DWMP24 options identification PIN

1 Introduction

United Utilities is in the process of developing its Drainage and Wastewater Management Plan (DWMP). This will set out how it can maintain a drainage and wastewater system that remains robust and resilient in the face of increasing external pressures over the next 25-year planning period from 2025 to 2050 and beyond.

Demand from external pressures that pose a threat to the future resilience of our drainage wastewater system include:

- Population growth and urban creep (the loss of permeable surfaces in urban areas)
- Climate change – more intense winter storms pose a challenge for the capacity of our networks and wastewater treatment works (WwTWs)

Taking into account the challenges created by these pressures, we have modelled the future scenarios to understand key risks to wastewater network capacity, WwTW capacity and environmental capacity. We are now in the process of developing and appraising options to mitigate identified risks. United Utilities has developed some of its own options, but to ensure that opportunities are not overlooked, we are seeking to collaborate with external stakeholders.

We are looking for proposals for alternative options in either demand or capacity management for evaluation alongside those developed internally that deliver:

1. Improve efficiency and delivery benefits for a lower cost for customers;
2. Identify innovative market led solutions to managing long term resilience pressures for drainage and wastewater management;
3. Enhance the natural capital of the north west, providing wider benefits for customers;
4. Sustainable solutions to water quality and sewer flooding risk.

Through the DWMP we want to deliver a plan which demonstrate best value for customers by investigating innovative routes for delivery. We also want to hear from organisations that can offer innovation to improve our management of drainage and wastewater in catchments, aligned with our Catchment Systems Thinking approach[1]. We are open to promotions of options across the range of risks we manage, a number of examples for third party options are included below:

- Measures related to demand reduction from surface water inputs to the sewer network. Examples: surface water attenuation, SuDS, natural flood management.
- Measures which involve working with partners to manage risk to water quality through interventions on catchment land. Examples: diffuse nutrient management to contribute to offsetting.
- Measures which involve managing demand from domestic or business customers.
- Measures involving engineered solutions to improve drainage and/or water quality.

Suppliers of the measures could be one or more of the following, all of these options will be considered in the development of our Drainage and Wastewater Management Plan, which will cover the period from 2025 to 2050.

Land owners / land users

Land owners or land users located within the geographical area supplied by United Utilities whose activities have an impact on environmental water quality e.g. industrial and agricultural users who could provide catchment offsetting.

Design

Organisations who can offer a design of services which would provide a benefit to demand or capacity in the drainage and wastewater system. This could be through services or technologies which could be adopted by United Utilities.

Delivery

Organisations who can offer delivery of services which would provide a benefit to demand or capacity in the drainage and wastewater system. This could be through services or technologies which could be adopted by United Utilities.

Operation

Organisations who can offer ongoing operation solutions outlined above.

It's also worth noting that, as part of water resources planning and the development of our Water Resources Management Plan (WRMP), we have undertaken a similar process of identifying options to, for example, increase our water supply or help us reduce demand for water. If you'd like more information about our water resources planning, please contact us at water.resources@uuplc.co.uk.

2 Statements of requirements

As outlined in the Prior Information Notice (PIN), Appendix A to this document details the specific option types that the United Utilities have considered in the development of the Drainage and Wastewater Management Plan. This list is not exhaustive and we would welcome other ideas that could be considered to supplement this list.

As guidance, interested parties should please note the total requirements for each 'strategic planning area' and the minimum benefit we will look to consider in a proposed option. We will exercise discretion for options proposed that are close to these figures or where it is uncertain of the exact size of the option proposed.

Table 1. Total opportunity identified requiring 3rd party input per strategic planning area

Strategic Planning Area	Anticipated SW management opportunities		Anticipated water quality improvement opportunities	
	Total	*Minimum benefit delivered for consideration*	*Total*	*Minimum benefit delivered for consideration*
Eden and Esk				
Waver Wampool				
Derwent				
South West Lakes				
Kent Leven				
Lune				
Ribble				
Wyre				

Douglas				
Alt Crossens				
Irwell				
Upper Mersey				
Mersey Estuary				
Weaver Gowy				

The geographical area covered by the United Utilities DWMP along with the breakdown of Strategic Planning Areas is shown in

Figure 1.

Figure 1 United Utilities strategic planning areas for the DMWP.

Opportunity mapping for each Strategic Planning Area, in the form of available green space and NFM potential, can be found in Appendix B.

3 Guidance on submitting a response to the PIN

Organisations/individuals wishing to submit a response to the PIN should use the response template provided. Wherever possible, responses should be submitted by email to DWMP@uuplc.co.uk with the wording **DWMP23PIN** in the subject title and subject field. An automated response will be sent to confirm receipt. We are happy to discuss potential options with organisations or individuals prior to submission of a response. If you would like to discuss potential options first please use enquiry form on the United Utilities Collaboration Portal: https://collab-uu.co.uk/dwmp-feedback-form/.

No other documentation should be submitted at this stage.

Respondents should complete the response template as fully as possible. Where there are uncertainties or required information cannot be provided, this does not mean that the option will be discounted at this stage. Wherever possible, United Utilities will subsequently work with respondents to better describe the option and to provide support to fill in gaps in knowledge/data.

The information requested on the response template is as follows:

1. **Organisation information**
    a. Organisation name
    b. Contact details including address, telephone and email address, main point of contact and position in company
    c. Is option being offered in collaboration with any other company/entity? If so, provide details in line with the above

2. **Option information**

a. Option name

b. Whether the option is for the provision demand or capacity management.

c. Whether your organisation is submitting an option which provides one or multiple of the below:
- Land owners or land users located within the geographical area supplied by United Utilities whose activities have an impact on environmental water quality e.g. industrial and agricultural users.
- Organisations who can offer a design of services which would provide a benefit to demand or capacity management for drainage and wastewater.
- Organisations who can offer a delivery of services which would provide a benefit to demand or capacity management for drainage and wastewater.
- Organisations who can offer ongoing operation of solutions outlined above.

d. A brief description of the option with details of the high level location of potential activities. If possible, including a map to visually illustrate the location.

e. If the option is for the provision surface water management, we will require:

   i. The type of surface water management your proposal incorporates (for example: attenuation basin, natural flood management, wetland etc.).

   ii. Detail of the quantities of water that the option would provide attenuation for, at its full capacity.

   iii. Information relating to land ownership and whether you are engaged with land owners regarding surface water management.

f. If the option involves catchment management, we will require:

   i. The area intended to be covered.

   ii. A brief description of the option, explaining the type catchment management services being offered such as farmyard management plans.

   iii. The benefit to river water quality – targeted nutrients and expected reduction (kg/year).

   iv. Existing relationships with relevant land owners and users within the area.

g. If the option involves managing demand from domestic or business customers, we will require:

   i. A description of the type of option being considered.
   ii. The estimated reduction in wastewater entering the network.
   iii. Assumed uptake rates and engagement with any demand reduction schemes

h. If the option involves engineered solutions to improve drainage and/or water quality, we will require:

   i. A description of the type of option being considered.
   ii. General location to be targeted.
   iii. The estimated benefit to sewer capacity, environmental water quality and/or treatment works capacity.

i. An estimate of the likely lead time to investigate and implement the option.

j. What further work is required to investigate the feasibility of the option, if so required.

k. Whether you have assessed any of the costs associated with the option and if so, what these are.

l. Details of any risks and uncertainties associated with the option.

4 Indicative guidance on the timescale and process for considering options

Figure 2 below shows the outline process that United Utilities intend to follow to identify options, including exploring opportunities for sharing water resources and to reduce demand for water within the next WRMP.

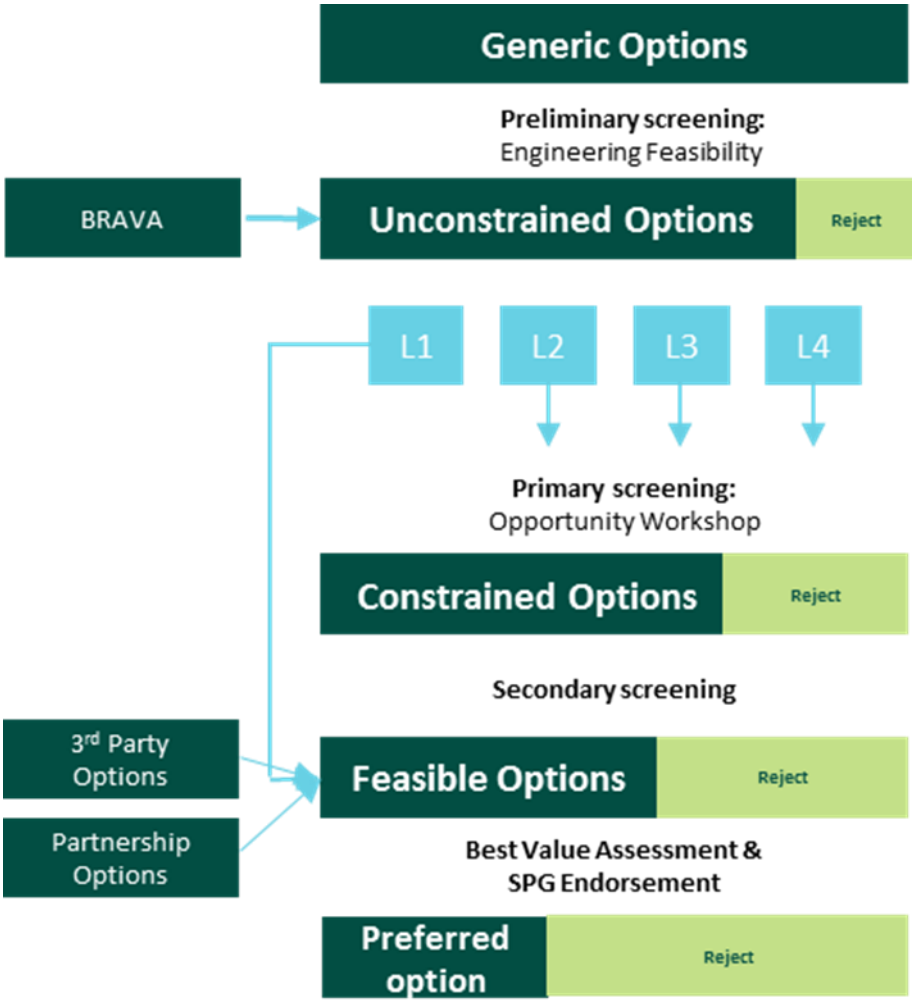


Figure 2 United Utilities DWMP options identification process

Interested parties should please note the key indicative timescales associated with this PIN as follows:

- All options will be subject to consistent screening and selection criteria at a number of stages, in the same way as options developed by United Utilities are
- No option identified will be implemented until 2025 at the earliest
- The PIN deadline is 12:00 on 27/10/2021.
- Prior to the PIN deadline, United Utilities are hosting a market engagement event, in the form of a webinar, on 29.09.21 at 2.30 pm. Stakeholders have received an invitation to this event, where more detailed information on the timescale and process for considering options will be presented. Whilst attendance is likely to be beneficial, it is not obligatory for ongoing consideration.
- Following the market engagement event, United Utilities will, wherever possible, work with respondents to fill in gaps in responses, as required, to allow screening of the options. The secondary screening criteria have been developed by United Utilities from criteria defined within the DWMP Framework (Appendix D)[2] and are listed in Section **Error! Reference source not found.** below. The purpose of this screening is to ensure that only potentially feasible options progress to be developed further.

- We will inform all respondents as to whether the option(s) they have submitted have been successful in making it through to the feasible options list for further development. We will be open and transparent about this procedure.
- For those options passed forward to the “feasible” options list, United Utilities will request more detailed data on each option to allow a scope of the option to be developed. The subsequent feasible list of options will be appraised in line with the DWMP framework.
- The period for submission of more detailed data will be August - September 2021.
- United Utilities will select the more cost beneficial options as “preferred” options for inclusion within the Draft DWMP, and will notify all “feasible” options respondents accordingly.
- The programme appraisal stage will assess the benefits and costs, as well as the wider natural capital and environmental impacts of each feasible option, and apply constraints in order to develop a best value programme to be put forwards for the DWMP.
- Programme appraisal is expected to conclude by 25/02/2022.
- United Utilities will then continue to engage with “preferred” option respondents in order to confirm the inclusion of their option(s) within the Draft DWMP, including seeking to establish an “agreement in principle” for the option by April 2022.
- The Draft DWMP is then published in June 2022, for public consultation and subsequent modification, as required, prior to finalisation in 2023.

5 Secondary screening criteria

United Utilities will develop a list of “constrained” options. Any options submitted will form part of this list. These options are then scored using screening criteria (Appendix C) to remove implausible options that may not actually work and deliver a benefit. The resultant feasible options will be further assessed to appraise the costs of construction and operation of the option alongside an appraisal of the wider benefits and environmental impacts of the option. If an option is selected as a “preferred” option an agreement in principle will be sought.

Through the plan we are considering risks which could impact on the resilience of the drainage and wastewater system between 2025 and 2050. As such this PIN notice is looking to identify opportunities which could be built upon and developed through the price review process for implementation in the period 2025 to 2030 and beyond. In addition we will consider options which are not available now, but which could be developed over time.

Appendix A: Generic option types for consideration within the DWMP options identification

Management Area	DWMP Generic Option Ref	DWMP Generic Option Title	Description
Sludge	B1	Resource recovery	Utilising technology to recycle valuable resources within sludge
Sludge	B2	Sludge centre rationalisation	Close localised on site sludge treatment and transfer for treatment at a central sludge centre (e.g. MBC)
Sludge	B3	Sludge centre decentralisation	Remove flows from a central treatment centre and create smaller localised treatment options
Sludge	B4	Increase treatment capacity	Increase the efficient use of the existing capacity with the existing assets, or invest on new assets to provide additional capacity within site footprint.
Customer Side Management	CM1	Water efficient appliances	Supplying customers with household appliances which are designed to reduce water consumption. Reduced consumption can also benefit the wastewater system by reducing the dry weather flow to be conveyed through the sewer network and through the STWs
Customer Side Management	CM2	Water efficiency measures	Water efficiency measures can be installed within buildings with the purpose of reducing water consumption. Reduced onsumption can also benefit the wastewater system by reducing the dry weather flow to be conveyed through the sewer network and through the STWs
Customer Side Management	CM3	Rainwater harvesting	Removing surface water from the system and making it available to re-use. By installing measures which collect and store the rainfall before it lands and is lost as runoff. Rainwater harvesting reduces the amount of flow that needs to be conveyed through the sewer network during a storm, thus reducing the likelihood of sewer flooding or spills to watercourse.
Customer Side Management	CM4	Customer incentives	Financially rewarding customers who sign up to a range of programs which are designed to help customers make smart choices in managing and/or utilising water and wastewater services.This for example could include use of metering/smart metering along with different tariff designs.
Customer Side Management	CM5	Domestic and business customer awareness	A roll out of an awareness programme to improve understanding of the importance of reduced flows and mis-use of the system, and the impact this has on the environment and sewerage system. Also Education programmes around CSO's the pros and cons and balancing investment choices (environment vs bill vs flooding)
Customer Side Management	CM6	Greywater treatment and reuse	Install systems to re-use (and possibly treat) household water (e.g. washing machine, dishwasher) for flushing toilets and gardening use. Either at property level or larger scale to reduces both flow and load to the system.
Customer Side Management	CM7	Charging and bill incentives	Reduction on bills or adapting charging e.g. for surface water removal
Customer Side Management	CM8	Foul water reuse	Install systems to re-use (possibly after treatment) foul water and final effluent.
Combined and Foul Sewer Systems	N1	Intelligent network operation	Controlling flow movement in reaction to the current situation. Allows the system to be operated proactively, maximising the use of existing assets. These options cover a range of different approaches e.g. modifying the start-stop levels at strategic pumping stations, creation of new network control points which allow for flow to be temporarily held back in the catchment.
Combined and Foul Sewer Systems	N10	Cross boundary transfer	The movement of flow to another area, or company.

Combined and Foul Sewer Systems	N2	Increase the capacity of existing foul / combined networks	Replace sewer with a large diameter sewer to increase capacity.
Combined and Foul Sewer Systems	N4	Inteligent asset maintenance	Allows the system to be maintained proactively, maximising the use and longevity of existing assets (for example by repairing minor sewer damage before a collapse occurs).
Combined and Foul Sewer Systems	N5	Sewer rehab	Sewer rehabilitation to improve asset health.
Combined and Foul Sewer Systems	N6	Property Level Resilience (PLR)	Measures at a property to reduce risk of sewer flooding. For example non return valves, pumps, flood gates.
Combined and Foul Sewer Systems	N7	Enhanced operational maintenance	Pro-active and targetting operation and maintenance programmes
Combined and Foul Sewer Systems	N8	Attenuation	Creation of additional volume to reduce storm impact.
Combined and Foul Sewer Systems	N9	Sewer maintenance	Repair and rehabilitation to maintain levels of service
Surface Water Management	SW1	Surface water source control measures	Managing surface water and maximising its potential for re-use. Opportunities for large-scale source control installation such as retrofitting in highways and around buildings, as well as aligning with ongoing programmes like local authority highway upgrades or major opportunity area developments.
Surface Water Management	SW2	Surface water pathway interception measures	Provision of safe conveyance (as opposed to storage) for floodwater during an extreme rainfall event when the capacity of the sewer network is exceeded.
Surface Water Management	SW3	Surface water attenuation	Regional SuDS e.g. a network of attenuation ponds or wetland solutions across a drainage area which cumulitively provide benefit to capacity in the wastewater network.
Wastewater treatment	W1	Treat or pre-treat wastewater in the network	Chemical dosing prior to flow reaching the treatment works to relieve the load transferred to the STW or to remove contaminants.
Wastewater treatment	W2	Increase treatment capacity	Increase the efficient use of the existing capacity with the existing assets, or invest on new assets to provide additional capacity within site footprint.
Wastewater treatment	W3	Intelligent treatment works operation	Optimisation of existing wastewater assets to improve efficiency at the treatment works
Wastewater treatment	W4	Treatment works rationalisation	Closure of a wastewater treatment works and transfer of flows to a neighbouring wastewater treatment works
Wastewater treatment	W5	Treatment works de-centralisation	Disconection of flows from a drainage area and creation of localised treatment works
Wastewater treatment	W6	Modification of consent / permits	Review and revise permit conditions / operating consents
Wastewater treatment	W7	Catchment management initiatives	These options are concerned with treating either diffuse or point-source non-domestic elements of wastewater before they enter the sewer system, or by treating and controlling the other contributors to the environment.
Wastewater treatment	W8	Effluent reuse	Recycle wastewater treatment works flow within the catchment

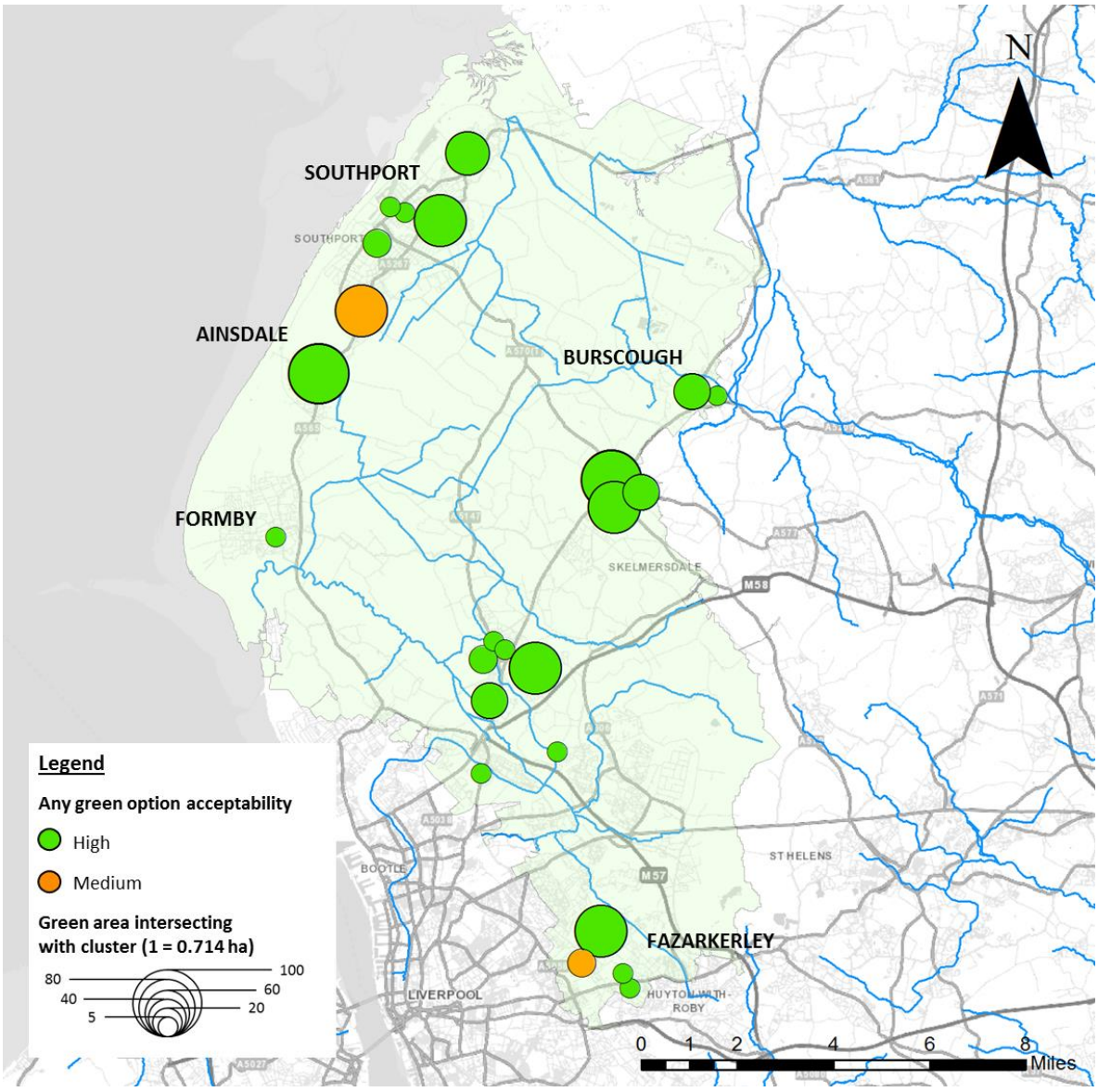
Indirect measures	IM1	Policy	Adaptation of national and local policy for example around growth and planning, surface water management etc.to provide benefit to the delivery drainage and wastewater services
Indirect measures	IM2	Investigate and monitor	Improve understanding of root cause and risk relating to issues idenfied through BRAVA prior to implementing solutions
Indirect measures	IM3	Future technology	Need to await or develop technology or approach

Appendix B: Blue/Green and NFM potential maps

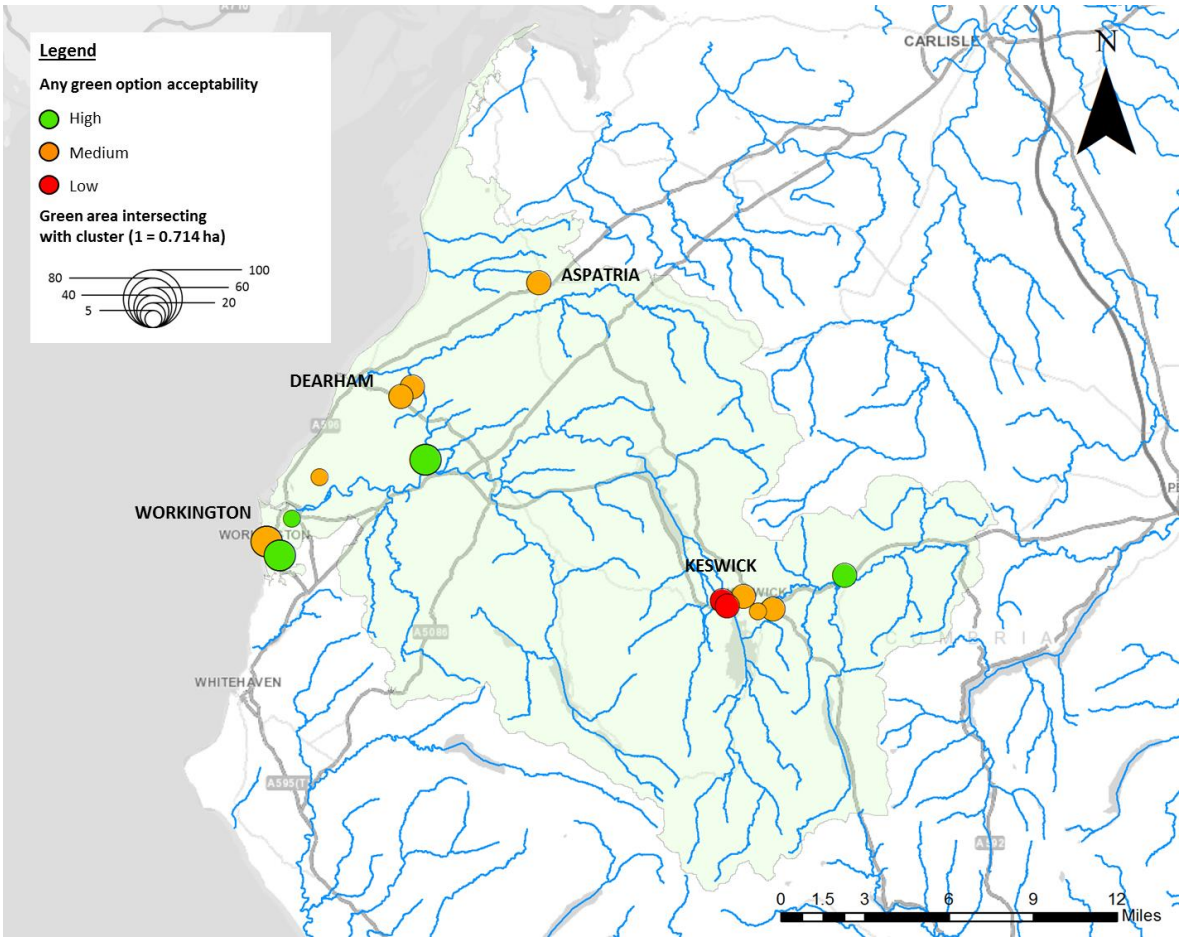
Blue/Green option acceptability

The following maps show areas we have identified as having high potential for options involving blue and green space in each of the catchments. This might involve surface water management and catchment management options.

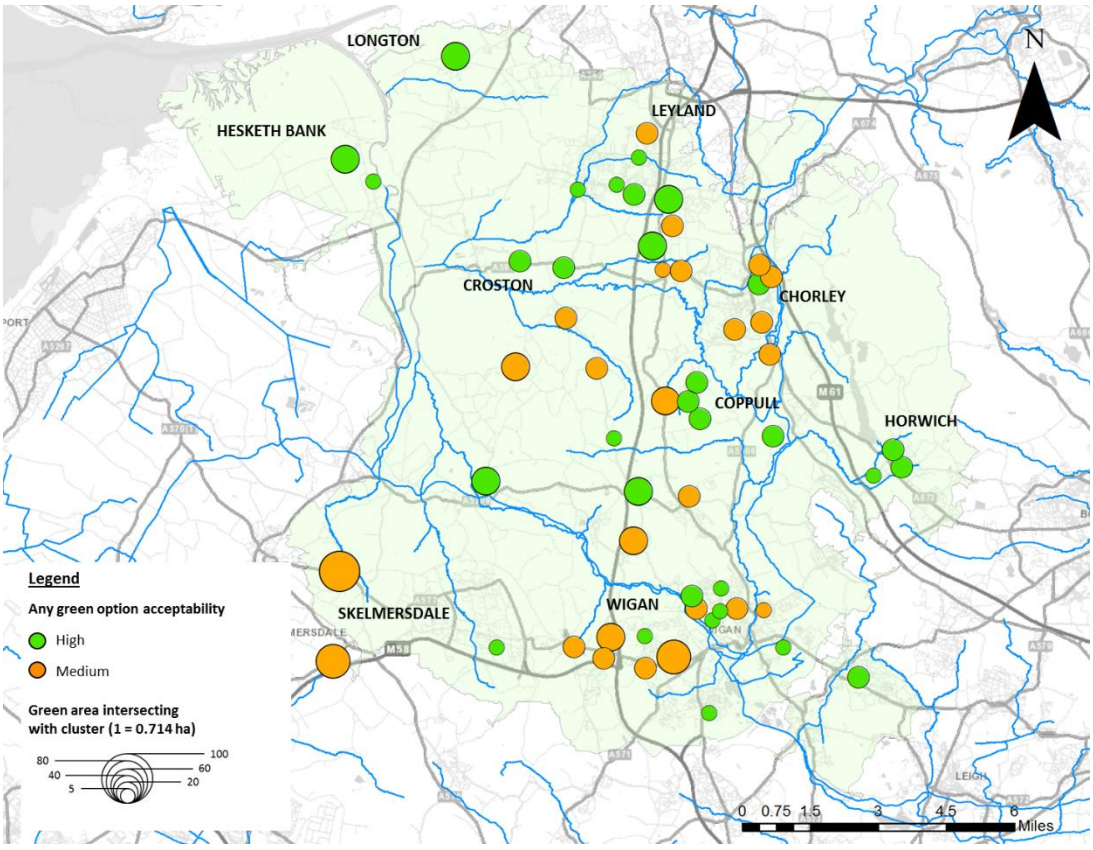
Alt Crossens



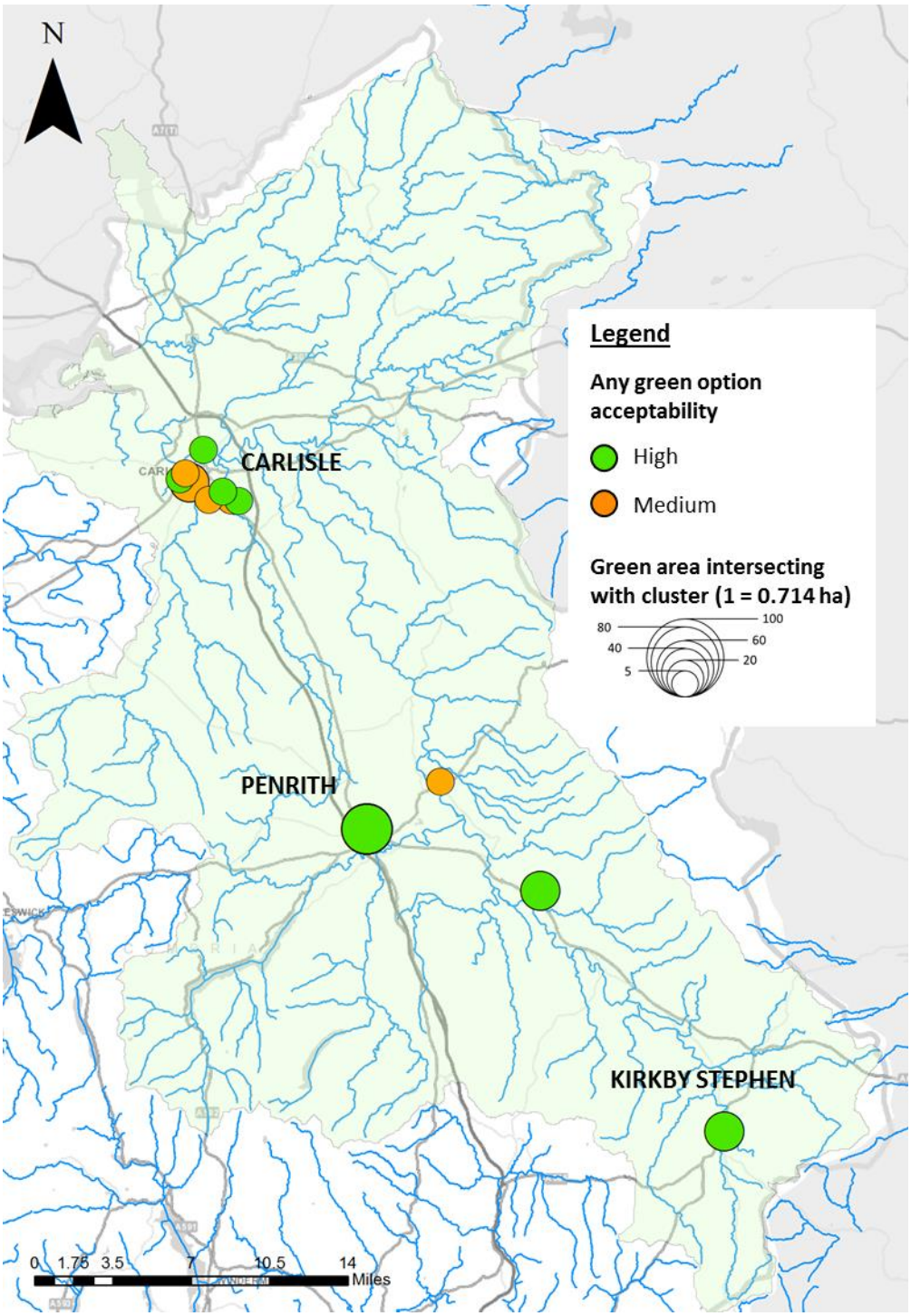
Derwent



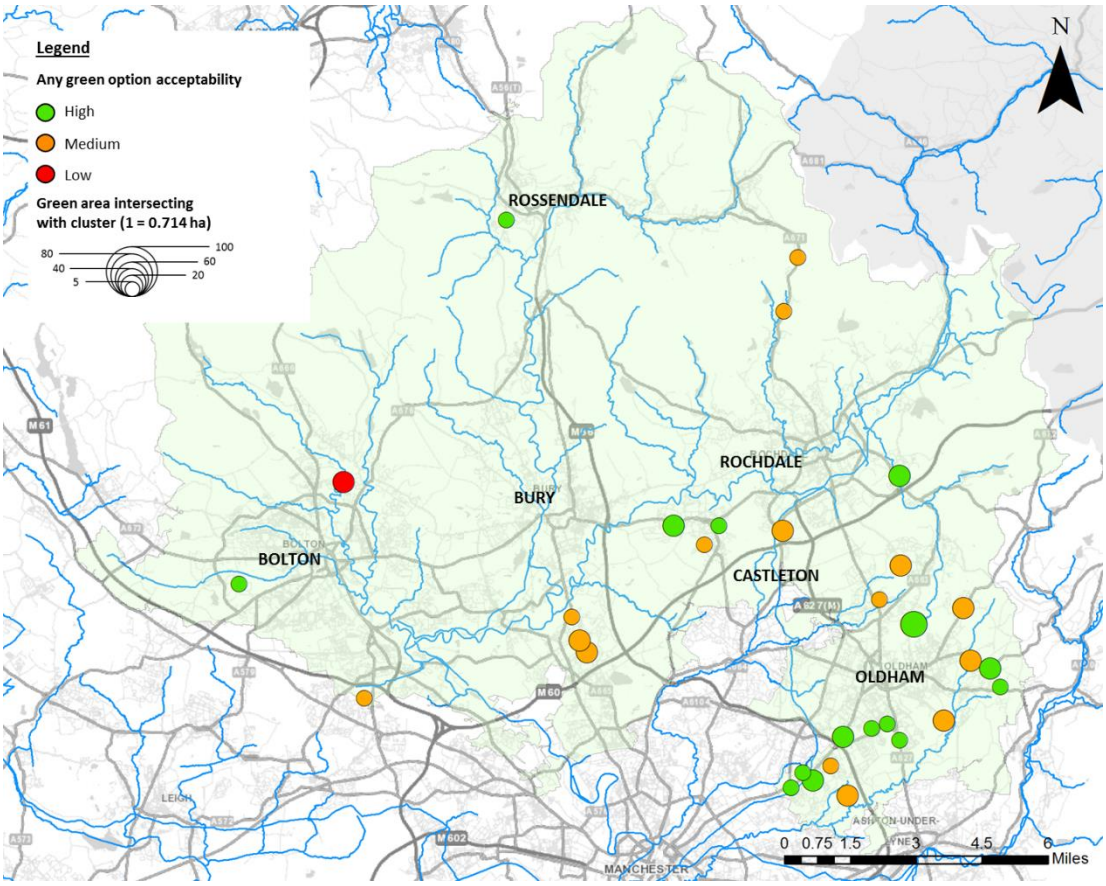
Douglas



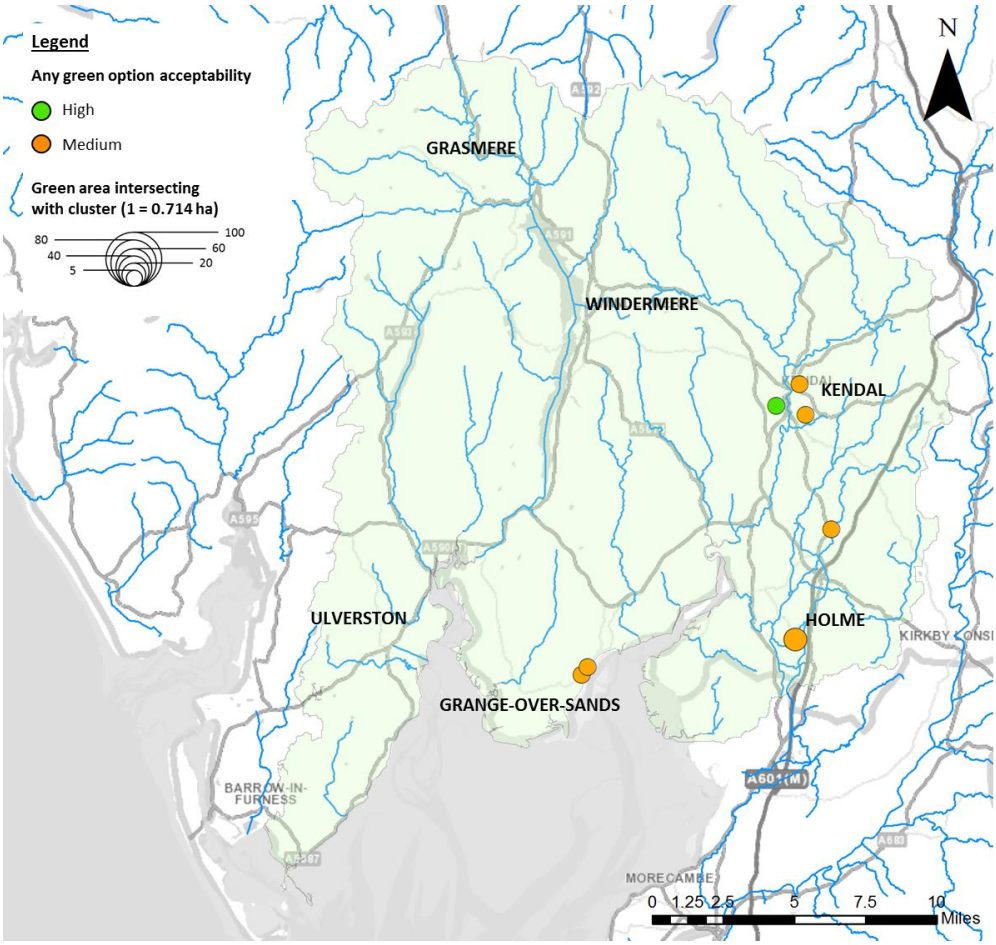
Eden Esk



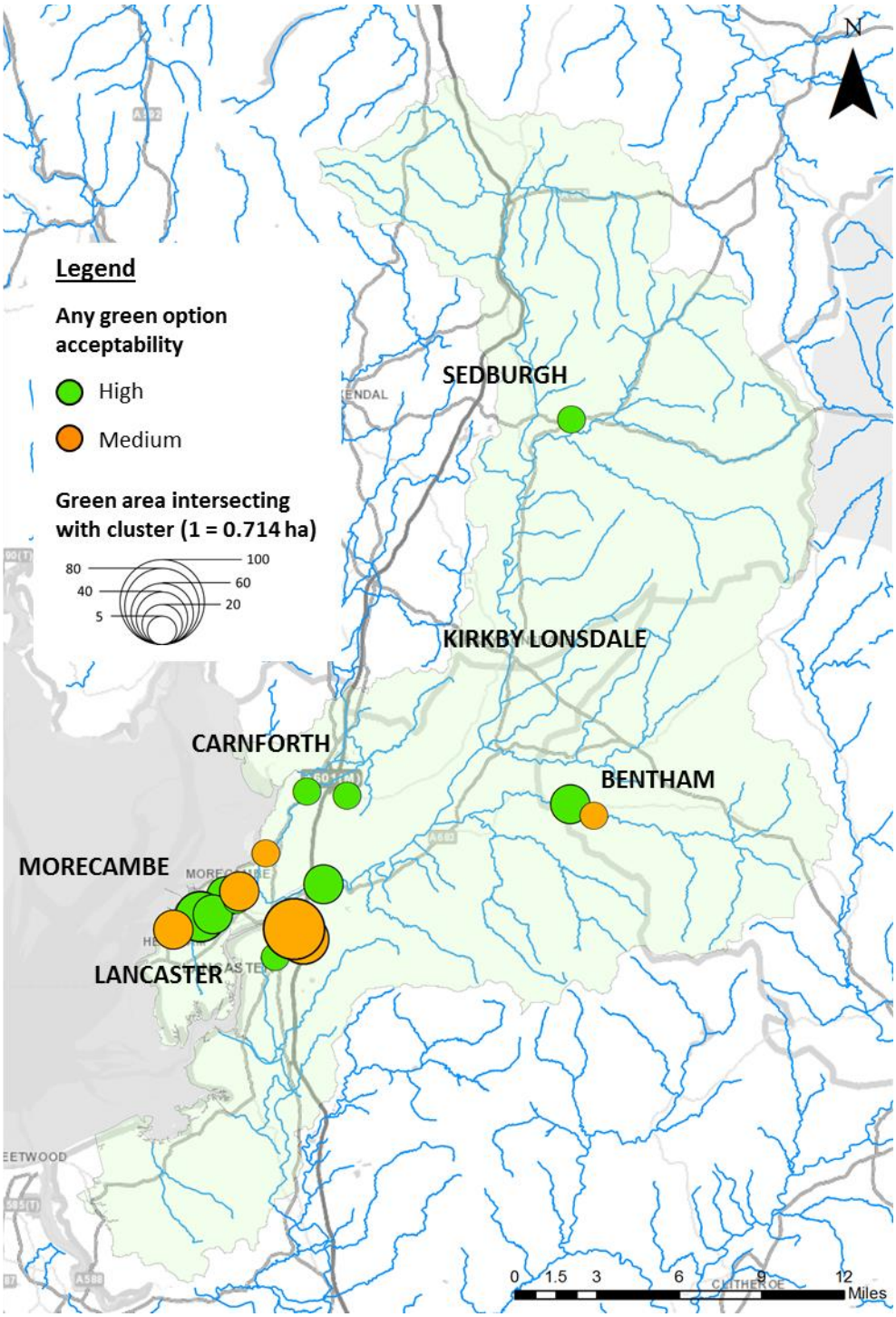
Irwell



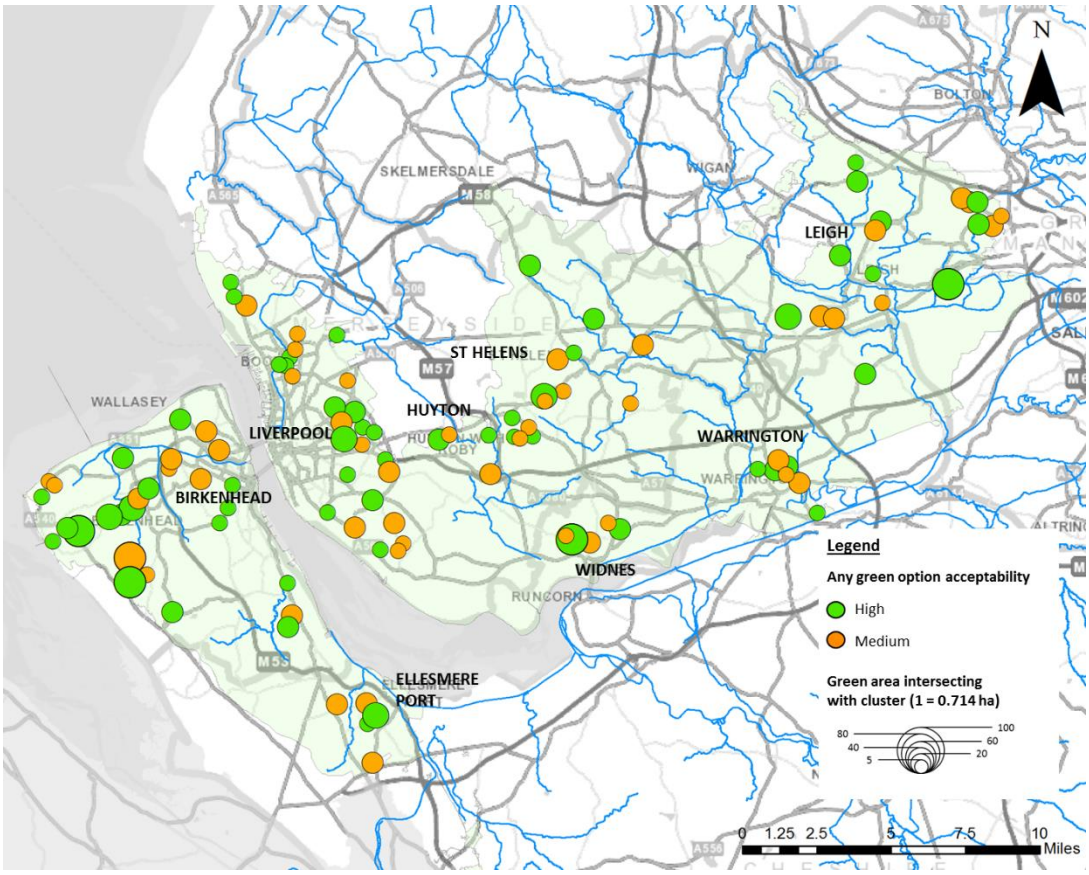
Kent-Leven



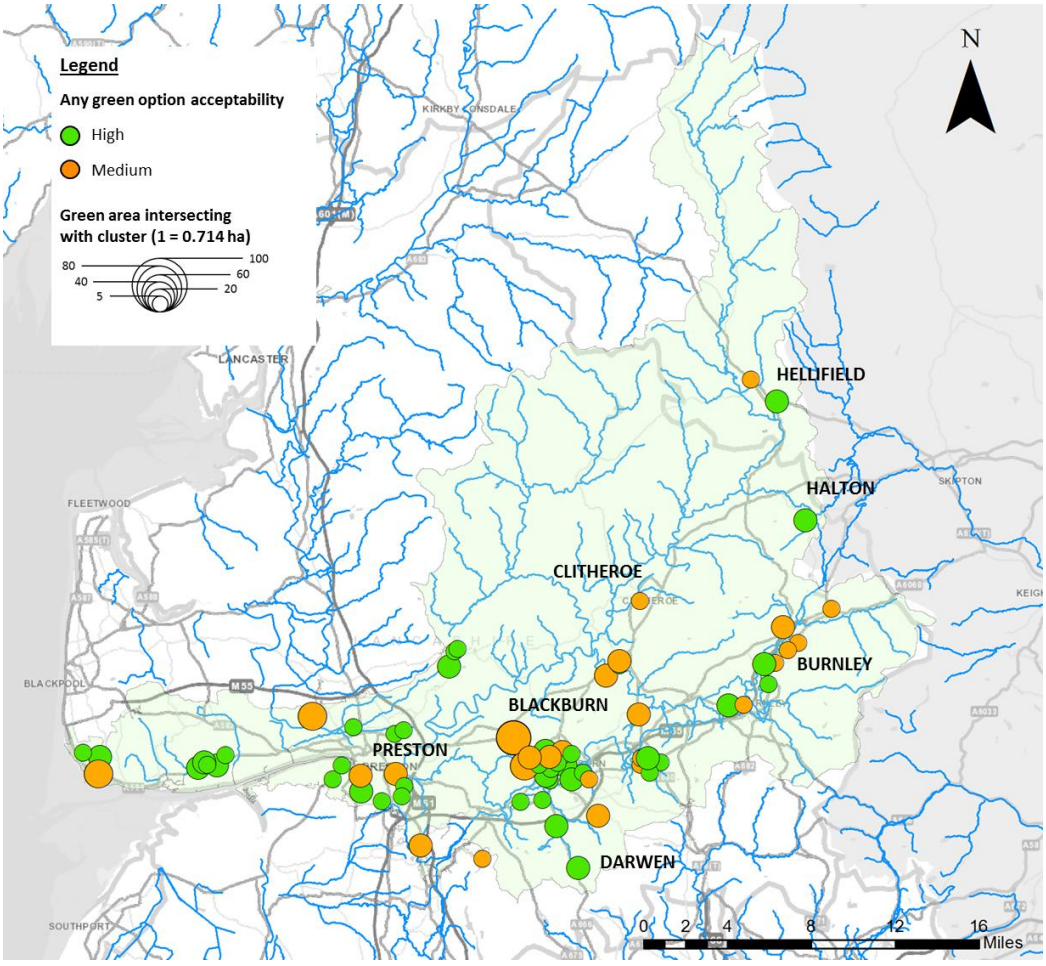
Lune



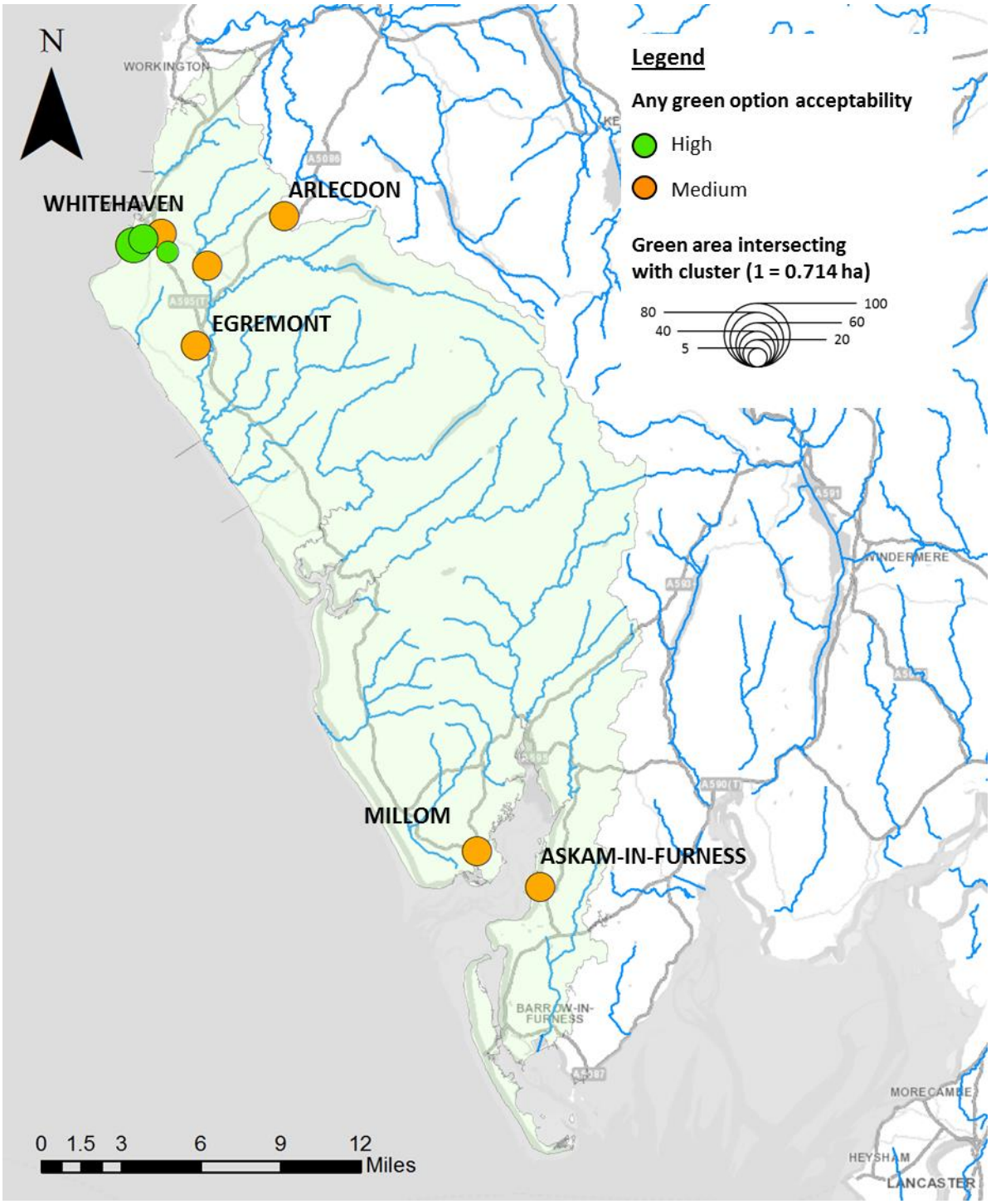
Mersey Estuary



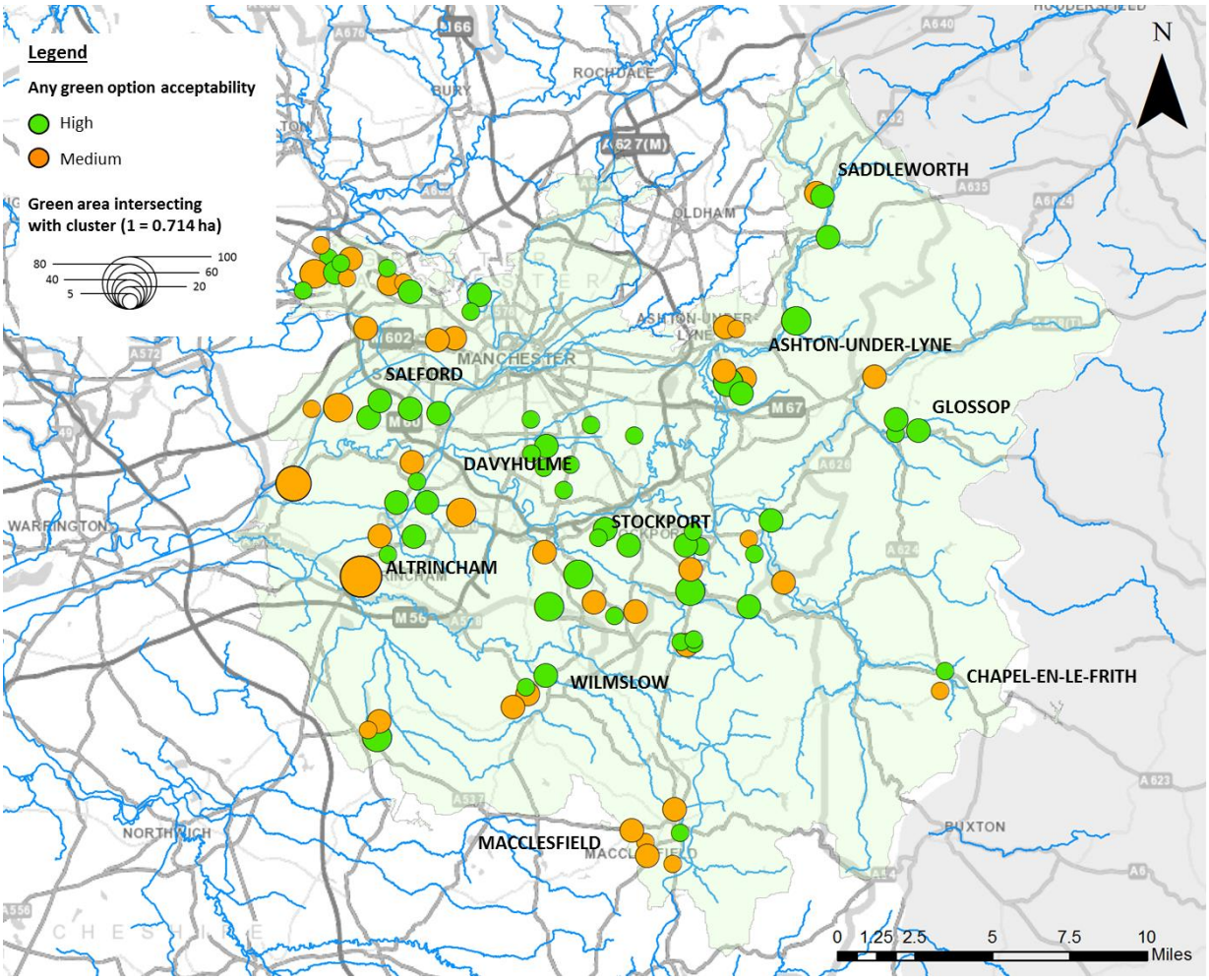
Ribble



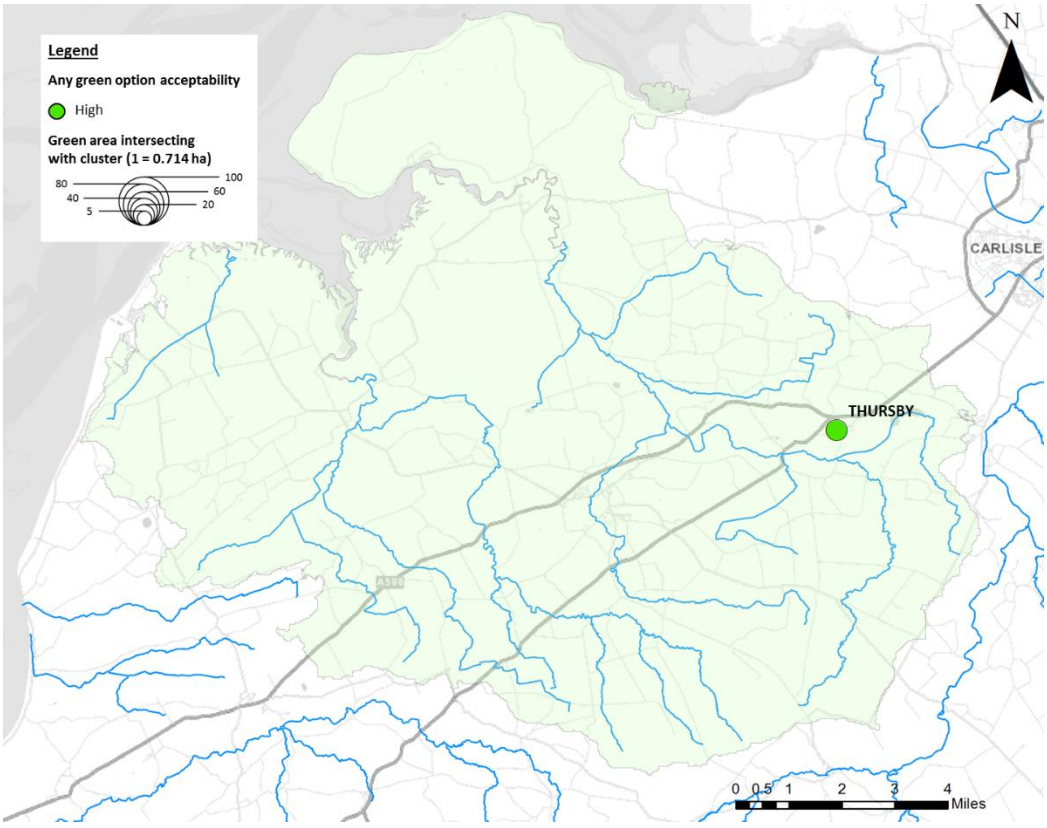
South West Lakes



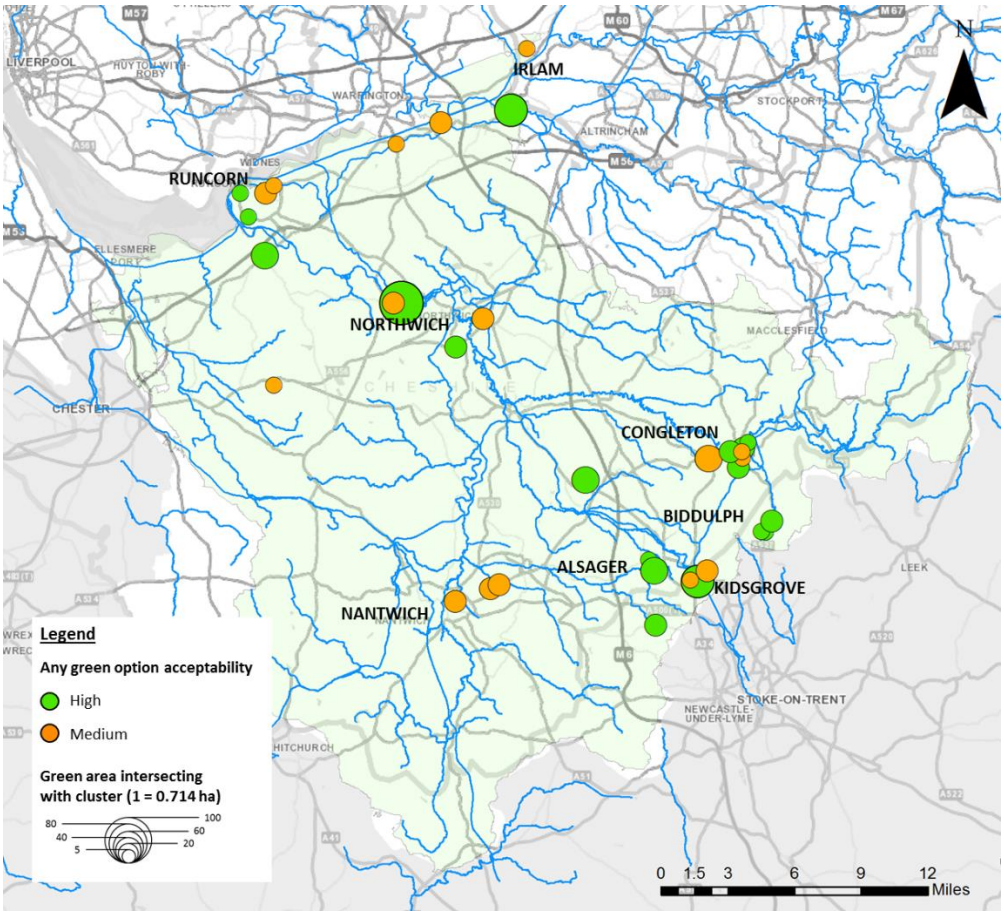
Upper Mersey



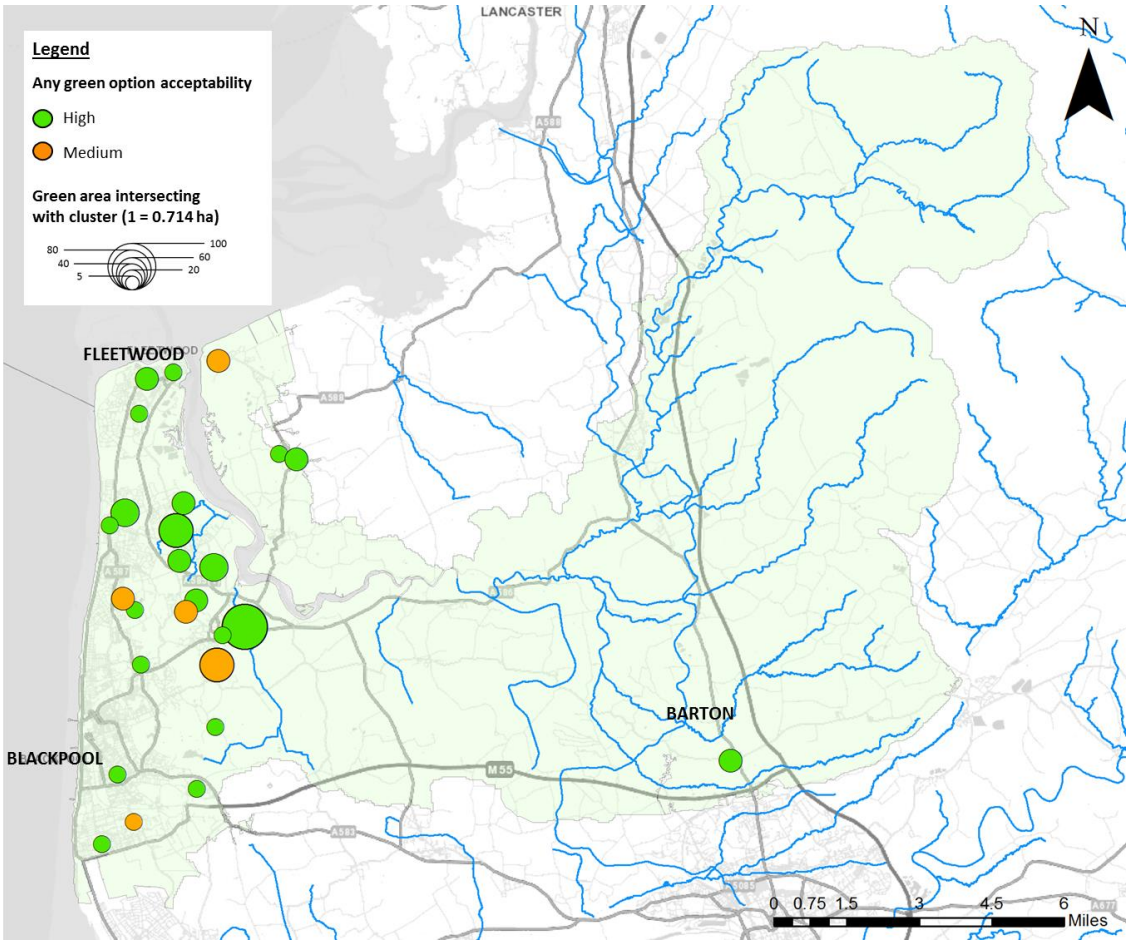
Waver Wampool



Weaver-Gowy



Wyre



NFM potential

The following maps were produced using a combination of United Utilities and Environment Agency datasets. They show areas of land with potential for floodplain, riparian and wider catchment woodland planting located in catchments upstream of United Utilities' drainage areas with more than 10 sites at risk of outfall locking, and that have been identified by the EA as having a high priority for natural flood management. These are opportunity areas where we believe there could be potential to deliver benefit through NFM measures following initial geospatial analysis. Further investigation would be required to fully understand the cost and benefit of any intervention.

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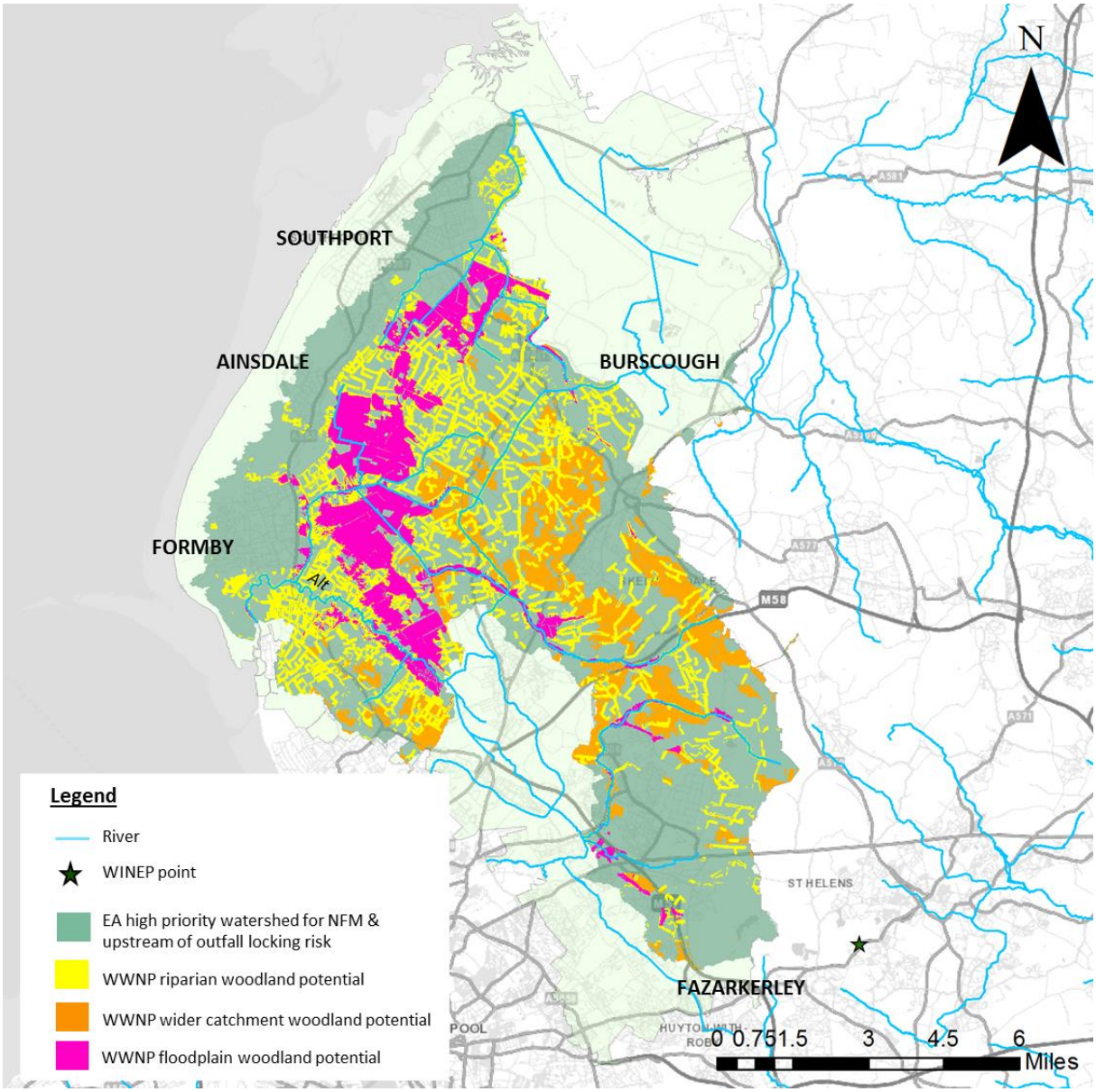
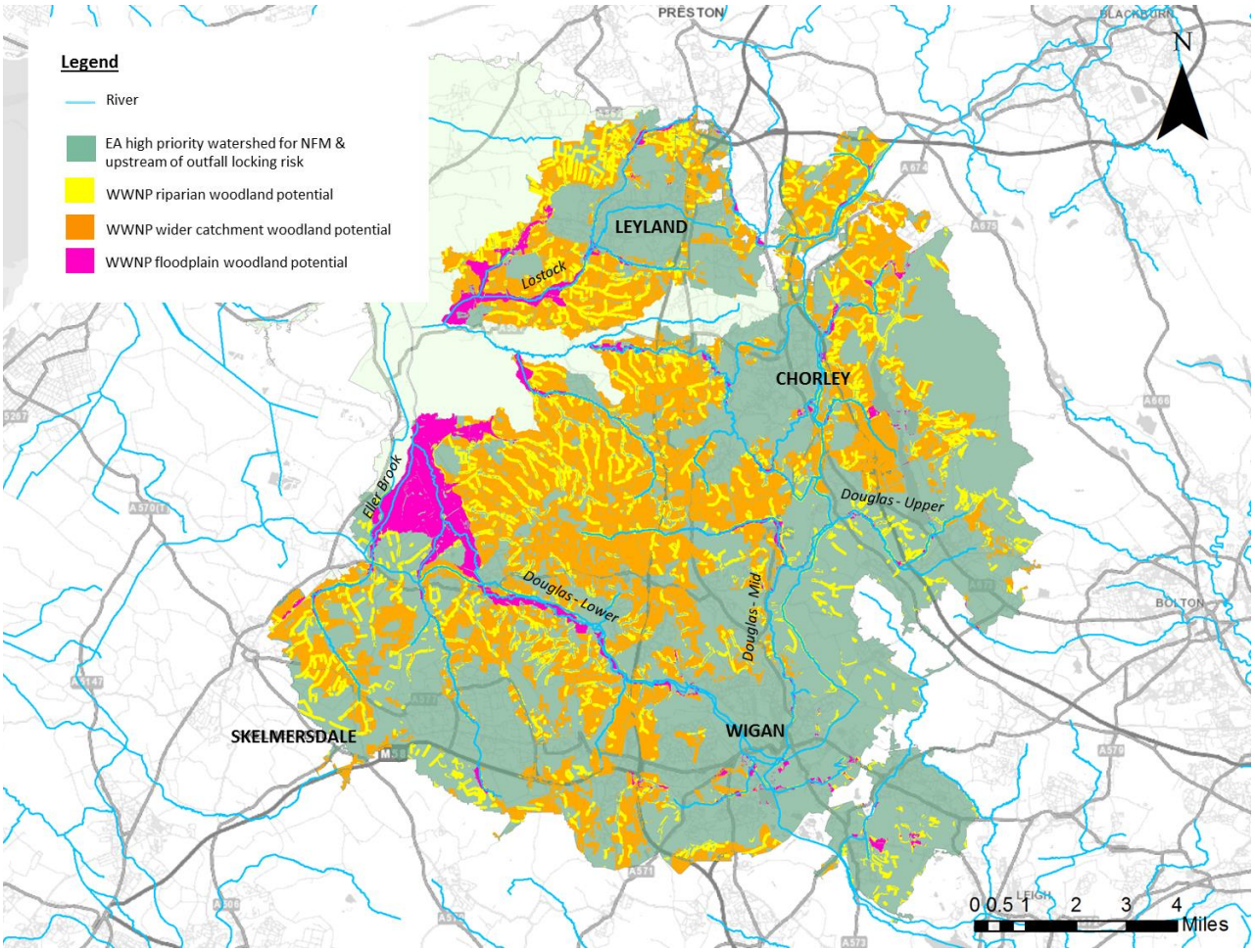


Douglas



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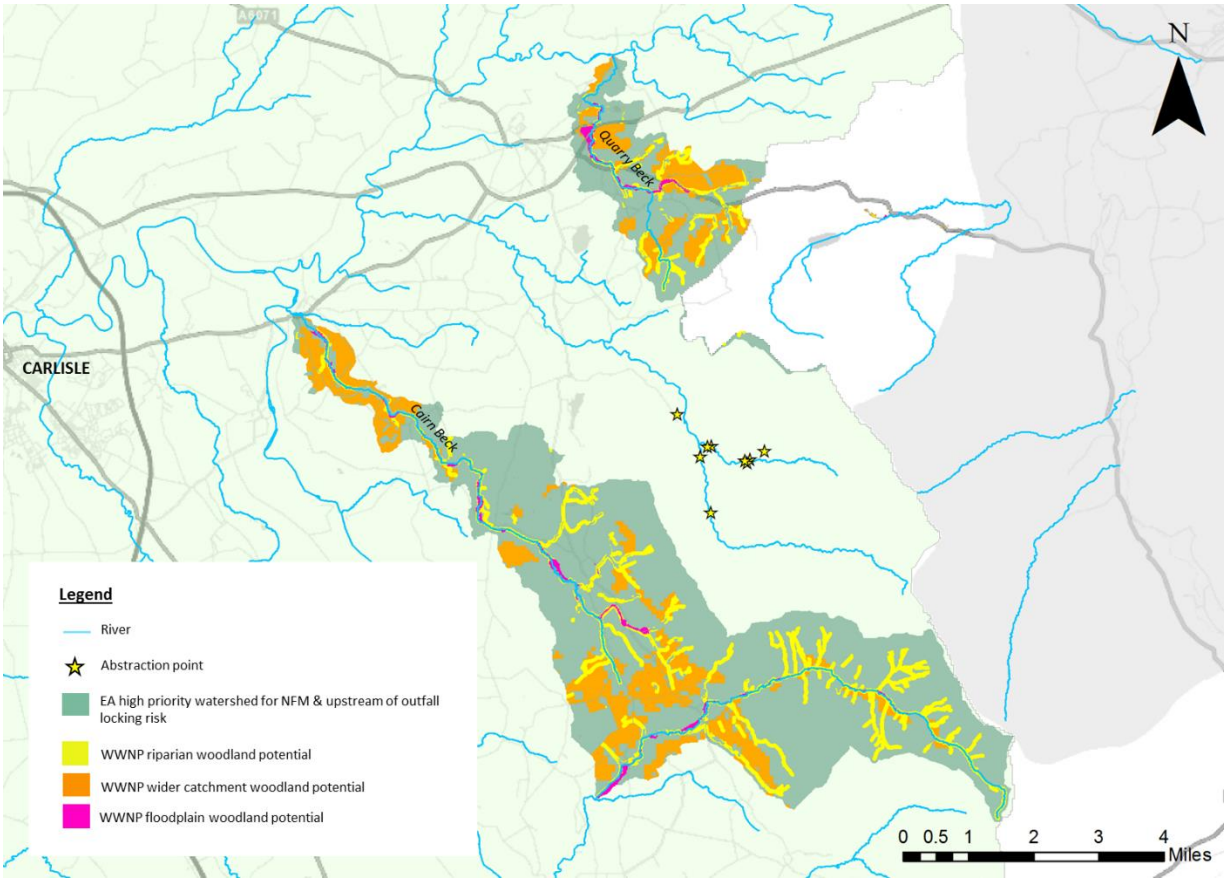

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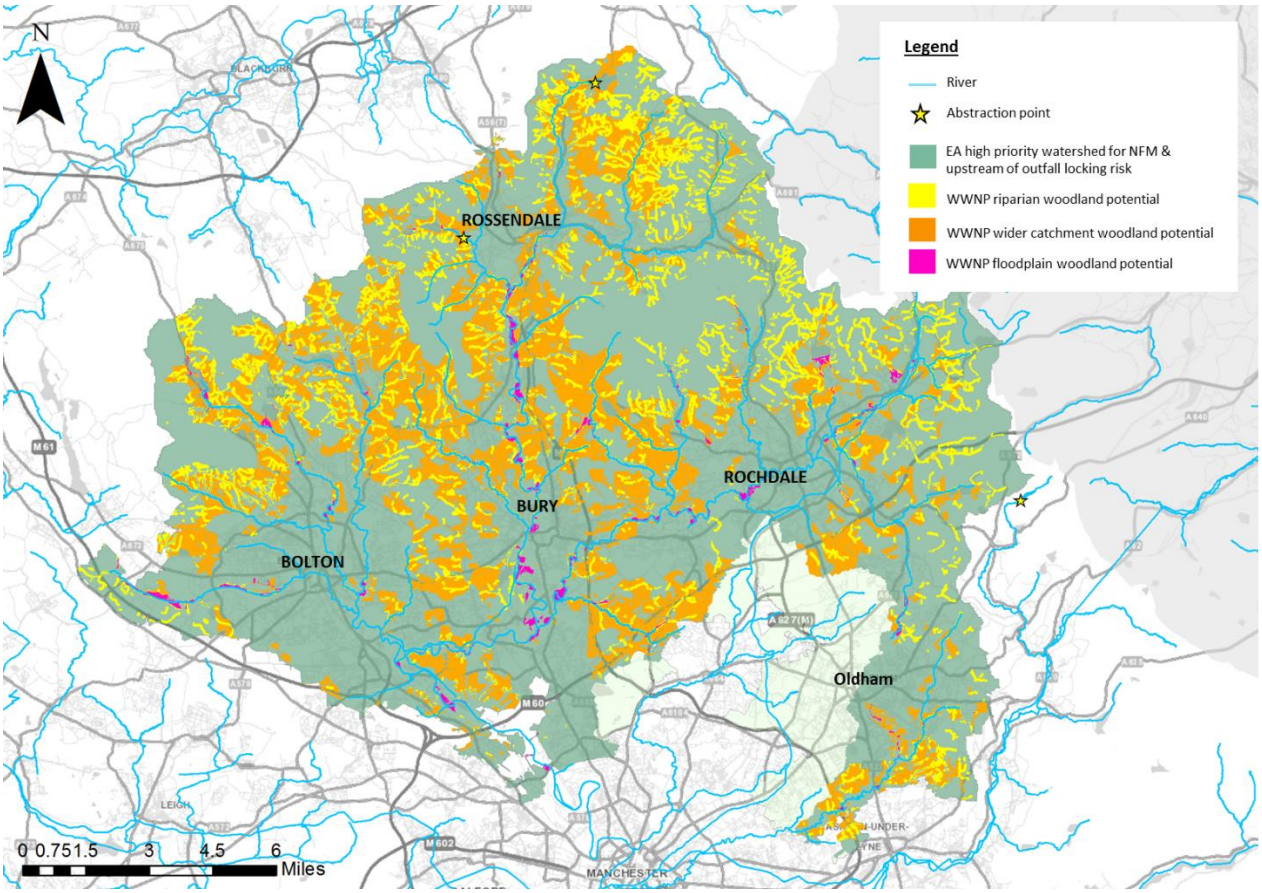
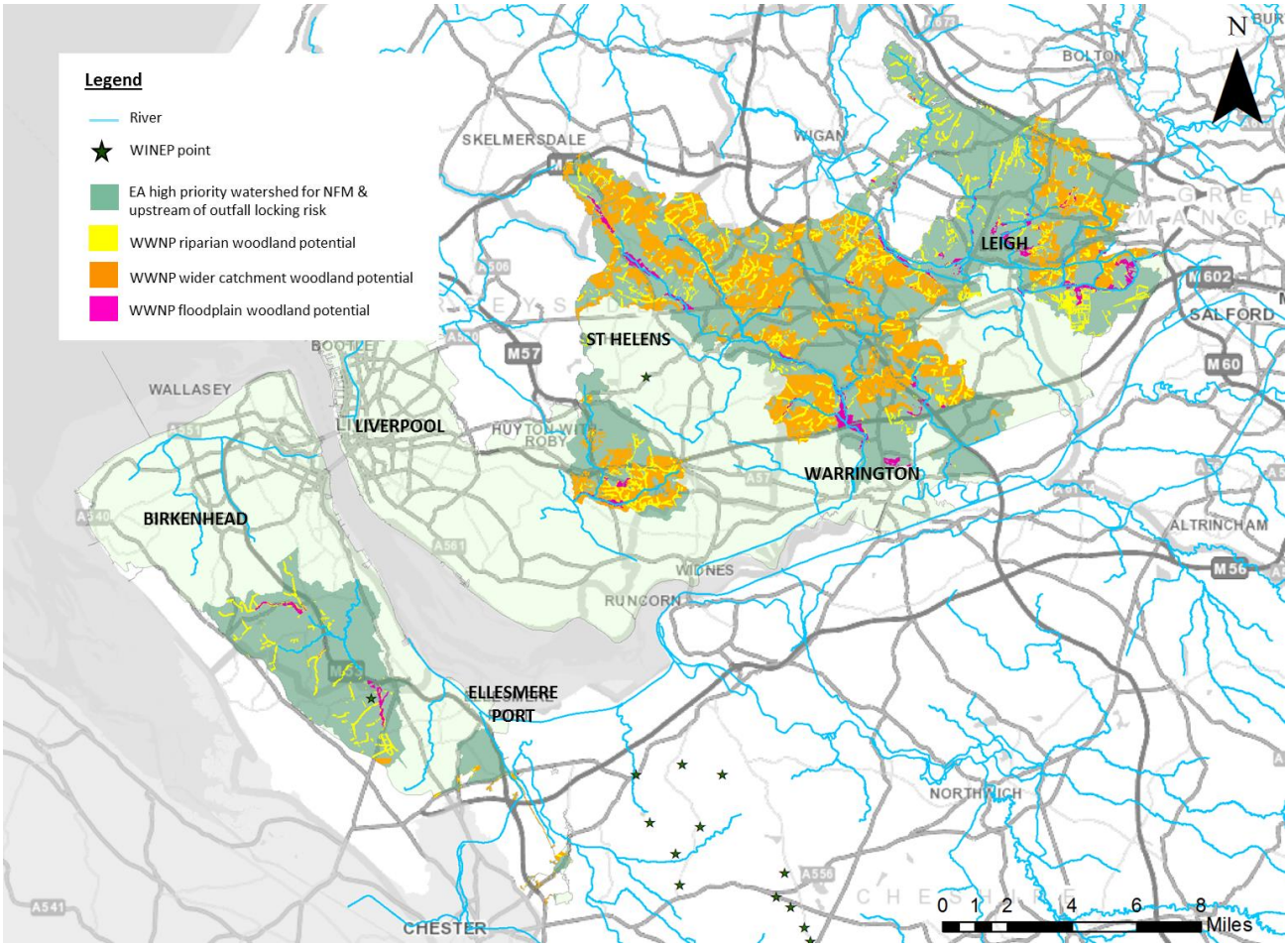
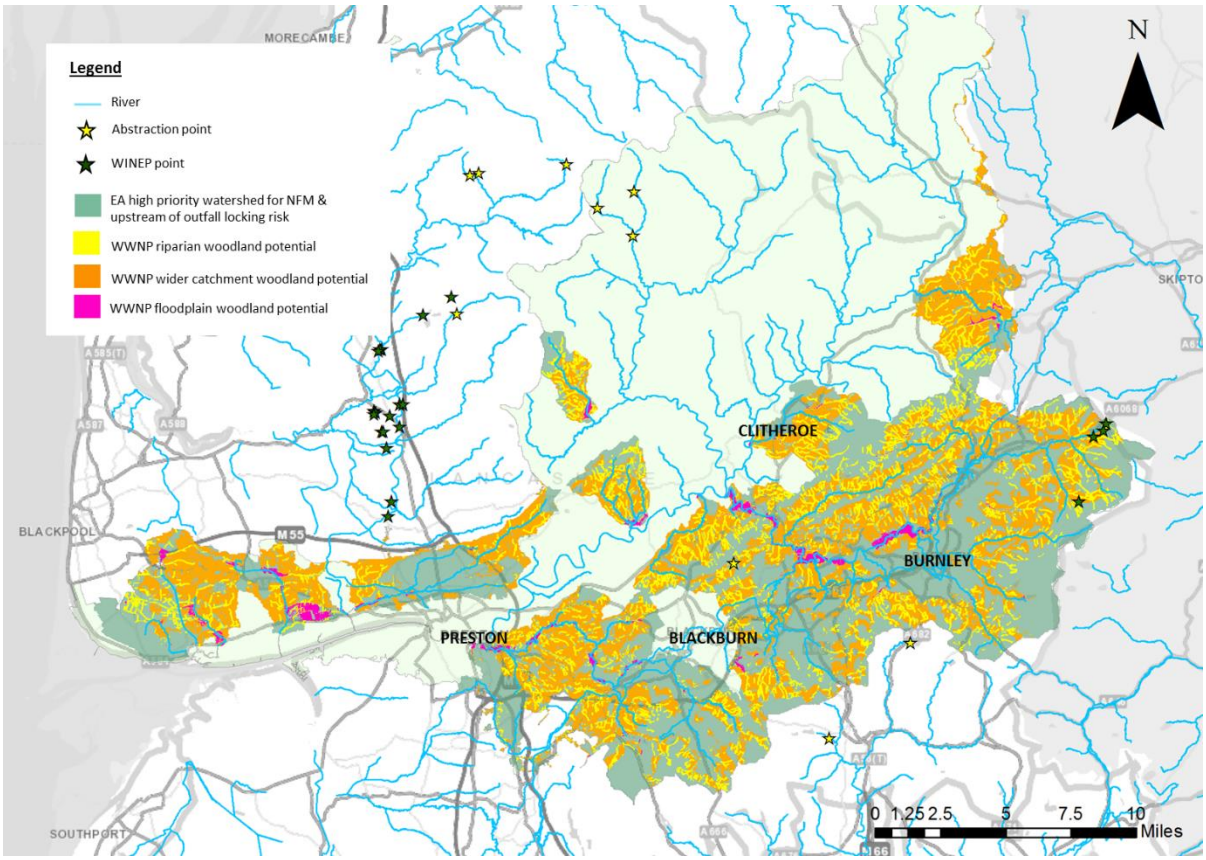


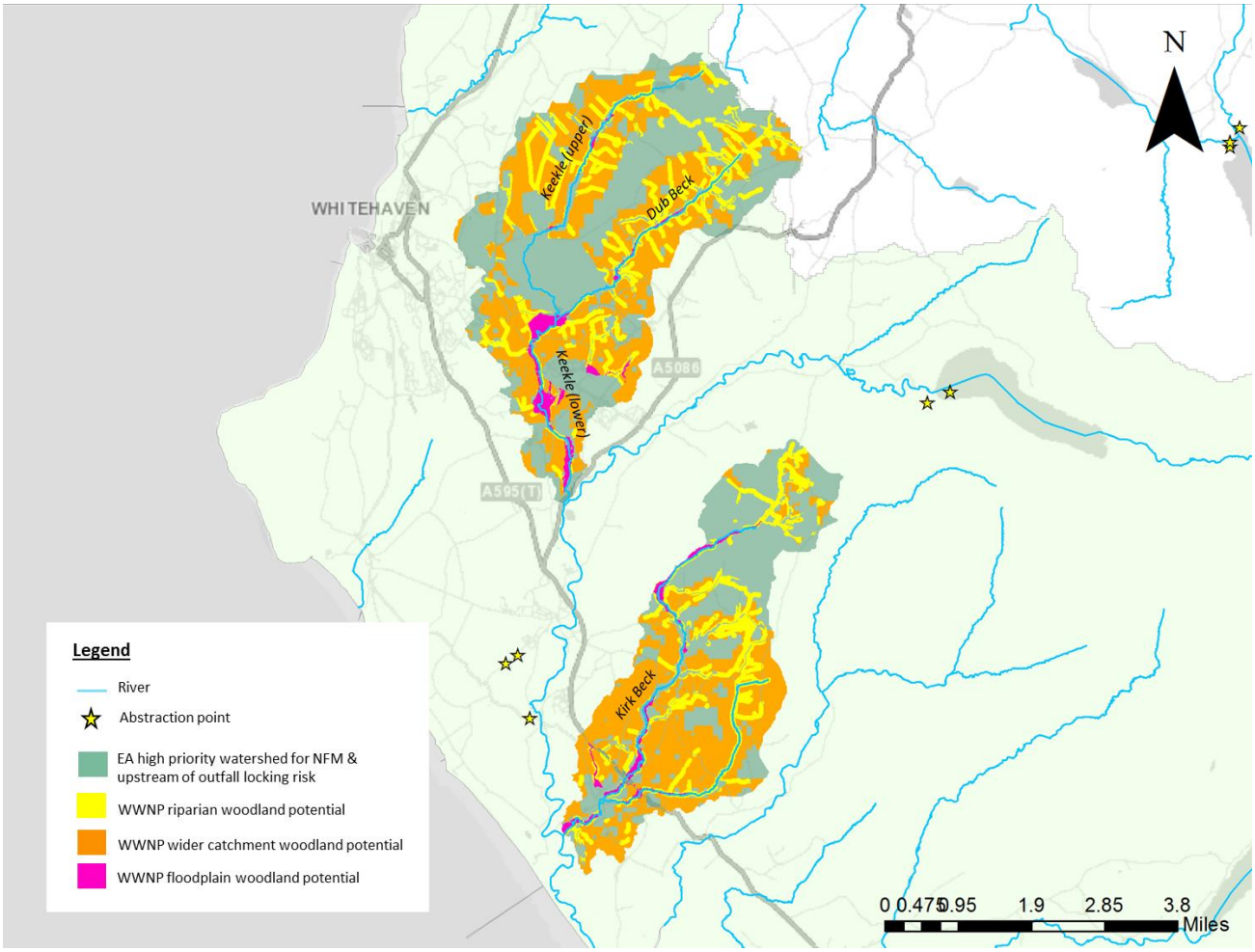
Mersey Estuary



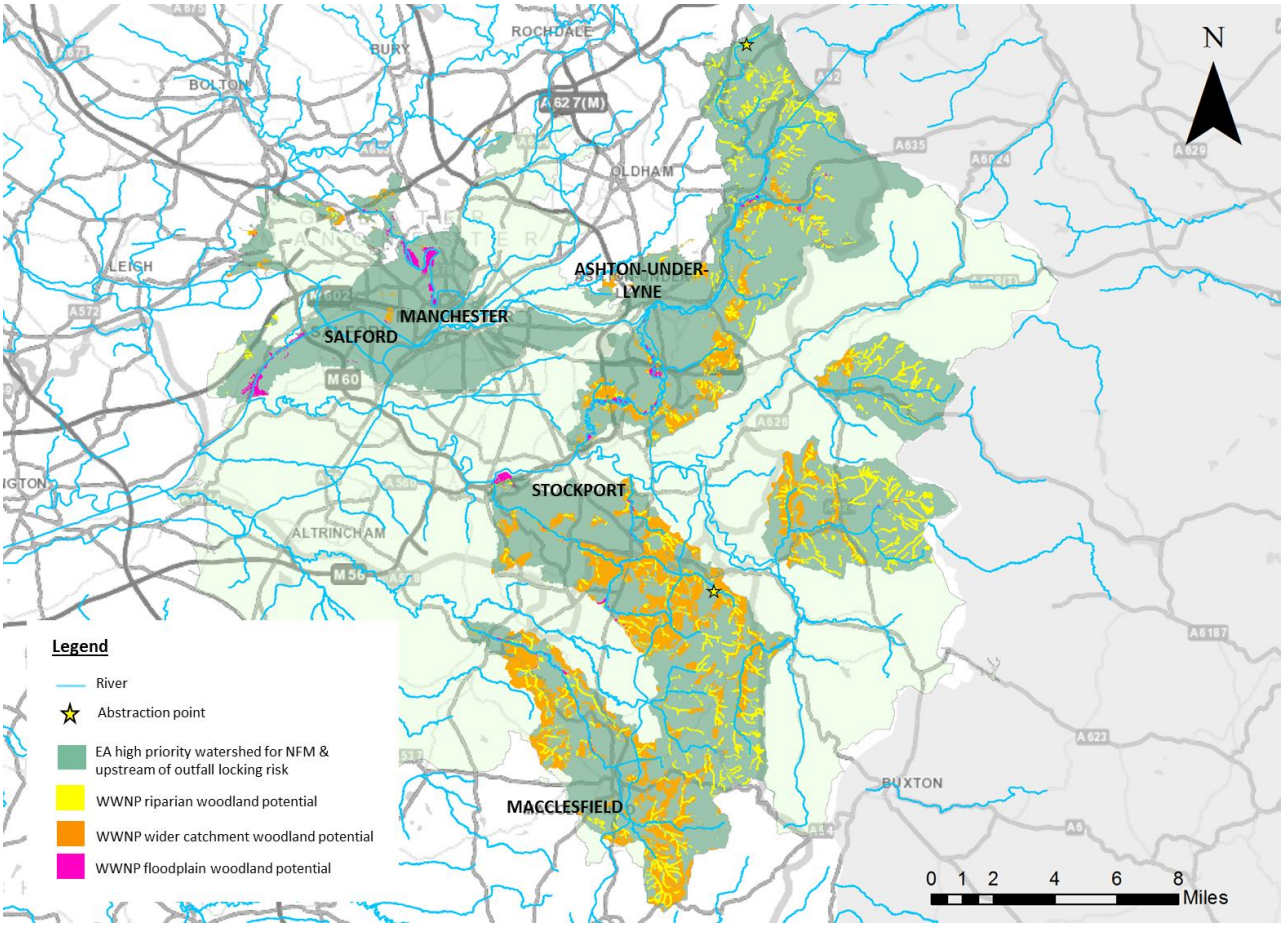
Ribble



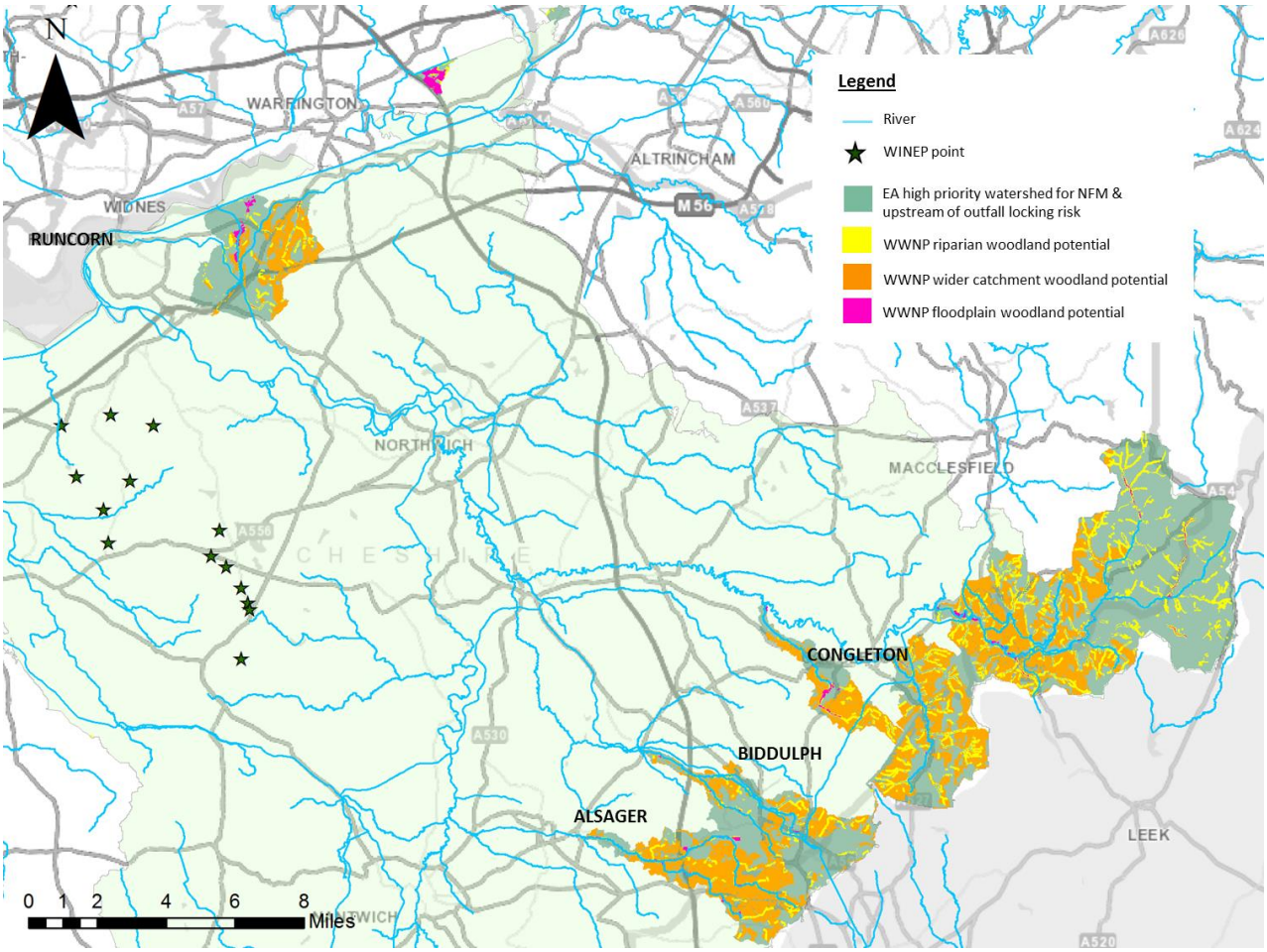
South West Lakes



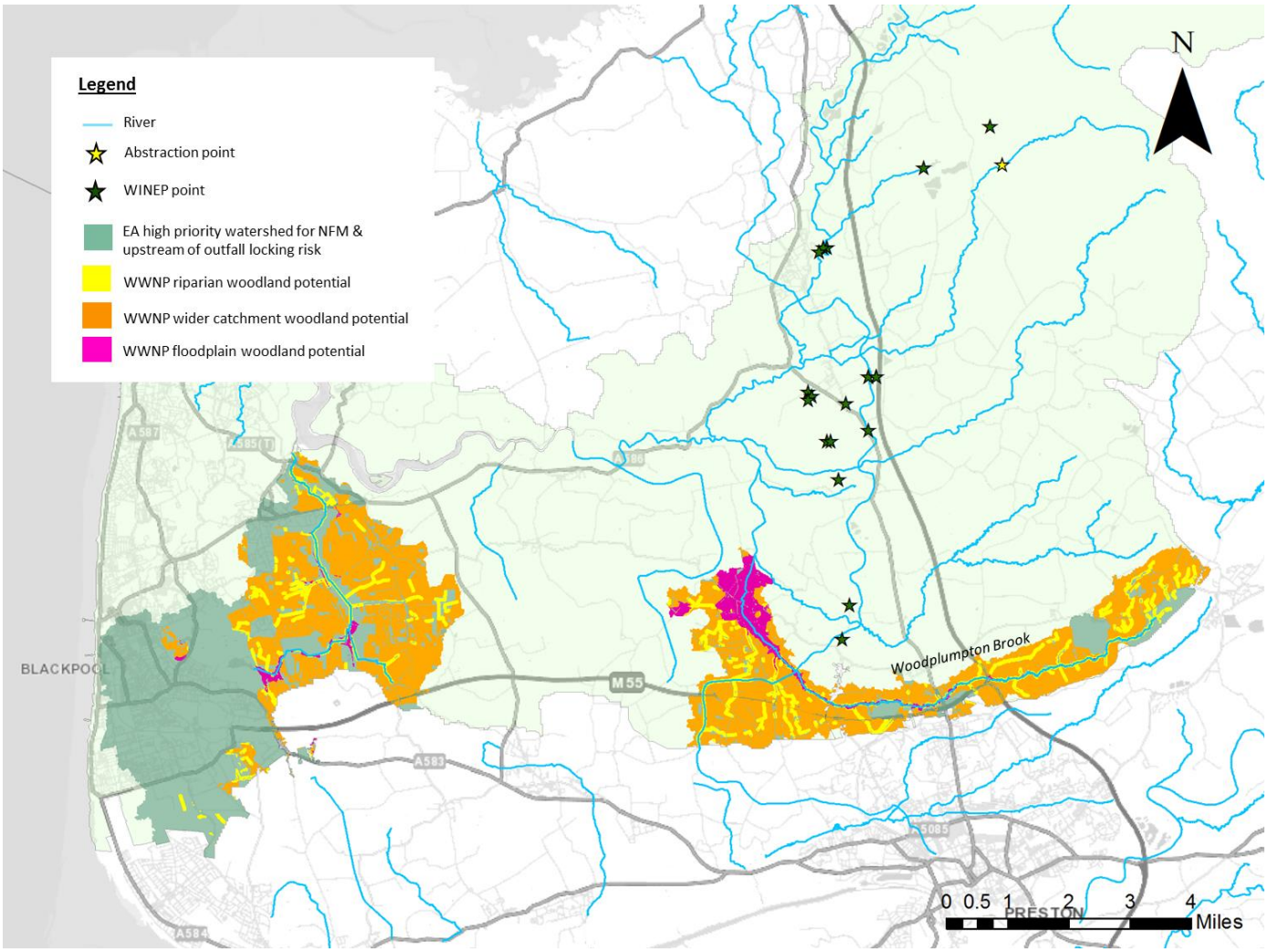
Upper Mersey



Weaver Gowy



Wyre



Appendix C: Secondary screening criteria

Assessment Category
1. Feasibility and Risk
2. Engineering & Cost
3. Performance
4. Operational impact
5. Environmental