Keswick Flood Action Group Response to:
Draft Consultation: Utilisation of Public Water Supply Reservoirs for Flood Risk Benefit – DRAFT Operating Framework

The third UK Climate Change Risk Assessment (CCRA) in 2022, identified flooding as one of the most important climate change adaptation challenges facing the UK. In all future climate change scenarios, direct and indirect flood risks are projected to rise over the course of the 21st century. (UK Health Security Agency: Flooding and Health: assessment and management of public mental health, 1 July 2022).

There is little or no mention in this draft of climate change and, particularly, the likelihood of a greater frequency of flooding and larger than normal floods.

The voice of the flood victim is drowned out in the bias of this document. If it was written FOR the water companies BY the water companies it would not read any differently. The methods used are predetermining the outcome. A limited remit with an eye to protecting water companies, then the environment …. and the communities very much further down the pile. **The balance between flood risk reduction, water resources and environmental regulators appears way off what flood-risk communities would expect.**

We would like:

1 To know who actually had input into this document beyond the general comment that it was created closely with water companies and the EA? Additionally, if they were consultants, who paid them?

2 To have a list of all those who have been given the opportunity to comment on the draft.

Nowhere in the report is there any mention of working with communities. The report includes only working with regulators and the water companies. Working with communities, both in the form of flood action groups and town or city councils should be included as these can offer great insight into local issues, particularly from the perspective of those vulnerable to flooding. Including these groups will also provide oversight and clarity. Furthermore, when decisions are made to abandon schemes, communities must be informed and have an opportunity to examine the decision-making process in detail and comment on it.

We were looking for recognition, focus and analysis on where reservoirs were already having serious impacts on communities at risk of flooding - because they are experiencing flooding NOW and are likely to suffer again in the near future unless they become a priority. Serious questions about why the Vrynwy and Clywedog reservoirs came to overspill despite there being an Act with legal force which gave the Clywedog a maintenance level? Was the release capacity adequate to deal with rainfall? Analysis of recent flood events to see if reservoirs were implicated eg. Ladybower reservoir & Matlock, the reservoirs above Sheffield on the Don.

The problem is a national one, not regional. It requires a complete re-think of our water network nationwide, alongside seeking out best practice and ideas from other countries. In our view that should be the start-point moving forward.

Looking through the extensive negativity of all the hurdles ready to be placed in the way of any scheme going forward there is no acknowledgement that reservoir management for storm space is actually happening – not just at Thirlmere but Gorpley, Kielder etc. **How is the experience of these schemes to be acknowledged and built on? Lessons learned acknowledged?**

The report seems not to recognise that in many cases - or even most cases - flood attenuation space can be created in reservoirs with only a small risk to water resources. This can be achieved by releasing water on receipt of a severe storm warning to create the necessary storage volume. The storm will then partly or fully refill the reservoir during the event. Even if the storm does not materialise, it is likely that the reservoir will refill in the following weeks, particularly in the autumn and winter. The inclusion of water resources diagrams in the appendices with constant target headroom

appears to suggest that **reacting to storms in a dynamic way has not been recognised**. It is certainly not mentioned in the report which is disappointing.

There is nothing within this document which indicates any sense of urgency that climate change requires. The privatisation of water companies in 1989 failed to address the need to manage water resources for flood risk as well as drought. The EA needs to recognise the unavoidable truth that reservoir managers have been allowed to simply hoard water for avoidance of drought penalties with no thought or responsibility, financial or otherwise, to the consequences. This is already exacerbating flood risk for some communities. Many reservoirs need to become a key part of community protection for the long-term. It is simply a matter of when – not if - there is a disaster with significant loss of life that we will get anything more than coloured timeline charts and hollow assurances.

The report is, in our view, unbalanced. It focuses on the (perceived?) negativity of actually bringing reservoirs into play with list after list of potential blockages. **There should be, at the very outset, the pre-feasibility stage,** alongside an investigation into whether each reservoir has the capacity to reduce flood risk, **a detailed analysis of the "Do Nothing" scenario which looks at the potential infrastructure challenges for that reservoir (and the infrastructure downstream such as roads, bridges and railways) given the CCRA statement above.** Many were constructed well over a century ago when current Probably Maximum Flood (PMF) would not have been thought possible. In our experience the "wave wall" at Thirlmere was not fit for purpose during Storm Desmond (despite a reassuring – and totally misleading - panel engineer's report into its condition) and two massive metal railway bridges were washed away, whilst others, including traditional packhorse bridges, were severely damaged**. There needs to be serious consideration as to whether reservoirs can withstand climate change forecasts without storm space** for the series of intense, prolonged rainfall events which many of us have already experienced this century.

What is being proposed will not spell disaster for biodiversity in water courses which largely need to be continually serviced by these reservoirs. We would suggest that some species would thrive more if there was an increased release regime as it will better reflect the rivers' historical flows pre-reservoir construction AND avoid habitat destruction during intense storm events.

The procedure as set out in this document, the years of investigations into blockages indicate, for any community that has already experienced flooding with uncontrolled reservoir overspill, that the only practical, timely, cost-effective way forward with (crucially) the potential to prioritise the safety of (human) life and property is by taking things forward by imperative reasons of overriding public importance (IROPI).

Executive Summary: This Framework can be applied to existing operational assets, assets identified for decommissioning and to support the assessment of new assets and associated infrastructure. Surely an important start point is to focus on any reservoir about to be decommissioned before the opportunity is lost to assess its value for flood risk reduction? **We had always anticipated (hoped for) a national review to analyse where reservoirs were already implicated in flood events.**

We note the Government's report on the "Benefits in Removing Redundant Reservoirs" was due out in autumn 2021 but is still not available. Here, again, the focus does not sound as if it is mindful of the role reservoirs can play in flood mitigation. With climate change forecasts for rainfall; antiquated, neglected, poorly maintained infrastructure; and housing developments set to continue virtually unchecked in areas of flood risk nationally it must be sensible to make better use

of the reservoirs already situated in rain-rich upper catchment areas. Flexibility of storage seems critical.

Flooding is largely a localised event whereas water shortage/drought is generally a regional or national event. It should be the case that local schemes for flood mitigation can be balanced against regional and national water supplies. The stress on "local" decisions will make any flood risk mitigation almost impossible to implement as it will inevitably mean leaving storm water space in reservoirs, thus reducing, if only marginally, water supply. **The existing legislative framework will prejudice water companies against accepting the use of their reservoirs for flood risk reduction.**

The stress on alignment with all existing plans and strategies and the legal framework immediately eliminates "left field" solutions which may have benefit. The framework should be flexible enough to allow such solutions to be identified and assessed, including any clashes with the above. It may be that changes to existing plans etc. can be justified.

Introduction: This Operating Framework deals with the key aspects that should be examined where the use of water supply reservoir assets for flood risk management are being considered and can be applied to new and existing assets and to those where decommissioning is planned. **We have long pushed for the Derwent catchment to be a pilot project and our catchment ticks both these boxes.** We believe that not using Thirlmere for flood risk reduction is criminal given that models and experience have proven how effective it could be if it was operated in a more broadminded way, taking account of downstream communities rather than just water resources. The River Derwent system also includes Crummock Water which is being decommissioned. The communities in the Derwent catchment believe that retaining some of the weir infrastructure at Crummock will offer better protection to the communities of Cockermouth (and Workington beyond) but that there will be pressure/cherry picked data to walk away from maintenance and ownership of the infrastructure. Incidentally our catchment also includes Barepot reservoir at Workington, a dilapidated structure with dubious ownership which can provide a different insight into overcoming problems of reservoir management to reduce flood risk.

Pre-Feasibility:

1m threshold is very low and may exclude viable schemes. Thirlmere already has triggers set at 3m at certain times of the year.

Is using the calculations for 1% Annual Exceedance Probability (AEP), being ambitious enough? A lot of these reservoirs are in mountainous western air flows where recent storm events way in excess of that are happening frequently.

Capping the reach of the river at 20km appears totally inappropriate. Cockermouth has some impact from Thirlmere. To limit the distance does not pick up the impacts of the Severn's reservoirs in the Welsh hills overspilling at more or less the same time and the effects of that bulge of water happening over several days almost the length of the Severn. Ditto the impacts on flooding from the Don in Sheffield. Additionally the EA's cost:benefit analysis is known to penalise rural communities and has no weighting for those who suffer from repeated flooding.

High level factors: **Unless there is an independent panel engineer doing the assessment then we have absolutely no faith in the outcome.** The panel engineers are usually in the pay of the reservoir owner and the report will be likely to be skewed towards the owner's interests. We have had real concerns over the routine panel engineer's reports on Thirlmere and currently have raised a number of serious and detailed questions over compliance with reservoir safety regulations which

also call into question the EA's reliance on the data they are provided – and their ability to oversee safety without thorough and proper scrutiny.

Will the panel engineer's remit be to assess the safety of the reservoir if storm space releases are NOT carried out and the reservoir overflows catastrophically as a balance to any arguments over safe releases?

Looking at the list of possible "show stoppers" it would be likely that, without the campaign and evidence that Keswick FAG has provided over the last 16 years that Thirlmere would be discounted – in a National Park; World Heritage Site; SSSIs & SACs. Is this process actually SERIOUSLY taking on board the need to protect communities – literally to protect life and property - from flood risk and the future climate change forecasts for intense rainfall? It looks like yet another exercise where every other species and NGO will have more power to veto common sense. The EA is, yet again, not showing itself as a committed Flood Risk Management Authority.

Whilst high level factors need to be flagged and initial understanding gained, why should any be a "show stopper" at this stage? The danger here is the mentality that any such factors are inevitably "show stoppers"

Water resource high-level factors need to be considered and may be a "stop" or "hold" point on a scheme. However, this needs to be linked to the national and local water resources planning that is on-going following the EA's document "Meeting out future water needs; a national framework for water resources", 16 March 2020. It is possible that what appears to be irreplaceable at a local water company level, may not be at a national level and at a future time.

Overall, the pre-feasibility stage seems to throw many barriers at a very early stage which could scupper schemes which could be viable if a wider perspective were taken.

We also note that Brexit has happened, **the UK is no longer required to be fettered unquestioningly to the Habitat's Directive etc. and can move forward, keeping the things which work for Britain**.

Flood Hydrology: The EA already has online maps which show the level of reservoir inundation as a rough guide to impacts and property numbers. In addition, for the reservoirs which SHOULD be a priority, i.e. those which have already been associated with recent floods, there should be enough data to accept that a reservoir CAN have a beneficial impact. **We would suggest that any process to identify reservoirs which may be of beneficial use should start by reviewing the recent flood events all of which are likely to have reservoirs in their upper catchments. In this way those communities already at risk are considered – hopefully before they suffer again.**

The bar is set way too high: "*sufficient additional storage to make a significant contribution to flood alleviation in the catchment.*" The EA has been excusing its lack of effective flood risk management with diversion measures wasting many years - and untold amounts of tax payers' money - on restoring peat bogs and planting trees that could never satisfy cost:benefit analysis in the name of flood risk and yet that is how these projects are justified and publicised. What percentage of these projects could be described as having the ability to make a significant contribution to flood alleviation? In any case, the approach of a "basket of measures", combinations of hard engineering with NFM is recognised at later stages so why be keen to discount reservoirs in this way?

The report suggests: '*Updating the statistical flood flow estimates based on gauged records*'. These records often fail to accurately represent flood risk as they are too short and therefore statistics

based on them are usually misleading. Alternatively, we believe there should be an examination of catchment flood history going back 100-200 years. In addition, the methodology should use the EA's own new non-stationary approach to statistics.

Decision point 1c. "..where the reservoir is critical to supply and the resource irreplaceable the study must be cut at this point for public water supply resilience"

Thirlmere's inclusion as a potentially viable option would be difficult to justify as United Utilities has been allowed to leave West Cumbria solely dependent on Thirlmere alone as a water source, without any connection to a national framework and they could present that as a reason to walk away from such plans. The logic of this still fails us – but at least the fresh water mussels in Ennerdale's outflow may be comfortable.

Water Companies have been in the enviable position of being in a monopoly. They have excessively rewarded their executives and shareholders with profits born of operating their systems, their principal aim is to avoid financial penalties from drought situations. They have been allowed to view floods as an "Act of God" and the EA/DEFRA/OFWAT have done nothing of substance to disabuse them of that view. Bonuses and high share returns would be more acceptable in an industry where actions were balanced and difficult decisions/high levels of investment had to be made to adjust drought risk V flood risk BUT that is never the case. Of course, water companies will argue long and hard that they cannot risk water supply for any of their reservoirs by providing winter storm space.

To quote the Lord Sikka (House of Lords Debate 7/7/22) "Back on 1 March 2018, the then Environment Secretary, Michael Gove, said that

"*water companies … have not been acting … in the public interest" and*

"have been playing the system for the benefit of wealthy managers and owners, at the expense of consumers and the environment."

He added that the water companies have,

"shielded themselves from scrutiny, hidden behind complex financial structures, avoided paying taxes, have rewarded the already well-off, kept charges higher than they needed to be and allowed leaks, pollution and other failures to persist for far too long."

Can anyone trust them to offer to change their operating regime?

Given the EA's obvious and continual failure to police water companies for pollution we have no faith that this approach will do anything more than give water companies a further "get out clause". **What is needed is legislation, an enforced duty of care on water companies to manage their assets for flood alleviation in tandem with their duty to supply water. What is also needed is an agency that puts climate change impacts and the safety of communities above all else.** The EA has repeatedly shown itself to be incapable of doing this.

2.0 Feasibility Studies: "The environmental impact of alterations to the flow regime and changes to water levels – particular attention should be given to adverse impacts under Habitats Directive or deterioration under Water Framework Directive" The reality is that reservoirs have not been in existence for millennia and the environment used to benefit from high flows. Aside from the (always ignored) fact that some species may well benefit from a different flow regime, flooding does not just impact on communities and wreck people's mental health. It destroys the natural environment, rips out trees, drowns livestock, abandons fish in fields, pollutes the water system

with petrol and raw sewage and impacts on the UK's carbon footprint through the months of dehumidifiers and heaters drying out homes whilst the need for landfill increases with skips of ruined property. **Are we REALLY agonising over environmental impacts of higher flows for storm releases – or providing another means for water companies to kick the can further down the road?** In 2021, the water companies were responsible for 368,966 spills, during which raw sewage and untreated wastewater was dumped into aquatic environments for a total of 2,650,290 hours. Even those staggering figures are an underestimate, because over a quarter of storm overflows had no monitors or monitors that were faulty or non-functioning. **What is doing the most harm here? Working towards protecting people/the river system from climate change impacts or allowing pollution on a truly industrial scale year after year?**

Page 10 The Environment Agency will work with Ofwat to ensure that flood alleviation-driven actions are funded by the Environment Agency (FCRM) or beneficiaries; they will not be funded through the water company's Business Plan or its water customers' bills.

Since privatisation of the water industry there has been no investment in new, nationally significant supply infrastructure such as major reservoirs. Water companies are supposed to be Flood Risk Management Authorities but they have been allowed to view their responsibilities only in terms of foul water flooding – something which has been lamentable to say the least**. Their statutory duties should include avoidance of uncontrolled reservoir overspills contributing to flood risk. CEO pay-outs and shareholder profits should be contributing to infrastructure funding. This will impact positively on cost:benefit analysis.**

Appendices: It might aid comprehension if all the diagrams were inserted at the relevant points in the document, rather than being in an appendix at the end.

The second diagram on page 28 the blue 'Resources available' line from the arrow titled *'A Flood Risk scheme can only be considered from this point'* is not shown decreasing over time at the same rate as in the previous two diagrams. **Why is the blue line not shown decreasing at the same rate?**

Whilst the green and blue lines on these graphs (pages 27 & 28) are only diagrammatic, and could be shown respectively increasing or decreasing at any rate. If there is no particular reason for the blue line in the diagram to be shown barely decreasing, then should it be shown decreasing at the same rate as in the other two diagrams.

The diagrams imply that 'Water Demand' shaded green is generally increasing over time, and 'Surplus' shaded blue is generally decreasing, Thus, in water companies' minds, opportunities for flood storage are likely to be diminishing not increasing**. Has the EA considered the impact of this depressing outlook? If water becomes, as we already acknowledge likely, ever more valuable, water companies will be even less inclined to lose some even if it is to protect downstream communities from flooding.**

The inescapable fact is that there needs to be an upgraded national water supply network so that water can be transferred from reservoirs, where downstream flood risk is exacerbated, and stored safely, closer to where it may be needed at other times of the year. Water is a precious commodity and nobody wants to see it pouring over spillways and wrecking farmland, homes and the environment. Reservoir overspill has no value to a water company. **The cost of new infrastructure/water transfer and alternative storage capacity is being used as a potential blocker to any scheme when this is actually something which should already be attracting huge investment because of hotter summers. By taking this stand the document is shielding**

water companies from recognising their failure to invest and upgrade, permitting their greed to continue - and even offering to support these monopolies by potentially providing the finance for redressing this situation. No doubt the water companies will be expecting to get away without cost and responsibility as they have done over river pollution for many years now.

This response to the report comes on a day when Britain is set to experience the highest temperatures ever and on the news a spokesman from Thames Water was asking people to ease off on water usage as they could not clean and pump water fast enough for demand. Lack of water company investment in infrastructure YET AGAIN!!!

A water network fit for purpose is going to prove to be essential as the century progresses. **A 5 year/ 25 year view is insufficient. So, too, is the failure to properly address the seasonality of water supply.** There is no consideration of the dynamic nature of flood storage acknowledging predicted short-term and longer-term rainfall over 24hrs - days, previous rainfall still flowing off the reservoir catchment and current and predicted abstraction etc. which can provide a basis for requirements in the future. **The report should recognise and examine resource and demand variations through a year.**

The UK has a unique location with ample rainfall on the western Atlantic regions, particularly in the winter months. If we do not take action to make use of the times of plenty to ensure food production in other regions with the problems climate change predict then generations to come will not thank us for avoiding effective action until it is too late.

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