Environment Committee

This document contains the written evidence received by the Committee in response to its Call for Evidence, which formed part of its investigation into Swimmable Rivers.

Calls for Evidence are open to anyone to respond to and in December 2024 the Committee published a number of questions it was particularly interested in responses to as part of its work, which can be found on page 3.

The Call for Evidence was open from 11 December 2024 to 20 January 2025.

The Committee are grateful to all the organisations and individuals who responded and shared their experience, ideas and expertise.

We have removed any personal information not intended for publication.

Back to Table of Contents

Contents

Back to Table of Contents

Questions asked by the Committee.

1. What factors [e.g. safety, water quality] are important to assessing if a river or other waterbody is 'swimmable'? How should these be measured and monitored?
2. What improvements are achievable in 10 years? Are there any short-term priorities or interim milestones that are needed?
3. Are there specific locations in London that should be prioritised for improving water quality and increasing access to rivers or waterbodies?
4. Who is responsible for making the changes needed? What actions should the Mayor and GLA take?
5. What can the Mayor learn from other examples (national or international) of creating cleaner and accessible 'swimmable rivers'?
6. Is there other relevant information you would like to share?

Back to Table of Contents

Albany Outdoors Ref No. SW001

A. About you/your organisation
• Organisation name
Albany Outdoors is a (AKA Albany Park Canoe and Sailing Centre)

• What does your organisation do?
Albany Outdoors is a (AKA Albany Park Canoe and Sailing Centre) small water sports centre in Kingston Upon Thames. We introduce young people (8-16, and Adults) to Paddlesports and Sailing primarily between March to October. We have between 6.5 and 8K activity experiences per annum.

• Where are you based (if applicable)?
Kingston Upon Thames.

B. The Mayor's swimmable rivers commitment

1. What factors [e.g. safety, water quality] are important to assessing if a river or other waterbody is 'swimmable'? How should these be measured and monitored?
Water quality and water quantity is of paramount importance. Water quality in the river Thames must be improved, it is not acceptable to allow Thames Water to dump raw sewage into the river under the guise of it being "Exceptional Circumstances". Climate change has made extreme weather event much more normal.

2. What improvements are achievable in 10 years? Are there any short-term priorities or interim milestones that are needed?
Make Water company executives legally responsible for sewage releases and make legal changes to environmental protection act.

3. Are there specific locations in London that should be prioritised for improving water quality and increasing access to rivers or waterbodies?
Kingston Upon Thames, this is a perfect area for wild swimming and the last section of the non tidal Thames.

4. Who is responsible for making the changes needed? What actions should the Mayor and GLA take?
Parliament however the Mayor can impact on this immediately.

5. What can the Mayor learn from other examples (national or international) of creating cleaner and accessible 'swimmable rivers'?
Mayors for a drinkable Thames
https://drinkablerivers.org/mayors-for-drinkable-rivers/thamesmayors-drinkableri vers-org/
This is big initiative and the Mayor needs to get on board

Back to Table of Contents

6. Is there other relevant information you would like to share?

I have been a Water sports Coach for over 40 years, I have managed 6 Water sports Centres in England, Wales, Ireland and France. The first river I worked on was the Wye which has turned from a pristine Salmon river to a ecological basket case. The Thames is slipping away, it is dying before our very eyes. There are two major construction projects lining up as we speak, The River Thames Scheme, and the Teddington Direct River Abstraction project, while these are commendable in many ways they are going to have a huge negative impact on the ecology of this reach of the river.
1 We already do not have an ecological baseline on the combined impact of sewage and climate change on this section of the river. Summer heat rises the temperature to over 20c for example, and this coupled with increased sewage releases will create a perfect environment for algal blooms etc.
2 Impact assessment of the River Thames Scheme.
3 Impact assessment of the TDRA.
We are going to kill this section of the river.

Back to Table of Contents

Barnes Common Limited Ref No. SW002

A***. About you/your organisation***
· Organisation name
BARNES COMMON LIMITED

· What does your organisation do?
LOCAL COMMUNITY CHARITY DELIVERING NATURE CONSERVATION TO LOCAL OPEN SPACES, BIODIVERSITY, LIFELONG OUTDOOR LEARNING, WELLBEING AND COMMUNITY ENGAGEMENT ON CLIMATE CHANGE AND FLOOD RESILIENCE.
Formed out of a 'Friends of' Association, BCL was incorporated as a charity in 2013 to design and deliver 3rd-sector conservation management on Barnes Common, since extended to four other sites. BCL is also a partner with LBRuT and WWT, in Community BlueScapes, one of 25 projects nationally funded under Defra/EA's innovative flood and coastal resilience innovation project, delivering nature based flood management and resilience projects addressing surface water flooding (often associated locally with tide lock), with strong community engagement; BCL is also an active partner in the Beverley Brook Catchment Partnership, and has undertaken two river habitat improvements (with funding from the GLA rewilding fund and EA, including toe board removal, litter removal, installation of diverters and silt traps using large woody debris, brush faggots etc as well as tree works on the banks to improve dappled shade and provide nesting, improved margin habitat and ecosystems), created new reedbeds, conducted river-fly monitoring over several years, started a more detailed 'smart river' citizen science project monitoring river invertebrates; participated in detailed outfall safaris to identify misconnections ; undertaken recording of invasive plant species and led volunteer sessions pulling Himalayan Balsam; led volunteer sessions for litter removal; collected water samples for innovative research by a highly recognised university into chemicals of emerging concern,(CECs) and, as part of Community BlueScapes, undertaken water sampling (citizen science) and regular recording of silting and other measures of river health within the lower catchment. The performance of road gullies is also being monitored by a volunteer task force led by BCL staff

· Where are you based (if applicable)?
BARNES, BOROUGH OF RICHMOND UPON THAMES, serving Barnes Common LNR, Leg o' Mutton Reservoir LNR, Vine Road Recreation Ground, Parts of the Beverley Brook as well as woodland conservation management in other open spaces within Richmond.

B. The Mayor's swimmable rivers commitment
1. What factors [e.g. safety, water quality] are important to assessing if a river or other waterbody is 'swimmable'? How should these be measured and monitored?
Definition of swimmable: the Beverley Brook is not deep enough for swimming, but in places it looks like an attractive rural stream ideal for paddling in, and on hot days many children can be seen doing so – greater clarity is needed so the public can make its own decisions on whether a river/stream is or is not safe to go in. We agree that in broad terms this comes down to safety and water quality. Right now concerns about water quality suggest that it would be imprudent to encourage paddling or other recreational use, but if water quality can be improved then attention should turn to establishing additional open access zones that meet reasonable levels of safety. Where open access is not advisable, every effort should be made to retain sight lines so the brook can still be enjoyed from nearby.

Safety: In normal conditions the brook is shallow enough for paddling, typically between 10 and 20cm. However, when it rains the brook is flashy, due to the urbanisation of the upper and middle catchment, and depth/flow rates can change rapidly (in a few minutes, not hours) so safety is a concern during storms. There can be other risks, such as underwater trip hazards, deep pools, deep soft silt/mud, broken glass and sharps, as well as steep or overhanging banks.
There are some culverts and spillways which are dangerous and currently protected (eg by chains).
There are a number of areas where the river is unfenced and there is open access, but others where fencing limits access for no obvious safety purpose. There do not appear to be any recorded instances of

Back to Table of Contents

accidents involving people, although we are aware of one small dog being swept away when it went into the water when it was in spate.
It would be sensible to establish areas where access should be controlled, either due to risk or in order to safeguard nature (such as spawning grounds or where habitat is being improved or species such as water vole being reintroduced), leaving other areas where open access remains possible. Consideration should still be given to viewing in these areas, which can bring considerable benefits to wellbeing.
[*Timing – ten-year target seems reasonable, depending on progress improving water quality*]
Water Quality: Right now this is our prime concern. It is not just theoretical: BCL staff have on more than one occasion had to take sick leave after exposure has caused respiratory and other illness, despite taking reasonable precautions.

- Raw sewage: CSO authorised discharges: It is to be hoped that the Thames Tideway Tunnel will mean that the four CSO's that permit authorised discharges of raw sewage from the eastern side of the catchment will no longer need to be allowed; GLA should obtain undertakings from TW that this will not only be possible but will be enforced rigorously against the agreed timetable for connection to the tunnel. It is noted that some reported discharges from CSO's have occurred when there has not been significant rainfall: there may have been other reasons, such as a blocked drain, but we question whether such discharges are 'authorised'. [*Timing: we understand the Tideway Tunnel should be fully operational within three years.*]
Note: The Beverley brook is the boundary between areas served by a combined sewer system, as in Putney, and areas served by dual systems, as in Richmond; Foul water within the brook catchment is connected to Mogden, Crossness, Hogsmill and possibly Beddington, and the 'catchments' for each of these do not coincide with the surface water catchments.

- Raw sewage Misconnections: More detailed investigation and enforcement against misconnections are needed: spot checks on a three yearly basis do not capture the issues that local residents are aware of; funding should be provided to enable in-stream checks on a more regular basis; the threshold for acting upon reported misconnections should be lowered and the TW SWOP programme be given additional resources to undertake the detailed investigations that are needed. The government should simplify the legal position which currently means TW cannot enforce actions on misconnections if householders fail to respond voluntarily, but has to refer these to the local authority, causing delays and potential for inaction. [*Timing: a time of 3 years is usually set for rectifying a misconnection once identified and prioritised. A ten year time frame should therefore be capable of achieving significant improvements if inspections are increased, and the SWOP programme adopts lowered thresholds for prioritising, combined with attention to enforcement , whether by the LA or otherwise*].

- Raw sewage: pipe failures: Just as it is recognised that there is substantial leakage from the fresh water pipe system (losses still in the order of 20% if targets are met) there have been local incidents of sewage pipes bursting (recognised and brought under management rapidly) or in some cases leaking into the ground water (often undetected for a long time - in one local case only identified after foul water was detected leaking into basement properties in one street).[*Timing – ongoing, and will inevitably be reactive, so milestones etc not relevant*]

- Leptospirosis (Weil's Disease): A widespread concern among the local community is Weil's disease, associated with rats. While rats are observed near or in the brook, there is no evidence at present on whether there is a leptospirosis problem, and if one were to be established, it is not clear if the source would be from brown rats in the wild or those living in the sewers: the latter would not be a problem if raw sewage discharges could be eliminated as should be the target. Testing is needed to establish if this is a real concern. [*Timing: it would be possible to undertake testing to see if there is a problem within one year of funding being provided; identifying sources might take a 3 to 5 year programme. Determining if eradication is possible and the cost/benefit would need to follow under normal public health regulation*]

- Road run-off: More regular checking for pollutants will help establish if there is a problem with contaminants from road run-off, including heavy metals, particulates, hydrocarbons etc and to identify

Back to Table of Contents

the sources and prioritise these for action. Methods to reduce such pollutants need to be encouraged and better traps provided to limit their discharge into watercourses. Roadside gullies should be cleared more frequently and drains monitored to ensure proper functioning. Additional research into changes in road run-off pollutants as a result of the move towards electric vehicles should be supported across Greater London, as well as into the effectiveness of innovative new systems to trap and /or treat run-off whether engineered (Community BlueScapes is hoping to pilot use of a recently invented relatively low cost system that can be retrofitted in existing gullies, which has performed well in laboratory conditions) or using nature based solutions such as rain gardens. [*Timing: Research programme: basic: 1-3 years; investigating changes over time: baseline 1 year and on-going 10 years; piloting innovations – up to 5 years evaluation: roll out thereafter if justified.; Improving gulley servicing – collaboration between TfL and LAs – can GLA support a drive to improve gulley clearing and sample the silt extracted? progress should be possible in 5 to 10 years*.]

- Discharge of treated water: A significant proportion of the flow in the Beverley Brook (estimated at 100% in dry conditions, diluting over the brook's 14km course to around 75%; in winter estimated at over 80% diluting to 40%) is sourced by pumping treated water from the Hogsmill Sewage Treatment Works. This may be helpful in maintaining the flow, especially during drier periods, but the quality of this water is a major concern: initial findings relating to CECs found in the brook need to be confirmed through regular sampling (and the source identified beyond any doubt), but it seems likely that tertiary treatment of the STW discharge will be necessary to achieve a healthier river and certainly to achieve a swimmable river that is safe for children to paddle in (which coincides with hot weather when the STW discharge is subject to relatively little dilution). Tests should also be extended to cover a wider range of pollutants associated with STW discharges, including everlasting chemicals and microplastics. [*Timing: WQ testing 1-2 years; confirming that Brook would be a suitable test-bed for tertiary treatments of STW discharges, since it offers a controllable flow and reasonable base line data: 2 to 3 years ; agreeing tertiary treatments, design, approval and tendering: 5 years; operational in years 6-10 years should be possible – faster if TW and EA decide this would be a good idea and get behind it.]*

Not all London's rivers have treated sewage discharge - It should be noted that not all London's rivers are subject to STW discharges, but all those that are appear to have higher than recommended levels of CECs and should therefore be prioritised in any cleaner water campaign. Is it acceptable that the standards for discharges by the water industry into the nation's rivers reflect what can be extracted by basic Victorian concepts of primary and secondary filtration, which fail to clean out / treat the products of the last century's advances in chemicals and pharmaceuticals, let alone the everlasting chemicals (including trade-named products such as Teflon and Scotchguard),plastics and particulates that enter into the rivers via our foul water system?

Is there a commercial opportunity? 'Swimmable' water may be a good target here in the UK, but the world needs to identify how to recycle its treated water to a standard that can then be brought back into the fresh water supply. Many countries and cities are in greater need than London to recycle water, although Thames Water already includes a partial recycling proposal in its plans for the upcoming 25-year WRMP (Recycling treated water from Mogden to the Thames at Teddington). Rather than seeing tertiary treatment as an investment that is not affordable or grudgingly undertaken, the UK water industry (in its broadest sense, including government agencies, water companies, service suppliers and research organisations) should recognise that there is a significant commercial opportunity by working together to provide pragmatic, sustainable solutions.
[*Timing: 10 years linked to the above testing of tertiary treatments should be enough time to achieve considerable progress, especially if a pragmatic 'test and improve' approach is adopted.*]

Dumping of waste by riparian owners and others: because the brook is little understood and appears neglected along many stretches, riparian owners in some area continue to see it as somewhere to dump garden or even household waste ; other behaviours that need action include the use of road gullies (and household surface water drains) by contractors (and owners) to wash out concrete mixers, paint brushes etc; even detergents from commercial or domestic car washing etc. Campaigns such as the yellow fish (stencilled fish with 'only rain-water in here' message) have been successful in raising awareness.

Back to Table of Contents

[*Timing: awareness raising is always a slow process but can gather momentum if it is part of a wider campaign with extensive publicity among the community, news stories and an opportunity for local residents, riparian owners, communities and LAs to be given a chance to take pride in getting their brook up to swimmable standards – we believe Beverley Brook can and should be a pioneer given what is already being undertaken. Good progress would be possible over 5 to 10 years using a collaborative approach across organisations in each of the relevant boroughs and a central coordinating role.*]

2. What improvements are achievable in 10 years? Are there any short-term priorities or interim milestones that are needed?

A lot of time can be spent trying to decide what should be done and why at the policy level, while scant attention is paid to who can best do it and how. If focus is put onto identifying the organisations best placed to know what the local issues are, and how to tackle them, and ask them to propose solutions against the broad policy aims, more rapid progress can be made. Serious attention should be paid to check the preparedness of the organisations, (experience, resources, collaborations etc), how shovel ready their proposals are and how far budgets might be leveraged.

Solid progress could be made on all aspects of the above (timing notes have been given against each item above rather than repeating them here) – but funding is needed so that monitoring and evaluation can ensure problems are identified and prioritised. In each area the aims need to be translated into detailed SMART targets and action plans, agreed with key stakeholders. In broad terms, some areas need to start by gathering baseline data from research, whereas others could move rapidly to development of Action Plans. Identifying/Allocating responsibility and identifying funding is critical, especially as the financial condition of the water industry is of significant concern and Local Authorities are having to focus on their statutory duties.

Smart Catchments: the smart catchment programme pioneered by Thames Water has demonstrated that relatively modest budgets can achieve significant results. It has been piloted with the River Crane and should be replicated for all London's rivers, either through TW or in a parallel programme since TW's funding is subject to uncertainty. There is grave danger that this excellent initiative will be allowed to fail if there is not only legacy support for the River Crane but also funding to support additional rivers ready to tackle these issues. If Beverley Brook were to be granted smart catchment status and funding then, acting with South East Rivers Trust, BCL would expect to achieve the targets and timing set out above (with implicit if not direct support from TW and EA, both of which are represented in the Catchment partnership, as well as GLA's backing).

The smart catchment approach encourages collaboration and bridges the challenges of community engagement between top down policy planning and bottom up community desire for better rivers. BCL has followed The River Crane smart catchment project closely. This has brought together two decades of community engagement with the river through FORCE, its friends group, and the Crane Valley Partnership of key stakeholders. The Crane Valley CIC has, since its formation in 2020, brought focus to the needs for improved water quality, a healthier river (improved geomorphology), enhanced biodiversity (wildlife and habitats), enhanced flood resilience and wellbeing (through promotion of public awareness, access and participation, including citizen science, volunteering and learning). BCL is working closely with an individual who has extensive experience with the River Crane who is acting in a consulting capacity on Community BlueScapes projects.

The Beverley Brook Catchment Partnership has been preparing its case to be considered for smart catchment status by advancing its base-line data gathering, as well as identifying improvements (and where possible delivering interventions, as BCL has done) as well as taking opportunities for community engagement and awareness raising, mindful of the smart catchment programme on the Crane.

Design and Deliver: Organisations need to be selected that can not only design and manage programmes but also deliver them. BCL's experience is that it is possible to achieve remarkable cost and timing efficiencies through such an approach, with no loss of standards, and offers itself as a case study in what small organisations can achieve with modest budgets.

Back to Table of Contents

Citizen science can be and is being used in several areas, with the added benefit of raising awareness within the community, but this needs to be treated with caution: to be effective it requires to be done to high standards and be reliable (to be accepted as valid by the water industry and other investors), so it requires considerable professional support, both to arrange and manage it, as well as to verify critical findings, which inevitably has a cost.

3. Are there specific locations in London that should be prioritised for improving water quality and increasing access to rivers or waterbodies?

A strong case can be made for prioritising the Beverley Brook: It is short with a modest catchment area, yet the estimated population in the catchment is over 400,000 and the boroughs it passes through cover nearly double this, or roughly 8% of the population of Greater London.

In places such as Richmond Park (as well as Barnes, Wimbledon and Putney Commons) it has the semblance of a rural stream, belying its poor water quality and hydromorphology: in particular the public tends to confuse relatively clear water with clean water – the sediment churned up by rainwater , which dilutes the contaminants, is seen as poor water quality when it is arguably safer than the clear water! Children and dogs are thus often paddling and cooling off in the river when contamination may significantly exceed recommended levels.
The brook faces challenges typical of urban rivers, making it a good test-bed for interventions across a wide range of issues, while its characteristics mean the results of interventions will be capable of close monitoring.

BCL and SERT are already working in collaborations and partnerships in research, community engagement, and co-production which we see as the best way forward for smart catchments to be effective in the short and medium term.

Improvements made with a river like this can be replicated elsewhere, and part of any engagement should be that results achieved and lessons learned should be shared. Budget provision should be made for the resources needed to achieve this, with other rivers and catchments, with organisations and with the public, through a range of meetings, webinars, posts and communication using a variety of channels.

4. Who is responsible for making the changes needed? What actions should the Mayor and GLA take?

This simple question ought to have a simpler answer but the present allocation of legal responsibilities is complex and too often leads to a denial of responsibility and buck passing, with the pubic confused about how and where to report concerns to try and get action : the public typically assumes that either EA or TW has responsibility, but the law is complex, given that rivers have no legal persona, and ownership is shared by all riparian owners who, in theory are responsible for their portion of the river bank and half of the water course – apparently whether or not modifications have been done in the past by the Rivers Authority (now EA).

Longer term – Policy challenge: We believe that there is a case to be made for a major review of the status of rivers, nationally but especially in urban areas, but we recognise such a fundamental change in law is unlikely in anything like a ten year time horizon. Still, if there is a major review of the water industry this should at least be raised as a policy challenge.

Short term: Encourage better collaboration and problem solving between those with responsibility: Discharges into the river typically are made through assets belonging to TW, but water passing into their assets is not their responsibility, such as from road gullies or private properties. EA tries to help resolve issues involving environmental incidents. We hesitate to suggest other parties are added to the reporting, which is confusing enough already, but given the capability of modern systems it ought to be possible to establish a simple reporting system that ensures allocation to a lead responsible organisation.

Back to Table of Contents

Short term: as demonstrated by the River Crane Smart Catchment, much can be done by a collaboration between TW, EA, River Trusts and local communities if they are given relatively modest funding (The Crane Valley CIC, established in 2020, received £3m support for 2020-25 to deliver a 10 year catchment plan. This funding had been leveraged four-fold to £12m by late 2022 to deliver specific interventions. Such sums are modest in the extreme compared with the billions proposed for the coming 25 years for TW investment or the annual budget of Defra for flood management and rivers).

The Mayor and GLA can use their influence and resources to galvanise all parties into collaborative action, and support communities seeking to make improvements to their local rivers and water bodies 'bottom up'. In particular we believe the GLA should help ensure the concept of smart catchments is developed across all the rivers of London, either ensuring TW is able to continue funding its programme or that official support is provided.

5. What can the Mayor learn from other examples (national or international) of creating cleaner and accessible 'swimmable rivers'?

We would recommend that the Mayor investigates the pathway to legal personality for rivers, without which rivers have no legal rights. Colombia, New Zealand and India have set precedents and there is extensive material available on-line on the pathways towards such status.

6. Is there other relevant information you would like to share?

Given the complex rights and issues involved it is easy for issues to be bogged down and action delayed, especially during the conceptual and planning stages. We would recommend adoption of an approach which encourages action and doing more with less. It is recognised that mistakes can happen (no matter how carefully planned a project is) and that provided the project is monitored, positive and negative lessons can be learned and acted upon, limiting downside and promoting upside, resulting in better and quicker results overall.

Back to Table of Contents

Development Manager, Crane Valley Partnership, Ref No. SW003

Environment Committee Swimmable Rivers call for evidence

I am writing in my professional capacity as the Crane Valley Partnership's Development Manager with reference to the above. The Crane Valley Partnership (CVP), hosted by the Crane Valley Community Interest Company (CVCIC), is an unincorporated association of charities, community groups, borough councils, private businesses & government agencies in the five boroughs within the River Crane catchment area (London Boroughs of Harrow, Hillingdon, Ealing, Hounslow and Richmond upon Thames). The Partnership aims to restore one of London's most natural river systems, conserve surrounding habitats and improve public access so that nearby communities can enjoy contact with the natural world. For more information, please see: **https://www.cranevalley.org.uk/**. CVP is a member of the River Partnerships in London (RiPL) group. Please note that this response captures my thoughts only and does not present the collective view of the partner organisations within CVP. [These organisations will have their own perspectives and (I assume) will submit their own responses accordingly if they wish to engage in the consultation process.] Nor does this response represent the view of CVCIC (of which I am a Director) or RiPL. Taking each question in turn:

1. What factors [e.g. safety, water quality] are important to assessing if a river or other waterbody is 'swimmable'? How should these be measured and monitored? *'Develop a bold plan for swimmable rivers within 10 years'* is an admirable aspiration but I do think that the 'swimmable rivers' stapline could ultimately prove to be problematic for the Mayor and policy-makers generally, raising public expectations way beyond what is actually achievable in London in that relatively short timeframe. Not only does water quality need to be significantly improved to make more rivers 'swimmable', but significant safety concerns also need to be addressed. Even in the absence of pollution, many rivers are inherently hazardous environments - with steep banks, strong currents, cold temperatures and sudden changes in water level. Furthermore fly-tipped objects and materials can lie unseen beneath the water surface, with the potential to injure or trap swimmers. So even if water quality was of a high standard I think it would be unwise to assume and/or imply that it was safe to swim. It would perhaps be better to focus on delivering 'healthy rivers' - a term which captures the spirit of the endeavour but without introducing an element of jeopardy. It is also worth mentioning that even if all safety concerns are addressed, swimming may still need to be discouraged in areas where precious riverine habitat needs to be protected and preserved and/or where aquatic wildlife needs to be left undisturbed. But if, after consideration of the above, there remains a strong political desire to encourage people to enter rivers, perhaps the best compromise would be to focus on paddling. It may well prove more straightforward to identify discrete stretches of shallow river which are potentially 'paddleable', and then work to resolve water quality and safety issues with stakeholders locally. Notwithstanding the above, if rivers are to be deemed 'swimmable' then the assessment of water quality must be made in a sophisticated manner and not simply on the basis of the results from infrequent spot samples at a limited number of locations. Continuous (automatic) monitoring is required, covering a wide range of parameters. And most importantly there needs to be microbial monitoring at any location deemed potentially suitable for swimming. Also there needs to be greater understanding on the potential impact on human health of 'Chemicals of Emerging Concern'. River water in London is a cocktail of exotic substances. For example, we know that in the Crane river system there are traces of pharmaceuticals, illicit substances (i.e. recreational drugs) and pesticides. And of course, oil and other hydrocarbons can enter rivers from road run-off after rainfall, adding to the unwelcome mix.

2. What improvements are achievable in 10 years? Are there any short-term priorities or interim milestones that are needed? The answer to this question depends entirely upon the level of investment by Thames Water and other relevant actors, including local authorities and of course the GLA. Also, the degree to which the Environment Agency (EA) is willing and able to take enforcement action where required is a major factor influencing the level of success. And it is worth highlighting too

Back to Table of Contents

that collective efforts to improve our rivers could of course be hampered if existing environmental protections are weakened in the drive to boost economic growth or facilitate more housing development. Over the past five years, the Crane Valley has greatly benefited from £3 million of targeted investment from Thames Water. The Crane Valley was selected by Thames Water as the urban pilot area for the 'Smarter Water Catchments' (SWC) initiative which (in effect) 'supercharges' Defra's Catchment-Based Approach (CaBA) by providing selected catchment partnerships with much needed funding to do things that benefit the river environment. As a result we have made great strides that would not have happened otherwise. SWC demonstrates that if catchment partnerships are properly funded (rather than having to get by on 'scraps' of cash) they can deliver transformational change. In the Crane Valley, as indeed in some other river catchments in London, misconnected properties are a significant problem affecting water quality. Where misconnections occur, household appliances (such as washing machines and dishwashers) and/or sanitary ware discharge to the rainwater system rather than the foul sewer, causing river pollution locally. Dealing with this problem should be a high priority for the Mayor. More clarity is needed over who is responsible for enforcement where such misconnections occur, but also planning authorities need more resources to check that new developments, home improvement works and new extensions aren't contributing to the misconnections problem. Dealing effectively with the misconnections problem would be a good short-term priority, particularly as misconnections can introduce pathogens into rivers.

3. Are there specific locations in London that should be prioritised for improving water quality and increasing access to rivers or waterbodies? The Crane Valley has a number of locations where paddling already occurs (informally) or could be encouraged. The catchment partnership is strong, and the community network across the valley has been greatly strengthened as a result of the Smarter Water Catchments initiative. If the Mayoral focus moves from 'swimming' to 'paddling', and the Mayor/GLA is looking to fund some pilot areas to test the concept of 'paddleable rivers', then it would be well worth considering the Crane Valley. Please feel free to get in touch with me regarding this.

4. Who is responsible for making the changes needed? What actions should the Mayor and GLA take? The responsibility lies with multiple actors - no single organisation has the power or resources to deliver the 'swimmable rivers' aspiration unilaterally. The existing catchment partnerships are well placed to assist the process as they already bring together many of the relevant parties, but the collective effort needs to be properly funded. The GLA can help by providing funding but also has role to play in encouraging co-operation across administrative boundaries where this doesn't already occur. And the London Plan is of course a key instrument that can, with the inclusion of appropriate policies, drive forward positive change in relation to river health.

5. What can the Mayor learn from other examples (national or international) of creating cleaner and accessible 'swimmable rivers'? I have no comment to make here.

6. Is there other relevant information you would like to share? For reports on water quality and misconnections in the Crane catchment, please see CVP's online library at: **https://www.cranevalley.org.uk/project-archive-library/** . We will shortly be releasing the second state of the environment report for the Crane catchment which will provide an up to date snap-shot of the Crane Valley in relation to five themes: • Public awareness, access and participation • Biodiversity and environmental connectivity • Flood resilience • Water quality • Geomorphology

Back to Table of Contents

Environment Agency Ref No. SW004

Call for Evidence – Swimmable Rivers
Please find below the Environment Agency submission in support of the Swimmable Rivers call for evidence.

A. About you/your organisation • **Organisation name** • **What does your organisation do?** • **Where are you based (if applicable)?**
The Environment Agency is a national body that works to create better places for people and wildlife and supports sustainable development. We are an executive non-departmental public body, sponsored by the Department for Environment, Food & Rural Affairs. We are the statutory environmental regulator for England. We are a Category 1 Incident Responder. We build and operate flood risk management infrastructure and assets. We are a statutory consultee at all levels of spatial planning. We are responsible for maintaining or improving the quality of fresh, marine, surface and underground water in England and Wales. We aim to prevent or reduce the risk of water pollution wherever possible and to ensure that any pollution that may affect ecosystems or people is dealt with. The Environment Agency is responsible for monitoring, improving, and maintaining water quality at all designated bathing waters. There are more than 450 designated bathing waters across England. Climate adaptation is a high priority for the Environment Agency and underpins much of our work. We devote resource to planning the coordination and delivery, maintenance and improvement of flood defences in line with climate change allowances. The communities we serve are also impacted by the water companies we regulate through their planning for drought supply resilience and wastewater treatment needs.
B.1. What factors [e.g. safety, water quality] are important to assessing if a river or other waterbody is 'swimmable'?
We believe swimmable relates to river and waterbody health. River health may be impacted by a number of sources and activities, some we regulate (such as water companies or agricultural) and some that we don't regulate, like transport road runoff and household misconnections. The role of others is also important who look at human health and safety in rivers. This includes physical river condition – entry and exit (flood walls), submerged dangers, structures and historic pollution. The Environment Agency uses Bathing Water standards to determine public access safety. We take up to twenty water samples at each of England's designated bathing waters during the bathing water season between May and September each year. In each sample we test for bacteria that indicate whether there is faecal matter in the water. These bacteria are known as faecal indicator organisms or FIOs and the specific ones that we test for are Escherichia coli or E. coli, and Intestinal enterococci. In this regard, the GLA will need to determine what "swimmable" means for Londoners, whether this is a designated bathing water, or something different. Alongside water quality, we would expect issues such as human health impacts, equitable access, safe access, river amenity value, and user types to be thought about.

Back to Table of Contents

Rivers / waterbodies can impact on human health in a number of ways:
- Physical (snags and cuts), Litter/debris
- Physical makeup - artificial concrete lined channels, deep silt-filled stretches, and some more natural gravel channels
- Facilities people have access to at the sites
- Flow
- Structures throughout London's waterways
- Chemical and pathogenic safety
- Pollutant inputs
- Resuspension of sediments / remobilisation, hazardous waste
- Misconnections
- Road runoff
- Safe ingress and egress points

Rivers in London are suffering from the presence of invasive non-native species (INNS) on a large scale. Some of these species (e.g. Giant Hogweed) are dangerous if people touch them. As such, any chosen sites for designated swimming should have a dedicated programme of INNS eradication. We should also consider the possibility of bathers moving INNS between sites. If one site has INNS that aren't being managed, they could easily be transferred around the city by people who visit more than one area.

It is important to note that the majority of the Thames' tributaries are not large enough for swimming in. Human access to rivers is more likely to be 'paddling' rather than swimming. Other water sports might also be available to people (e.g. paddleboarding/ kayaking). A specific definition of what 'swimmable' means should be determined as early as possible.

Finally, the roles / remits of different organisations / landowners will need to be understood.

B.2. What improvements are achievable in 10 years? Are there any short-term priorities or interim milestones that are needed?

We use the Water Framework Directive status to monitor environmental health of rivers. There are 41 rivers in London that are classified. In summary, their status is 36 Moderate, 3 Poor, 2 Bad.

Restoring these rivers to good ecological status has its challenges due to highly modified nature of the watercourses and the heavily urban environment they are in.

To clean these up to bathing water standard would require even more investment and changes to the water company standard of operation and treatment, as well as resolving other sources of pollution such as road runoff and misconnections. There is also a lot of historic pollution that is in the rivers from years of industrial use in the surrounding areas.

When areas are designated, it is important that this is clearly communicated to the public by the Mayor. The use public mapping (similar to say TFL's tube map) which is easy to understand, should be produced that clearly marks areas which get designations, but also marks areas which are considered dangerous.
Immediate actions should cover:

Back to Table of Contents

Misconnections: Improve LA's approach to planning enforcement and then misconnection enforcement. Encourage more TW resource to do more investigations.

Thames Water assets: Phosphates are an issue even in London's 'nicest' waterbodies. In areas which could work, how can upstream CSOs be addressed more urgently than current TWUL plans?

Public education: Londoners need to understand how London's drainage system works (i.e. what is/is not flushable, what are misconnections) and how they can help through their own actions. Public information programme in areas where swimmable rivers will be required.

We suggest a mapping exercise to narrow down the potential sites where a Bathing Water or swimmable designation could be made and where would not be possible. This should understand:

Where we know physically it isn't possible to achieve Bathing Water status (e.g. 'exclusion zones' near structures/assets/concrete channels/flood channels etc.)

Locations where facilities/transport look suitable

Locations downstream of storm overflows/major roads that may not be suitable for bathing

The riparian land ownership picture across London (e.g. we'd expect residential owners to push back on people swimming in their back gardens, so perhaps you could exclude private ownership completely and focus on parks/public spaces – i.e. areas where public bodies are able to give permission for swimming)

Waterbodies currently with good/bad WFD water quality

This mapping exercise should reduce the number of viable locations. Each of these sites should be visited to check current conditions and understand any improvements that are likely to be required:

invasive species
endangered species
land ownership
ingress/egress
facilities
baseline water sampling data to compare against 'bathing water status' metrics and other potential sources (e.g. roads/landfills etc.)
length of river viable for Bathing
flow conditions/variation
river restoration opportunities

B.3. Are there specific locations in London that should be prioritised for improving water quality and increasing access to rivers or waterbodies?

Back to Table of Contents

There are currently four designated bathing water locations in London 2024 – monitored by the EA:

Hampstead Heath ladies good
HH mens excellent
HH mixed excellent
Serpentine Sufficient

Other current London outdoor swimming locations:
West Reservoir, Royal Docks, Beckenham Place Park, Canary Wharf, River Thames.
The Thames Upper and Thames Middle waterbodies are failing to reach Good Status and are designated as "Moderate Ecological Status' and "Moderate Chemical Status". Reasons for both the Upper and Middle Thames water bodies not achieving good Chemical Status are:
• Pollution from towns, cities and transport
Pollution from wastewater
• Physical modifications

Potential river locations in London and an example of the issues they face:
The River Lea through Hackney Marshes. It is a heavily modified river and fails to meet WFD standards due to elements such as priority hazardous substances (PFOS & Polybrominated diphenyl ethers (PBDE). It has reason for not achieving good status including sewage, misconnections, pennywort, and physical structures.

River Roding is of Moderate Status. The reason for not achieving a good status include Urban diffuse pollution, misconnections, sewage discharge, and physical modification.

Our field teams will be able to support a better understanding of:
Crane (Crane Park/Kneller Gardens)
Upper part of Turkey/Cuffley Brook (tie in with Landscape Recovery/Highways M25 work)
Dollis Brook (Brook Farm Open Space/Whetstone Stray)
Reservoirs where sailing is currently allowed
Roding (Wanstead Park)
Roding (Fairlop Waters)
Roding Valley Meadows (in the river alongside the lake)
Ching (Highams Park lake/Connaught Water)
Mayes Brook Park

B.4. Who is responsible for making the changes needed? What actions should the Mayor and GLA take?

In partnership with a range of other environmental and planning organisations, the Environment Agency has set out actions to improve river health, and by extension human health, through River Basin Management Plans. We have set out actions for all sectors with influence on the quality of London's rivers:

• Investigations used to support the RBMP covering the Thames and London, shows that the sectors with the greatest impact on London's rivers are the water industry and urban and transport factors. In parts of London without a combined sewer, surface water from roads drains to the river depositing oils and metals into the water. These connections upstream of any "swimmable" location will need to be addressed by highways and local authorities.

• To bring locations up to bathing water standard would require changes to the water company standard of operation and treatment. Current standards are focussed on ecological requirements and not human health.

Back to Table of Contents

• Historical pollution that is in the rivers from years of industrial use in the surrounding areas will need to be addressed. The risks from resuspension of sediments / remobilisation of heavy metals or hazardous waste will need to be addressed. • Ongoing problems of residential and industrial misconnection to the watercourse will need to be addressed. This is a cyclical problem. Anecdotal evidence suggests that programmes of dealing with residential misconnections may have a limited lifespan and require revisiting to hotspot locations. Thames Water is responsible for the majority of outfalls in Greater London; the remainder are Highways Agency, Local Authority or privately owned. This would need the local authority to take the action that it is regulated to do
B.5. What can the Mayor learn from other examples (national or international) of creating cleaner and accessible 'swimmable rivers'?
It may be useful to explore the hybrid approach of Copenhagen: From Industrial Harbour to Urban Harbour Bath) River Wharf in Yorkshire is one of the UK's only 'swimmable' rivers going by the bathing water standards.
B.6. Is there other relevant information you would like to share?
Pan organisational work lead by the Environment Agency (Blue Space Forum: Health and Inequalities project. (Jan 2024)) has shown that: • There are physical and psychological barriers to blue space access. • These barriers can relate to socio economic factors. • Identified barriers revolved around infrastructure, access of information (e.g. where accessible pathways are) and identity issues (e.g. lack of visibility – rare to see disabled swimmers in adverts, etc). • There are safety barriers to accessing blue spaces (e.g. personal safety, water quality, multiple use risks). • There is a lack of knowledge and awareness (and swim ability) on the use of blue spaces. • There is a need for education and increased safety measures and provision in blue spaces. Multiple avenues to blue space education: from free public events and public education to private, organised events/lessons/groups. • Trespass and fear of confrontation acts as an access barrier. People need to feel welcomed into a space to use it. Consider where Londoners are already using rivers to swim in without any official designation and consider incorporation into the work programme (e.g. the unofficial Hackney Beach on the Old Lea). Water is vital to everyone and everything and yet we may not be doing enough to ensure we have the right amount of good quality water in the right places and times. The Environment Agency, along with others, plays a crucial role in managing and protecting England's waters. Greater collaborative efforts across organisational boundaries are needed to address future challenges. How do we create a shared codesign strategic vision.

Back to Table of Contents

FORCE Ref No. SW005

Organisation

FORCE (Friends of the River Crane Environment) www.force.org.uk

What we do and where we are

FORCE was set up in 2003 to protect and enhance the community and environmental value of the Crane Valley (river and associated open space) in West London. We are a volunteer led Charity with around 750 members and deliver on our objectives through:

- Delivering and supporting regular volunteer activities
- Collecting and analysing data to better understand the key issues and our impact on them – including through the Citizen Crane programme set up in 2014 with ZSL and other partners (including Thames Water and the Environment Agency)
- Engaging with the wider community through walks and talks, events and social media to inform them about the value of the river and associated open spaces and what they can do to improve them
- Working in partnership – including as part of the Crane Valley Partnership www.cranevalley.org.uk - to enhance the community and environmental value of the river and open spaces – investing £1m+ per annum directly over the last five years and linked to a further £5m per annum of wider investment in the river and open space network

FORCE are based in Twickenham and the Crane valley covers 125 sq km and parts of five west London Boroughs (Harrow, Hillingdon, Ealing, Hounslow and Richmond).

What factors are important in whether a river is swimmable?

We consider "swimmability" to be a proxy for river health. In reality much of the Crane would not be swimmable for reasons of depth and/or accessibility but we would like to see the river being used by people to paddle and enjoy. This is a characteristic of most London Thames tributaries and "paddle-able" rivers may be a more encompassing target.

We work with the WFD framework as a helpful guideline and Good Ecological Status as a realistic target for the River Crane through our Citizen Crane programme. We are pleased to say that parts of the lower Crane are approaching Good Status already – not least because of the efforts of many partners through 10 years of the Citizen Crane programme. We have also adopted the following:

> *"An urban river corridor teeming with wildlife and unconstrained by pollution, serving as a vital community resource where people can connect with nature and improve their wellbeing."*

As a broader and more public friendly target.

Clearly microbial pollution is a factor for swimmability (and paddle- ability) that does not figure directly on the WFD measures – though ammonia levels may be a useful proxy.

What improvements are achievable in 10 years?

We are halfway through a ten year Smarter Water Catchment programme, funded by Thames Water and working alongside many partners through the Crane Valley Partnership. This is (as far as we are aware) the first such programme on an urban river in the UK and has helped us to achieve a huge amount over the last five years and given us confidence that Good Ecological Status and/or our proxy statement above should be achievable in the next five to ten years.

Back to Table of Contents

We are currently working with partners to complete the State of the Crane Environment Report which will set out our findings to date and plans for the future. This is due to be launched at an event on 13th February 2025. It will provide more detail on what we think to be achievable over the period to March 2030.

Are there any short-term priorities or interim milestones that are needed?

The first priority for us in developing our programme in the Crane Valley has been to establish and support the catchment partnership host organisation (Crane Valley CIC). There are eleven such hosts for the rivers across London and these convene as the Rivers Partnership in London group. Engaging with these catchment hosts should provide a valuable insight into how London's rivers are managed and their needs.

Community involvement and catchment based partnership working are key to the delivery of our Crane Valley programme. We identified the key themes early in the process (biodiversity; water quality; geomorphology; community and access; and flooding) and produced a catchment plan that sets out the targets against each theme. These are now being delivered by theme leads working in partnership with landowners (local authority and private) and the wider communities.

Are there specific locations in London that should be prioritised for improving water quality and increasing access to rivers or waterbodies?

We don't have a strong view on this – though we would be very happy to see the GLA engaging with the Partnership to use the Crane catchment as a pilot area.

Who is responsible for making the changes? What actions should the Mayor and GLA take?

One of the things we have learned through working as part of the Crane Valley Partnership over the last 20 years is that all the interested parties have a role in delivering change to urban rivers and no party has sole responsibility. Rivers cross so many boundaries of geographic and legislative control and interest that no party has the sole authority, budget or inclination to do this on their own. This is why in our view Partnership working is the only means that generates large scale and sustainable beneficial change to river condition.

In our view the GLA is well placed to play an important role by engaging with the existing Partnership network and identifying the areas that are best suited to its remit and resources. This is an area that could be explored further by piloting with the Crane Valley Partnership.

What can the Mayor learn from other examples (national or international) of creating cleaner and accessible 'swimmable rivers'?

Is there other relevant information you would like to share?

There are significant libraries of information available through the FORCE and CVP websites. However, if the GLA are interested in exploring our experience in more detail, we may be better served by setting up a meeting where the priorities and approaches can be discussed. We can then take any outputs to the next meeting of the Partnership.

Back to Table of Contents

Friends of the Thames Ref No. SW006

About Friends of the Thames: Friends of the Thames is a community-based organisation dedicated to ensuring the River Thames returns to being a clean, accessible, and vibrant waterway for nature & future generations. We aim to gather communities along the full length of the Thames, initially pre-existing sports clubs, citizen scientists, swimmers, businesses, schools etc. to recruit disconnected, more diverse communities, so all can foster a love for the river Thames, therefore cementing her health for future generations. We will hold data centrally, accessible to all, to get a full view of the picture of the river from source to sea. We advocate for improved water quality, increased public access, and the protection of this vital ecosystem. Our work emphasises the importance of collaboration with all as well as building relationships with local authorities, water companies, and environmental stakeholders to address pollution and safeguard the health of the river.

Key Considerations for Swimmable Rivers:

1. Water Quality and Safety: For a river to be deemed "swimmable," water quality and safety must be prioritised. Water quality is not only an environmental concern, but it is also vital to public health and recreational activities. River pollution from untreated sewage, chemical runoff, and industrial waste poses significant risks to both people and wildlife.

All of the sewage and chemicals released into the river Thames from its source at Kemble, in the Cotswolds end up in London, with Thames Water dumping untreated sewage with many of these dark discharges, into the Thames for thousands of hours, it is imperative that we have a concentrated, combined effort to force this to stop. We need infrastructure improvement on a huge scale, with tertiary treatment at all sewage treatment works in order to put a stop to the 350,000 regulated chemicals that are in use from flowing freely into our river.

The Thames, one of London's most iconic features with Thames Water continuing to underperform in addressing water quality concerns. As noted in the Environment Agency's report, Thames Water was responsible for a significant number of serious pollution incidents in
rivers Thames' biggest threat!

2. Water Quality Testing and Monitoring: E.coli levels are one of the most important indicators of water quality for recreational use, including swimming. High levels of E.coli in the Thames have been detected, sometimes exceeding the Environment Agency set safe thresholds by ten times. For rivers to be considered safe for swimming, they must meet the bathing water quality standards of less than 1,000 CFU per 100ml.

Testing for E.coli using WHO-certified equipment, such as the Fluidion analyser, should become standard practice for monitoring water quality across London's rivers. These efforts can help identify pollution sources quickly, facilitating rapid intervention to protect public health.

3. Actionable Improvements in the Next Decade: In the short and long term, a robust strategy must be implemented to improve water quality and ensure the Thames is swimmable. Key actions include:

- **Enhanced Water Quality Monitoring:** Immediate steps should be taken to improve real-time monitoring systems for water quality in London's rivers. Accurate and transparent data is essential for identifying pollution hotspots and prioritizing areas for intervention.
- **Incorporating Water Quality into London's Environmental Strategy:** The Mayor's Environment Strategy must integrate measures to improve water quality, such as promoting sustainable drainage systems (SuDS), urban greening, and better catchment management practices.
- **Supporting Green Infrastructure:** Investing in green infrastructure, such as wetlands and rain gardens, can reduce stormwater runoff, filter pollutants, and improve the health of rivers. The

Back to Table of Contents

GLA should encourage the development of these solutions through incentives and policy guidance.

4. Identifying Priority Areas for Action: Specific areas along the Thames and its tributaries should be prioritised for water quality improvements. These include zones where sewage overflows are most frequent and regions with high public access for recreation. The GLA can play a central role in guiding these efforts and coordinating between local authorities, water companies, and environmental organisations.

5. Accountability and Action: The responsibility for addressing pollution lies with multiple stakeholders, including water companies, regulators, and policymakers. The Mayor and GLA have a unique position to drive change by advocating for stronger enforcement of environmental regulations, supporting the modernisation of London's sewage infrastructure, and holding polluters accountable.

Thames Water has been a consistent source of pollution in the Thames, with ongoing failures to meet environmental standards. Given its financial instability, it is crucial that Thames Water undergo restructuring through mechanisms like Special Administration, ensuring that resources are allocated to critical infrastructure improvements and pollution control.

6. Learning from National and International Examples: Cities around the world have made significant strides in improving water quality and creating accessible, swimmable rivers. London can learn from best practices implemented in places like Berlin and Copenhagen, where comprehensive river restoration projects, stricter regulations, and public engagement have led to cleaner, safer waterways.

7. Additional Considerations: A key issue contributing to river pollution is misconnected plumbing in newly built properties. Many properties discharge wastewater directly into storm drains, leading to untreated sewage entering the river. The GLA can support enforcement actions to address these misconnections and ensure proper plumbing standards are met across the city.

Conclusion: To make the Thames and its tributaries swimmable, urgent and sustained action is required at every level—local, regional, and national. The Mayor and the GLA must lead the charge by holding polluters accountable, advocating for improved regulatory oversight, and implementing effective environmental strategies. By working together, we can create a future where London's rivers are clean, safe, and accessible for all.

For more information, visit our website: www.friendsofthethames.org

Back to Table of Contents

London Borough of Bexley Ref No. SW007

Within Bexley, there are a number of watercourses including the Rivers Cray and Shuttle. The River Thames flows along the north of the borough, and the River Darent along the northeast. Additionally, there is a network of lakes, canals, smaller streams, dikes and ditches within the borough and 'lost rivers' such as the Wansunt and Stanham that now run in tunnels beneath Crayford.

Policies within the Bexley Local Plan 2023 support the improvement of water quality and activation of water spaces for water-based activities and transport, where safe and active use of the water space can be facilitated. This includes policies, such as DP29 'water quality, supply and treatment'; Policy SP13 'Protecting and enhancing water supply and wastewater infrastructure'; Policy DP18 'Waterfront development and development including, or close to, flood defences'; and Policy DP33 'Sustainable drainage systems'.

Bexley's water spaces are valuable public assets, contributing to Bexley's natural, cultural and built heritage and encourage physical and healthy outdoor activities which are essential to our health and wellbeing. The River Thames and the navigable part of the River Cray are part of the Mayor of London's Blue-Ribbon Network, where sport and leisure activities are supported and transport opportunities exist for passenger and freight movement to improve connectivity and support good growth.

Although, activities such as fishing and boating are supported in appropriate locations, ensuring there is no rubbish or pollution in river channels that could hurt people whilst swimming, accessing and exiting the water would be a significant challenge. Encouraging swimmable rivers may place additional burdens on landowners with increased liabilities, insurance costs and claims associated with increased risks to public safety, water quality, access and egress, and the need for signage. General access to recreation, travel and nature, and enhancement of waterways for the purposes of sustainable development and nature recovery is therefore considered to be more important and easier to achieve. Funding to improve water quality and access to the water for these purposes, such as improvements to Erith Pier to allow access by river bus services, should be a priority.

The Environment Agency (EA) routinely monitors the ecological and chemical quality of water bodies, including the River Thames, River Shuttle, River Cray, and the Marshes Dykes with a monitoring station at Southmere Lake. For Bexley, the EA has declared a 'moderate' ecological status for all monitored surface water bodies, with an objective to achieve good status by 2027. A chemical status of 'fail' was also recorded for all monitored surface water bodies, with an objective to achieve a good status. The status of 'fail' is partly due to a change in the EA methodology to increase the evidence base of collected data, which includes 52 chemicals. There are four groups of global pollutants which are ubiquitous, persistent, bioaccumulative and toxic substances (uPBTs) causing these failures. If these uPBTs are excluded, then chemical status of all monitored water bodies in Bexley would be 'good'. These chemicals are widespread in England's water bodies, so the status is not unique to Bexley. The Thames River basin district (RBD) management plan includes Bexley's water bodies and describe the EA's framework to improve the quality of waters. The key issues include point source pollution from water industry sewage works; physical modification of water bodies; abstraction; and diffuse pollution from urban sources.

There are many things that can affect the quality of our water supply. For example, road and rail represent the predominant modes of transport within Bexley and both modes have the potential to contaminate both land and groundwater. The potential for rainwater to carry hydrocarbons, metals, dust, litter and organic materials into watercourses as it washes the urban streets and buildings poses a threat to the water quality at local watercourses.

The majority of Bexley's waterways are designated as sites of importance for nature conservation (SINC) and have an important role to play in both protecting wildlife and creating pleasant environment for people to access and connect with nature. Nature-based solutions to address water quality issues could

Back to Table of Contents

include, for example, wetland construction. Nature-based solutions such as this, would not only mitigate against the impact of road runoff but can also bring about multiple benefits to the local community and area [e.g., improved biodiversity and nature recovery, mitigation of flood risk, carbon storage, more natural green and blue spaces that contribute to community wellbeing]. However, to make these projects feasible, a priority should be to ensure sufficient revenue funding can be secured at the outset to cover costs of resourcing their long-term management.

Funding to support organisations such as North West Kent Countryside Partnership and Thames 21 who work to actively involve communities, volunteers and other stakeholders in restoring their local rivers, tackling pollution, managing invasive species, and improving access to rivers, should also be prioritised. Initiatives to reactivate the Thames river frontage for sustainable freight and passenger transport to promote sustainable growth opportunities would form an important component of this.

Back to Table of Contents

Port of London Authority Ref No. SW008

Dear Zack Polanski AM,

1. I am writing to you in your role as Chair of the London Assembly Environment Committee. The Port of London Authority operates as a trust port with no shareholders, reinvesting all proceeds for the benefit of the Thames. We are the custodians of the riverbed and foreshore up to mean high water for 95 miles of the tidal Thames, from Teddington Lock to the Estuary. Our Thames Vision 2050 outlines our ambition to grow the Port of London, already the UK's largest port, while achieving Net Zero emissions.
2. The Port of London Authority (PLA) is pleased to submit evidence to the Environment Committee. As custodians of the tidal Thames, we are uniquely positioned to provide insights into the challenges and opportunities of the Swimmable Rivers plan. Our submission outlines specific safety considerations which are essential when assessing if a river is "swimmable" as well as the PLA's recommendations on what priority actions are required to reduce pollution in our waterways.

A The Port of London Authority

3. The tidal Thames is a vital ecological and cultural resource. It is home to diverse wildlife, supports local communities, and provides essential ecosystem services, including flood protection. While the river has made significant progress since being declared biologically dead in 1957, pollution—especially from sewage discharges—remains a major challenge.
4. The PLA works to protect and enhance the environment of the tidal Thames. With escalating climate challenges, ensuring the health of the Thames is vital for the environment and the economy. Section 200 of the Port of London Act prohibits pollution into the Thames, however these powers are not enough to stop pollutants being discharged into the river as its enforcement is limited to direct actions within the PLA's remit, such as discharges from commercial vessels. Broader sources of pollution, including combined sewer overflows and diffuse run-off from urban areas, fall outside the scope of these powers, necessitating collaboration with other authorities and strengthened regulatory measures.
5. We want a river that is clean, free from pollution, and with a healthy ecosystem. We have a right and a responsibility to insist that the river is not damaged by the actions of others.
6. More than ever, our stakeholders, river users and the communities who live and work along the riverside, are demanding a clean river. Public and media outrage about pollution in the river has never been more vocal. Our own research on public attitudes tells us that tackling pollution is the top priority for people when they think about the River Thames.
7. We support the ambition of the Mayor's manifesto commitment for the improvement of river water quality. However, there are sections of the tidal Thames that are not suitable for swimming activities due to significant hazards in and around the waterway. Our evidence highlights key initiatives undertaken by the PLA to improve water quality in the tidal Thames and emphasises the importance of consideration of the Thames and safety. We do not support the use of the word 'swimmable' in relation to this plan as we are concerned about this encouraging swimming in dangerous conditions, even with more nuanced safety messaging.

B. The Mayor's Swimmable Rivers Commitment

What factors [e.g. safety, water quality] are important to assessing if a river or other waterbody is 'swimmable'? How should these be measured and monitored?

8. The PLA is responsible for ensuring the safety of all river users which is a top priority. When assessing if a river or waterbody is "swimmable" there are various factors that should be considered. The majority of the tidal Thames is not suitable for swimming due to its fast-flowing tides,

Back to Table of Contents

undertows, hazards in the water and the heavy presence of commercial vessels traffic. These conditions create significant risks that make the river hazardous for swimming and, for this reason, swimming below Putney is prohibited under the Port of London Authority's Byelaws. Between Teddington and Putney, swimming is permitted, but it should only be undertaken by experienced, strong swimmers who are aware of the many dangers associated with swimming in the Thames. We do not encourage swimming in any part of the tidal Thames.

9. The PLA focuses on encouraging safe and inclusive recreational use of the river through our Active Thames funding, in partnership with Active Essex, Active Kent & Medway, London Sport, British Canoeing, British Rowing, RYA, Canal & River Trust and Thames Path National Trail, which supports a variety of water sports, including sailing, paddle sports, rowing and walking along the waterways. By making these activities more affordable and accessible, the PLA can provide safer alternative for enjoying the river. We have attached the impact report for this scheme. Much of our funding is directed towards projects that engage people who are less likely to be active, or from communities with less access to sports and activities.
10. The PLA also has established initiatives such as the Tidal Thames Water Safety Forum which actively educates the public about the dangers of swimming in the Thames. This helps to reduce river-related drownings and enhances overall water safety. The PLA has established partnerships with key organisations such as the Royal National Lifeboat Institution (RNLI) and London Fire Brigade to ensure a coordinated approach to river safety.

What improvements are achievable in 10 years? Are there any short-term priorities or interim milestones that are needed?

11. Our 2050 Vision for the tidal Thames is of a clean, thriving river, free of sewage and other pollutants, supporting greater biodiversity and recreational use.
12. While improvements in infrastructure and policy have enhanced water quality, the Environment Agency reports that the tidal Thames is not meeting its water quality targets under the Water Framework Directive. Further action is urgently required to address pollution, especially from Combined Storm Overflows (CSOs) and sewage treatment works.
13. In response, over the last 10 years the PLA has taken a leading role in tackling pollution through partnership driven initiatives including developing the Thames Litter Forum in 2014 and launching the Thames Litter Strategy in 2018.
14. Partnership working is essential to delivering the required improvements to water quality that are required in the Thames. Collectively, partners bring together different expertise is various fields and the PLA uses its convening power to bring about positive change. Building on our Thames Litter Strategy, in 2023 the PLA launched the Clean Thames Manifesto[1] which addresses broader pollution issues, including sewage discharges. It establishes a framework for collaboration with water companies, regulators, and other stakeholders.
15. Through the Clean Thames Manifesto, the PLA has achieved significant commitments to reduce sewage pollution:

    a) Thames, Southern, and Anglian Water, alongside their regulators, have committed to a strategic working group with the PLA to address sewage discharges in the tidal Thames.
    b) Thames Water has agreed to work with the PLA to tackle wet wipe accumulations on the foreshore.
    c) Thames, Southern, and Anglian Water will provide near real-time information on sewage discharges from all CSOs and storm overflows from treatment works.
    d) Ofwat has committed to supporting water companies in advancing investment proposals that deliver best value and align with long-term environmental goals.

[1] https://pla.co.uk/clean-thames-manifesto

Back to Table of Contents

e) The Environment Agency has pledged to support water companies in expediting projects from their 25-year plans within the Water Industry National Environment Programme (WINEP).

16. Together with over 20 partners[2], the PLA launched the Clean Thames Plan[3] in 2024. This comprehensive strategy outlines efforts to prioritise ten key areas for action through to 2030. These areas include:
    a) Seek opportunities for nature restoration.
    b) Collect, use & share meaningful data and research.
    c) Engage with the public to access, understand and value the river.
    d) Create funding opportunities to enable innovation and technological development.
    e) Partner with businesses to co-develop best management practices to reduce pollution.
    f) Thames is an evidence-based exemplar for solutions to river pollution in the UK.
    g) Combat pollution pathways into the river.
    h) Co-produce holistic and enforceable legislation.
    i) Understand the plastic lifecycle to tackle sources of litter.
    j) Remove existing litter in the river.
17. The Clean Thames Plan summarises the need for implementation of advanced real-time monitoring technologies and the integration of nature-based solutions such as green infrastructure and constructed wetlands. The plan emphasises significant infrastructure investments to upgrade sewage treatment facilities and reduce Combined Storm Overflows (CSOs), while enhancing collaboration with water companies, regulators, local authorities, and community groups. Additionally, targeted public engagement and education campaigns aim to foster community involvement in pollution prevention and river stewardship, ultimately achieving substantial improvements in water quality, biodiversity, and the overall health of the tidal Thames ecosystem.
18. Over 70 achievable actions have been committed to by both the PLA and its partners in the Clean Thames Plan to be delivered by 2030. This framework to partnership working could be used as a blueprint for targeting action in London's waterways, acknowledging the Thames has specific challenges being a commercial river.

Who is responsible for making the changes needed? What actions should the Mayor and GLA take?

19. In the tidal Thames, the Environment Agency is the lead regulator responsible for monitoring water quality and reporting progress under the Water Framework Directive. As a Trust Port, the PLA is also committed to improving the natural Thames environment and therefore believes that convening relevant stakeholders leading on these issues is an effective way to deliver the changes needed. The PLA welcomes the Mayor also putting renewed focus on this area.
20. The PLA's leadership in the Clean Thames Manifesto provides a compelling example of how coordinated efforts between stakeholders can accelerate progress on reducing pollution.
21. Based on our experience in developing a collaborative agreement with three water companies discharging into the tidal Thames, we have found that coordination between water companies is essential to driving quicker, more impactful outcomes and fostering innovation in addressing systemic issues such as sewage pollution.

[2] Our Clean Thames partners: Active360, British Plastics Federation, British Rowing, Bywaters, Cory, Cross River Partnership, DP World, Drinkable Rivers, Environment Agency, Essex Wildlife Trust, Gravesham Borough Council, GreenSeas Trust, Hubbub, HR Wallingford, London Borough of Hammersmith & Fulham, London Borough of Newham, London Borough of Richmond Upon Thames, London Borough of Tower Hamlets, Medway Swale Estuary Partnership, Natural England, Natural History Museum, Port of London Authority, Queen Mary University of London, River Thames Society, Royal Holloway London, South East Rivers Trust, Thames21, Thames Estuary Partnership, Thames Litter Forum, Thames Rivers Trust, Tideway, University of Reading, Way to Eco, Zoological Society of London (ZSL)

[3] https://pla.co.uk/cleanthamesplan

Back to Table of Contents

22. The PLA strongly supports the Mayor and GLA pushing the requirement for water quality monitoring across the tidal Thames and its tributaries to effectively report improvements.
23. In addition, the PLA supports the GLA and Thames Water's work to explore delivering sustainable urban drainage schemes (SUDs) through streetworks. We recognise the limitations and challenges of SuDS in the urban London landscape. Thames Water's Drainage and Wastewater Management Plan picks up this challenge, proposing the management of 7,000 ha of land using SuDS across London by 2050. We believe that the GLA are uniquely positioned to promote the delivery of SUDs throughout London's Boroughs which will in turn provide huge benefits to both climate resilience and river water quality.

Is there other relevant information you would like to share?

24. The PLA recently responded to the Government's call for evidence in relation to the Water (Special Measures) Bill. To summarise our response:

a) The PLA strongly supports the inclusion of statutory requirements for water companies to publish annual pollution incident reduction plans. We at the PLA recognise that the introduction of annual pollution incident reduction plans can significantly enhance water quality protection measures. By requiring undertakers to set out detailed strategies for reducing pollution incidents and to report on their progress each year, Clause 2 provides a valuable framework for accountability.

b) We welcome Clause 3's requirement for near real-time reporting of emergency overflow discharges, which aligns with our commitment to transparency and responsiveness under the Clean Thames Plan. Ensuring that the public, regulators, and river authorities like ourselves have rapid access to discharge information is crucial for safeguarding water quality and minimising harm to local ecosystems and river users (for example those involved in recreational activities).

c) The PLA recommends that water companies be encouraged to adopt integrated management practices that consider both emergency and non-emergency overflows collectively. This includes prioritising low-impact, nature-based solutions (e.g., constructed wetlands) and partnering with local authorities for sustainable urban drainage (SuDS). Given the direct impact overflows can have on navigation, ecology, and water quality, the PLA advocates for mandatory engagement with local port and navigational authorities during any permit review or overflow management planning.

d) We welcome Clause 4, which requires sewerage undertakers to incorporate nature-based solutions (NBS) within their drainage and sewerage management plans. Drawing on our Clean Thames Plan, we recognise the significant potential of NBS to improve water quality, enhance biodiversity, and bolster climate resilience in the tidal Thames and beyond.

Conclusion

46. The Port of London Authority is committed to protecting and enhancing the tidal Thames for future generations. The Mayor's manifesto commitments within the "Swimmable Rivers" represent a significant step forward to improving water quality for London's rivers.

47. However, making the tidal Thames "swimmable" presents significant challenges due to inherent risks such as fast-flowing tides, undertows, hazards in the water and the heavy presence of commercial vessels traffic. These factors make swimming in the tidal Thames hazardous.

48. While we do not advocate for swimming in the tidal Thames, our Active Thames funding programme ensures that the river remains a vibrant and safe space for leisure and recreation.

49. By promoting water activities and fostering inclusive community engagement, we help people enjoy the physical and mental health benefits of the Thames without compromising safety.

50. We are committed to delivering on the actions set out within our Clean Thames Plan and Clean Thames Manifesto ensuring cleaner and healthier waterways for current and future generations.

Back to Table of Contents

River Action Ref No. SW009

1. **About you/your organisation**

River Action is a UK charity on a mission to rescue Britain's rivers by raising awareness of river pollution and applying pressure on industrial and agricultural producers, water companies and other polluters.[4] River Action campaigns firstly for polluters and their supply chains to take greater responsibility for remedying the adverse environmental impact they are having on the health of our rivers, and secondly for environmental regulators to improve their historic poor performance in enforcing regulations and bringing polluters to account.

2. **What factors [e.g. safety, water quality] are important to assessing if a river or other waterbody is 'swimmable'? How should these be measured and monitored?**

Why water quality and safety matters

Water quality is not just a matter of environmental stewardship; it is fundamental to public health, recreation, and the well-being of communities who rely on clean rivers and waterways. Across the UK, there were over 600,000 sewage discharges in 2023.[5] Since 2010, hospital admissions for waterborne diseases have risen by 60%, with 122 cases of leptospirosis (Weil's disease) diagnosed last year—double the number recorded in 2010.[6]

The River Thames, a central feature of the city, serves as both a recreational hub and a vital ecosystem. However, Thames Water has persistently underperformed on water quality as shown by the Environment Agency's (EA) report published last year. The EA annual report on the environmental performance of England's water companies revealed ongoing underperformance, with Thames Water receiving a two-star rating.[7] The report highlighted that over 90% of serious pollution incidents in 2023 were caused by just four companies- with Thames Water responsible for 14 incidents.

The level of pollution was starkly illustrated in March 2024, when, ahead of the historic Oxbridge Boat Race on the River Thames, River Action's water quality testing[8] found alarmingly high levels of dangerous E.coli bacteria. Between 28th February and 26th March 2024, River Action, in collaboration with the Fulham Reach Boat Club, conducted regular testing on the Thames. Using a Fluidion analyser verified by the World Health Organization, the tests detected E.coli levels up to 10 times higher than the threshold deemed acceptable by the Environment Agency for bathing waters graded as 'poor,' the lowest of four categories. When water is classified as 'poor,' the Government advises against bathing. The testing results indicate that the pollution likely originates from sewage discharges by Thames Water into the river and its tributaries.

In response, British Rowing, River Action, and The Rivers Trust collaborated to create some guidelines on rowing when water quality is poor, designed to reduce the risk of illness from exposure to polluted waterways. The guidelines include practical advice, such as covering cuts and blisters with waterproof

[4] River Action [online]
[5] End Sewage Pollution Coalition (2024), [online]
[6] Labour Party (2024), analysis of NHS hospital admissions. [online]
[7] Environment Agency [online]
[8] River Action [online]

Back to Table of Contents

dressings and thoroughly cleaning equipment after use, to name a few. The need to issue health guidance to elite athletes ahead of a historic race on the River Thames highlights the consequences of decades of inadequate regulation and neglect by Thames Water.

As highlighted by River Action and leading figures in rowing, decades of underperformance and pollution have turned vital waterways into hazards, putting athletes, communities, and ecosystems at risk. This points to the need for the Government to enforce environmental laws, hold polluters accountable, and ensure water companies invest in infrastructure to prevent sewage discharge, safeguarding the health of all river users.

Ways of measuring water quality

E.coli is the most important pollutant that should be measured as an indicator of water quality for human use. The E.coli bacterium is found in faeces and can survive in the environment. It can cause a range of infections including urinary tract infection, cystitis (infection of the bladder), and intestinal infection, stomach cramps, bloody diarrhoea, and vomiting. In the worst of cases, some strains of E.coli can lead to life-threatening sepsis (blood poisoning) requiring urgent medical attention.

For Rivers to be swimmable they should meet bathing water quality standards, this level should be below 1,000 CFU per 100ml.

River Action has used the Fluidion Alert 1 World Health Organization verified E.Coli analyser, other E.Coli testing products are also available.[9]

3. **What improvements are achievable in 10 years? Are there any short-term priorities or interim milestones that are needed?**

All Londoners have a right to clean and healthy rivers. The GLA has an opportunity to help make improvements to the system in the short and long-term.

Accurate monitoring

Accurate monitoring and reporting of water quality data should be available to the GLA and the public to see. This will highlight those water bodies which are most polluted and therefore pose the greatest threat to humans and nature. Improved monitoring ensures that pollution sources are quickly identified and addressed, allowing for more effective management and targeted interventions. For the GLA, implementing robust monitoring systems is a realistic short-term goal that would provide immediate data to inform decisions, enhance transparency, and build public trust in efforts to improve water quality.

Prioritise water quality in London's Environment Strategy

The GLA can ensure that water quality improvement measures are interwoven into the Mayor's London Environment Strategy, focusing on areas such as sustainable drainage systems (SuDS), urban greening, and catchment management to reduce pollutants entering rivers. These strategies are particularly beneficial as they can be implemented relatively quickly and cost-effectively. By incorporating these

[9] Fluidion Water Intelligence [online]

Back to Table of Contents

measures into the environment strategy, the GLA can achieve immediate environmental gains while fostering long-term sustainability.

Supporting London's green infrastructure

London's green infrastructure and natural capital are invaluable assets that underpin the city's environmental resilience and economic vitality. Ensuring that natural capital is managed sustainably will enable the GLA to achieve multiple objectives, such as reducing sewage overflows, enhancing biodiversity, and creating cleaner, healthier rivers, which in turn supports London's status as a world-leading sustainable city.

4. **Are there specific locations in London that should be prioritised for improving water quality and increasing access to rivers or waterbodies?**

5. **Who is responsible for making the changes needed? What actions should the Mayor and GLA take?**

Responsibility for addressing the urgent issues of water quality and river pollution lies with a combination of stakeholders, including water companies, regulators, and policymakers. The Mayor of London and the GLA are uniquely positioned to drive change at the regional level, leveraging their authority and influence to advocate for stronger enforcement, better investment, and community-driven solutions. While water companies like Thames Water must be held accountable for meeting regulatory standards and investing in infrastructure, the Mayor and GLA have a critical role in ensuring these companies fulfill their obligations by using their platforms to champion transparency and public accountability.

A collaborative and multi-stakeholder approach, driven by decisive leadership from the Mayor and GLA, is essential to achieving cleaner, safer rivers for all Londoners. The Mayor and GLA should prioritise several actions to improve water quality in London's rivers:

- They must advocate for stricter regulatory oversight from national bodies such as the Environment Agency and Ofwat, and ensure enforcement mechanisms are robust and well enforced.
- The Mayor should work with the Government to accelerate investment in modernising London's aging sewage infrastructure, particularly in high-risk areas.
- Public awareness campaigns led by the Mayor's office can empower communities to hold water companies accountable.
- The GLA can work with local councils and stakeholders to promote nature-based solutions, such as wetland creation and river restoration projects, that improve London's green infrastructure while mitigating pollution.
- The GLA can develop action on solutions such as rain gardens by promoting their implementation throughout London through incentives and guidelines, encouraging the use of creative, low-maintenance designs to manage stormwater, reduce runoff, and improve local water quality.[10]

[10] More Natural Capital Coalition [source]

Back to Table of Contents

A further cause of river pollution is misconnected plumbing in new properties.[11] To help address this issue, the GLA could play a critical role by supporting enforcement action against property owners who fail to address pollution issues. While Thames Water attempts to enforce repairs, about 10% of property owners do not comply, and these cases are often handed over to Local Authorities for action through Development Control legislation.[12] However, Local Authorities are increasingly reluctant to take on this responsibility, particularly as water companies have enforcement powers they are unwilling to use. The GLA could step in by supporting an officer to undertake these enforcement actions, ensuring greater accountability and more effective pollution control.

6. **What can the Mayor learn from other examples (national or international) of creating cleaner and accessible 'swimmable rivers'?**

7. **Is there other relevant information you would like to share?**

Thames Water: A Case for Special Administration

Thames Water is the primary cause of pollution in the Thames and has failed in both its moral and legal duties. The company's current financial crisis underscores the urgent need for structural intervention. If Thames Water is allowed to continue operating within its failed financial structure, it stands little chance of being able to ever raise sufficient capital to address its dire environmental performance.

With debt levels double those of many industry peers, yields exceeding 12%, and bonds trading at substantial discounts, the company is trapped in a cycle of unsustainable debt servicing. For comparison, the UK's 10-year government bond yield is approximately 4%, highlighting the severity of Thames Water's financial challenges.[13] This precarious financial state has resulted in a diversion of resources away from critical infrastructure investments, jeopardizing both public service delivery and environmental protection.

Special Administration offers a robust pathway to address these challenges. Under government-backed financial restructuring, borrowing costs could be significantly reduced, enabling Thames Water to allocate resources more effectively toward infrastructure improvements. This model could also facilitate debt restructuring and enhance the company's debt-to-equity ratio, ensuring greater financial stability and resilience. Importantly, the mechanism prioritizes consumer protection by preventing service disruption and securing investment in essential infrastructure to meet public and environmental needs.

The case for Special Administration becomes even more compelling in the context of Thames Water's broader responsibilities. As one of the UK's largest water providers, its financial instability has far-reaching implications for water quality, pollution management, and climate resilience. By resetting its financial structure under Special Administration, Thames Water would not only regain operational capacity but also set a precedent for improved governance and regulatory compliance within the water industry.

[11] BBC [online]
[12] Thames Water [online]
[13] *Source: Dr Laurence Jones, Credit Risk Research Group, Institute of European Finance [available upon request]*

Back to Table of Contents

Ultimately, Special Administration provides a pragmatic solution to safeguard Thames Water's future, ensuring that vital investments in infrastructure and environmental stewardship are no longer compromised by excessive debt servicing. This approach aligns with the need for a water sector that places public and environmental priorities at its core, while delivering long-term value for consumers and stakeholders.

Back to Table of Contents

River Roding Trust Ref No. SW010

The River Roding is London's third biggest river, after the Thames and the Lea. The River Roding Trust is a charity whose purpose is to protect and restore the river, as well as acting as a guardian for its interests.

The River Roding is one of the best rivers in London to make swimmable, for reasons that will be dealt with in detail further down this response. The River Roding Trust is pleased that the Mayor has recognised this and included the Roding in rivers that he wishes to make swimmable.

The River Roding Trust's response deals with three key issues:

- Locations
- Water Quality.
- Other Issues

Locations

The River Roding is arguably one of the most potentially swimmable rivers in London.

This is largely because it is London's premiere medium sized rivers and therefore avoids issues that afflict both larger and smaller issues. With regards to larger rivers, like the Lea and the Thames, although they are deep enough to swim in, but have significant currents and boat traffic that could make swimming dangerous. Other rivers that are smaller avoid these dangers, but are often not of sufficient depth to allow swimming (as opposed to paddling).

It is also important to note that swimming on the Roding is not some eventual pipedream, but is already occurring. In particular, there is swimming occurring in summer in the Roding just upstream of Barking Town Centre and a long tradition of people paddling and playing in the river at 'the Beach' at Wanstead Park.

Potential Locations

Town Quay, Barking

https://maps.app.goo.gl/85VTsVRLKgxKzoU58

Between Barking Town Centre & the District Line

Back to Table of Contents

https://maps.app.goo.gl/vuFxuPGDsRYEzPAb8

Between the District Line & Ilford

https://maps.app.goo.gl/ACBTKhEaxeckmKeZA

Ilford Golf Course

https://maps.app.goo.gl/YLUmzGNn9Kydd8U86

Wanstead Park

https://maps.app.goo.gl/q5HGWiYcpgSkXy7Z6

The Back River

https://maps.app.goo.gl/fkbCzGJUBZ7G4pyU6

This is something of a 'wild card'. However, if the water quality issues, currents, rubbish, access issues etc on the main river make it too difficult to make the river swimmable, or if an alternative is needed to swimming on the main river, the restoration of the Back River could provide an off-channel swimming place.

Back to Table of Contents

The Back River was the original channel of the Roding, but was filled-in at the start of the 20th Century. However, its entire route remains undeveloped and thus it is one of the most restorable rivers in London. The restoration of the river has now been included in the draft Newham Local Plan and it is hoped that it will happen in stages as land along its route is redeveloped. It would be reasonably simple and cost effective to add features to enable swimming (e.g. pools or off-channel ponds) along the river to allow swimming once its restored.

Water Quality

The key determinant of whether the Roding can be made safely swimmable is water quality. Whilst it must be acknowledged that improving water quality to a safe level is not an easy task, it is not an impossible one either. With sufficient effort and some funding, it would be possible to improve water quality to a safe level within a decade.

The key issue initially is that on the Roding, like most rivers in London, we don't know where much of the pollution is entering and thus finding this out must be a key priority.

Sewage

The Roding is second only to the Thames in London for being the river with the most hours of sewage discharge. Despite this, it has not received anywhere near the level of investment into water quality infrastructure improvement as the River Thames and Lea.

Perhaps most disturbingly, we don't even know where all of the polluting outfalls on the river are. The River Roding Trust has identified two unknown polluting outfalls and there are potentially many more.

The River Roding Trust, in conjunction with Thames21 and other catchment partners is proposing a groundbreaking project to identify all polluting outfalls on the Roding and propose solutions to stop this pollution. We ask that the GLA/Mayor support this project and potentially use it as blueprint for a way forward for other rivers in London.

We also believe that the Mayor has the powers to force water companies to clean up illegal outfalls, if they refuse to do so voluntarily. For instance, the Mayor could set up a self-funding department to bring private prosecutions for illegal spillages in London. Or, for any riparian land owned by the Mayor, GLA or subsidiary agencies (e.g. TFL), a private claim based on nuisance (as per the recent Manchester Ship Canal case in the Supreme Court) could be brought.

Road run-off

One of the biggest concerns on the Roding is road run-off, as the River runs parallel to main roads (M11 and A406) for all of its course in London. Road run-off has the potential to be a greater hazard than sewage, as the river can naturally cleanse the chemicals and heavy metals in the same way it can for organic substances and so they build up in the silt and waters of the river.

Back to Table of Contents

There is no single map of all the road run-off points along the Roding and a key thing the Mayor could do is demand that TFL maps and monitors its outfalls and request (and provide funding) for the Boroughs to map and monitor theirs.

The Mayor could also support the River Roding Trust/ Thames21 outfall testing and monitoring project, so that it could fully include road run-off and this could act as an example of the kind of work that could be done on other rivers in London.

Agriculture

This is a potentially big issue on the Roding, as the first half of the river is very rural. However, as this is mainly a problem ion the wetter winter months, it is un likely to significantly affect the river being swimmable.

Other Pollution

The 'unknown unknown' nature of water quality on the Roding means it is possible that there are other types and location hotspots of pollutions (e.g. heavy metals or PFAS) that we simply have no idea about. The Mayor could fund a testing programme for the Roding to enable different diffuse chemicals to be tested and their sources identified so that solutions to the pollution can be found.

Other Issues

Each site identified in this response has some potential issues. These aren't as challenging as water quality to solve, but will need some thinking and effort.

Access:

Only two of the potential sites are currently easily accessible (Town Quay, Barking and Wanstead Beach). Town Quay has steps down to the water and Wanstead Beach has a gradual gravel slope into the water. There may be an issue with the PLA allowing swimming at Town Quay, as this is within their jurisdiction.

Some sites are publicly accessible at the moment, but need some form of access (e.g. ladders or rafts). This is the case on the river between Barking Town Centre and the District Line Bridge. The tidal range (up to 2 metres) on this part of the river makes this somewhat difficult, although solvable with access pontoons.

Other places do not have bank-side access to the public. However, both the sites where this is the case (between the District Line Bridge and Ilford, and Ilford Golf Course) are publicly-owned (by TFL and LB Redbridge respectively) and therefore it should be a key priority of the Mayor to work with the River Roding Trust and get these sites opened to public access, not only for swimming, but also the myriad other benefits it will bring to local communities. Given the excellent depth and topography of the river,

Back to Table of Contents

the large length of river potentially able to be made swimmable, the surrounding greenery and proximity to population centres and transport, these sites may represent some of the best opportunities for river swimming in London.

Rubbish/Debris

Two types of rubbish on the Roding could potentially interfere with swimming at the sites identified. The first is hard debris at the bottom of the channel. As most of the Roding is below human standing depth, it is likely that swimming will involve people making contact with the bottom of the river. Further, due to the effective abandonment of the river from any form of guardianship or care by the authorities for decades, and the post-industrial nature of parts of the river, there has been a significant build-up of such rubbish and debris. Therefore, removal of sharp and dangerous debris such as metal and glass will be necessary to make the river swimmable. It will be a big task to remove this rubbish, but it is possible. Using volunteers, the River Roding Trust has begun removing this rubbish from parts of the river with some success. The Mayor could help speed up this process by offering support, such as barges for the waste to be piled into and removed from the river. The removal of this rubbish and debris would not only be a great thing for the river and for local people who spend time around it, but could also serve as a concrete action showing progress towards the Mayor's swimmable rivers pledge.

The other type of rubbish is potentially more difficult. Floating rubbish in the river comes up on the tide, down on the river flow and over the side in populated areas. The River Roding Trust has made strong efforts in reducing this by conducting volunteer litter picks of the riverbanks and reeds along the river in winter. Ways that we could reduce this litter and thus help to make the river swimmable include the following:

- Support the River Roding Trust to expand our winter litter picking programme.
- Work with River Roding Trust and local councils to install litter bins at key litter entry points into the river.
- Pressure the PLA to clean up the huge deposits of litter on the parts of the river that it owns and controls. At the moment, the Creek controlled by the PLA is a significant source of floating rubbish.
- Installing passive floating rubbish catching machines to reduce the amount of any such rubbish floating loose in the river.

Silt

In many places the Roding, although it has mud at the edge, has a gravel bottom, making it ideal to swim in if the mud at the edges can be travelled over (e.g. by steps or pontoons).

At one key swimming place (Town Quay in Barking), there is a significant build up of silt. This is not natural, but rather a result of the building of the Barking Barrage in the 1990's and the failure to properly maintain the system by regularly opening the barrage to allow the passage of silt. This could be reasonably simply solved by requesting LB Barking & Dagenham (which manages the barrage) to open it regularly (particularly during times of high river flow) and/or providing funding for them to do this.

Back to Table of Contents

Studio Octopi Ref No. SW011

A. About you/your organisation

• Chris Romer-Lee (Co-founder of Studio Octopi, Thames Baths CIC, Swimmable Cities & Future Lidos)

•Chris is both lead on all water projects at architects Studio Octopi and steering committee member for Swimmable Cities & Future Lidos.

• London but working internationally

B. The Mayor's swimmable rivers commitment

1. What factors [e.g. safety, water quality] are important to assessing if a river or other waterbody is 'swimmable'? How should these be measured and monitored?

Water quality monitoring should be included within the Mayor's remit, as pollution and air quality are. The approach established for air quality monitoring should be carried over to our blue spaces. By publishing the water quality, it is then a decision for the swimmers as to whether they enter the water or not, as the beaches around our coast are monitored and the data made available for individuals to decide whether to enter the water or not. Establishing official places to swim provides an opportunity for water quality data, emergency call points and improved access to be installed with the necessary signage and disclaimers. A precedent for this are the free to access tidal pools around the UK (Walpole Bay, Bude etc). These are not fenced off, instead they provide a safe zone for those who want to enter the sea.

The challenges of busy tidal river waters in London make the situation complex. However, there are plenty of examples of similar locations around the world that have overcome this challenge through being innovative and not rigid in their thinking. Blanket bans on entering the water helps no one.

2. What improvements are achievable in 10 years? Are there any short-term priorities or interim milestones that are needed?

I have been working for ten years on a floating lido for the Thames (Thames Baths). It hasn't been easy with some river authorities making it very clear they will never allow this to happen within their domain, despite examples in other cities proving it is technically possible, safe and wanted.

Creating a floating pool (there are many variations of these pools) in the non-tidal Thames or docks is easily achievable within 10 years. I've been involved in conversations for a number of years with a local authority in SW London and the Royal Docks. Their assumptions around risk and cost are incorrect, yet we cannot get beyond the naysayers to undertake the necessary work to put these myths to bed. I have backers who will undertake this work but a willingness to engage is required to progress these ideas. With the Mayor's support we can overcome the barriers and deliver a transformed waterway within 10 years.

The operational model the Serpentine offers is worth further analysis. The Swimming Club has affordable access to the lake, year round. 3000 members swim there for £40 a year between 5:00-9:30am. There are other models across London but a lot of operators present barriers to access the facilities. Nowca for example have control of numerous locations across London. However, it isn't possible to turn up and swim (the Serpentine this is possible during the summer months only). There's an annual membership then a further venue entry cost. These are all barriers to everyone getting access to water. A more accessible programme could be established by the Mayor within 10 years.

The launch of a programme that educates Londoners about water safety should be implemented as soon as possible. There is far too much unknown, misunderstood or plain wrong about our waterways. The

Back to Table of Contents

opening of Tideway should have been an opportunity to kickstart this, and other priorities. I tried on numerous occasions to get the Tideway board to see this opportunity and look to how Copenhagen Harbour celebrated their clean up.

I would like to see a roundtable discussion with all those responsible for London's waterways to understand their concerns and focus on where progress can be made within 10 years.

3. Are there specific locations in London that should be prioritised for improving water quality and increasing access to rivers or waterbodies?

The non tidal stretches of the Thames and the many docks of London should be prioritised. A lot of people swim in both all year round, legally and illegally. There is questionable access arrangements and improvements could be easily implemented at both locations.

4. Who is responsible for making the changes needed? What actions should the Mayor and GLA take?

It is regrettable, but understandable that the PLA do not want swimmers directly in the tidal Thames. The danger posed by the considerable traffic, pollution, tides and currents is acknowledged and accepted. I have never suggested anyone get into the tidal Thames. However, the PLA have also made it very clear to me on a number of occasions they do not want to see a floating pool in the central London section of the Thames. This is disappointing. I have allayed their fears about how this could safely be achieved on a number of occasions. My understanding is the Department of Transport need to intervene and facilitate a meaningful conversation about this. The Mayor and GLA can make this happen.

5. What can the Mayor learn from other examples (national or international) of creating cleaner and accessible 'swimmable rivers'?

My personal knowledge and ongoing work with international partners at Swimmable Cities offers many national and international examples of swimmable rivers and waterways. We will happily share with the Mayor our knowledge and expertise around this.

Paris has swimmable canals, floating pools on the Seine and soon, swim sites along the Seine.

New York City is funding +Pools to develop a self-filtering floating pool, technology that could be available to London within 5 years.

And finally, I have worked with Sydney Water in Australia on establishing new swim sites across the city, in the harbour but also in the Parramatta River. In 2025 there are expected to be some considerable steps forward in bringing new swim sites to western Sydney.

These are just a few international examples.

6. Is there other relevant information you would like to share?

For the last ten years I have worked tirelessly, nationally and internationally on improving access to water for all. Starting with proposals for London's first floating lido (Thames Baths), then the restoration of 1930s lidos and the design of two new tidal pools across the UK, Ireland and Australia. In 2025 I will be increasing my focus on undertaking independent (separate to Studio Octopi) advocacy and consultancy work for Swimmable Cities (www.swimmablecities.org) and the UK and Ireland group, Future Lidos (www.futurelidos.org)

I believe I have a lot of knowledge and skill to offer the Mayor around this topic. I look forward to sharing this with his team.

Back to Table of Contents

Swimmable Cities Ref No. SW012

[Cover letter removed]

Cover Letter
Dear Mayor Sir Sadiq Khan,
On behalf of the international Swimmable Cities alliance, made up of 100 diverse organisations across 59 cities and communities, and 22 countries, we're writing to express our full support of your proposal for a swimmable Thames.
Below you will find a rich collection of principles, resources, case studies and stories to support London's ongoing efforts in transforming your city's lifeblood. We trust that your team will find this useful as it draws on an exceptional brain trust of experts, actors, activists, industry pioneers and decision-makers around the world.
We'd like to take this opportunity to extend some warm invitations:
1. To sign the Swimmable Cities Charter on behalf of London
2. To attend the inaugural Swimmable Cities Summit, scheduled for mid-2025 in Paris
3. To express interest for London to participate in Swimmable Cities' emerging community of practice for Flagship and Next Gen cities (mid-2025 >)

We look forward to hearing from you and continuing to work together.
Warm regards,
Matt Sykes
Swimmable Cities
Convenor & Steering Committee Member
[personal information redacted for publication]

On behalf of the Swimmable Cities Charter 'Steering Group'
Ana Mumladze Detering, Pan European Urban Bathing Network & SVDK Vienna
Chris Romer-Lee, Studio Octopi, Thames Baths & Future Lidos
Sibylle van der Walt, Metz Ville d'Eau
Tim Edler, Flussbad Berlin
Jerome Castex, Libres Nageurs
Matt Sykes, Regeneration Projects – Convenor

A. About you/your organisation
Organisation name:
Swimmable Cities - https://www.swimmablecities.org/

What does your organisation do?
Transforming Urban Waterways

Launched in the lead up to the Paris Olympics in July 2024, the Swimmable Cities alliance is supporting a global, grassroots movement for swimmable urban waterways. With 100 diverse signatory organisations from 59 cities and communities and 22 countries, our Swimmable Cities Charter champions the Right to Swim, celebrates urban swimming culture, and honours the sacredness of water.

Together we aim to rewrite rules, promote participation and create resilient, connected

communities.

Goals of the Swimmable Cities alliance:

Back to Table of Contents

3 by '30: Swimmable Cities Summits (in Paris, Copenhagen, New York)
30 by '30: Flagship Swimmable Cities
300 by '30: Next Gen Swimmable Cities
3000 by '30: Swimmable Cities Charter Signatories

Key Activities include:
- Awareness-raising & Education via Events, Social Media & Resources
- Convening for Inter-city & Inter-disciplinary Knowledge-Sharing & Collabs
- Advocacy to city-based & international organisations for policy changes

Where are you based (if applicable)?
Swimmable Cities is convened by Regeneration Projects, an environmental consultancy based in Melbourne, Australia. Our Steering Committee is spread across London, Berlin, Vienna, France and Melbourne. Signatories of the Swimmable Cities Charter include 100 diverse organisations spread across 59 cities and communities, and 22 countries worldwide.

Back to Table of Contents

B. The Mayor's swimmable rivers commitment

1. What factors [e.g. safety, water quality] are important to assessing if a river or other waterbody is 'swimmable'? How should these be measured and monitored?

Firstly, our definition of 'swimmable' cities is:

'Swimmable cities are built environments with urban waterways that have achieved and sustain 'bathing water' standards (such as those described in European regulations), supported by complementary policies, infrastructure, amenities, services and cultural practices.'

Secondly, the 10 principles of the official Swimmable Cities Charter address many of the interconnected aspects of why 'swimmability' is important:

[FOUNDATIONAL VALUES]

1. THE RIGHT TO SWIM:

Safe, healthy and swimmable waterways should be accessible to all people.

2. ONE HEALTH, MANY SWIMMERS:

Swimmable urban waterways are vital to the liveability of cities and communities, as shared civic places that promote the health of people (physically, mentally, spiritually) and the health of Mother Earth.

3. URBAN SWIMMING CULTURE:

Urban swimming culture is a unique expression of life in cities and communities, reflecting the distinct interplay of sports, recreation and tourism in each given place, as well as natural and cultural heritage.

4. WATER IS SACRED:

Urban swimming should celebrate natural waterways as living, integrated entities that nurture communities, promoting universal accessibility and peaceful coexistence inclusive of religious, cultural and gender diversity.

[ENABLING CONDITIONS]

5. REWRITING THE RULES:

Urban waterway swimming should become part of a new status quo in public access standards, challenging accepted conventions such as industrial uses and stormwater pollution, with governing authorities swiftly amending legal and regulatory frameworks to enable citizens access to its benefits.

Back to Table of Contents

6. DEMOCRATIC PARTICIPATION IN SWIMMING PLACES:

Urban swimming places and experiences should be planned, designed, made and operated through inclusive, integrated water management approaches; with managers ensuring universal access via community-led programs for learning how to swim in natural waterways and ecological literacy.

7. RECONNECTION & RESILIENCE:

Urban swimming places and experiences should be invested in as an innovative way to enable resilient communities to adapt and thrive in a changing global climate, environment and economy.

[SHARING BENEFITS]

8. NEW ECONOMIC OPPORTUNITIES

Urban swimming development models should balance social, cultural, ecological and economic values, creating new jobs, careers and livelihoods in regenerative professions and industries.

9. SHARING WELLBEING BENEFITS, CULTURE & KNOWLEDGE:

Urban swimming should create wellbeing benefits to local citizens, ecosystems and economies; enhanced by the respectful sharing of Indigenous, traditional and Western water culture knowledge.

[NEXT GEN]

10. STEWARDSHIP FOR TODAY, TOMORROW & FUTURE GENERATIONS:

Urban swimmers are stewards responsible for protecting the health of their local waterways, working alongside Mother Earth's closest carers, such as Indigenous peoples, rangers and waterkeepers as well as urbanists, architects, social changemakers, educators and policy-makers.

Thirdly, we believe in the integrated net benefits of Swimmable Cities. So, we'd recommend measuring and monitoring for a range of criteria such as:
- Social Benefits (eg: public access to nature and water-based recreation, benefits of mental health, community climate resilience, social connection, avoided costs of inactivity-related disease, urban-heat-island-effect impacts)
- Cultural Benefits (eg: fostering of urban swimming culture, policy reform to directly value and recognise urban swimming access as a right, recognition of rights of Nature in public and private governance)
- Environmental Benefits (eg: water quality (inc. E. coli and other bacteria), stormwater improvements, sewage overflows and management, litter prevention and reduction, biodiversity and regeneration)
- Financial Benefits (eg: green jobs creation, value and increase in public and private investments in urban waterway restoration and urban swimming infrastructure, hospitality and tourism, property value increases, corporate volunteering)

Back to Table of Contents

- Knowledge Benefits (eg: water literacy, rates of participation in learn to swim programs (inc. in minority groups such as Culturally and Linguistically Diverse communities), research, technology, inter-city knowledge sharing)
For example, see diagram in the Swimmable Cities Handbook.

2. What improvements are achievable in 10 years? Are there any short-term priorities or interim milestones that are needed?

Examples of key types of activities:

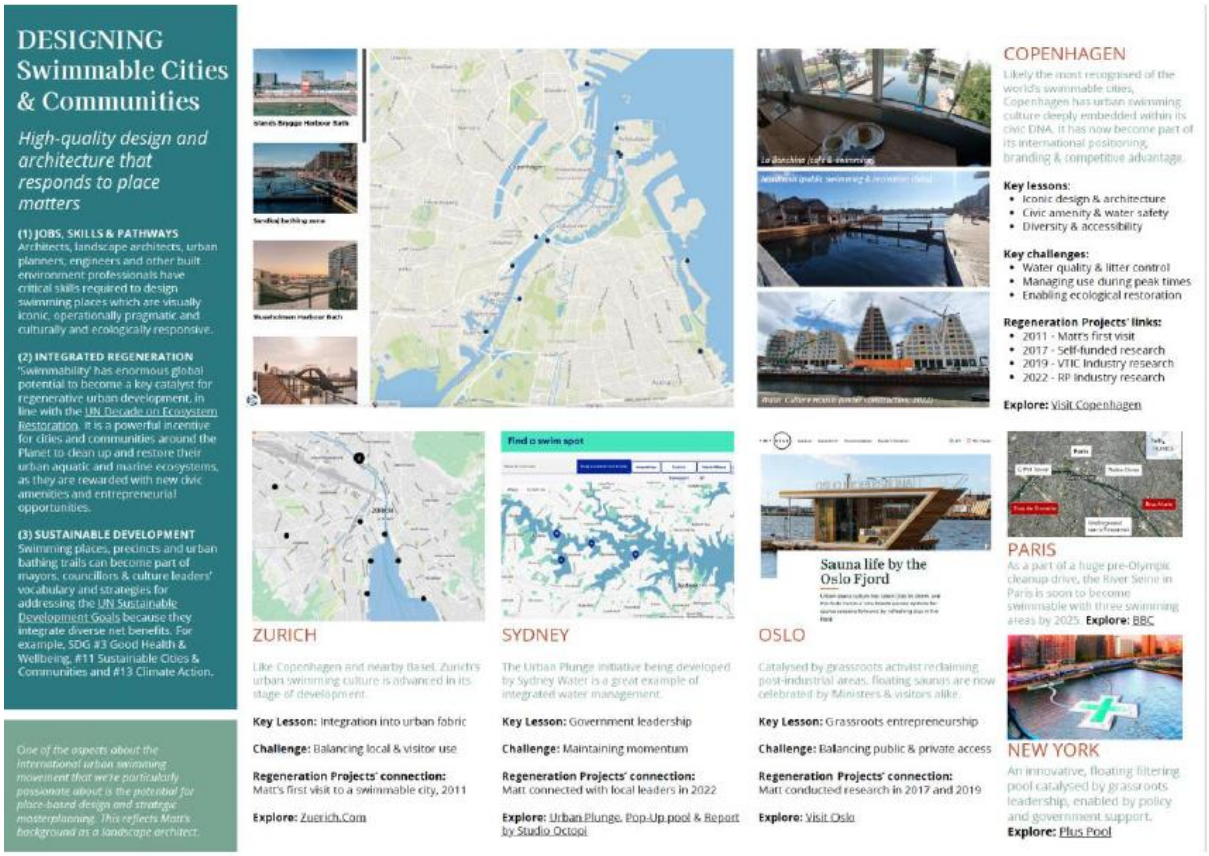
Basic - Community & Stakeholder engagement, Education & Capacity Building, Political advocacy and commitments (inc. becoming Signatories to SC Charter)

Foundational - Policy reform, Water quality (inc. stormwater, sewage & recycled), Feasibility studies

Activation - Swimming place analysis, pop-up experiences, masterplanning, staged designing and building, maintenance and

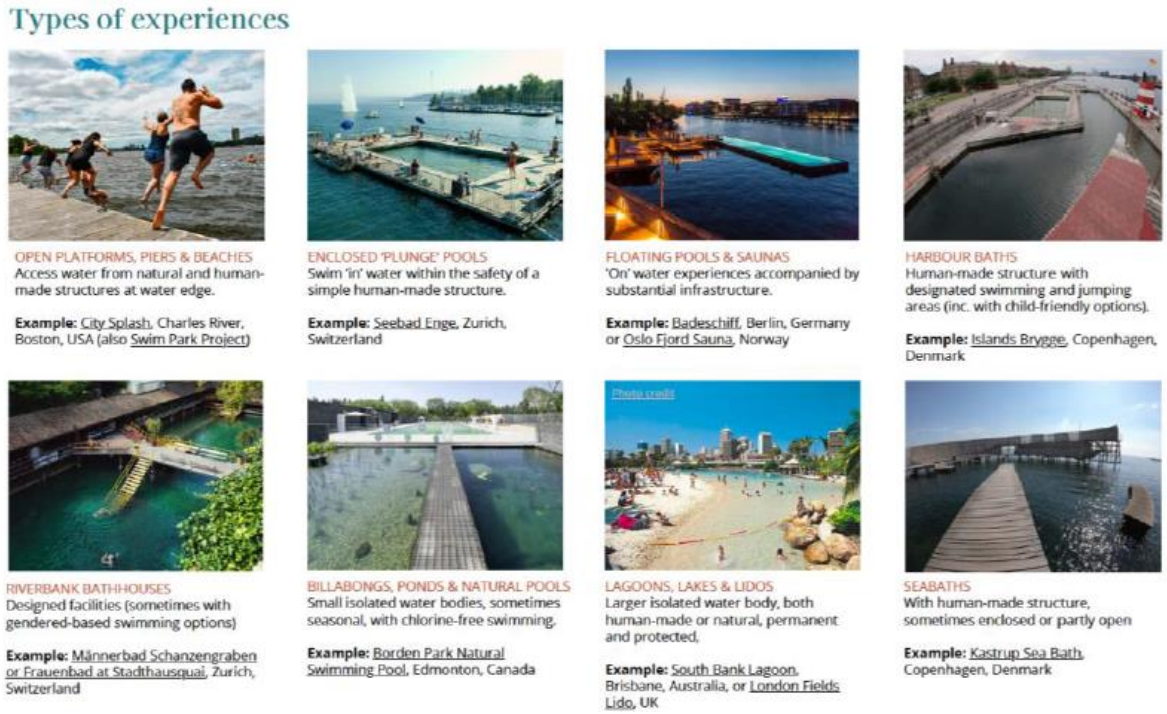
Back to Table of Contents

Long-term goals (10+ years) should take into account examples such as Copenhagen (24 yrs) and Zurich, where you see 'whole of city' transformation with urban swimming embedded into social and built environment fabric. See Swimmable Cities Handbook, 2023.

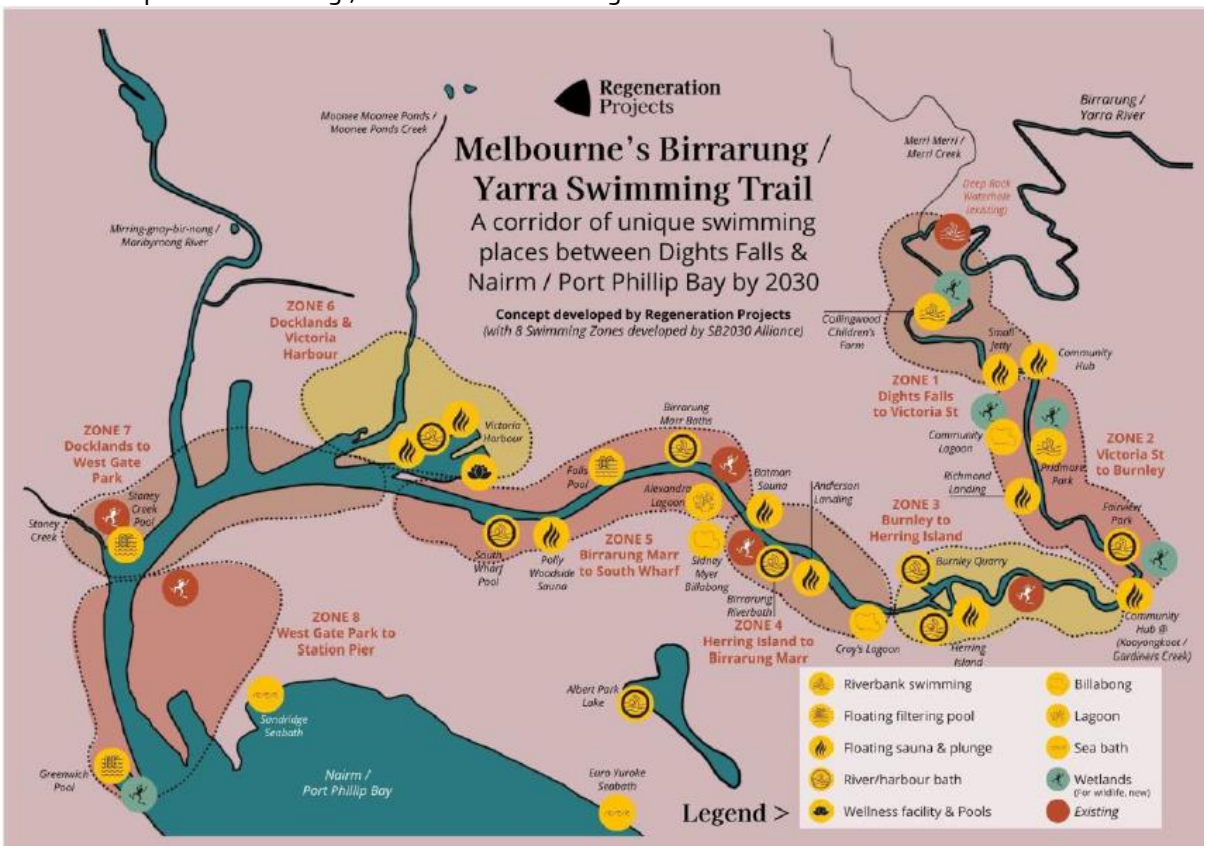


Diversity of urban swimming experiences should also be considered, with particular attention given to embracing and celebrating the unique spirit of place in urban swimming culture.

Back to Table of Contents



Another consideration is the aspiration towards interconnected urban swimming networks or trails, such as the concept for a Birrarung / Yarra River Swimming Trail in Melbourne.



Back to Table of Contents

3. Are there specific locations in London that should be prioritised for improving water quality and increasing access to rivers or waterbodies?

Without identifying specific places, we would suggest principles such as:

- Starting with places with the highest existing water quality, then outwards
- Focusing on places with historical significance as past swimming spots
- Considering access to urban swimming places for minority groups, including recent migrants and people from culturally and linguistically diverse communities, ensuring that everyone has access to 'learn to swim' programs
- Promoting an awareness about 'shared swimways' where people and wildlife can peacefully coexist, while preserving areas of high ecological value as sanctuaries

4. Who is responsible for making the changes needed? What actions should the Mayor and GLA take?

- Transforming urban waterways to become and stay 'swimmable' is a 'whole of society' responsibility. i.e. bottom up and top down. This is demonstrated by our Signatories ranging from local activists and community swimming groups to municipalities and government agencies, civil society organisations, businesses, universities and cultural institutions.
- Communities should be empowered to co-create urban swimming places and become active stewards of their local waterways and surrounds - It's critical that the Mayor and GLA set clear, bold aspirations towards the Thames and other local urban waterways to become 'swimmable' (an existing strength)
- It's critical that governments reform policy to enable supportive conditions for this, drawing upon best-practice examples around the world. For example, New York City and State's reforms for access to non-traditional beaches, New Zealand's recognition of the Whanganui River having legal personhood and Melbourne's Yarra River (Birrarung) recognition as a living entity.
- It's important that the Mayor works with other Mayors and cities around the world (at different stages of their journeys towards 'swimmability' to promote international cooperation and knowledge-sharing
- For example,
- By signing the Swimmable Cities Charter
- Attending the Swimmable Cities Summit, scheduled for 2025 in Paris
- Express interest in Swimmable Cities' emerging community of practice for Flagship and Next Gen cities
- Government and business (corporate, investors and finance) should work together to develop innovative joint funding mechanisms for the cleaning up of the Thames, as well as the activation of urban swimming places. For example, housing and mixed-used developers can include urban swimming places as part of their community commitment / give back legacy.

5. What can the Mayor learn from other examples (national or international) of creating cleaner and accessible 'swimmable rivers'?

- Be a champion for transforming urban waterways like Mayor Anne Hidalgo
- Break the post-industrial cycle of urban swimming bans going back ~100 years
- Embrace progress over perfection
- Accept the unknowns and learn through iterative staged development

Back to Table of Contents

- Be a good ancestor by creating a legacy for future generations, humans and wildlife

For more examples, please go to:
- Swimmable Cities - Handbook
- Swimmable Cities - Instagram and LinkedIn

6. Is there other relevant information you would like to share?

Swimmable Cities is available to be engaged in advisory services to support cities in their journeys towards 'swimmability' so please don't hesitate to reach out.

CONTACT: Matt Sykes, Convenor, Swimmable Cities, [personal information redacted for publication]

- Swimmable Cities - Signatories to the Charter - HERE
- Swimmable Cities - Handbook and Toolkit (inc. FAQ's,. Letter to decision makers)
- Swimmable Cities - Instagram and LinkedIn
- Swimmable Cities - Media articles & stories (2024 highlights)
- Jan 6 (2025) - The Asahi - Shimbun SDGs ACTION - here (Kei Okamoto)
- Dec 12 - Monocle - https://lnkd.in/efra_WyS (Andrew Tuck)
- Oct 22 - Il Giornale dell'Architettura - https://lnkd.in/g9YDXPxc (Michele Roda)
- Sep 11 - Landscape Architecture Aotearoa (NZ) - https://lnkd.in/gM4e8Esw (Stephen Olsen)
- Aug 30 - Bloomberg - https://lnkd.in/ec6XDUA6 (Jessica Furseth)
- Aug 20 - The Guardian - https://lnkd.in/gWuWud8q (Oliver Wainwright)
- Aug 15 - Fast Company - https://lnkd.in/gxsbCj-F (Sarah Amandolare)
- Aug - Outdoor Swimming Society - https://lnkd.in/g7KeM7_2 (Ali Couch & Patrick Naylor)
- Jul 15 '24 - Two Bays, A Business & A Kitchen Table Podcast - Apple (https://lnkd.in/dmPguKTb) & Spotify (https://lnkd.in/gUQAk-q2) (Matt Sykes)
- Jul - UN Decade on Ecosystem Restoration - https://lnkd.in/dCg2jPHc (Lucía González & Saron Iyasu Woldegabrie)
- Jun 24 - Fast Company - https://lnkd.in/gfA6Si3q (Sarah Amandolare)

Back to Table of Contents

Thames Blue Green Economy Ref No. SW013

The Thames Blue Green Economy (TBGE), is a group of campaigners, industry experts politicians, planners & environmental lawyers set up during the planning stage of the Thames Tideway Tunnel, arguing for an integrated Blue-Green Infrastructure (BGI) integrated water management approach instead of a concrete-heavy giant sewer under the River.

We continue to lobby governance bodies for Integrated Water Resources Management (IWRM) and Nature Based Solutions (NBS), mandated by the UN Sustainable Development Goal 6 on Water & Sanitation, specifically clauses 6.5 and 6.6.

We also seek to raise awareness and application of the Aarhus Convention, mandating genuine stakeholder engagement in environmental legislation at the earliest stages when all options are open. The UK, signatory to both, is obligated to comply.

In support of above, TBGE is giving evidence to the public inquiry into the Port of London Authority's (PLA) draft Harbour Revision Order (HRO) in February 2025 because the PLA seeks to increase its powers over the whole Tidal Thames without undertaking any environmental assessments.This is unlawful. It must also be recognised that the PLA has banned swimming in most of the Thames.

Definition of IWRM
https://link.springer.com/chapter/10.1007/978-3-030-48485-9_3
UN SDG 6 https://www.globalgoals.org/goals/6-clean-water-and-sanitation/
Aarhus Convention https://unece.org/environment-policy/public-participation/aarhus-convention/text

Introductory Comments

We welcome the Mayor's commitment to make the River Thames swimmable. Ordinary Londoners not members of rowing or sailing clubs have far too little access to their own River, to sail, row, paddle, swim or play safely. The River is the peoples' Commons and like parks, should be accessible to all.

Making the Thames swimmable will involve the GLA considering how it will manage both water, the blue infrastructure and planting, the green infrastructure, to mitigate both flooding and drought and increase resilience to both, found to be urgently required in the 2024 Mayor's Climate Resilience Review. IWRM using NBS is urgently needed.

Our iconic River has been swum probably ever since humans first lived along its banks and certainly since Roman times, because swimming in one's local river is as natural as breathing or walking. Even during the modern era into the twentieth century, at the height of toxic industrial pollution, many people swam in the Thames, as referenced below. The problems faced today are the result of Victorian embankment, removing the natural flood plain thus narrowing and increasing the speed of flow (escalating due to the heavier rain storms of our hotter climate), our continued manipulation of the natural river banks through development, and our failure to manage sewage spilling and toxic pollution from road runoff, thus making swimming in the Thames today an extreme health risk.

Back to Table of Contents

But there are solutions. They will take political will to implement.

2015 article by Caitlin Davies, historian and author of 'Downstream: A History and Celebration of Swimming the River Thames
https://www.independent.co.uk/sport/general/others/the-return-of-wild-swimming-swimming-in-thethames-is-becoming-the-norm-again-a75881.html 2
022 blog post by the Outdoor Swimmer listing many famous Thames swimmers
https://outdoorswimmer.com/featured/river-thames-the-wet-windy-history/

Suggestions Regarding the Mayor's Swimmable Rivers Commitment

1. What factors eg safety, water quality are important for assessing if a river or other waterbody is 'swimmable'? How should these be measured and monitored?

Swimmer safety
Tides & Depth
• Although there are of course risks from fast tidal flow and deep water, especially for inexperienced swimmers, it is convenient for the Port of London Authority (PLA), seemingly unaware of the history of Thames swimming, to argue that it should not be considered at all on safety grounds
https://www.bbc.co.uk/news/articles/cm21n52mn5jo

• Safety also depends on exactly what form swimming would take ie i**n enclosed pools in the main Thames, as in many European cities, or free swimming in sections of the River and/ or its tributaries, which may also be an additional option to explore as they are narrow, shallower and non-tidal.** The problem is that many of them have been canalised and merged into sewers or culverted over.

• 'Daylighting', the de-culverting and re-naturalising of urban rivers and streams, happening across the world, should be explored by the GLA and local authorities as potential swim sites and also as a means of reducing surface water flooding and groundwater upwelling, filtering stormwater runoff, urban heat island mitigation, reducing infrastructure repair and insurance costs, increasing biodiversity and encouraging community cohesion through connection to and enjoyment of Nature, so important for our mental health. Access to free swimming during very hot summers could become important for reducing deaths from over-heating.

• A famous example is the 'daylighted' Cheonggyecheon River in Seoul, formerly a wide motorway through the city, now a draw for visitors and helping with flood management, air pollution and urban heat.

https://www.theguardian.com/world/2025/jan/17/seoul-cheonggyecheon-motorway-turned-into-astream

• Daylighting rivers
https://www.theguardian.com/cities/2017/aug/29/river-runs-global-movement-daylight-urban-rivers
https://nrcsolutions.org/daylighting-rivers/
https://www.smithsonianmag.com/innovation/how-daylighting-buried-waterways-is-revitalizing-citiesacross-america-180981793/ https://orionmagazine.org/article/daylighting-underground-water-management/

Advice/Solution
• Incorporate IWRM + NBS across the emerging London Plan to for environmental and social multi-benefits, following the example of the Green City Clean Waters project in Philadelphia, USA (see below)

Back to Table of Contents

• Consult with local authorities, the PLA and riparian stakeholder groups, of which there are many, for recommendations regarding safe sections of the main Thames, and on possibilities in existing tributaries and streams and those which could be 'daylighted'
• Support the restoration of the 2002 River Thames Forum stakeholder group (set up during the creation of the first London Plan by the then Mayor, Ken Livingstone) to help explore swim site options
• Ensure that the PLA changes its no swim policy in the tidal Thames

Water Pollution

Sewage

• The other significant risk to swimmers' lives and health is the poor quality of Thames water due to excessive illegal and well-documented sewage spilling by Thames Water (TW), an issue on which their customers and campaign groups are extremely vexed. The GLA taking action against TW in order to clean up the River for swimming would prove popular.
• Although the vastly expensive Tideway Tunnel (building costs almost £6B but financial structuring will increase this figure to many billions with customers paying until 2100), once operational after ten long years of carbon heavy excavation and concrete lining, will remove 95% of the current volume of CSO spilling but only *from Barnes to Beckton*
• All CSOs upstream, including Mogden at Isleworth, as well as all those CSOs on upstream tributaries will still carry on spilling until TW upgrades outdated infrastructure which, in the current debacle, seems unlikely in the short and medium term unless the government threatens/ enacts Special Administration.
• Indeed as Professor of Economics at Oxford, Sir Dieter Helm, recently wrote, "Thames (Water) has a need for a huge sewerage upgrade programme. Thames Tideway helps to push the sewage down river to Beckton, but the subsequent costs don't go away, and of course none of the upriver costs vanish."
• Tideway has perpetuated the Victorian end-of-pipe solution at vast expense, when the same costs spent on IWRM & NBS could have prevented the spilling in the first place
https://dieterhelm.co.uk/publications/and-so-it-goes-on-and-on-the-next-instalment-of-the-thameswater-saga/

Advice/Solutions

The Blue Green Solutions

• As mentioned above, TBGE argued in 2014 that IWRM would be a far more effective, natural, and cheaper option than a super-sewer to mitigate sewage spills, with many additional environmental and social benefits. We gave the example of Philadelphia's 25-year Green City Clean Waters project begun several years earlier. We even brought the project director over to convince politicians. Ten years later, with global heating ramping up alarmingly, severe storms, heavy rain and flooding an even higher risk, the need for IWRM & NBS is even more urgent. We must be aware it's just a matter of time before a Valencia-scale flood in London and take appropriate actions now.

A Model for London: Philadelphia - Green City Clean Waters

https://water.phila.gov/green-city/#:~:text=What%20is%20Green%20City%2C%20Clean,capacity%20with%20traditional%20infrastructure%20improvements

2023 Philadelphia Water Dept video explaining how the problems caused by a combined sewer system are being overcome https://youtu.be/1eM6fnmeW5E?si=nELeZYhNbG_MI3C_

• Our briefing document, The Case Against the Thames Tideway Tunnel & In Favour of Integrated Water Resources Management for the Thames Tideway, co-authored by Lord Tony Berkeley, Martin Blaiklock, financier and author of Infrastructure Finance, and Charles Secrett, sustainability expert and former head of Friends of the Earth UK, is also attached. Its arguments are more urgently relevant today.

Back to Table of Contents

Call For Citizen Scientists to Help

• The scale and siting of regular pollutants must be understood in order to tackle the problem. There are Citizen Science projects testing Thames water who would rally to the Mayor's call for assistance to understand the scope and scale of water pollution. So many people and community groups are ready and willing to be involved in local projects to overcome the environmental challenges we face.
• For example Earthwatch
• https://earthwatch.org.uk/greatukwaterblitz/
• Earthwatch report from late 2024 citizen testing
• https://earthwatch.org.uk/wp-content/uploads/2024/10/Great-UK-WaterBlitz-report Sept24_WEB.pdf
• Also Watershed Investigations pollution map
• https://watershedinvestigations.com/map-whats-polluting-your-local-river-lake-or-coast/
• Also the Thames Waterkeeper, Theo Thomas carries out extensive testing and reporting via blog posts and social media
• https://waterkeeper.org/news/who-is-waterkeeper-theo-thomas-london-waterkeeper/

Road Runoff Pollution

• The thousands of miles of roads across Greater London leach toxic chemicals and heavy metals from vehicle exhausts and micro-plastics from tyre-road friction into street drains and thence into sewers. They end up as sewage sludge being sprayed onto agricultural fields and eventually into Nature and our food.
• Last week saw extensive reporting from Watershed Investigations into the shocking levels of PFAS or 'forever chemicals' in the UK environment, including our rivers and most likely our drinking water. Many are not regulated - and our regulations are far less stringent than in Europe - so we don't have a clear understanding of the dangers posed.
• The Environment Agency (EA) has effectively admitted it cannot cope with monitoring and regulating PFAS.

Advice/Solutions

• The GLA will need to know the level of PFAS contamination in the Thames before people should be encouraged to swim in it. Therefore, rigorous testing programs need to be set up immediately in order to identify and attempt to eliminate them over the next ten years.
• This will require pressuring the EA and DEFRA to take radical actions ie legislation and strong regulation.

Stormwater Shepherds report on UK road run-off https://www.stormwatershepherds.org.uk/wp-content/uploads/2024/05/Highway-runoff-and-the-waterenvironment-report-combined-LR.pdf

Watershed Investigations Report into PFAS
https://watershedinvestigations.com/

Watershed Investigations into UK Swimming Waters Pollution
https://watershedinvestigations.com/watershed-uncovers-polluted-bathing-waters/

• The GLA, with direct control over Transport for London (TFL) and London local authorities, who are also responsible for much of the road network, must be mandated to embark on a program of understanding, measuring and reducing/eliminating contaminants from road runoff through the means of roadside physical filtration.
• Hard grey infrastructure plants required to filter all road runoff are clearly a planning and logistics impossibility especially in the timescales required.

Back to Table of Contents

• Therefore the easier, faster solutions are nature-based blue-green methods, such as reed beds and water gardens as well as various means of discouraging vehicle use and encouraging active travel, with its many other environmental, cost and health benefits.

Nature Ecology Safety Risks

• Humans splashing about in the Thames would inevitably have some effects on the natural marine and littoral ecology. This must be understood and minimised or avoided, for example in cases of rare species being threatened. The public needs to better understand our dependence on Nature and that we are part of it.
• Nature is not simply something to be used and abused and should have its rights legally protected. The movement for legal rights rights for Nature, including for individual rivers, is now mainstream and the UK should be exploring legislation.
• A call for legal rights for the River Thames would coordinate well with making the River fit for swimming again and would be a first for a global capital city to enshrine.
• Swimming sites should be as natural and naturalised as possible ie swimming in fresh water rather than a chlorinated pool sited in or near the Thames, with minimal built infrastructure to contain swim areas.
• Wherever possible, the swimming areas could aim to feel like swimming in the ancient river, unchanged by human intervention.

Advice/Solutions

• Consult with the many nature NGOs eg Wildlife Trust, The South East Rivers Trust, The Thames Rivers Trust, RSPB etc for information and advice on River ecology.
• Connect with TBGE - we work with environmental lawyers in this field of law, and with Lawyers for Nature https://www.lawyersfornature.com/

Flood Risk

• A regularly flooding Thames will continually damage any swim infrastructure, hard or soft, and incur large repair and insurance costs.
• The Mayor is aware of London's flood risk exposure as well documented in scientific studies as well as GLA-commissioned reports such as the 2019 Climate Change Risks for London and the 2024 Climate Resilience Review (CRR).
• **Solution:** Blue Green Infrastructure (BGI) the basis of IWRM & NBS, as set out in the CRR pp 102-107, by 'slowing the flow' into areas of surface water pooling and sewers, will reduce flood risk and mitigate flooding and pollution of the Thames when it does happen.

Urban Heat Island

• Intense hotter summers, with dangerous heatwaves, are predicted to become the norm, posing risk of death for the infirm, babies and children and the very old. Access to clean cooling water for swimming is an obvious solution, with its added mental health and environmental benefits.
• **Solution:** the Thames 'blue ribbon network' with its tributaries daylighted where possible along with the green infrastructure (planting) created by BGI will both help mitigate urban heat

2. What improvements are Possible in 10 Years? Are there any short-term priorities or interim milestones that are needed?

• Clearly, the immediate challenges, flooding and water pollution, need to be urgently addressed but planning for potential sites and designs of swimming facilities should begin in parallel to solving the problems faced.
• As set out above our core recommendation to make the Thames fit for swimming is IWRM + NBS as the overarching solutions to the main challenges.

Back to Table of Contents

• The Mayor could contact the Philadelphia Water Department (Green City Glean Waters) for information and advice on a time-scale, including the 'low hanging fruit' that could be achieved in the first five years. We can help with an introduction.
• Eliminating pollution and enabling nature-based blue and green infrastructure solutions will also bring biodiversity benefits and allow Nature to thrive in the Thames and across London. • Nature's return in watery places can be surprisingly fast as this recent article explains https://www.theguardian.com/environment/2025/jan/03/back-from-the-dead-the-zombie-ponds-repumpingnature-into-essex-farmland?CMP=Share_iOSApp_Other
• Involve Londoners in the project - call for suggestions, ideas, creativity - with 75% of the British public understand human-caused climate and nature risks, people will want to be involved and help wherever possible.
• https://climatecommunication.yale.edu/publications/climate-change-british-mind/toc/2/

3. Specific Locations

• as mentioned above, the Mayor should consult with local authorities, the PLA and riparian stakeholder groups, of which there are many, for recommendations regarding safe sections of the main Thames, and on possibilities in existing tributaries.
• Existing steps, stairs and landing stages built during Bazalgette's Victorian era embankment are closed off and locked by the PLA to prevent the public from accessing the River for any form of recreation. An aura of danger exists around the River which reinforces our general societal separation from Nature. Of course there are dangers but if wild swimming is to be enabled these steps and stairs may be ideal sites for swimming zones and should be re-opened in due course. This will involve discussion and agreement with the PLA.
• A possible site for example, in Wandsworth, is the sloping Putney Embankment, home of rowing and sailing clubs and once an Edwardian beach. It should be possible to reinstate summer paddling and swimming in a section of this long stretch of riverbank.
• And another, instead of replicating the excessively tall tower developments of the Riverside Quarter and Smugglers Way, the Wandle Delta should be rewilded, restored as a natural small estuary with minimal/no building on the whole site from the culverted section under the Wandsworth roundabout. The estuary should become a small parkland and nature reserve with swimming, small craft facilities and aquatic nature education and access especially for children and families with no access to a garden or natural spaces.
• Upstream sections of the Wandle and Beverley Brook, both precious chalk streams, could potentially be made accessible for swimming.

4. Who is responsible for making changes & what actions can the Mayor take?

• the PLA, which leases the Riverbed from the Crown, has remit over navigation and safety in the tidal Thames as well as some recreation responsibilities but not over other functions of the River such as drainage and water supply, a setting for development, an open space and ecological resource, and a recreational, leisure and tourist facility (as set out in 1997 Strategic Regional Planning Guidance for the Thames, RPG3b/9b and incorporated into various river strategies since that time).
• The GLA/PLA Thames Forum although much reduced in stakeholder members and engagement since 2002 (and this should revert to its original form), should be the means for the Mayor and PLA to transparently, on Aarhus Convention principles, discuss making the Thames fit for swimming and possible sites.

Question 5. What can the Mayor learn from other examples?

These are many inspiring examples across Europe and America including:
• Copenhagen - no less than 14 different swimming places on the River Nyhavn & estuary beaches
• Aarhus, Denmark
• Paris, Piscine Joséphine Baker + Anne Hidalgo's plans as the Mayor is aware
• Porto, Portugal - Piscina des Marés

Back to Table of Contents

• Helsinki, Finland - Allas Sea Pool • Basel, Switzerland
• Vienna, Austria
• Various German cities and especially Berlin, with its ambitious plan, Flussbad for enabling swimming in a canal section of the Spree River https://ftrc.blog/flussbad-berlin-swimming-in-thespree/
• Flussbad details - perhaps the Mayor's team could connect with their German counterpart https://www.flussbad-berlin.de/
• Many American cities including Boston, Chicago, Washington DC, Portland Oregon, Austin Texas
• Inspiring article setting out similar reasoning as above https://nextcity.org/urbanist-news/why-citiesare-opening-their-rivers-and-lakes-to-swimming#:~:text=Cities%20like%20Boston%2C%20Chicago%2C%20Washington,plans%20to%20build%20swimming%20infrastructure

Back to Table of Contents

Thames Water Ref No. SW014

About you/your organisation

- Organisation name: Thames Water
- What does your organisation do? Water and wastewater provider
- Where are you based (if applicable)? London, Thames Valley and Home Counties.

The Mayor's swimmable rivers commitment

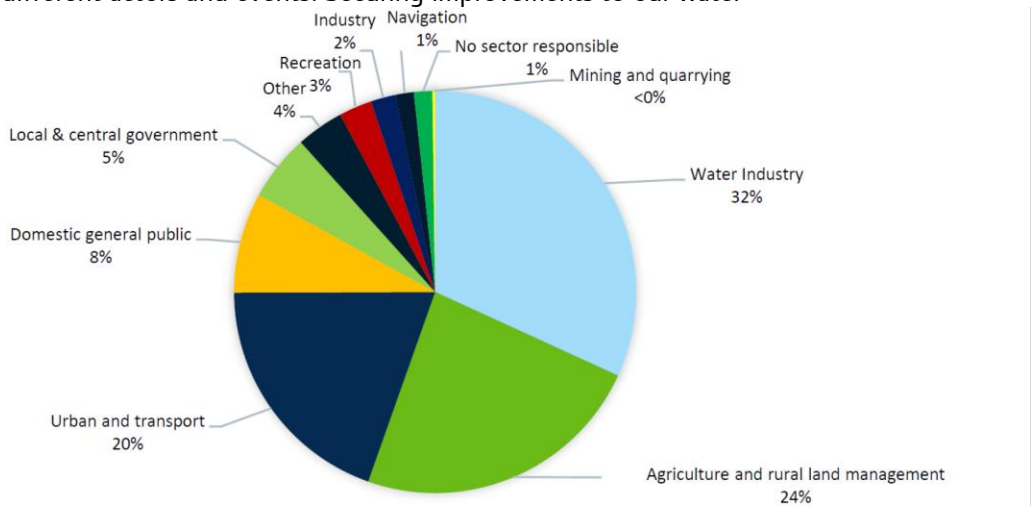
1. What factors [e.g. safety, water quality] are important to assessing if a river or other waterbody is 'swimmable'? How should these be measured and monitored?

We share the Mayor's ambition for London's rivers to be clean, healthy, vibrant for nature and where appropriate, safe for swimming. We are committed to playing our part to help achieve this vision alongside others whose actions influence river water quality, and organisations responsible for ensuring safe recreation. The focus of our work is to ensure consistently high standards of sewage treatment at our works; reducing the number and impact of storm overflows from sewers and treatment works, and reducing the risk of pollution incidents. We have also provided small grants to over 30 different recreation groups to support access to rivers since 2021.

To increase the transparency of our operations and provide our customers, stakeholders and river users in particular with information about our impact on rivers, in January 2023 we became the first company to publish a live map of our storm discharges. We were the only company to make this data available via Application Programming Interface (API) with an open data license so that any organisation or individual could use the data and integrate it in their own tools, which organisations such as Surfers Against Sewage have done with their Safer Rivers & Seas App.

Water companies are progressing an industry-wide approach to improving real time bathing water quality information through a UK Water Industry Research (UKWIR) project. The core objective of the project is to provide a nationally-accepted standard for reporting near-real-time water quality impacts from storm overflows; and modelling, forecasting and reporting real-time bathing water quality. To improve the accessibility and consistency of information provided to river users, the water industry has recently launched the National Storm Overflow Hub, a single nationwide map showing storm overflows in real time.

The water environment is a complex system and river water quality reflects the combined influences of a wide range of different actors and events. Securing improvements to our water



Back to Table of Contents

environment requires an understanding of those influences and the relative impacts of changing them. In the River Thames Basin, the water industry accounts for 32% of the total reasons for rivers not achieving 'good' status as defined by the Water Framework Directive.[14]

We strongly support the partnership approach the Mayor envisages, because realising his vision will be possible only if all stakeholders who are responsible for or influence river health and the suitability of the river for recreation play their part. Water companies play an important role in improving river quality but wider action will be needed. While agriculture is a less significant factor in the capital than the wider River Thames basin, the impact of road run-off is a highly significant factor in London, so the roles of Transport for London and London's Boroughs will be key.

Designated bathing water sites in England are currently assessed by the Environment Agency (EA) for their water quality. Weekly assessments during the bathing season (May to September) measure the prevalence of Faecal Indicator Organisms (FIOs) in the samples taken. Annual ratings classify each sites as 'excellent', 'good', 'sufficient' or 'poor' based on measurements taken over a period of up to four years.

FIOs originate from a number of sources beyond discharges of sewage effluent, including urban run-off and agriculture. Faecal matter produced by animals in and close to rivers means that FIOs would still be present in rivers even if there were no discharges of sewerage.

There is a lack of understanding of how these biological entities behave over time and under different riverine conditions. The industry is working collaboratively with other sectors to reduce this knowledge gap and improve our understanding of how we best measure and monitor rivers for recreation. A current example is a UKWIR project to understand FIO die-off rates in rivers. We welcome the engagement of Department of Health and the EA in these matters in the interests of better protecting customers/swimmers.

2. What improvements are achievable in 10 years? Are there any short-term priorities or interim milestones that are needed?

Understanding the improvements and progress made over the last ten years can help understand where improvements are planned for the next ten years, and what can be achieved.

In 2001 Thames Water, the EA, Greater London Authority and others started to assess how best to improve the quality of the tidal Thames in London, and created plans for a three-stage process that is now nearing completion. The Thames Tideway Tunnel is the best-known part of the programme but was preceded by two key improvements that between them have already reduced the volume of discharges of storm sewage into the tidal Thames by 55%:

1. Between 2010 and 2015 Thames Water invested £675m to complete upgrades to five sewage works on the tidal Thames (Mogden, Beckton, Crossness, Long Reach and Dartford) reducing discharges by 40%.
2. Work on the Lee Tunnel, capturing the single biggest discharge at Abbey Mills pumping station in Newham, began in 2010 and the project became operational in 2016, taking cumulative reduction of discharges to 55%. The Tunnel, which cost £700m to complete, can accept the equivalent of nearly one and a half Olympic swimming pools of water and sewage every minute.

Thames Water first made the application to begin work on the Thames Tideway Tunnel in 2013 and its delivery was enabled under the Specified Infrastructure Project Regulations (SIPR), which has unlocked the private finance needed to allow Tideway to be delivered for £20-£25 per customer, as opposed to an original estimate of £70-£80 per customer. The £4.6bn project will become fully operational in 2025 and will take the cumulative reduction in discharges to 95%. Sections of the Tunnel are already operational and starting to capture sewage from overflows that would have discharged into the river. In one instance

[14] Environment Agency. *Challenges data for Thames River Basin District.*

Back to Table of Contents

in December 2024 this kept half a million cubic litres of rain and untreated sewage out of the river in a single 24-hour period.

In a sign of the positive impact that the Tideway Tunnel can have on river health, the Lee Tunnel is already having a transformative effect on the Channelsea River and River Lea. There have been no discharges of storm-diluted sewage from Abbey Mills Pumping station since the building and commissioning of the Lee Tunnel in 2016. In December 2022 an environmental study by Ricardo found that the Channelsea River is healthy and supports a wide variety of fish and other wildlife. In total, 714 fish from 12 different species were found. Among them were common bream, juvenile sea bass, roach, dace, perch and a 10lb sea bass, a rare find so close to the centre of a major city.

In December 2023 a further study was completed which found that the water quality in the Channelsea River and River Lea can be classed as 'good to excellent', in accordance with Water Framework Directive classifications, which is unique for urban rivers of this type. [2]

While the programme of improvements comprising sewage treatment works upgrades, the Lee Tunnel and the Thames Tideway Tunnel are having a transformative effect in London, much remains to be done beyond the tidal Thames and Lee systems to improve the quality of the tributaries within the catchment that discharge to these rivers.

In the next water industry Asset Management Period, which runs from 2025-2030, (known as 'AMP8'), we have proposed to invest more than £8bn in wastewater sites across the Thames Water region to reduce storm overflows and pollution incidents, as well as over £4bn in critical assets to reduce sewer flooding and maintain the safe removal of wastewater. This includes in excess of £800m to reduce storm overflows, and £335m to create additional capacity at our sewage treatment works, targeting a 34% reduction in storm overflows. As part of this we will create 9 new wildlife habitats, including at Beddington sewage works in Croydon.

The key basis for investment in the environment by water companies is determined by the Water Industry National Environment Plan (WINEP). It is designed to enable companies to meet new legal obligations and regulatory expectations in relation to the environment. Actions required under the WINEP, as cascaded from priorities and expectations in the Water Industry Strategic Environmental Requirements (WISER) by the EA and Natural England, are designed to ensure compliance with UK environmental legislation. In most cases, the actions are statutory, and companies and their stakeholders have limited influence over associated investment. In some cases, the need for a scheme is dependent on a favourable cost-benefit assessment and/or evidence of customer support.
In London our proposals include specific measures as part of the WINEP:

- Extra capacity for storm storage at 29 sites on tributaries of the Thames.
- 151 new monitors (134 continuous water quality monitors and 17 storm or flow monitors).
- 166 investigations (157 for storm overflows).

Water companies received Ofwat's 'Final Determination', setting out what they will be required to deliver from 2025-2030, and limits to customers' bills during the period, in December 2024. Like other companies, we are currently assessing the implications of the Final Determination and whether to accept it or appeal to the Competition and Markets Authority.

From a water industry perspective the key interim milestone in the ten year period the Mayor's plan considers is April 2030, which marks the conclusion of AMP8 and start of AMP9. This will be preceded by the 'PR29' regulatory review which, like the PR24 process that recently concluded, will determine investment levels and the outcomes being targeted for the subsequent five years. Beyond that, the outcomes of the recent Defra consultation on Bathing Water Regulations will likely have a significant impact on the wider approach to bathing waters. The proposed reforms will impact the way in which new and current recreational and bathing waters are recognised and managed.

Back to Table of Contents

As there are presently no bathing water sites currently designated in London, our AMP8 plan does not include any funding for improvements for bathing water sites in London. While Ofwat did include a mechanism in their PR24 'Draft Determination' for water companies to recover in AMP9 some, but not all, additional costs occurred in AMP8, there is currently only a small likelihood of us being required to undertake work relating to a bathing water site in London during AMP8 (2025-2030).

Applications for new bathing water sites are currently on hold by Defra until at least Spring 2025, while it consults on the new definition of bathing waters. The Department needs to respond to any consultations and implement any new rules before applications can reopen. Applications then need to be made by interested parties. Once an application is made Defra runs a consultation on an application with organisations including water companies, local police forces, landowners, National Farmers Union, recreation groups, and Natural England, before making a final decision whether to designate a bathing water site.

If a new bathing water site is designated there then needs to be water quality monitoring for a full season at the site before the EA notifies us of the status of the water quality. If this status is found to be poor we then begin to explore and undertake work to help improve the water quality at the site. The current hold on applications and this process means that any investment at potential bathing water sites in London is unlikely until at least the very end of AMP8 or possibly the start of AMP9.

Many of our customers are passionate about our rivers and use them for various forms of recreation and we recognise that a variety of river users would welcome an extension of the definition of bathing waters that would lead to an increase in designations. This would be expected to involve a high capital cost for new infrastructure to meet more stringent requirements related to storm overflow performance and waste treatment, and the associated operational costs to operate new equipment such as UV disinfection. There are also potential carbon and sustainability costs related to meeting those additional requirements. Our customer research has suggested that, on average, our customers would support one or two new designations throughout our region, per five-year period.[3]

Changes to the way bathing waters are designated and de-designated could have significant implications for those organisations involved in making improvements at locations designated as 'poor', and those looking to apply at new locations. The water sector will need to ensure readiness to reflect those changes, if enacted, into future investment programmes.

In addition, there is also at present a misalignment between ambitions to create swimmable rivers and national government targets which are outlined in the Storm Overflow Discharge Reduction Plan (SODRP) which conclude in 2050. Water companies must prioritise investment to address storm overflows in line with the SODRP, which preferentially selects 'sensitive' watercourses and bathing water sites. Large cities such as London tend to have comparatively fewer sensitive watercourses than rural areas, and funding through the regulatory review will provide for companies to meet SODRP targets, and not to accelerate delivery.

This means that most cities in England will see their storm overflows improved later in the SODRP timeframe. As companies are funded to deliver the SODRP at the minimum pace to meet the deadlines, improving London's rivers will span the full period covered by the SODRP, and there is little scope to accelerate that pace, apart from in any areas which become designated as bathing water sites.

3. Are there specific locations in London that should be prioritised for improving water quality and increasing access to rivers or waterbodies?

As set out in Question 2, there is are different statutory objectives that water companies must comply with and set out the basis on which investment is prioritised and allocated, including the SODRP and the WINEP. These requirements, along with our customers priorities' received as part of the Price Review process have determined our 2025-2030 (AMP8) business plan which sets out how we plan to invest in the environment and improving river quality.

Back to Table of Contents

In line with our customers' priorities and regulation, our AMP8 WINEP will focus on our storm overflow reduction plan, reduce abstraction at sites that impact chalk streams, and address investment at the newly designated bathing water at Wolvercote Mill Stream in Oxfordshire, which is currently designated 'poor'. The storm overflow reduction works are key to minimising the risk of harm to the environment as well as improving river health which is an area of high stakeholder focus.

We understand the Mayor will want to work with stakeholders in London to identify any potential new bathing spots and we look forward to being a part of that discussion. We would note that areas of high tidal flows, water abstraction intakes, sewer outfalls and sensitive biodiversity areas should not be prioritised for recreation.

Many misconnections on our network are also outside of the scope and power of water companies to resolve. Up to 25 pollution incidents per annum are caused by the "cross-over" of flows between the two different networks that serve communities. In many areas properties are served by a foul system which conveys wastewater to the local sewage treatment works and a second piped system which take rainwater from roofs, patios and drives to the local watercourse directly. When flows that should be connected to the foul system are mistakenly connected to the surface water network it results in "foul" flows discharging direct to the watercourse. Between 2020 and 2023 we identified 4,752 misconnections and have "cleaned up" 136 previously polluted surface water outfalls. We have proposed to address a further 200 polluted surface water outfalls in AMP8.

Working in collaboration with local authorities and the EA we identify surface water outfalls that are of concern. Once any misconnections are discovered on our network they are resolved, but in many cases enforcement action by the local authority is needed when the misconnection occurs on private property. Currently this enforcement action differs between local authorities and wider co-ordination is needed to tackle the issue.

4 Who is responsible for making the changes needed? What actions should the Mayor and GLA take?

We have outlined in our response to Question 2 the barriers to improving water quality at bathing water sites and the impact of wider factors beyond the influence of water company activity.
Specifically in relation to the Mayor and the GLA we believe that there are two specific measures that they could take forward to help create more swimmable rivers:

1) The Mayor should introduce the requirement in the London Plan for all new developments to embed sustainable drainage systems (SuDS) within their design. High levels of rainwater entering our network via runoff from non-permeable surfaces is the single biggest driver of storm overflows. In London there is an average loss of vegetated garden area equivalent to 2.5 Hyde Parks each year, and half of London's front gardens were paved over in the decade to 2015. In heavy rainfall a paved area of six square metres can contribute the same volume of flow to the sewer network as the wastewater from 100 homes. SuDS can also help to reduce and remove pollutants from highway runoff, another major contributor to poor river water quality.

2) We welcome that the Mayor is using his influence as a convener to bring together the stakeholders involved in creating healthy rivers in London. This should include all stakeholders including water companies, the EA, Defra, GLA, Port of London Authority, RNLI, NGOs, Transport for London, recreation groups and river users.

3) Co-ordination of efforts to tackle third party misconnections is needed at a London level. We are currently undertaking research into the number of misconnections across London and their impact on river health which we are happy to share with the Committee once the final report is produced.

Back to Table of Contents

4. What can the Mayor learn from other examples (national or international) of creating cleaner and accessible 'swimmable rivers'?

Through the investment cycle from 2020-2025 we have trialled a pioneering and collaborative implementation of a new catchment-based approach to create cleaner rivers. Our Smarter Water Catchments initiative is taking place in three river catchments, the Crane in west London, the Chess and the Evenlode. Funded as a pilot through the 2019 Price Review, this approach seeks to equip the local environmental community with the skills and resources to work collaboratively in building understanding of the river catchment, identifying and delivering interventions that provide most in terms of environmental benefits. The programme has been successful, generating on average an additional £4 of investment for every £1 contributed by Thames Water and securing significant environmental improvements. One of the trial catchments, the River Crane in west London, has been heralded by the EA as the only London river catchment likely to achieve Good Ecological Status in the near future under the Water Framework Regulations.

Rob Gray, Chair of the Friends of the River Crane Environment (FORCE), responded to an Ofwat consultation stating that "the SWC programme has been transformative for the Crane Valley, creating a network of activities across five main themes (community and access; water quality; biodiversity; flooding and geomorphology), identifying or directly generating a further £20m+ of investment, and starting to have a transformative effect on the condition of the river and its associated open spaces, as well as the quality of life of the more than half a million people who live here."

The success of the River Crane Smarter Water Catchment partnership illustrates how a collaborative approach can drive environmental improvements but there are currently barriers to implementation. A lack of clear governance of, and unclear responsibilities for, river catchments and inadequate funding of both catchment hosts and the EA has tended to result in a very blunt approach to securing environmental improvements, focusing on point source impacts and adherence to single parameter standards.

Despite the success of our Smarter Water Catchment trials and although some of our regulators say they favour catchment-based approaches, the policy and regulatory framework largely fails to incentivise it - and in some cases actively blocks its use. Regulation can secure the wider use of catchment approaches by recognising that they inevitably involve a trade-off between the greater value they offer with a reduced certainty of outcome in comparison to conventional 'end of pipe' solutions - and reflecting that in measuring compliance. The power of successful catchment approaches is largely due to the bringing together of different actors to work in collaboration, but the absence of strong and clear governance structures and funding for the organisations responsible is hampering efforts to realise genuine progress.

In order to improve the uptake and delivery of integrated, collaborative or catchment-based approaches for water management, a more flexible regulatory approach needs to be adopted, one that recognises that a progressive step-wise approach to environmental improvement rather than simply targeting individual parameters governed by legal requirements will secure greatest environmental improvement, and involving local stakeholders to identify the interventions that will make the greatest difference. Clear guidance is also required on roles and responsibilities and those with designated responsibilities adequately funded to deliver them.

5. Is there other relevant information you would like to share?

We are currently undertaking research into the number of misconnections across London and their impact on river health which we are happy to share with the Committee once the final report is produced.

Back to Table of Contents

Thames21 Ref No. SW015

About you/your organisation

Organisation Name

Thames21

What does your organisation do?

Thames21 is an environmental charity that restores rivers across London and the Thames Basin to tackle the climate and biodiversity crisis, inspiring communities to enjoy and look after them over the long term. Thames21 has led citizen science monitoring and bathing water applications on sites across the Thames Basin. This includes successfully securing bathing water designation for Wolvercote Mill Stream at Port Meadow, Oxford and on the Thames at Wallingford Beach, as well as running campaigns for bathing water designation on the River Thames at Pangbourne and Henley, and on the River Roding at Wanstead (see here for more information: https://www.thames21.org.uk/improving-rivers/bathing-waters-reclaim-our-rivers)

Where are you based?

Thames21 head office is situated within the Guildhall, Aldermanbury Street, EC2V 7HH, with a satellite office based at Bow Locks, E3 3JY. Thames21 works across the following 10 catchment partnership areas across the Thames Basin:

- 'Your Tidal Thames' catchment (covering the tidal Thames through London)
- Roding Beam and Ingrebourne Catchment (covering the London boroughs of Barking & Dagenham, Newham, Redbridge, and Havering)
- Ravensbourne Catchment (covering the London Boroughs of Bromley, Greenwich, Lewisham and Croydon)
- Brent Catchment (covering the London Boroughs of Hounslow, Ealing, Barnet, Harrow and Brent)
- London Lea Catchment (covering the London Boroughs of Haringey, Hackney, Enfield & Waltham Forest).
- Marshdykes and Thamesmead Catchment (covering the London Boroughs of Greenwich and Bexley)
- Maidenhead to Teddington Catchment
- South Chilterns Catchment
- Cherwell and Ray Catchment
- South Essex Catchment

In addition, Thames21 hosts the River Partnerships in London (RiPL) group; a network of all organisations involved in delivering the catchment based approach to river improving rivers across London.

The Mayor's swimmable rivers commitment

What factors [e.g. safety, water quality] are important to assessing if a river or other waterbody is 'swimmable'? How should these be measured and monitored?

Water Quality: Thames21 considers water quality monitoring as a priority factor in the assessment and ongoing management for healthy waterways. This will support community engagement and access to bathing water sites and allow a pro-active approach to determining future requirements for improvements and protection of waterways for all.

Back to Table of Contents

The Water quality of London's rivers should be monitored in as near to real time as possible using innovative/ automated systems, where feasible, and calling on the support of external agencies to improve monitoring regimes. Currently, for officially designated bathing water sites, the Environment Agency carry out weekly monitoring across the May-September bathing water season for two key bacteria associated with sewage pollution that pose a risk to human health (E. Coli and Intestinal Enterococci). As a minimum, this weekly statutory monitoring should be rolled out across London rivers, with the GLA supporting this monitoring for sites which are not officially designated as government recognised bathing water areas (see the example of Vienna where local authorities lead on monitoring bathing water sites on behalf of their residents).

Thames21 recommends:

Statutory bathing water monitoring be completed by:
- The GLA supporting coordinated citizen science monitoring of rivers which focuses on identifying the pollution sources impacting on bathing water quality and
- supporting catchment partnerships in developing solutions (nature based where possible) to these pollution inputs.

Thames21 (and the Rivers Trust) have secured a new EU Horizon project called AQUAMON which will be launching in 2025 – this will incorporate the following –
AQUAMON's Vision: To address the challenges in urban water quality faced by London, a comprehensive monitoring system is proposed. This system involves the co-creation of observing system objectives and outputs with various river stakeholders, including charities, utilities, national regulators and agencies, local government, citizens, and citizen scientists, by integrating existing observing efforts and partnerships. The implementation of IoT-enabled systems will play a crucial role, incorporating physico-chemical multiparameter probes, in-situ microbiological labs for bacterial quantification, and lab-on-chip sensors for detecting microplastics, tire wear particles, iron, nitrate, and phosphate, as well as at least two of PFOS, pharmaceuticals, or toxic metals. These sensors will be integrated with and benchmarked against existing observing technologies and campaigns, such as sampling, sensors, and citizen science initiatives. A cloud-based dashboard will be developed to integrate multi-parameter water quality data with existing national data systems, adhering to best practices in data security, access, and presentation. Additionally, robotic and autonomous technologies will enable the diver-free collection of data from challenging or inaccessible underwater environments. The monitoring system will also include quantitative microbial and chemical risk assessments (QMRA/QCRA), providing actionable information to minimize risks in treatment processes for agricultural irrigation and urban uses.

Thames21 has limited funded capacity for staff resourcing but will have access to the technologies and equipment developed through this project. This is an innovation project hence not all elements may work as intended.

Availability of data: Data collected through statutory and citizen science monitoring should be presented back to the public in an up-to-date, easily accessible and understandable format that allows people to make informed decisions on whether to access and swim in a river. This can be done through on-site signage, and live updated online maps/storymaps. Annual report cards can be used to give the public an overview of the health and 'swimmability' of their local rivers as has been done in Australia. Thames21 are involved in a number of platforms which could act as a base for such work including GOVAQUA Welcome to the Oxford Rivers Portal!

Access: London's rivers should be made accessible to facilitate safe access and swimming. In rivers where there are currently poor levels of public access (such as the River Roding through Redbridge and Barking and Dagenham) new riverside walking and cycling routes should be created. Where rivers already have public access along their banks, safe access routes down into the river should be added where appropriate. Planned development around rivers should incorporate public access along and to rivers as a matter of course. Having public access along London's rivers is the critical first step in

Back to Table of Contents

engaging Londoners with their blue spaces and creating a culture where communities champion clean healthy rivers which is the first step towards people wanting to swim in these spaces.

High quality information online is key to supporting safe access to rivers, as well as helping to understand the issues they face and the geographic locations where they are present. Thames21 is continually working on this and would appreciate further support to continue to develop this work.

Landowner Permission: London's rivers and riverbanks are owned by a range of private individuals, organisations, government agencies and local authorities. Landowner permission is therefore key to facilitating Londoners swimming within their rivers. Engaging landowners through local catchment partnership networks can offer a fast-track solution to this.

What improvements are achievable in 10 years? Are there any short-term priorities or interim milestones that are needed?

Catchment scale improvements to water quality: With large scale catchment action, significant improvements to water quality are possible within this time frame. This has been seen in both the Isar River (Munich) and Danube River (Vienna) which are both urban river sites that have both moved from heavily polluted to clean, wild and well used swimmable rivers in a time frame not much longer than this. To deliver this however, significant investment and stringent regulation will be needed at a catchment level.

Road Run Off: Road run off pollution events occur when pollutants such as oils, heavy metals and microplastics wash off roads during rainfall events and enter rivers via surface water sewers. Road Run Off is a major pollution source to London's rivers and tackling it will be a critical step towards making London's rivers swimmable. Constructed wetlands intercept and treat road run off, whilst creating blue/green spaces that benefit peoples wellbeing and nature alike. Thames21 has produced a Road Run Off Pollution Solutions Tool which identifies London's worst roads for contributing pollution to London's rivers and suggests the Nature Based Solutions (NbS) most appropriate for dealing with this pollution including Rain Gardens. With GLA support (both through funding and support in increasing the priority of delivering these NbS), then tackling road run off pollution across London is something there can be significant progress in achieving over the next 10 years. Further updates to this model are needed to facilitate enhanced delivery as well as integration with other mechanism such as Market Based approach to deliver SuDs through Street works and other mechanism.

Improved regulation of developments to tackle problem misconnections and 'cross connections': Misconnections and 'cross connections' (connection between surface water systems and foul systems), present themselves as the same issue when identified at the outfall i.e. sewage entering the river at the outfall. Historically, this has just been called misconnections by Thames Water and the Environment Agency, however NGOs in London have found that historically Thames Water have not recorded the 'cross connections' until the recent Asset Management Period (2020-2025). Data in this period highlights that 7385 misconnection appliance have been identified from 3403 properties (11% of which are toilets). In the same time period 2476 'cross connections' have been identified. Cross connections are largely a Thames Water issue. Thames21 are seeking further information on these and will seek academic view on which is likely the bigger source of pollution, however Thames21 current position is that 'cross connections' are likely to be a bigger source of pollution that misconnections.

Regardless misconnections (where wastewater from buildings is wrongly plumed into surface water sewers and enters rivers untreated) are a significant problem across London's waterbodies, and represent an unregulated source of pollution that impact the health of a river and whether it is safe to swim in. Currently, enforcing against misconnected falls between local authorities, Environment Agency and Thames Water. There are significant inefficiencies in this process and the GLA should seek to support a more efficient and effective relationship between local authorities, Thames Water, Environment Agency and developers to address the problem of misconnections within the next 2 years.

Back to Table of Contents

Attenuating rainwater to reduce surface water run off: High volumes of rainwater runoff from hard, impermeable surfaces is a critical reason for combined sewers becoming overwhelmed and combined sewer overflows (CSOs) spilling untreated sewage into rivers, causing bathing water sites to fail safety standards. A 10-year timeframe is realistic to have a mass roll out of retrofitted raingardens and SuDs across London, whilst ensuring that new developments all have these measures included within their design. A market based approach is a potential solution to delivering this at scale, and this links to the SuDS and streetworks project that the GLA and Thames Water are currently developing. Attenuation of rainwater runoff at scale will reduce the volume of surface water entering the combined sewer system, reducing the volume and frequency of CSO spills into rivers, protecting river health and keeping them safe to swim in. Using the evidence developed in the above, the Mayor and GLA should significantly increase pressure on Thames Water to deliver the Drainage and Wastewater Management Plan quicker than is currently outlined. Significant progress is possible within 10 years, particularly as this has large benefits for flood risk reduction (surface water flooding is the 3rd largest threat to London) and improving air quality.

Recognition of more designated urban bathing water sites: key criteria must be met, and a successful application submitted, for Defra to officially designate a site as having bathing water status. Once bathing water status has been granted, the Environment Agency will carry out weekly monitoring of the site for E. Coli and Intestinal Enterococci across the May to September bathing water season, comparing results against safe swimming levels to inform the public of whether a river is safe to swim in. Designated bathing water sites also put pressure on water companies to reduce pollution inputs upstream of each site. Across the 27 EU countries, there are 7,383 inland bathing water sites & 1,121 river bathing water sites (with approximately 50% of the latter in excellent condition). The UK has only 38 inland bathing water sites and 20 river sites none of the latter are in excellent condition. This is in comparison to Germany that has 1,929 inland bathing water sites with 90.8% of these in excellent condition. Securing more officially designated urban river bathing water sites across London is a realistic target to aim to achieve within the next 10 years.

Public engagement: Many communities across London are not confident in accessing their local river and have fears around river swimming/directly accessing the water. Thames21's Thames Connections work has shown there to be significant barriers to many communities living along the tidal Thames accessing and enjoying their river. This includes people not realising they are allowed to access and walk along the foreshore, and people not feeling safe in being near the water. Thames21 has been working for the last 20 years to educate people about their local river and ensure everyone within London knows where their local river is and how to safely access it. With GLA support, a widescale education programme around this, to change Londoner's perceptions and knowledge of their local river is a realistic goal.

Restoration of historic river swimming sites: London has several historic river swimming sites which represented important cultural locations, where previous generations of Londoners would have learnt to swim and appreciate nature (e.g. South Park Lake on Loxford Water in Redbridge). Restoring these sites so they can once again be clean and well maintained enough to swim in would be another achievable goal within a 10-year time frame.

Facility creation and access improvements: Over this 10-year timeframe, there should be a priority in maximising public access along London's rivers, ensuring that previously inaccessible areas are made accessible, and that any future riverside developments have public access along rivers mandated as part of their approval process. Areas that are popular sites for swimming/paddling/accessing the water should have facilities (such as public toilets and changing rooms) added to ensure these sites can be officially designated as bathing water sites and are well used.

Are there specific locations in London that should be prioritised for improving water quality and increasing access to rivers or waterbodies?

Back to Table of Contents

Officially designated river bathing water sites across England are largely located in affluent areas of the country. As such, within London, it should be ensured that a range of sites to represent the diverse socio-economic backgrounds of Londoners are put forward. With climate change leading to more extreme heat events, having places where Londoners can freely access blue spaces to cool off will also be increasingly important for community wellbeing and climate resilience.

Sites to consider a priority include:

- **The River Roding through Barking and Redbridge:** The River Roding is London's third longest river but is currently largely inaccessible between Barking and Wanstead Park. Improving public access along this stretch is a priority for delivery over the next 10 years but will need GLA support to help finance and convince relevant stakeholders of the benefits of allowing this. Thames21 have completed a community survey which received 161 responses. These showed that, in the Ronding's current condition, 27% of respondents would consider swimming in the Roding, but if the river was awarded bathing water status, this number would rise to 90%. Thames21 has identified a potential bathing water on the River Roding at Wanstead Park which is popular for families paddling in. Thames21 and The River Roding Trust have completed a season's worth of bathing water monitoring on the river (results and press release here).

- **The River Lea through the Olympic Park:** The River Lea through the Olympic
- bathing water site here would help establish the area's Olympic legacy and make it a destination for Londoners.
- **Arnos Park in Enfield –** With Thames21's support Enfield Council are investigating a bathing water designation within the lake within the park.
- **The River Thames at Teddington:** This site is already popular with swimmers, with the Teddington Bluetits group having 1.6k members. The river here is deep and slow so well suited to swimming.
- **The River Beck at Harvington Woods, Bromley:** This is a popular location with good access where families often come to paddle in the river.
- **Albany Reach at Thames Ditton, Elmbridge:** This is a deep stretch of the River Thames, with good access, facilities nearby and throwlines already installed for safety.

Who is responsible for making the changes needed? What actions should the Mayor and GLA take?

Environment Agency: As the regulatory authority, it is the Environment Agency's responsibility to ensure Thames Water do not break their permit requirements, and to fine and enforce against them in instances where this happens. The GLA and Mayor have a role to hold the Environment Agency to account for this and ensure Thames Water are properly regulated and breaches of permits are strongly enforced against. The GLA and Mayor can also play a role in ensuring fine money from any breaches of permits that Thames Water commit are put back into improving London's rivers for the benefit of Londoners. Thames21 and other NGO's have been challenging the Environment Agency for not delivering their regulated duties for a number of years now and have had some good results including increasing transparency regarding misconnections and cross connections.

Thames Water: Thames Water are responsible for ensuring their sewerage network is up to standard and for delivering upgrades and fixes against their 5-year Asset Management Plans to ensure people's water supplies and the environment are protected. The GLA and Mayor can push Thames Water to bring forward targets and deliver more ambitious work in areas where improved river health is most important to Londoners. Aside from encouraging a faster improvement to Thames Waters Combined Sewer Outfall network, the GLA should also be pushing Thames Water to improve their understanding of Cross-Connections and the relative impact of these compared to misconnections

Local Authorities: Local authorities are often risk averse and discourage or ban the public from interacting/swimming in their blue spaces. The GLA has a role in engaging with local authorities to reverse this rhetoric, instead getting local authorities to encourage safe access to water, where

Back to Table of Contents

individuals can swim under their own risk. The GLA can also support Lead Local Flood authorities with delivering SuDs/raingardens in areas where surface water attenuation is a priority for reducing loading on the combined sewer network. Finally, enforcement of misconnections (where wastewater from buildings is wrongly plumed into surface water sewers and enters rivers untreated) is often left to local authorities to deliver under the building regulations act, despite local authorities being poorly resourced to do this and rectification of these issues also being key to Thames Water's asset management plans. An opportunity exists for the GLA to work with Thames Water to fund and host officer position(s) to support London Borough Councils in identifying and enforcing against misconnected properties. Alongside this improved capacity, the GLA can support local authorities by giving them guidance and policies on how best to enforce building regulations with property owners and developers, clarifying who has final responsibilities in rectifying mis connections and cross connections. The GLA can also Thames Water to increase the size of their surface water outfall programme (and ensuring data from this is handed to local authorities in an easy-to-understand format), as this is the only way the causes behind misconnections and cross-connections are found.

Private homeowners: Replacing soft landscaped front gardens with impermeable pavement/concrete has been a common trend across London over past decades. Each soft landscaped garden replaced with hard impermeable surfaced increases the amount of surface water run off that enters the combined sewer system and risks untreated sewage spills into rivers. The GLA has a role to play in reversing this trend and incentivising homeowners to soft landscape their gardens.

Developers: Private developers must have their developments pass standards checks upon completion. Often these checks are completed remotely through assessments of the developments designs and drawings meaning issues of misconnected plumbing that effect river health are easily missed. The GLA has a role in ensuring each new development is properly assessed to show there are no issues of misconnected plumbing that would affect river health.

London's Environmental NGO's (Thames21, ZSL, South East Rivers Trust, London Wildlife Trust etc) - For many years, environmental charities in London have led on restoration of rivers and catchments in partnership with local communities and public sector organisations. This is often done through or aligned with Catchment Partnerships (see below). Examples of this have won multiple awards including South East Rivers Trust – UK River Restoration Prize for restoration works on the Wandle, Thames21 – UK River Restoration Prize for Rewild the Rom, Thames21 and Peabody – Social Value Awards for Gallions Lake, Enfield Council and Thames21 - Ashden Awards for Local Nature Recovery in Enfield and multiple SusDrain Awards for projects throughout London. NGO's need better support, particularly in the development of projects to 'shovel ready' status at catchment scales. Increasingly, Environmental Markets are growing and can deliver restoration of catchments including water quality at scale. An example of this is the Pymmes Brook, Thames21 and Enfield Council with £10k from the Ashden Awards have developed a business case for £3.3m of works from corporate and flood risk funding to deliver 13 projects distributed through the catchment which will improve water quality significantly and remove over 200 properties from flooding in a 1 in 100 year flood event. Many more programmes which can deliver at scale are possible if development funding were available to support eNGO's in London to work with local authorities to gain large scale capital funding.

Catchment Partnerships – Catchment partnerships are unique in England in providing an established mechanism of bringing together all key stakeholders working across the water environment within a catchment area, and supporting them in developing, and securing funding, for collaborative, cross partner projects that aim to improve the health of rivers at a catchment scale. To achieve this, Catchment Partnerships bring together stakeholders including community groups, local authorities, landowners, NGOs, water companies and government agencies to agree on collaborative catchment action plans and work together towards their delivery. eNGOs across London are tasked by Defra with hosting these catchment partnership networks, and catchment partnerships have been shown to be successful way of leveraging external funding for river improvements, with every £1 of Defra funding for catchment partnership host roles, securing £3 of investment in river improvements from non-government sources. Despite these successes, the hosting of catchment partnerships is critically

Back to Table of Contents

underfunded, with Defra's annual contribution to host roles (which varies from £3,750 to £15,000 depending on catchment size) not increasing in the 11 years the scheme has run for. An opportunity exists for the GLA to 'supercharge' catchment partnership's ability to deliver healthy rivers within London by offering to match/increase the funding for the hosting of catchment partnerships across the 10-year time period. Through the River Partnerships in London Group (RiPL), Thames21 chairs a network of all catchment hosting organisations across London.

What can the Mayor learn from other examples (national or international) of creating cleaner and accessible 'swimmable rivers'?

Munich: Munich, Germany has a population of 1.6million people and has the River Isar flow through it. Between 2000 and 2011 the 35 million euro Isar Renaturation project aiming to restore Munich's River to deliver flood protection, ecological restoration (to near natural state), and improvements to recreation and leisure. In total 8km of the river was restored, with riverbanks widened and made gently sloping, new islands and gravel banks created and fish barriers removed. UV treatment was also mandated at all sewage treatment works upstream. The river Isar is now a popular swimming location within Munich. Interestingly, here there is no testing of bacteria levels and swimming is left up to the individuals own risk.

Vienna: Vienna, Austria should be looked to as an urban centre that has embraced swimmable rivers. With a population of 2 million, Vienna has the Danube River flowing through it, made up of the Old Danube (a former river channel cut off from the river in 1875 to form a large shallow lake), and the New Danube (a flood relief channel of the river built in the 1980s). During the 1990s, the building of this flood relief channel lowered the water levels in the Old Danube, leading to eutrophication, plant die off and cyanobacteria bloods. The city authority works to stop pollution from landfills and misconnections, create a large biological filter bed to reduce key pollutants, and undertook chemical restoration of the lake. The Old Danube now has 1.2 million swimmers annually and water quality rated excellent over all 7 areas. The city itself has 29 bathing water sites. Read more about this project here.

Australia: Within Australia, there is local government monitoring of river health and the Environmental Protection Agency of Victoria has a river health forecasting site that shows the expected water quality of rivers in the way that we have weather forecasts and air quality forecasts within the UK.

New Zealand: Within New Zealand, there has been pioneering work to grant the Whanganui River legal personhood, giving the river the same rights and protections as a human. The country has also been pioneering in involving local groups in the governance of the river. Similar methods could be used on the Thames and the Roding, Beam and Ingrebourne Catchment Partnership are currently working with The River Roding Trust to incorporate a representative of the River Roding within the Catchment Partnership group as an early-stage way of introducing the idea of river legal personhood to the catchment partnership.

Canada: Within Canada, citizen science data on waterbodies is feed into an online platform called Water Rangers where it is used to inform national statutory water health assessments. Thames21 is now using water rangers to upload all of its citizen science data and is working on the national CastCo project to improve how citizen science data can impact policy in a similar way.

The River Wye, Wales: Defra have appointed a River Wye Champion to push forward progress on delivering government objectives to improve the health of the river.

Is there other relevant information you would like to share?

Healthy rivers offer a multitude of interconnected benefits that are crucial for both the environment and local communities. They provide clean water, essential for human consumption and ecosystem health. Improved biodiversity in and around rivers supports a wide range of species, contributing to a balanced

Back to Table of Contents

and thriving ecosystem. Additionally, healthy rivers play a significant role in reducing flood risk by naturally managing water flow and absorption. They also improve resilience to climate change by acting as natural buffers against extreme weather events. Furthermore, rivers offer valuable amenity spaces for local communities, promoting recreational activities and creating connections to nature. By prioritising the health of our rivers, we can ensure these diverse benefits are sustained for future generations.

Back to Table of Contents

Tidal Thames Swimmers Ref No. SW016

We are Tidal Thames Swimmers, a Facebook group of friends, not a formal organisation.

We have facilitated safe swimming in the Tidal Thames for the last 15 years.

We use the facilities [personal information redacted for publication] in Hammersmith

Factors

The two main factors in assessing whether a river is swimmable are boat traffic and water quality. We agree with the regulations of the Port of London Authority that prohibit swimming below Putney Bridge and in the navigable channel. The latter prohibits crossing the river.

Water quality is critical. Historically we subscribed to the Thames Water Rowers alerts. We avoided swimming 24-48 hrs after discharges from Hammersmith Pumping Station and Mogden Treatment works. Nobody could advise if this was correct, but it seemed to work, as we have had no reports of swimming related illness. Historically, we averaged cancelling two of our ten swims each year.

Last year we widened our monitoring of discharges to cover the whole Thames catchment area through the Thames Water interactive map. We don't know to what extent these discharges are diluted or aggregated when they meet the Thames? What we do know, is that they are coming our way.

It is impractical to expect recreational users/organisations to test Water quality in the Thames. It should be monitored by a single organisation, with results freely available to all. Maybe the PLA with a grant from the GLA?

Important warning

Swimming in the Tidal Thames can never be made safe for the general public. We endorse the warnings given by the PLA and consider it dangerous. Tidal Thames Swims exists to mitigate the risks, based on our local knowledge. Over 15 years we have never had an incident.

We are entirely voluntary and our swims are free. We welcome all who answer our questions on fitness and open water experience. Chris Romer-Lee has swum with us and knows that the two founders are aging and in need of support. We would welcome discussions with the GLA on any support they might give to expand our participation numbers, so that more people can enjoy swimming safely in the Tidal Thames. When the tides permit, we organise wild swims as part of the Totally Thames festival.

Back to Table of Contents

Transport for London Ref. No SW017

Transport for London (TfL) is the largest transport authority in the UK, operating services across the Capital and managing 5 per cent of London's roads.

We are fully committed to supporting the Mayor of London's ambition to achieve clean and swimmable waters across the city. As a key stakeholder in London's urban infrastructure, we recognise the critical role we play in preventing and managing water pollution, particularly in mitigating the impact of surface water runoff from roads and transport networks.

Strategic planning and proactive measures, such as reducing pollutants, improving drainage systems, and implementing sustainable urban drainage solutions, are central to our approach. These efforts align with the broader goals of safeguarding the health of London's waterways, enhancing their ecological integrity, and ensuring their suitability for recreation. The evidence submitted here reflects our commitment to these priorities and outlines our ongoing initiatives to support a cleaner, more sustainable London.

We would like to submit the following documents, by way of written evidence. Together, these materials demonstrate our strategic approach to enhancing London's resilience to climate-related challenges and ongoing efforts to integrate sustainable practices and support the health of London's waterways.

TfL-published reports

TfL Corporate Environment Plan (published 2021)
https://tfl.gov.uk/cdn/static/cms/documents/tfl-corporate-environment-plan-29-october-2024-acc.pdf

This sets out TfL's high-level approach towards corporate environmental sustainability, factoring in relevant Mayoral strategies (e.g., London Environment Strategy, Mayor's Transport Strategy, etc.). TfL is currently planning a refresh of the Plan to reflect the latest changes in legislation and policy, as well as improvements in knowledge.

Includes details on better managing flooding risk to adapt to climate change [page 20].

Back to Table of Contents

TfL Annual Report
https://content.tfl.gov.uk/annual-report-and-statement-of-accounts-2023-24-acc.pdf

This includes TfL's sustainability reporting under the Task Force on Climate-related Financial Disclosures and Taskforce on Nature-related Financial Disclosures [pages 15-16]. The most recent annual report sets out our work to develop scenarios to assess risks against [page 17].

Adaptation Reporting Power 4 (ARP4) Submission (published 2024)
https://content.tfl.gov.uk/tfl-adaptation-reporting-power-2024-non-technical-summary.pdf

This is TfL's most recent and comprehensive climate change risk assessment. It sets out TfL's key climate-related risks now and in the future, focusing on infrastructure, people and interdependencies. More intense summer rainfall after prolonged dry periods, as a result of climate change, will contribute to particularly damaging road runoff events.

Climate Change Adaptation Plan (published 2023)
https://content.tfl.gov.uk/tfl-climate-change-adaptation-plan.pdf

Based on the climate risk assessment available at the time, this sets out in more detail how TfL will meet its climate change adaptation commitments (for example, in the Corporate Environment Plan) and obligations. It includes TfL's first corporate target for Sustainable Drainage System (SuDS) delivery: an additional 5,000 square metres of highways SuDS catchment each year [page 22]. It also sets out TfL's work to increase its maturity on climate change adaptation (including addressing surface water flood risk), so that investment prioritisation can be informed by quantitative data [page 8].

Green Infrastructure & Biodiversity Plan (published 2024)
https://content.tfl.gov.uk/green-infrastructure-and-biodiversity-plan-2024.pdf

This sets out in more detail how TfL will meet its green infrastructure and biodiversity commitments (for example, in the Corporate Environment Plan) and obligations. Green infrastructure, via SuDS, is a key measure to help reduce road runoff. The Plan also includes an explicit focus on helping to address environmental inequalities [from page 22].

Externally-published reports that TfL has contributed to:

London Climate Resilience Report (published 2024)
https://www.london.gov.uk/sites/default/files/2024-07/The_London_Climate_Resillience_Review_July_2024_FA.pdf

Surface Water Strategy Interim Report (published 2024)
https://www.london.gov.uk/sites/default/files/2024-07/LSWS-Interim-Report-FINAL-240724FR.pdf

Back to Table of Contents

Wildlife Gardeners of Haggerston Ref No. SW018

A.
Our organisation is The Wildlife Gardeners of Haggerston (WGH). We have been enhancing the biodiversity of a stretch of the Regent's Canal which we care for under an adoption agreement with the Canal and Rivers Trust. We also managed the Kingsland Basin, owned by London & Quadrant Housing Association for ten years. We have won a European award for Creative Urban Ecological Green Space Management as well as two Green Flags, a lot of complimentary articles in the press and the support of the local community. We have been doing this work voluntarily since 2013 and formed our constituted community group in 2017 to access Grow Back Greener funding and ran a Crowdfunder to increase the scale of our work on these waterways. We are based in Haggerston, Hackney.

B
1. As well as considering safety and water quality it is important to consider what will be lost if a Site of Importance to Nature Conservation is designated as a swimmable site. The area of the Old Lea that became known as 'Hackney Beach' was degraded in a number of ways and this impact was one of the main drivers that led Hackney Council and local organisations and individuals to work to lessen and then reverse the problems caused. Our organisation was involved with these initial works and subsequently, in 2021, we successfully applied for Grow Back Greener funding to start river restoration works on the Old Lea. One of the arguments we made for the importance for this restoration was that people should have 'Access to Nature'.

We applied again in 2022 and 2023 for additional funding with the backing from all the organisations we worked with in the first project: Hackney Council, LVRPA, EA, Thames21, Wild Trout Trust, UCL and others. We were successful in these bids and are now coming to the end of the third project. We have learnt a huge amount over the three years including that 'Access to Nature' should be delivered through bringing people to Nature, not degrading what remains of London's sensitive natural spaces by building infrastructure on these sites and encouraging people to behave so that these sites suffer physical and biological degradation.

Bringing Nature to People, in this instance, means that designated swimming areas should not be sited in SINCs but instead in areas that can be improved to allow many people to access an area that provides a seemingly-natural and safe environment for swimming. Through the Swimmable Rivers plan there are blue spaces in London whose huge potential can now be realised.

A possible location for a future swimming site should be assessed on its costs and benefits: what is likely to be lost and what is likely to be gained. That a SINC such as the Old Lea was mentioned as even a possible future designated swimming site was irresponsible for a number of reasons. Did no one think of the damage incurred just by publicising this site in this context. I am very grateful for this call for evidence to be able to state that there are sites in London that can provide a swimmable river experience and many other major benefits without cost.

2. It would be possible to provide a huge new seemingly-natural, highly accessible swimmable site within ten years if Thames Water and the Canal & River Trust were first reformed or replaced.

3. There are a number of locations within a number of waterbodies that should be prioritised for improving water quality and increasing access. On the other hand, London's most sensitive semi-natural sites should be protected from inappropriate access and behaviour.

4. The Environment Agency and the GLA are responsible for making the changes needed - they have the knowledge and funding.

6. The Wildlife Gardeners of Haggerston have been working in waterbodies for over ten years, first at Kingsland Basin and then the Regent's Canal, Wenlock Basin, City Road Basin and the Old Lea. We have

Back to Table of Contents

experience with the statutory bodies governing these sites, the various stakeholders, communities as well as the physical and ecological factors of these sites and have developed a number of methods, as well as possessing the skills necessary, for improving the ecological health of all these waterbodies. As a group that has grown out of the local community we haver the experience and understanding as to how to efficiently use the resources available to improve London's waterways and we are uniquely positioned to help deliver the Swimmable Rivers plan. The Wildlife Gardeners of Haggerston would like to be considered as a partner in delivering the Swimmable Rivers plan.

Back to Table of Contents

Zoological Society of London Ref No. SW019

Thank you for the invitation to provide evidence that will help influence the committee's recommendations to the mayor on his plans to work with partners across London to deliver improvements to water quality and make rivers clean and accessible for Londoners to enjoy safely.

1. About us
We are the Zoological Society of London (ZSL) an international science-driven conservation charity. Our UK team has been working in partnership with key stakeholders and community groups in London for the restoration of rivers since 2003, as part of our wider programme of works on the recovery of freshwater ecosystems. We are a founder member of the River Partnerships in London working group (RIPL) and currently, as a lead partner in delivery of the Smarter Water Catchments programme, are managing live river restoration projects with the London Boroughs of Hillingdon, Hounslow, and Richmond.

We have a national reputation for developing and managing community science projects that produce evidence used to improve rivers. For example, our programme of Outfall Safaris sees us survey every river in London on a four-year rotation to map and report sources of pollution. We carry out this work with catchment partnerships and hundreds of community volunteers. In addition, with the GLA, we produced the 'Urban Wetland Design Guide', and we are currently monitoring the function and impact on nature and water quality of three wetlands constructed as nature-based solutions in London.

2. The Mayors Swimmable Rivers Commitment
ZSL's UK team is excited to be able to support the Mayor in his ambitions for clean and healthy waterbodies in the London. The commitment to deliver improvements to water quality and make rivers clean and accessible for Londoners to enjoy safely could be transformative for London and help us achieve many benefits for Londoners.

2.1 What factors [e.g. safety, water quality] are important to assessing if a river or other waterbody is 'swimmable'? How should these be measured and monitored?

'Swimmability' must consider the critical safety factors such as flows, tides and the physical restrictions around depth and accessibility. In our response we have focused on another key consideration, that of water quality and the need to identify and remove sources of pollution to improve water quality. We have outlined evidence on the impacts, pathways and current management practices around a range of chemical pollutants that are entering waterbodies across London.

In addition, in keeping with ZSL's mission to embed nature into the heart of decision making and support nature recovery, we have focused on the role nature can play in removing pollutants and mitigating their impact. This is not to suggest that nature-based solutions are the primary intervention needed to improve water quality, but rather that they should be considered an important component of a strategy that prioritises the removal of pollutants at source.

Sewage
For human health, the main concerns with sewage entering rivers are related to e-coli and other disease-causing bacteria.

The impact of sewage on the natural environment can be both acute, as a pollution event, or multiple smaller inputs can chronically degrade nature in rivers and other waterbodies. When sewage enters a river it causes a bloom in bacteria that draws oxygen out of the water, severe crashes in oxygen availability during sewage pollution events kill wildlife. As sewage breaks down it releases ammoniacal nitrogen and phosphorus. One form of ammoniacal nitrogen, ammonia, is toxic to river life and found at high concentration in sewage contaminated water (Trach *et al*., 2024). Elevated ammonia

Back to Table of Contents

concentrations result in fish kills and reduced diversity in local aquatic invertebrates (Johnson *et al*., 2019). The fingerprint of chronic sewage in rivers is elevated nutrients such as phosphorus and low oxygen the impacts of which are the general breakdown of aquatic ecosystems (Cooper *et al*., 2022; Albini *et al*., 2023)

Rivers in England are assessed by Environment Agency, to determine their ecological and chemical health, as required by the Water Framework Directive (Gov.uk, 2024). Their data shows that many of London's rivers (last assessed in 2022) fail to meet good ecological status. Most are currently classified as moderate (ecological status) and suffer from high concentration ammonia as NH3 and have low dissolved oxygen (DO) for example. The Dollis Brook has poor DO and moderate ammonia, Edgeware Brook – poor DO, moderate ammonia, Pymmes Brook – poor (DO) and bad ammonia (Environment Agency, 2023). Ammonia concentrations within many of London's waterbodies are high due to the input of sewage, which is contributing to none of the catchments currently receiving the required "good" status. In some areas the long-term trends are concerning, for example Environment Agency data shows a 20-year trend of decreasing oxygen availability and increasing ammonia concentration in both the Yeading Brook East and West in the London Boroughs of Hillingdon and Harrow (CVP, 2022).

A study conducted on the Thames near Swindon, showed how rivers can quickly recover when sewage pollution decreases. A seven-fold decrease in ammonia was achieved through improved processing at the Waste Water Treatment Works (WWTW). This resulted in improved concentrations of dissolved oxygen in the river and a sustained improvement in the presence and numbers of the less pollution tolerant invertebrate species (Johnson *et al*., 2019).

A particular issue in standing waterbodies such as lakes is 'eutrophication' where inputs of nutrients can cause excessive growth of algae (Whelan *et al*., 2022), oxygen depletion and potential for toxic algal blooms.

Road run-off and 'urban diffuse pollution'

Run off from roads and other hard surfaces contains a mixture of chemicals that are potentially harmful to the environment and to human health, these include; polycyclic aromatic hydrocarbons (PAH) and other hydrocarbons from exhausts and spilt fuel and oil (Markiewicz *et al*. 2017), metals such as Zinc and Cadmium (Huber *et al*. 2019) , particles from tyre wear (Baensch-Baltruschat et al. 2020),and salts that are applied to road surfaces for maintenance (Hintz and Relyea 2019). Some of the chemicals associated with roads carry significant potential risk to public health (Soltaninia *et al*. 2024).

A ZSL led study on the Frogs Ditch (ZSL 2021), a small tributary of the River Crane in the London Borough of Hillingdon, showed total PAH concentrations to be greater downstream of the M4 than upstream. Most individual PAHs were above both the 'Probable' and 'Interim' guidelines, indicating a marked pollution problem.
Brierley, 2013, showed sediments in the River Wandle are contaminated to above the 'Lowest Effect Level' for multiple heavy metals and for certain contaminants (copper, lead) are above 'Severe Effect Levels'.

The intermittent nature of the road run off pollution and the variety and low concentrations of chemicals involved can make direct measurement and quantification of pollution loading of an individual road drain difficult and expensive. Modelling has been used to derive likely concentrations of road pollutants entering rivers in a GLA and ZSL funded project led by Thames21 and Middlesex University. The summary of the project and its findings are available here - road runoff pollution decision support tool (Thames21). National Highways use their Highways Agency Water Risk Assessment Tool (HAWRAT) to model water quality impacts of discharges from their assets on receiving water courses in London (and nationally). We have asked National Highways for the number of outfalls soakaways within the Greater London boundary that present a medium to high risk to the receiving water course and hope to include their response in our full report.

Back to Table of Contents

The impacts on rivers of pollutants washed into them from roads and other hard surfaces is a very complex one. The effects on the receiving waterbodies can be both acute and chronic. Acute impacts are most often witnessed during summer storms after prolonged periods of dry weather when river levels are low. Materials that have built up on the roads are washed into rivers in one quick 'first flush'. High pollution loadings arriving very rapidly can lead to the swift depletion of oxygen in the receiving river that can kill fish in large numbers. The long-term impacts of the other chemicals that often become bound up with river sediments is currently poorly understood.

Silt

Most rivers in London are heavily modified and surrounded in reaches by impermeable surfaces which can make them more susceptible to flashy responses to rainfall, with water levels and flow rate often rising very quickly, resulting in particularly high inputs of sediment, and that sediment is more often resuspended in the river channel (Kemp *et al*. 2011; Taylor and Owens 2009). Sediment washed into urban rivers can contain organic matter, concentrations of metals, pharmaceutical products, pesticides, herbicides, hydrocarbons, PCBs, PAHs, dioxins and radionuclides (Taylor and Owens 2009). All chemicals mentioned in the section 'Road run-off and urban diffuse pollution' are all relevant here, as road run-off is a significant contributor to sediment in urban rivers.

As well as at the point of entry, high levels of suspended solids washed into rivers can travel a great distance from outfalls, causing a range of negative impacts on aquatic life downstream (Van Biervliet 2015). Sediment can smother and compact gravels, reducing oxygen as well as the available habitat for invertebrate and fish (Kemp *et al*. 2011). More specifically, sediment can have a detrimental effect on salmonid spawning by accumulating in redds, which increases sediment oxygen demand (SOD) and physically blocks pores, reducing oxygen supply, all of which can impact levels of salmon recruitment (Sear *et al.* 2017). For fish, excess sediment in waterways can also cause gill irritation, reduce swimming performance, and change blood physiology (Wildfish 2017).

Sediment accumulating over time results in a build-up of pollution concentration in both the riverbed and within biota living within the river. Contaminants can combine and form complex mixtures that can exacerbate their harmful impacts on river ecosystems. Pollutant accumulation in sediment may result in sediment beds that have much higher concentrations of pollutants than the surrounding water, which can be particularly harmful for benthic invertebrates and ground living fish and means they are at risk of both dissolved and sediment bound pollutants (Thellmann *et al*. 2017).

Van Biervliet (2015) showed in a study that monitored run off from 15 outfalls across London that the Total Suspended Solids loadings in the samples taken after rainfall regularly exceeded the 25 mg/l threshold set by the European Union Freshwater Fish Directive (78/659/EC).

Pesticides

There is an increasing amount of evidence in the academic literature on the impact of pesticides on rivers in the UK. Pesticides can contain chemicals such as fipronil, fipronil sulfone, fipronil sulfide (collectively known as fiproles) and imidacloprid (Perkins *et al.* 2021). In a risk-ranking for surface waters in England, fipronil identified as the top-ranked organic chemical of concern (Spurgeon *et al*. 2022), and imidacloprid was recently identified as one of the highest risk chemicals of concern across the Thames catchment (Egli *et al.* 2023).

Fipronil and imidacloprid are commonly used in anti-flea/tick products for pets (Perkins *et al*. 2021). Current legislation assumes the exposure to chemicals in ectoparasiticides to be low, and down the drain pathways to pollution are not considered (Perkins *et al*. 2024), but in the UK, over 80% of cats and dogs now receive at least one routine treatment of an ectoparasiticide product per year (Perkins and Goulson 2023). In a study by Perkins *et al*. 2021, it was found that sites downstream of wastewater treatment works had higher concentrations of these ectoparasiticide, suggesting that significant quantities of these chemicals are entering waterways via household drains. A study to understand the pathways of

Back to Table of Contents

these chemicals into rivers found that bathing pets, pet bed washing and washing of owners' hands all resulted in the presence of ectoparasiticides chemicals within the drainage system (Perkins *et al*. 2024).

Pesticides can also directly contaminate waterways when pets swim in rivers or ponds etc (Perkins *et al.* 2021). In a study of Hampstead Heath ponds, ponds where dogs swim were found to have exceeded environmental toxicity thresholds for Imidacloprid and fipronil (Yoder *et al.* 2024).

Surface water contaminated with the chemical Imidacloprid, has been linked to macroinvertebrate decline (Van Dijk *et al.* 2013).

Pesticides including chemicals such as fipronil and imidacloprid are restricted for agricultural use due to risks to non-target invertebrates and have been linked to continental scale declines of pollinators (Goulson *et al.* 2015).
Despite their wide-ranging use in pet ectoparasiticides, human health implications of prolonged exposure to fipronil and imidacloprid remain limited (Perkins *et al*. 2024).

Pathways and management

In this section we describe how the pollutants listed above enter rivers and other waterbodies and describe some aspects of the current management of those pathways.
Sewage

Sewage treatment works

There are eight wastewater treatment works within the M25 serve ninety nine percent of the GLA population (Thames Water 2100 plan).

Discharges from WWTW (Waste Water Treatment Works) must comply with requirements set out in legislation and environmental permits, but the permit conditions are specific to each WWTW (Ofwat 2024). According to the Thames Water 2025-2030 Drainage and Wastewater Management Plan, if management continues as it is currently, all eight treatment works that serve Greater London are at risk of operating at or above their permit levels. Since 2019, there have been microbial breaches, specifically coliform detections, at seven large water treatment works serving London: Ashford common WTW, West London, Coppermills WTW, East London, Kempton WTW, West London & Hampton WTW, West London, highlighting the need to address water ingress at these sites (Thames Water 2024b).
A 2024 investigation by OFWAT into sewage treatment works and sewerage networks found that Thames Water had failed to ensure the sufficient performance of its wastewater treatment works in terms of design, construction, operation, and maintenance to ensure that spills only occur in exceptional circumstances (OFWAT 2024).

Combined sewer overflows (CSOs)

We have asked Thames Water for the number of CSOs in London and the frequency of spills and hope to include their response in our full report.
CSOs are permitted to temporarily discharge untreated sewage into waterways when the sewerage system is at risk of becoming overwhelmed. This can happen during heavy downpours, or when there are sewer blockages or equipment failures. This is regulated by the Environment Agency under The Environmental Permitting (England and Wales) Regulations 2016.

Since December 2023, it has been a legal requirement for water companies to install Event Duration Monitors (EDM) on all storm overflows (Environment Agency 2024). According to the EDM data from Thames Water, in 2023 there were 619 active storm overflows within the Thames Water area, of which 610 had spill data. On average across the year, there were 27.9 spills per CSO and per spill event, there was an average spill time of 11.6 hours from each CSO. EDM monitors only measure the start and end

Back to Table of Contents

time of flow, not the volume of flow, so the amount of pollution that is being emitted during these spills is unknown.

An issue with CSO's is that Thames Water's drainage map is incomplete – This means there could be unknown CSO's or asset acting as CSOs that are discharging but not being monitored and therefore not contributing to the official stats.
Monitoring is showing that CSOs across England are discharging sewage outside of the weather events they are permitted to, in times where there is normal or no rainfall (CIWEM 2022). Giakoumis and Voulvoulis (2023) analysed EDM data, considering the type and location of CSOs and the sewerage networks they are connected to, and found that "chronic undercapacity" of wastewater systems is one of the main causes behind the increased frequency and duration of CSO spills in England.

"In order to prioritise the highest spilling CSOs, the Environment Agency and water companies developed the Storm Overflow Assessment Framework (SOAF). Stage 1 assesses whether the overflow exceeding spill frequency triggers is due to 1. exceptional rainfall 2. due to maintenance issues; or 3. due to insufficient hydraulic capacity. Thames Water named asset maintenance as the reason for high spills at 60% of its high spilling sites in 2021, 38.7% in 2022 and 40.4% in 2023. Under the SOAF framework, if the cause of spills at a high spilling site is identified as being due to a requirement for asset maintenance, the storm overflow is removed from the SOAF process at this Stage. The removal of these sites from the SOAF process reflects the fact that companies are expected to be able to resolve these issues in a timely manner and as part of their ongoing operational and maintenance activities (activities that companies are already funded for under the price control). The Environment Agency's published spills data would seem to indicate, however, that issues at many of Thames Water's high spilling sites were not resolved swiftly and that many of these sites continued to record a significant number of spills in subsequent years" (Ofwat 2024).
Giakoumis and Voulvoulis (2023) concluded that the power to resolve the issues lie with the water companies and a need to invest and extend water infrastructure. It has been proposed in a report by the Chartered Institution of Water and Environmental Management (2022) that a WSC (water and sewerage companies) only solution could risk investing water-bill payers' money without addressing the root causes of the issue. There are multiple factors that have led to the increased flow of sewage and rainwater into combined networks, and whilst water companies will need to play a leading role in rectification, there are opportunities for actions to be taken elsewhere, involving other organisations, that could reduce the amount of costly investment needed by water companies (CIWEM 2022).

As there is such a strong influence of surface water run-off on storm overflow discharge frequency, organisations that have a role in flood risk management and/or the development of roads, buildings and other hard surfaces, such as local flood authorities, highways agencies and local planning authorities, should be involved in delivering solutions (CIWEM 2022).

In December 2024, the Office for Environmental Protection found that there have been failures to comply with environmental law in relation to regulatory oversight of untreated sewage discharges by the Department for Environment, Food and Rural Affairs (Defra), the Environment Agency (EA) and Ofwat following an investigation into the regulation of network combined sewer overflows (OEP 2024). CIWEM (2022) say there is a need for stronger regulation, both by the environmental regulator the Environment Agency, and the economic regulator, Ofwat.

An example of non-permitted CSO's is one on the River Roding in Aldersbrook. Despite being reported over three years ago, the illegally discharging CSO is still awaiting repairs. The Environment Agency has not been responding to reports of pollution unless there is evidence of wildlife impact/fish kills. This does not account for the fact that many rivers in London are in such a degraded state that there is no fish left to be reported as being impacted by sewage spills (London Borough of Redbridge Scrutiny Committee 2024).

Polluted Surface Water Outfalls

Back to Table of Contents

Much of outer London is served by a dual drainage system. Foul sewers take sewage to a WWTW and surface water flows via the surface water network to the nearest watercourse. If there are cross overs between the foul and the surface then the point of discharge of the surface water sewer, the outfall, will become polluted and termed a Polluted Surface Water Outfalls (PSWO). Up until 2015 there had been no systematic way of surveying and reporting PSWOs to the asset owner for remediation. ZSL, working within the Citizen Crane project, responded to this evidence gap by developing the Outfall Safari community science programme. Outfall safari volunteers are trained to identify and score outfalls, during complete river walk over surveys, based on any visible evidence of pollution. Scores from 0 to >10 are used to rank outfalls, the higher scores for outfalls with higher levels of visible pollution.

Since 2016, 24 outfall safaris have been conducted on the rivers in London. Since 2018 the programme, funded by Thames Water, surveys every river in London on a four-year rotation. 4465 outfall assessments have been completed in London. Most outfalls assessed were non-polluting. In total 23% of assessed outfalls have shown some sign of visible pollution (scores 4+). Outfalls that are deemed highly polluting (scores ≥10) account for 4% of outfalls found (Fig 1). Data from the outfall safaris are passed onto Thames Water, the Environment Agency and Catchment Partnerships for follow up action to remove sources of pollution.

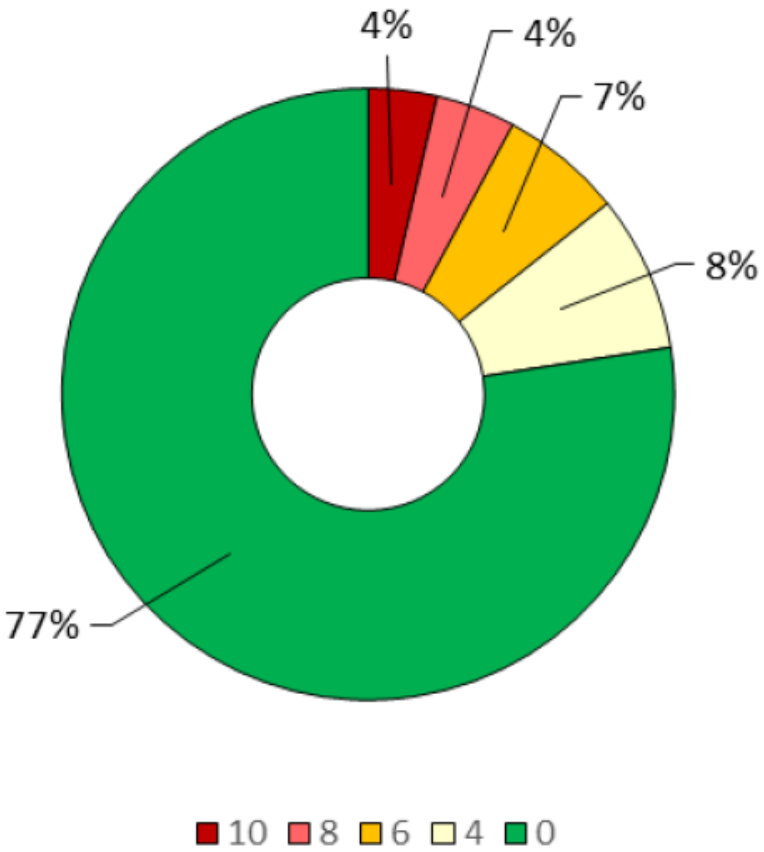


Figure 1, Breakdown of outfall scores as a % for all 4465 assessments in the outfall safari programme.

Since 2016 the outfall safari programme has,

- Surveyed over 671 km river in London
- Conducted 4465 outfall assessments
- Identified 638 polluting outfalls (≥6)
- Identified 162 outfalls identified that were highly polluting (≥10)
- Seen on average across London of one PSWO (score ≥6) per km of river surveyed.

Back to Table of Contents

Looking at the density of polluting outfalls within London catchments (outfalls with a score of ≥6), the lower Brent (2023), Beverely Brook (2024), Dollis Brook (2017 & 2022) had some of the highest number of polluting outfalls per km surveyed. The Edgware brook outfall safari has the highest density, 3.8 polluting outfalls per km, compared to the next highest at 2.3 outfalls per km (Dollis Brook 2022) (Fig 2).

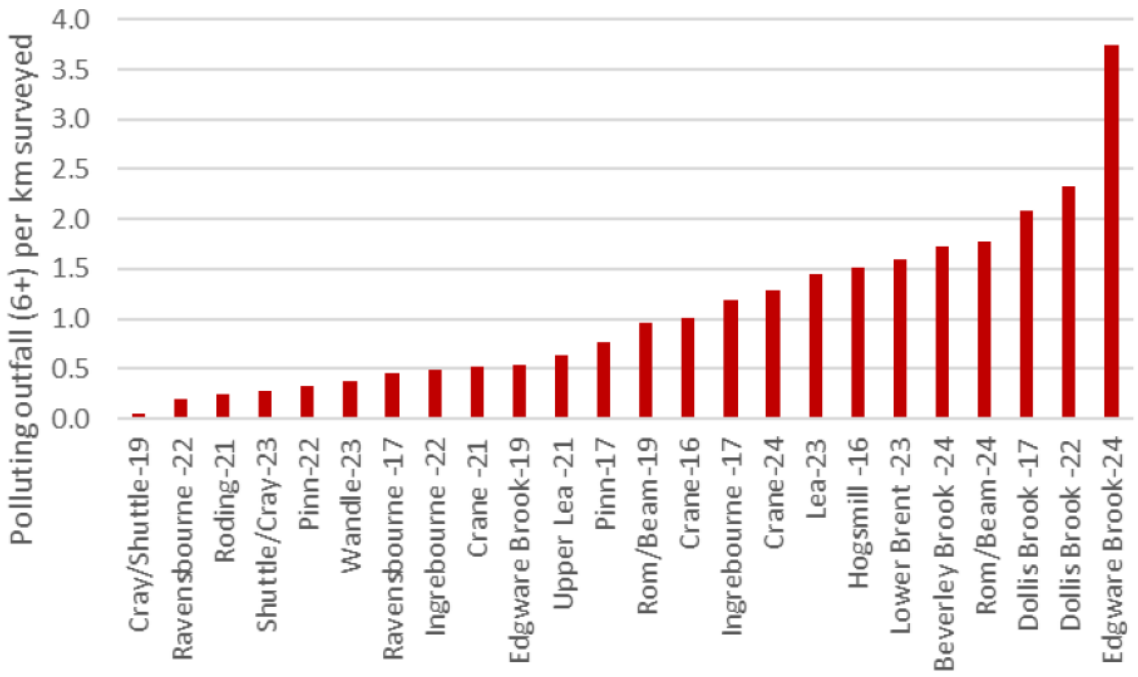


Figure 2, The density of polluting outfalls (≥6) identified during the London outfall safaris, as measured by number of polluting outfalls divided by the length of river surveyed in each respective survey.

Outfalls typically become polluted due to misconnections, blockages or failing assets in the localised upstream drainage catchment.

Misconnections

Misconnections can occur both ways, surface water into the foul, which causes surcharging of the sewer network and can lead to CSO's discharging, and foul to surface which discharges foul waste and other pollutants into rivers via outfalls (Ellis and Butler 2015). The misconnection rate in London is estimated at around 3-5% of properties (Ellis and Butler 2015). Ownership of outfalls is often unclear, but we understand that Thames Water own ~ 60% of Surface Water Outfalls in London. The remainder of outfalls not owned by Thames Water are Environment Agency, Highways Agency, Local Authority or privately owned.

The Thames Water Surface Water Outfall Programme (SWOP) team follow up on reports of PSWOs from members of the public which often come from the ZSL coordinated Outfall Safari Programme (ZSL 2017). The SWOP results from AMP7 (2020-2025) are shown below (Barry 2024. Personal communication).

Back to Table of Contents

Table 1. AMP7 SWOP results from Thames Water 194

194	Outfalls significantly improved so far and signed off by EA (minimum AMP target 200)
3403	Properties with misconnections/defects – 18.8% rate per property surveys (after narrowing down network)
7385	Individual misconnected appliances
18915	Properties surveyed
48432	Total visit attempts

The Building Regulations 2010 state that an adequate system of drainage shall be provided to carry foul water from appliances within the building to either a public or private sewer or a septic tank or cesspool where appropriate (The Building Regulations 2010). "On new-built properties, Local Authority Building Control officers or their contractors sign-off connections to the sewage network, although this often manifests itself as a check on the connection itself rather than a check of the connection drainage; thus, there can be many inefficiencies in the compliance process" (Ellis and Butler 2015). If building regulations are violated and if the issue is not rectified after a letter from Thames Water, they are referred to the local authority, who are responsible for enforcement and if necessary, prosecution under Section 59 of the Building Act 1984. Once Thames Water trace the pollution to a property, often cases are rectified following a letter from Thames notifying them that their property is polluting the local watercourse. In 2024 the voluntary rectification rate was 77% (Barry 2025. Personal communication). In previous years, this has been as high as 90%, this decrease could possibly be due to factors such as the cost-of-living crisis or public opinion of water companies (Citizen Crane 2025).

Misconnections to the surface sewers scale between single domestic appliances to whole blocks of flats, as has recently been brought to the attention of the press by Friends of the River Crane Environment (FORCE) and Clean Up the River Brent (CURB) (BBC News 2024). Due to the nature of the issue, it can take the SWOP team a long time to identify the source of a misconnection, with some outfalls remaining on the SWOP list for several years. It is possible that misconnections are appearing faster than they are being resolved and to keep up with the rates of misconnections appearing in the system, SWOP would need to be scaled up.

When purchasing a property, buyers can choose between three RICs building surveys. Level 1 is recommended for "conventionally built, modern dwellings in satisfactory condition" and does not include a drainage inspection (RICS 2024). Under survey 2, drain covers are lifted and inspected, but this is a more expensive option, is not compulsory and means that misconnections are often left un-rectified when houses are passed between buyers, especially in newer properties where survey 1 is likely to have been advised.

An Environmental Information Request (EIR) to Thames Water in 2021 identified that 801 misconnections were sitting with local authority Environmental Health Offices (EHOs) across Greater London for enforcement (Citizen Crane 2025), with some being there for seven years or more. Despite holding the legal powers of enforcement of this issue, local authorities question that they have the powers of enforcement or cite resourcing issues for not acting on misconnections.

Back to Table of Contents

PSWOs that are not Thames Water assets are not being investigated by the Environment Agency unless they are continually reported via their pollution hotline and they will only respond immediately to a report if there is evidence of "dead fish or fish gasping for air", but this system does not take into account areas where the water quality may be so severely degraded that there are no fish left to be reported as being impacted (London Borough of Redbridge 2024).

Blockages

Blockages in the foul sewer network cause sewage to back up and find the nearest route to a river via the surface water drainage network and an outfall. We have asked Thames Water about the number of blockages that cause foul to back up and find the nearest route to a river and hope to include this in our completed report.
On average Thames water clear around 75,000 blockages from their sewers each year (Thames Water 2024). In 2024, Thames Water cleared 52,000 blockages from sewers and since April, visited 4000 restaurants to educate business owners on the dangers of throwing fat, oils and grease down the drains (Beech and Daman 2024). This forms part of their 'Bin it, don't block it' campaign, which aims to educate consumers of the dangers of both flushing items down the loo such as wet wipes and sanitary products and pouring cooking oils, fat and grease down drains (Thames Water 2025).

Many blockages are caused when items that don't decompose, such as wet wipes, sanitary products, cotton pads etc, are flushed down the loo and combine with cooking oils and fats, forming blockages. Sixty percent of sewer flooding in homes is caused by blockages (Thames Water 2024) and over the last six years, most internal sewer flooding has been caused by blockages. This is often in pipes with a diameter below 150mm, where 70-80% of incidents result from a blockage (Thames Water 2024c). In 2024, 80% of blockages were caused by items which should not have been thrown down the sewers (Beech and Daman 2024) and Thames Water estimates that they remove nineteen billion wet wipes from their sewers every five years (Thames Water 2024e). By the end of AMP7, Thames Water will have installed 19,500 sewer depth monitors on their network to identify and respond to blockages sooner and to monitor the performance of the sewer network (Thames Water 2024d).

As well as regular blockages, items such as wet wipes, sanitary products and nappies can combine with fat within the sewers and overtime can build into massive structures called 'fatbergs'. These often appear in the media, with one of the largest ever fatbergs discovered in East London in 2017, weighing 130 tonnes and measuring 250m long (BBCNews 2017). The formation of fatbergs is caused by several factors. Firstly FOGs (fats, oils and greases) enter the wastewater system in the form of animal or vegetable fat residues (as triglycerides and free fatty acids), from both domestic, industrial and FSE sources. Secondly, these FOGs combine with other material in wastewater systems, such as disposable wipes, to agglomerate forming blockages (Court *et al.* 2021).

If left either undetected or untreated, blockages in sewer networks can lead to sewer overflows, adverse impacts on the environment, for example, through depletion of oxygen in streams, as well as urban flooding (Court *et al*. 2021).

Failing or poorly designed sewer assets

Pollution incidents can arise from poorly designed or failing assets such as chamber defects, cracks, collapsed walls or missing rodding eye caps allowing foul water to cross over into adjacent surface water system (Ellis *et al*. 2004).
The Thames Water SWOP results from AMP7 (2020-2025) demonstrate the causes of pollution at outfalls in London Rivers and are shown in Table 2 (Barry 2024. Personal communication).

Table 2. SWOP results from AMP7

Back to Table of Contents

1314	Defects found additionally to physical misconnected pipework, which are also a potential pollution source
291	Private blockages
500	Private surface water caps missing
102	Private defects
269	Public defects

"A significant number of problems are due to infrastructure such as dual manholes. Dual manholes allow shared access to both foul and surface water sewers that are sometimes in open channels. As such they can allow cross contamination of foul to surface or surface to foul to occur" (CIWEM 2014).

A 2016 investigation by London Borough of Harrow found 209 dual manholes within the 45,915m2 study area, although it is believed there are many more (Figure 3). Although Thames Water do carry out remedial work on these assets such as fitting caps back on the surface water line, they can often be displaced when there is next a large rainfall event, or by rodents or when blockages are cleared (Bradshaw 2025. Personal communication).

Back to Table of Contents

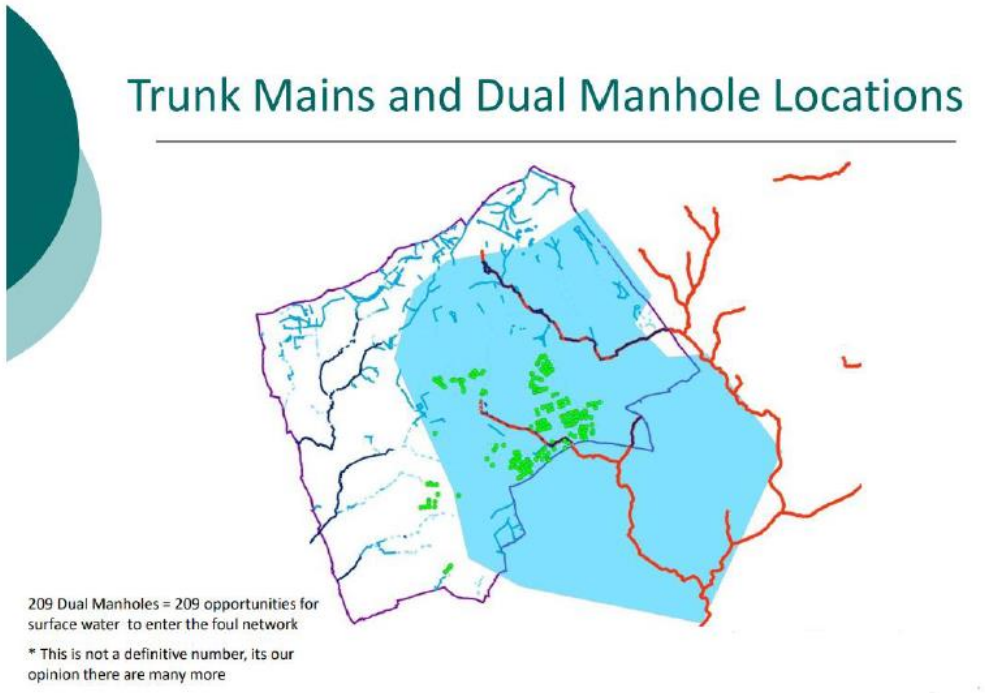


Figure 3. Screenshot from London Borough of Harrow *slides referring to the 2016 project investigating pollution in the Wealdstone Brook Catchment. 209 manholes found in the study area (area shaded in blue) (Bradshaw 2025. Personal communication).*

Thames Water have estimated that their total asset health deficit is £19.3bn (Thames Water 2024f). The deficit was calculated as the modern equivalent asset replacement value of a) Assets which pose a risk that is above a defined risk threshold ('risk'). B) Assets no longer capable of reliably performing their function ('performance') and C) Non-critical assets in very poor or failed condition and beyond their useful life ('condition'). (Thames Water 2024d). Over 53% of the asset deficit relates to situations where the assets give rise to unacceptable risks (Thames Water 2024d). Thames Water are requesting additional funding to cover the costs of managing their accumulated asset heath deficit in order to start addressing it (Thames Water 2024d).

"Urban wastewater and drainage systems suffer from a combination of insufficient or over-designed capacity, institutional weaknesses, infrastructure deterioration and frequently inappropriate and/or reactive remedial methods. These issues have been compounded by an ageing infrastructure, lack of maintenance, increased urbanisation and more recently the effects of climate change" (Ellis *et al.* 2010). There are a concerning number of failing assets in the Thames Water region (OFWAT 2024).

Roads

40% of London's surface is impermeable (Greater London Authority 2018) this area includes an estimated 40,000km of road. Pollutants that accumulate on these hard surfaces are washed by rainfall, via road gullies, or roadside drains into the surface water network and rivers. Not all roads pollute equally. Roads with higher volumes of traffic and where heavy goods vehicles regularly apply their brakes pose the highest environmental risk (Visanji 2023) Modelling has shown that road runoff from 2,415 road sections (covering a total of 451.43km out of 3,862.3km (10%) of London's major roads that were modelled) are deemed high priority and pose a higher risk to receiving waters.

The organisations responsible for the main road networks in London are,

- National Highways, which manages the national motorway network, including the M25, M1, M4 and the M11 in Greater London.

Back to Table of Contents

- Transport for London (TFL), which is responsible for the main London Road Network (London's Red Routes) which makes up 5% of the city's roads but carry up to 30% of its traffic.

National Highways and other highway authorities in England have no permits in place for managing pollutants in any of their outfalls (CIWEM and Stormwater Shepherds 2024) so there isn't any routine monitoring of outfalls that convey road runoff to rivers. National Highways published their '2030 Water Quality Plan' in August 2023. This identifies that "There are 1,236 outfalls and soakaways identified by National Highways as having a potential high risk of pollution. Of these, 145 have a verified high risk of pollution and therefore require mitigation whilst the remaining 1,091 are unverified and have been identified as having a 'potential' high risk of polluting the water environment.

We have asked National Highways how many outfalls and soakaways they have within the GLA boundary and the works they conducted during the 2020 to 2025 budget control period to prevent those discharging pollution to rivers. We expect to have an answer by March and will include this in our completed report.

How nature recovery can contribute to clean water

Realising our shared vision of clean and healthy waterbodies in London is a huge challenge that will require multiple approaches from stakeholders working in new partnerships and adopting new ways of tackling old problems. The principal approach will be to stop inputs of pollution at source. Working with nature to boost natural processes that remove other pollutants will be another important approach that will also support London to achieve many other benefits; flood resilience, cooling mental and physical wellbeing.

To achieve the most from these nature-based solutions it is vital that they are planned strategically at catchment scale through the existing Catchment Partnerships in London.
We have listed below some of the evidence on various nature-based approaches to improving water quality.

River Restoration

River restoration refers to the process of returning a degraded or modified river system to a more natural state to enhance its ecological, hydrological, and social functions. In London, excluding the Thames, there are over 600km of rivers and streams. Many of these waterbodies have been heavily modified so there are plenty of possible locations for improving the condition of rivers. A 2020 review of work river restoration in London showed that 40 km of river was restored between 2000 and 2019 (Catchment Partnerships in London 2020). We can and must do more and faster if we have a vision of clean and health waterbodies in London. Opportunities to restore rivers are listed in each catchment partnerships catchment plan. In 2024 ZSL worked with GiGL, RiPL and the Environment Agency restoration projects for the soon to be launched, GiGL hosted, River Restoration Opportunity Map.

Restoring rivers will improve water quality through a variety of processes. Restoring natural riverbanks (Riparian Buffer Restoration) reduces the velocity of water running off land and into rivers. This reduces the amount silt bound with other pollutants from being washed into rivers. The trapped pollutants are processed and broken down by microbial and native plant communities for, (Dosskey *et a*l. 2010, Wenger 1999). Over widening and straightening of rivers has been a particular issue through the 20th century. There are opportunities, particularly where they flow through open spaces to re-meander and restore. Putting meanders back slows water flow which reduces erosion and sediment transportation and enhances nutrient cycling through increased water-sediment interaction. It also promotes sediment deposition and the removal of pollutants from the water (Wohl *et al*., 2005). In-stream improvements such as riffles, pools, woody debris, aquatic vegetation increases oxygenation and in turn promotes organic pollutant breakdown, improves sediment deposition and pollutant trapping and provides habitats for aquatic organisms that contribute to pollutant cycling, Wohl, Lane and Wilcox (2015).

Back to Table of Contents

Daylighting Rivers and Streams

The process of uncovering rivers that were previously buried or culverted, known as daylighting or deculverting, can result in several significant benefits to water quality and nature recovery. Many years spent burying rivers means that London is rich in daylighting opportunities and with vision and investment could become the daylighting capitol of the world. The 'Finding and Managing Culverted Watercourses report' (Thames Water 2019), identified a total of 444km of lost river and 386km of culverted watercourses in the London area. However, it should be noted that a lack of historical map coverage in some areas means that some lost rivers may not be accounted for in these numbers.

Through the same process that restored river and constructed wetlands impact water quality, daylighted rivers interact with the air, UV light, their banks, vegetation, soils, and microbes which filter, breakdown and disperse pollutants like sediments, nutrients, and heavy metals more effectively while also helping to prevent harmful algal blooms. The river's exposure to air, prevents stagnation and promotes higher oxygen concentrations which support the breakdown of organic pollutants and improve conditions for aquatic life (Pinkham 2000).

Constructed wetlands

Constructed wetlands are increasingly being used as a nature-based option for improving the management of surface water in urban areas. Wetlands can build flood resilience, remove pollutants, benefit biodiversity and improve urban environments for wellbeing. However, there is often a trade-off between these benefits, for example the biodiversity of a constructed wetland will be compromised by excessive pollution loadings (Zhang *et al.* 2020). It is therefore essential that constructed wetlands are maintained and managed correctly to sustain these benefits (Ellis *et al.,* 2003). Constructed wetlands clean polluted water through four key mechanisms (Russell, Glover and Pecorelli 2021):

- Nutrient uptake - Wetland plants use nutrients such as nitrogen and phosphorus to grow.
- UV irradiation - Exposure to UV light helps to remove pathogens and breakdown organic pollutants.
- Sedimentation - Wetland plants increase hydraulic resistance and reduce velocity; suspended solids drop out together with attached pollutants such as metals and non-soluble phosphorus.
- Microbial action - The wetland plant root structure creates a large oxygen rich surface area for microbial biofilms. These microbes break down organic pollutants, such as hydrocarbons, and transform nutrients, this process is assisted by the large surface area of shallow water provided by wetlands which further improves oxygenation.

Restoration of Keystone Species

European Beaver

The European Beavers inhabit wetland ecosystems. In 2022 they were recognised as a native species, having disappeared in the UK 400 years ago. These charismatic animals are classed as keystone species, due to their ability to alter the wetland environment that they live in. Purely vegetarian, their feeding and damming behaviour is known to have positive impacts on local biodiversity and water quality.

Damming of smaller water bodies by beavers have positive impacts on water quality through two main routes (Brazier *et al*., 2021). The first route to improved water quality is by slowing down water through a wetland system as through the damming of water channels, and holding back water and creating smaller, lower energy side channels. This produces a low energy environment in the water, where suspended sediment, nutrients and chemicals can be deposited and removed from the water. This process effectively filters the water as it moves through a beaver wetland. During times of flooding, beaver dams can move water onto the connected flood plains. These new flow pathways allow sediment to be deposited onto the flood plains, removing them from the water column (Howe and Crutchley

Back to Table of Contents

2020).The second route of improved water quality is through the improved biogeochemical cycling of nutrients within beaver habitats, which are positively affected through the increased volume of standing water in beaver ponds and increased amount of both aquatic and riparian vegetation (Brazier *et al.* 2021). Ammonia, phosphorus and particulate carbon all accumulate within beaver wetlands (Brazier *et al.* 2021). These nutrients are taken out of the water through the increased aquatic and riparian plant growth that is often seen in beaver habitats resulting in improved water quality. Beavers, released into Paradise Fields in Ealing by Citizen Zoo and Ealing Wildlife Group, have in a short space of time, drastically altered the wetland habitat they were released into. Signals of the positive impact that these keystone species have on water quality were seen in a ZSL pre and post release survey at the site (ZSL 2024).

Water voles

Water Vole were once widespread across London but by 1997 had disappeared from 72% of their previously occupied sites. ZSL's 2023 review of water vole data in London shows they are hanging on in just 11 sites. With thanks to GLA funding, ZSL initiated the London Water Voel Recovery Programme (LWVRP) in 2022. The programme brings together 41 partners, with the vision of restoring resilient and self-sustaining water vole populations to all rivers in Greater London. Although they don't in themselves drive water quality improvements water vole are an iconic species and their future is reliant on clean, healthy and restored river habitats.
We hope that the recovery of water vole and the introduction of Beaver across London could be a way of engaging the public in the restoration of a resilient network of nature rich, pollution free waterways throughout Greater London.

Measuring and Monitoring Improving Waterbodies

Critical parameters to monitor in relation to swimmability are listed in the Bathing Water Regulations (2013) These include E Coli, cyanobacteria, tarry residues, glass, plastic or rubber.
In addition to routine Environment Agency monitoring for Water Framework Directive, we support the use of community science in monitoring rivers. Well designed and coordinated community science schemes generate robust data and support environmental literacy and stewardship. There are three schemes that we think important to tie into a monitoring strategy to check the delivery of the mayor's plan for rivers.

1. The Riverfly Monitoring Initiative (RMI — also known as the Anglers' Riverfly Monitoring Initiative, ARMI) has been pioneered by the Riverfly Partnership to provide a simple, standardised monitoring technique which groups can use to detect river pollution events and put communities in direct communication with their local ecological contact at the Environment Agency. In addition, Riverfies can be used as a proxy for water quality or wider ecosystem health so monitoring them allows communities to build a picture of water quality and ecosystem condition changes over times.

Back to Table of Contents

Figure4. Riverfly Monitoring Training Events (Photos, ZSL)

2. The **Outfall Safari Project**, which systematically surveys every river in London on a four -year rotation, surveyed 800 outfalls in 2024, of which nearly 20% were actively polluting (ZSL data).Currently approximately 64% outfalls on the Thames Water SWOP list for remediation are outfalls that were reported via the Outfall Safari Programme (Barry 2025).Over time Outfall Safari data will show trends in the number of PSWOs in London and pollution hotspots .

3. ZSL have developed a citizen science method for monitoring the function of **constructed wetlands.** The method is currently being piloted across three wetland sites in London. Once the method is finalised it will be a useful tool for increasing community monitoring of wetlands built as nature bases solutions and understanding the role they might play in improving the condition of rivers and supporting nature recovery across London

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Back to Table of Contents

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Back to Table of Contents

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Back to Table of Contents

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Back to Table of Contents

Stormwater Shepherds UK Ref No. SW020

A. About you/your organisation

· **Organisation name:** Stormwater Shepherds UK

· **What does your organisation do?** We are dedicated to the improvement of stormwater management across the UK.

· **Where are you based (if applicable)?** Lancashire and Shropshire.

B. The Mayor's swimmable rivers commitment

1. What factors [e.g. safety, water quality] are important to assessing if a river or other waterbody is 'swimmable'?

Runoff from highways contains hazardous chemicals that are endocrine disrupting and carcinogenic, amongst other effects. The runoff also contains elevated levels of pathogens such as e-coli and coliforms. When it rains, discharges of highway runoff from the network around London cause significant, toxic pollution.

How should these be measured and monitored?

Sampling these outfalls is relatively straightforward, but the analysis is expensive and the samples have to be taken in the rain. However, these 'hurdles' are not insurmountable, and sampling is possible and important.

2. What improvements are achievable in 10 years? Are there any short-term priorities or interim milestones that are needed?

The quickest way to reduce this level of pollution would be for National Highways to **maintain their existing pollution control devices**. They have devices and ponds across the Network that they do not maintain; these devices were installed to control pollution.

The installation of retro-fit SuDS across local roads will help to capture some of this pollution; many of the London Boroughs are already delivering retro-fit SuDS and this delivery could be accelerated if more funding were assigned to it.

Improved and targeted gully-pot emptying also reduces pollution from highway runoff. Contractors and TfL could adjust their gully pot emptying schedules to prioritise busy roads that are discharging to the River. New gully pot designs are also being developed that facilitate the capture of pollutants.

TfL and National Highways own and operate roads where the runoff is too polluted to use SuDS on their own. These roads need **more engineered solutions** with detailed (and funded) maintenance schedules. These engineered solutions are often UK manufactured, so their deployment supports growth.

Mapping of highway outfalls that discharge to the river would be a great starting point. Across London, the surface water drainage network is complex, and understanding which highways drain straight into the River would quickly help us to prioritise those that need investment first.

3. Are there specific locations in London that should be prioritised for improving water quality and increasing access to rivers or waterbodies?

Highway runoff discharges upstream of stretches that are preferred for swimming could be prioritised.

Back to Table of Contents

4. Who is responsible for making the changes needed? What actions should the Mayor and GLA take?

Much of the responsibility lies with TfL and National Highways. But the London Boroughs have a huge role to play in the control of urban pollution and the GLA are already providing excellent support with their London Surface Water Strategy, the Infrastructure Mapping Application and the dedicated GLA Infrastructure Coordination Service (ICS). These tools are allowing SuDS opportunities to be identified and for SuDS to be delivered. However, the delivery of SuDS is inconsistent across the Boroughs, so the Mayor and GLA can help to make that more consistent and find ways to unlock money to pay for the SuDS.

The SuDS that are installed need to be maintained too, so a revenue fund must be identified, secured and ring-fenced so that the SuDS are kept in a functional condition.

5. What can the Mayor learn from other examples (national or international) of creating cleaner and accessible 'swimmable rivers'?

The treatment of highway runoff varies around the World. Parts of the USA, and Germany have pretty good systems in place to treat and manage pollution from highways. Their 'secret' is that they have created a funding stream to pay for this; they have a form of Stormwater Utility Levy which creates a fund to manage stormwater. If we were to introduce such a levy in London, it would provide funding to deliver this work.

In Philadelphia, they also have a scheme where local people who have been out of work are trained to become SuDS Maintenance operatives, so that they have a rewarding job, with transferable skills to maintain the SuDS and keep their local stormwater management systems functional.

6. Is there other relevant information you would like to share?

When we think about swimmable rivers, we overlook pollution from highway runoff. But in a city like London, where the motorways carry over 300,000 vehicles per day, this is a huge source of toxic pollution.

We have focussed too much on sewage pollution for too long; any investment in pollution control should, first & foremost, be about the protection of aquatic life, and so toxic pollution should be a priority. If we get pollution control right, and make investments that are proportionate to the levels of pollution from different sectors, we will restore river health. That is the most important thing. Then, if people want to swim in rivers, they can choose their preferred locations and pollution control in those places can be fast-tracked, but not before we have dealt with the urban pollution that is destroying river health and the health of the aquatic ecosystem in and around the river.

Back to Table of Contents