish passage as required under WFD. For example, NIEL understands that an evaluation of the Ballinderry river found 26 complete barriers and seven high impact barriers to adult lamprey. These are likely to have a significant impact on population levels of lampreys and other species.

QUESTION 3: Do you agree that during periods of heavy rain, green spaces in urban areas should be used to hold water on a temporary basis to help prevent the flooding of homes and businesses and help prevent sewage spilling into the City's rivers and Belfast Lough?

YES

NIEL does agree that during periods of heavy rain, green spaces in urban areas should be used to hold water on a temporary basis to help prevent the flooding of homes and businesses to help prevent sewage spilling in to the City's rivers and Belfast Lough. However, the provision of land to hold water should not be limited to urban areas. In fact, providing space for rivers to flood in areas upstream of urban and industrial areas is likely to be much more successful as illustrated by South West Water's Upstream Thinking project, which is explored in more detail in NIEL's response to question 4. The restoration of peatlands and the expansion of woodlands need to be other key elements of the whole catchment approach to reduce the impact of flooding.

QUESTION 4: Do you agree with the catchment based approach to address drainage and wastewater management problems?

YES

As outlined in response to question 2, above, NIEL believes that NI, and the rest of the UK must take a whole catchment approach. This is not only the approach required by the WFD, which has been in place for many years, but is also the approach advocated by the UK Government's 25 year plan for nature 'A Green Future' ^x. Taking a whole catchment approach also fits with the approach outlined in NI Water's 2021-2046 strategy^{xi} which states that NI Waters aims to improve water quality at source and acknowledges that while investment in treatment works and chemical treatment can remove the problem

"the sustainable long term solution is to work in partnership with land owners and other stakeholders to manage the source waters using catchment management."

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NIEL would like to see the whole catchment approach continue to be the as the norm rather than the exception in catchment management in Northern Ireland.

It is important to learn from examples of where taking a catchment approach which also utilises ecosystem services has had a positive impact on the management of water resources, for example, South West Water's Upstream Thinking project. This project works in eleven catchments across Devon and Cornwall, including in the Exmoor National Park, and aims to improve water quality, at source, by improved land management techniques to reduce soil and chemical run off in the upper reaches of rivers taking a whole catchment approach. According to South West Water^{xii}

"It also has wide reaching, positive impacts on the environment by increasing biodiversity and improving raw water quality, reducing energy use, improving carbon sequestration and reducing the risk of flood and drought."

"It is a cost-effective and environmental approach to tackling long-term problems facing the water industry and for relatively small amounts of expenditure, the scheme has the potential to reduce water treatment costs, reduce energy consumption and support our company vision and values – Pure Water, Pure Service & Pure Environment "

The project is also predicted to improve the probable water quality in the sub-catchment to 'good ecological status' for phosphate, something that should be of particular interest for those of us in Northern Ireland who seek to reduce the levels of phosphorous in our water bodies.

If many of our drainage and wastewater management problems could be managed in a way that can improve water quality, reduce energy use and improve carbon sequestration by using ecosystem services/natural flood management that is something NIEL believes that DEARA and the NI Executive should support and implement as much as possible, especially when this more natural, land management based approach also has very positive economic benefits. According to South West Water, Upstream Thinking has a potential 65:1 payback ratio over 30 years if it delays or even avoids capital expenditure for building and operating traditional treatment works^{xiii}

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| QUESTION 5: Do you agree that we have identified all of the pressures and issues and set the correct objectives for each study area, as set out in chapters 7 – 10? | |
| Blackstaff Study Area | YES / NO |
| Please provide details | |
| Connswater and Lagan Embankment Study Area | YES / NO |
| Please provide details | |
| North Foreshore Study Area | YES / NO |
| Please provide details | |
| Inner Belfast Lough Study Area (WwTW) | YES / NO |
| Please provide details | |
| QUESTION 6: Do you agree that we have identified all of the opportunities for integrated drainage measures for each study area, as set out in chapters 7 - 10? | |
| Blackstaff Study Area | YES / NO |
| Please provide details | |
| Connswater and Lagan Embankment Study Area | YES / NO |

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| <i>Please provide details</i> | |
| North Foreshore Study Area | YES / NO |
| <i>Please provide details</i> | |
| Inner Belfast Lough Study Area (WwTW) | YES / NO |
| <i>Please provide details</i> | |
| QUESTION 7: Do you agree that the proposed measures adequately address the pressures and issues and meet the objectives for each study area, as set out in Chapters 7 - 10? | |
| Blackstaff Study Area | YES / NO |
| <i>Please provide details</i> | |
| Connswater and Lagan Embankment Study Area | YES / NO |
| <i>Please provide details</i> | |
| North Foreshore Study Area | YES / NO |
| <i>Please provide details</i> | |
| Inner Belfast Lough Study Area (WwTW) | YES / NO |

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| Please provide details | |
| QUESTION 8: Do you agree that the levels of investment identified within this plan are necessary and should be considered a high priority by the NI Executive? | YES |
| <p>NIEL is not familiar with the specifics of the levels of investment that would be necessary to satisfactorily resolve the problems identified in the consultation document but NIEL does agree that the levels of investment identified in the consultation are necessary, as a minimum. NIEL hopes that the department will be given the level of funding necessary in order to address the various problems with the drainage and wastewater system and ensure that our water continues to be delivered to customers while managing flood risk and drainage in a sustainable manner as outlined in 'Sustainable Water: A Long-Term Water Strategy for Northern Ireland (2015-2040)'.</p> | |

- ⁱ <https://www.nidirect.gov.uk/articles/climate-change#:~:text=The%20highest%20predicted%20releases%20for,rise%20by%20up%20to%2094cms>
- ⁱⁱ <ukcp-headline-findings-v2.pdf> (metoffice.gov.uk) page 7
- ⁱⁱⁱ Met Office State of the UK Climate 2019 <https://rmets.onlinelibrary.wiley.com/doi/10.1002/joc.6726>
- ^{iv} <https://www.infrastructure-ni.gov.uk/sites/default/files/publications/drd/sustainable-water-a-long-term-water-strategy-for-northern-ireland-2015-2040.PDF> (page 22)
- ^v <https://www.infrastructure-ni.gov.uk/sites/default/files/publications/drd/sustainable-water-a-long-term-water-strategy-for-northern-ireland-2015-2040.PDF> (page 25)
- ^{vi} A Green Future: Our 25 Year Plan to Improve the Environment https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/693158/25-year-environment-plan.pdf page 52
- ^{vii} <http://www.opengreenspace.com/opportunities-and-challenges/climate-change/flood-management/#:~:text=Proper%20utilization%20of%20green%20infrastructure,the%20impacts%20caused%20by%20flooding.&text=Surface%20attenuation%20is%20a%20key,flows%20by%20up%20to%2060%25>
- ^{viii} Wheeler, H. and Evans, E. (2009) Land use, water management and future flood risk. *Land use Policy*, 26, S251-S264 (S254)
- ^{ix} https://ec.europa.eu/environment/water/water-framework/index_en.html
- ^x A Green Future: Our 25 Year Plan to Improve the Environment https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/693158/25-year-environment-plan.pdf page 52
- ^{xi} Our draft strategy 2021-2016 NI Water <https://www.niwater.com/ourstrategy/> p20
- ^{xii} <https://www.tonline.co.uk/features/moorland-project-delivers-multiple-benefits->
- ^{xiii} <https://www.tonline.co.uk/features/moorland-project-delivers-multiple-benefits->