Public Consultation on the Designation of Heavily Modified Water Bodies for Ireland's third cycle River Basin Management Plan, Department of Housing, Local Government and Heritage

The Local Authority Waters Programme (LAWPRO) would like to make a submission with the following observations as part of the consultation process on the designation of Heavily Modified Waterbodies for Ireland's third cycle River Basin Management Plan (Water Action Plan 2024).

LAWPRO would like to acknowledge work carried out by the EPA, Department of Housing, Local Government and Heritage and National Hydromorphology Expert Group members in the process of characterisation and designation tests to assign Heavily Modified Waterbodies (HMWBs) in Ireland.

LAWPRO acknowledges that HMWBs are waterbodies that have had their physical conditions changed for the purpose of the specified use. Physical modifications in HMWBs are extensive and prevent the waterbody from achieving Good Ecological Status (GES). In these waterbodies, restoration options are not feasible (without impacting on the specified use) and to acknowledge this, HMWB designation aims at achieving Good Ecological Potential (GEP). The approach for establishing Good Ecological Potential for Irish HMWBs is to ensure mitigation (rather than restoration) measures are implemented to minimise the impact of hydromorphological changes as far as possible and to ensure that elements that are both sensitive and not sensitive to hydromorphological changes are at Good (or higher) conditions. This means that elements that are not sensitive to hydromorphological modifications still need to achieve standards consistent with Good Ecological Status. How elements sensitive to hydromorphological changes are to be assigned within the Good Ecological Potential is still to be determined within the designation process.

This consultation is specifically on the designation steps (Steps 7-9) of the Heavily Modified Water Body Designation. In this submission LAWPRO has additionally provided some commentary on the earlier steps as these comments provide the context for the comments on the further designation steps.

1. Step 7: Designation test 4(3)(a)

Step 7 provides for the identification of the restoration measures to achieve GES and Step 7.2 considers whether the restoration measures have significant adverse effect on the specified uses. The pressure owners have been given this task to identify such restoration measures. There is limited information on the process undertaken by each stakeholder, more detail would be useful even though they are best placed to identify such measures.

Step 7.3 requires the wider environmental impact (from the restoration measures) to be assessed. We acknowledge benefits of the specified uses, and this step lists them for each HMWB. However, as no measures have been identified in this process, it is not clear whether impact of the restoration measure on the benefits of the specified use were assessed. This assessment should also consider wider environment including biodiversity, climate and water quality.

2. Step 8: Designation test 4(3)(b)

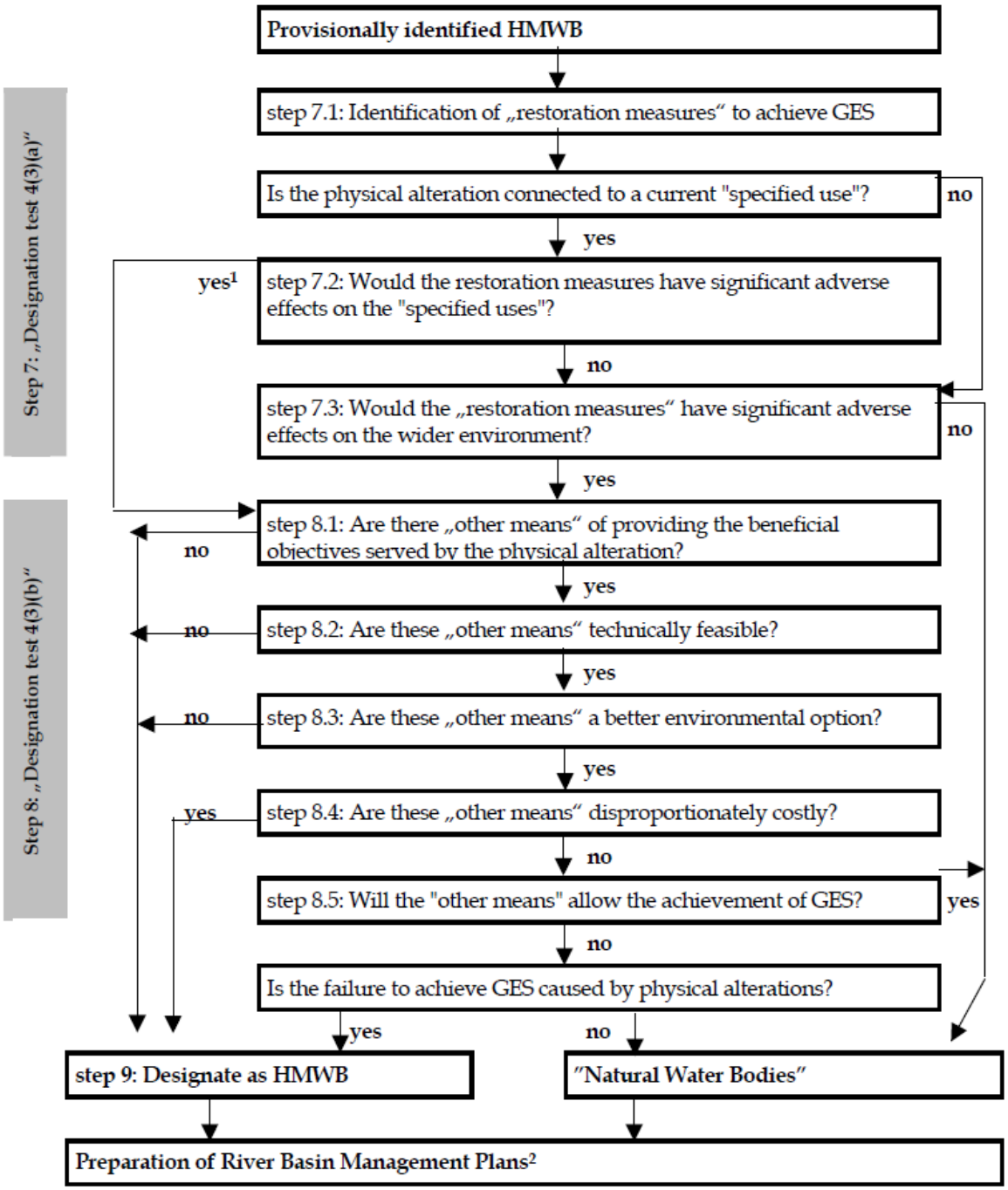
Step 8.1: It is accepted that in many cases there are no other means to provide the specified use, however, it is stated that in some cases drinking water supplies may be replaced by alternatives following further assessment. The timeline for the assessment should be made clear. The decision-making process and technical information should be provided on the alternative options that were considered, which would allow for subsequent steps to be fully applied. Some 'other means' may fail at the subsequent steps due to not being technical feasible etc. but should be listed.

Step 8.2, 8.3, 8.4 and 8.5: Other means are not identified for each of the specified uses so it is difficult to determine if not technically feasible or disproportionately costly or a better environmental option exists, or would other means allow GES to be achieved.

It is accepted that the pressure owners are best placed to make this determination but clarity on the decision-making process would be helpful.

3. Step 9: Designation as HMWB

As mentioned later in the document, the review of the designated waterbodies in each cycle is a welcome process, as more information is made available waterbodies may either be added to the HMWB designation or removed. It is understood that this iteration may be conservative due to insufficient information being available. Ireland should seek to gather this information in advance of the next cycle designation.


Step 7: „Designation test 4(3)(a)"
Step 8: „Designation test 4(3)(b)"
Provisionally identified HMWB
step 7.1: Identification of „restoration measures" to achieve GES
Is the physical alteration connected to a current "specified use"?
no
yes
yes[1]
step 7.2: Would the restoration measures have significant adverse effects on the "specified uses"?
no
step 7.3: Would the „restoration measures" have significant adverse effects on the wider environment?
no
yes
step 8.1: Are there „other means" of providing the beneficial objectives served by the physical alteration?
no
yes
no
step 8.2: Are these „other means" technically feasible?
yes
no
step 8.3: Are these „other means" a better environmental option?
yes
yes
step 8.4: Are these „other means" disproportionately costly?
no
step 8.5: Will the "other means" allow the achievement of GES?
yes
no
Is the failure to achieve GES caused by physical alterations?
yes
no
step 9: Designate as HMWB
"Natural Water Bodies"
Preparation of River Basin Management Plans[2]

While Steps 1 - 6 are not the subject of this consultation the following commentary provides some context for the above comments and the next designation process for the 4th cycle.

4. Waterbodies selection for Heavily Modified Waterbodies designation

4.1 Specified use

'The specified uses, and the criteria for designation, are set out in Article 4(3) of the Directive which states that a waterbody can be designated as a HMWB if:

(*a) the changes to the hydromorphological characteristics of that body which would be necessary for achieving Good Ecological Status would have significant adverse effects on: (i) the wider environment; (ii) navigation, including port facilities, or recreation; (iii) activities for the purposes of which water is stored, such as drinking-water supply, power generation or irrigation; (iv) water regulation, flood protection, land drainage, or (v) other equally important sustainable human development activities.*

(b) the beneficial objectives served by the artificial or modified characteristics of the water body cannot, for reasons of technical feasibility or disproportionate costs, reasonably be achieved by other means, which are a significantly better environmental option. Such designation and the reasons for it shall be specifically mentioned in the river basin management plans required under Article 13 and reviewed every six years. [1]

LAWPRO acknowledges significant amount of work carried out to characterise waterbodies within the designation process, including analysis of feasibility of restoration measures versus adverse effect on the wider environment for the specified use (Water storage and regulation; Flood protection; Urban environment; Arterial drainage and Navigation)), and we acknowledge designation is an iterative process.

LAWPRO notes that a substantial proportion of the proposed HMWBs are to be designated due to the presence of arterial drainage scheme. LAWPRO also acknowledges that, in parallel to the heavily modified waterbody designation, '*the Government has mandated a national Land Use Review, which will trigger a review of future drainage needs and practices'*[2]. This will include the review of the Arterial Drainage Act. In that respect, LAWPRO has recently made a submission on the consultation on *the Draft Arterial Drainage Maintenance Activities 2022-2027 and associated SEA Environmental Report and AA Natura Impact Statement Report* (please see enclosed document), where we have highlighted the need to review arterial drainage maintenance works to determine the positive benefits of

[1] Environmental Protection Agency, 2022. *Review of Ireland's Heavily Modified Water Body Designations for the Third Cycle River Basin Management Plan*.

[2] Department of Housing, Local Government and Heritage, 2024. *Water Action Plan 2024: A River Basin Management Plan for Ireland*. Available at: www.gov.ie/RBMP.

continuing maintenance works versus wider societal, biodiversity and climate related impacts.

Therefore, LAWPRO acknowledges that in time, with the upcoming review of the Arterial Drainage Act that will inform Land Use Review and support new Nature Restoration Law, our understanding of the beneficial use (and consequently further designation tests steps (e.g., Step 7.3 - *would restoration measures have significant adverse effect on the wider environment*) may change and if the beneficial use can no longer be demonstrated, there is scope to de-designate and restore some waterbodies. Regardless of the review outcome, LAWPRO would hope that with the new Nature Restoration Law, HMWBs have an opportunity for the full restoration process.

LAWPRO also acknowledges that currently full restoration for HMWB may not be feasible at this point of time (considering potential impact on the specified use, environment or disproportional cost). However, we note that passive restoration measures (particularly for channelised rivers) can be effective and cost-reducing, as shown by Inland Fisheries Ireland research. EPA is also in development of a framework for river restoration measures which considers passive measures (e.g., cessation of channel maintenance) in some of the scenarios. We would recommend that more case studies within HMWBs, where restoration measures are implemented, should be carried out now in advance of the fourth WFD cycle, so that the process for Steps 7 - 8 of the HMWB designation are more informed for future review of the designations.

We acknowledge that currently, at the 3rd WFD cycle, full restoration for HMWBs may not be feasible and therefore we welcome the approach where HMWBs need to be mitigated against their impact as far as possible (without impacting specified use). Our recommendation would be to ensure that there are adequate resources invested to apply mitigation measures within the HMWBs. Measures that can be applied for HMWBs are known ('EU mitigation measures library for surface waters', and their review under the EPA technical review of HMWB designation (Appendix 4))[1]. There is an urgency now to ensure guidance and resources are in place to implement these measures.

Additionally, LAWPRO notes that only the OPW arterial drainage scheme was considered under arterial drainage specified use for HMWB designation and Local Authority-led drainage schemes as well as private schemes were not considered due to poor records and data availability. LAWPRO would like to note that Ireland should aim to fill this knowledge gap and review drainage schemes other than OPW-led including their impact on the environment. Where evidence exists (for example through local catchment assessment) waterbodies impacted by these schemes should be included in future HMWBs designation, which would provide for the implementation of mitigation options at these waterbodies. This would be particularly important for the private channel drainage practices where currently no guidance exist regarding best environmental practice for the works.

4.2 Ecological Status

Step 5 of the characterisation test for the HMWB designation considers whether the waterbody has or is likely to fail Good Ecological Status because of the hydromorphological changes. As per the guidance, if a modified waterbody can achieve Good Ecological Status, it should not be considered for the heavily modified designation.

LAWPRO notes that the correlation between deterioration in hydromorphology and alteration of biological community from reference condition is well established. At the same time, while many mechanistic links between changes to hydromorphology and ecology response are understood not all of them are fully established and biological quality indices sensitive to many types of hydromorphological alteration are yet to be developed for use in Ireland. For this reason, expert opinion as to the impacts of the hydromorphological change on ecological function was incorporated. The EPA's consultation with stakeholders concluded that Good Ecological Status can be achieved in some waterbodies within the arterial drainage schemes, and the EPA has applied a cautious approach and excluded waterbodies from the HMWB designation if Ecological Status was Good within the previous three monitoring periods[1].

LAWPRO's view and recommendation would be that those waterbodies with arterial drainage scheme as a specified use that were excluded from the designation based on Step 5, where Ecological Status was Good within the last three monitoring periods, should be made known to OPW and appropriate protection measures (e.g., no further maintenance work or higher level of care during works) should be implemented to ensure they stay in Good Ecological Status.

While we acknowledge the challenges and cautious approach of considering Ecological Status for three consecutive monitoring periods, LAWPRO would take the view that if a waterbody achieved Good Status in any of the monitoring period it demonstrated that is capable of achieving it, therefore designation may not be appropriate in such scenario. While one may argue that waterbody temporarily recovered due to lack of maintenance works, and it consequently dropped its Ecological Status after maintenance works in the next monitoring period, our suggestion would be to document such link between pressure (maintenance works timeline) and drop in Ecological Status, which could then warrant HMWB designation in the next designation review process.

Step 5 of the designation test has also implications for the further Step 7, which requires identification of the restoration measure to achieve GES as some of the designated waterbodies are already achieving GES. Additionally, *'No restoration measures without impacting specified use'* has been identified for all proposed HMWBs under Step 7. LAWPRO would be in a view that restoration measures should be tested in pilot studies (e.g., waterbodies with arterial drainage) to assess the true impact of a measure on the specified use. This would inform future HMWB review process but also upcoming Nature Restoration Law Plans.

In terms of waterbodies that were currently proposed for HMWB designation, LAWPRO's local catchment assessment (where available) in selected waterbodies confirms that

waterbodies are indeed heavily modified (substantially changed) and, in some cases, Good Ecological Status is possible and achieved.

In some waterbodies (proposed to be HMWBs) that have multiple monitoring stations, some of the stations can achieve Good Biological Status (Q-value of 4) while others do not, which could be attributed to other pressures, usually nutrient impacts. Similarly, some proposed HMWBs that are currently not achieving Good Ecological Status, may be failing biological element of the status (Q-value) due to pressures other than hydromorphology. Therefore, potentially, there is a greater proportion of proposed HMWBs that are capable of achieving Good Ecological Status if other impacts (than those arising from changes to hydromorphology) are addressed.

LAWPRO also notes that some of the proposed HMWBs do not have monitoring programmes in place and their Ecological Status have been assigned through modelling extrapolation exercise, therefore the true ecological potential of these waterbodies is not known.

Finally, LAWPRO acknowledges that the designation is not permanent. Considering the ongoing further characterisation process (especially local catchment assessments with the improved knowledge on pressures and impacts) and new Ecological Status due to be assigned in 2025, which will allow the assessment for the 4th cycle to commence in advance of the next plan being published. This would allow not only to review if a waterbody can achieve Good Ecological Status, but also to incorporate any new knowledge (e.g., if there was better understanding of linkages between ecology and hydromorphology, if new knowledge or data on pressures arises such as LA drainage district or private schemes or if there are new studies on restoration measures feasibility and their impact on specified use), therefore allow for new designations or de-designation of the existing HMWBs.

5. Good Ecological Potential

5.1 Requirement for mitigation measures

While full restoration of the HMWB is currently not feasible (without impacting specified use, wider environment or requiring huge resources), LAWPRO acknowledges that heavily modified waterbody designation is not an exemption from achieving best biological conditions or implementation of mitigation measures. While mitigation measures need to assure that specified use is retained, the physical modification of HMWB still needs to be mitigated against as far as possible. Therefore, LAWPRO considers a requirement for best-suited mitigation measure to assure Good Ecological Potential being a positive outcome of the designation and treats it as an opportunity for Ireland to mitigate pressures to hydromorphology.

LAWPRO is, however, concerned that there are currently no adequate provisions (in the form of dedicated organisation and resources) to assure wider implementation of such mitigation measures other than barrier removal. For arterial drainage channels, LAWPRO acknowledges that there are current practices, such as (1) drainage maintenance carried out in accordance

with the best environmental guidance, (2) IFI and OPW Environmental River Enhancement Programme and (3) improvement to longitudinal connectivity [3]. These measures however, while welcomed, in LAWPRO's view are not sufficient and additional provisions could be made.

For example, river enhancement works (such as increasing in-channel morphological diversity) are currently only carried out in channels with fish spawning potential. This excludes certain waterbodies from being considered for such mitigation measures as they do not fit the criteria (particularly river gradient) for fish spawning sites. Therefore, a requirement for 'the physical modification of heavily modified waterbody to be mitigated against as far as possible' is simply not met in these scenarios.

It is LAWPRO's view that measures that increase morphological diversity and flow diversity could improve environmental conditions that are not only beneficial for fish but also for macroinvertebrates, which are the main biological elements being assessed. Increased flow diversity (achieved through provision of such measures) can also potentially improve fine sediment transport additionally improving environmental conditions (improving habitats for macroinvertebrates). LAWPRO carried out hydromorphological assessment of River Boycetown (OPW Channel) in 2022 with the advice from River Restoration Centre (RRC) and some of the RRC recommendations included measures increasing in-channel substrate and flow diversity. After the discussions with the stakeholders, these works, however, could not be included in the IFI/ OPW river enhancement works as the river did not satisfy criteria for fish spawning potential. This indicates that mitigation measures can be identified but there are no mechanisms as well as funding to have them implemented. We would recommend that the criteria for river enhancement works are considered outside of the current scope of improving fish habitats and include other biological elements. To achieve this additional guidance and resources are needed.

LAWPRO is concerned that '*in reality there will be no difference in the environmental management standards for HMWB or non HMWB channels on the arterial drainage network'* as current practice is that feasible mitigation measures are applied in any suitable scenario[3] and we would argue that additional measures could be applied (as described above) if adequate provisions are made.

It is LAWPRO's recommendation that to fully consider the requirement to achieve Good Ecological Potential (and/or Good Biological Status for individual quality elements e.g. invertebrates) in heavily modified waterbodies, Ireland, rather than accepting no change to current practice, should aim to expand on current best practices and ensure additional resources to put mitigation measures in place. While the measures are known there needs to be a process put in place to allow for the measures to be implemented in HMWBs as soon as possible.

[3] Gilligan, N. and Quinlan, E., 2020. *Ireland: Changing the Scale of Heavily Modified Water Bodies Designated Under the Water Framework Directive*. Irish National Hydrology Conference.

It is also important that the effectiveness of the implemented mitigation measures is monitored and if mitigation (rather than restoration) measures could improve biological conditions so that Good Ecological Status is achieved this would impact future designation process.

5.2 Classifying Good Ecological Potential in Irish HMWBs

The proposed approach for Ireland is to use the Mitigation Measures (Prague) approach for assigning Good Ecological Potential (GEP) for HMWBs. LAWPRO acknowledges this is the best current approach as the reference hydromorphological conditions required to support biological communities are not understood with sufficient precision as to allow a clear ecological target to be set and we echo statements in the EPA's technical review that *'In time it is hoped that increased understanding will allow us to use the Reference-based approach which will allow a more targeted selection of mitigation measures and a more direct and precise determination of GEP.'* [1] LAWPRO also believes that now, at the onset of the HMWB process an ambition should be set where process is mapped out in which Ireland could move towards a more evidence based "Hydromorphology-Ecology linked" approach.

LAWPRO also acknowledges and is supportive of having all elements that are not sensitive to hydromorphological impacts (e.g., specific pollutants and priority substances, or impacts from nutrient or organic enrichment) to be consistent with achieving Good Ecological Status (GES) and Good Chemical Status rather than Good Ecological Potential.

The challenge, however, can exist where multiple pressures affect water quality and it may not be easy to disentangle impacts to ecology between nutrient and organic pollution from impacts derived from physical modification (that can affect flow and sediment regimes as well as habitats that are needed to support good ecological conditions). Therefore, caution would be required when establishing Biological Quality Elements (BQE) parameters that are sensitive to the hydromorphological alteration used to establish GEP (as these may also respond to other impacts than hydromorphology).

Additionally, considering that some of the waterbodies designated to be heavily modified are (1) currently achieving Good Ecological Status, (2) or have no monitoring programme in place (where current Ecological Status is assigned through modelling), (3) or where Local Catchment Assessment indicates that Ecological Status can improve if chemistry impact is addressed, LAWPRO recommends caution when establishing BQE sensitive to hydromorphology to assure that best ecological potential is achieved as it is believed that in some cases it is possible to achieve conditions as good as Good Ecological Status (and in those cases we should still aim for Good Ecological Status). Therefore, we believe that establishing BQE for GEP may require waterbody by waterbody considerations and can be waterbody specific.

LAWPRO also acknowledges that all three elements need to be achieved for GEP: (1) measure in place, (2) BQE not sensitive to hydromorphology at Good, and (3) BQE sensitive

to hydromorphology at Good. This approach ensures that mitigation measures are in place. However, EPA technical review states:

'The assumption is that most of the HMWBs designated for the third cycle ***do not have mitigation measures in place that would help to achieve GEP****. There is insufficient knowledge to support the use of the Reference-based approach, so this makes the Mitigation Measures approach a practical alternative until this knowledge gap improves. If Ireland was to apply this classification method to the current HWMBs they would likely come out as Moderate Ecological Potential or lower. Over time as the measures are implemented this situation would improve but* ***initially there would be larger number of HMWBs failing to meet their ecological objectives****.'* [1]

In the scenario, where there is no measure in place but both BQE sensitive and not sensitive to hydromorphology are at Good Ecological Potential, overall GEP is moderate or lower (see table below, scenario highlighted in blue box). In such scenario, **clarifications are required for waterbodies designated to be heavily modified that are currently achieving Good Ecological Status but where mitigation measures are not in place**. Concern here is that waterbodies that currently achieve Good Ecological Status will have their status dropped to Moderate Ecological Potential when they become designated to be HMWBs (although achieving the same Good Ecological Status).

Hydromorphology (Mitigation Measures Approach)	BQEs/Parameters Not Sensitive to Hymo	BQEs/Parameters Sensitive to Hymo	Overall HMWB Classification
Measures in place	Good*	At best achieved since hymo alteration	Good Ecological Potential/higher
Measures in place	Good	Not at best achieved since hymo alteration	Moderate Ecological Potential/lower
Measures in place	Moderate/lower	At best achieved since hymo alteration	Moderate Ecological Potential/lower
Measures in place	Moderate/lower	Not at best achieved since hymo alteration	Moderate Ecological Potential/lower
Measures not in place	Good	At best achieved since hymo alteration	Moderate Ecological Potential/lower
Measures not in place	Good	Not at best achieved since hymo alteration	Moderate Ecological Potential/lower
Measures not in place	Moderate/lower	At best achieved since hymo alteration	Moderate Ecological Potential/lower
Measures not in place	Moderate/lower	Not at best achieved since hymo alteration	Moderate Ecological Potential/lower

*The objective for BQEs/Parameters not sensitive to hymo may be High status in some rarer cases.

Proposed approach to defining and classifying GEP in Irish HMWBS – Table extracted from the EPA technical review on HMWBS designation [1]

LAWPRO also considers assigning GEP as having important implications on work on the ground (including local catchment assessment methods and approach to measures) therefore it is important that clarifications and guidance on the process on how GEP is assigned (especially assigning BQE sensitive to impacts from physical modifications) with the implications on the work on the ground is provided as soon as possible.

Key Recommendations

- **Steps 7 – 9 of the Designation Tests**
    - ✓ **More information and clarity** are required on the decision-making process undertaken by pressure owners for the designation Steps 7 – 9. Identification of restoration measures, determination of significant adverse effects of the measures on specified uses, assessment of alternative means and cost evaluation to determine disproportionate costs should be clearly documented on a waterbody-by-waterbody basis in advance of the next cycle designation to review and update HMWB designations.
    - ✓ **Pilot studies** on restoration measures within HMWBs should be conducted before the fourth WFD cycle to assess restoration measure impact on specified use, cost-effectiveness on achieving GES, inform future HMWB review and the upcoming Nature Restoration Law.
- **Mitigation Measures for HMWBs**:
    - ✓ Adequate resources should be urgently invested to allow for application of mitigation measures (required under the designation) within Heavily Modified Waterbodies to minimise the impact of hydromorphological changes and to assure Good Ecological Potential is met.
    - ✓ Mitigation measures for HMWBs within arterial drainage schemes should not be limited to the current environmental management standards and practices, which, while welcomed, in LAWPRO's view are not sufficient. Particularly, river enhancement works could be considered outside of the current scope of improving fish habitats, considering other biological elements such as macroinvertebrates improving habitat and flow conditions.
- **Protection Measures**:
    - ✓ Protection measures should be implemented for waterbodies with arterial drainage schemes that were excluded from HMWB designation based on their Good Ecological Status in the last three monitoring periods.
- **Guidance on Good Ecological Potential (GEP)**:

- ✓ Clarifications and guidance on the process of assigning GEP with the implications on the work on the ground (particularly local catchment assessment) is needed.
- ✓ Clarification is needed on GEP for HMWBs currently achieving Good Ecological Status but lacking mitigation measures.
- ✓ Biological Quality Elements (BQE) sensitive to hydromorphology may need to be assigned waterbody by waterbody basis to ensure the best ecological potential is achieved (considering some of the waterbodies are currently achieving Good Ecological Status).
- ✓ Ireland should aim to move towards a more evidence-based "Hydromorphology-Ecology linked" approach for assigning GEP in Irish HMWBs.

- **Other Drainage Schemes**:
  - ✓ Ireland should aim to fill the knowledge gap by reviewing Local Authority-led and private drainage schemes, including their environmental impact, and include them in the HMWB designation where evidence exists.

23rd May 2025