CAMELLIA
Community Water Management for a Liveable London

Imperial College London

F.A.O. Rachel Fletcher
Innovation consultation
Ofwat
21 Bloomsbury Street
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Dear Rachel

Re: Innovation Consultation Response from CAMELLIA

Community Water Management for a Liveable London (CAMELLIA) is a 5-year programme funded by the NERC, encompassing research at the Imperial College London, British Geological Survey, UCL and Oxford University. Through our wide stakeholder engagement, spanning from citizens and local communities, through water industry and developers to local and national governments, we are working on developing solutions that will enable the required housing growth in London, whilst managing water and the environment.

CAMELLIA is developing a new approach to the management of London's water by facilitating integration across communities and institutions through new methods of community engagement using co-design aided by participatory system dynamics. To support this work, we are developing a range tools and processes that can provide guidance to local communities on water management, as well as developing integrated systems models of the water cycle. This allows decision making across a range of scales from a local site right up to the city and catchment scale.

CAMELLIA fully supports Ofwat in its efforts to promote innovation within the UK water sector and beyond, and to address pressing challenges of sustainable development. The key points of our response detailed below align with three key elements we believe are necessary to deliver solutions that achieve transition towards a sustainable water future, which are fully aligned with Ofwat's innovation ambitions. These are then expanded upon for two selected questions posed below:

- Innovation in the water sector should be supported by innovative tools that link sophisticated spatial data analysis with novel simulation models that can assess the impact of changes within the urban water system, both from the perspective of land use change (e.g. blue-green infrastructure, new developments) and water infrastructure planning (including water supply and wastewater systems).

- Systems approaches that integrate multiple stakeholder perspectives to support collaborative decision-making, promote the role of urban natural

capital, and ultimately lead to coordination between two key aspects of urban sustainability – water management and urban planning – should be promoted and developed through the innovation funding.

- Community engagement through modelling and co-design should be a key component of the innovation process so that citizens become integral part of the water system design and management.

Q10: Do you think the proposed innovation challenge approach will help better enable partnerships and collaboration between companies and third-parties, in particular smaller innovators? Are there alternative approaches we should be considering? How can we make sure this approach works in practice?

We welcome the mention of 'co-creation' and the focus on stakeholder engagement. We suggest that in its current form the Strategy may place engagement with the public and community groups at something of a disadvantage (in comparison with research institutions and consultancies). In our, Community Water Management for a Liveable London (CAMELLIA) programme[1], we are showing not only the value of engagement with community and stewardship groups and the general public but the importance of carefully structuring this engagement to achieve co-creation. This is essential so that those consulted not only feel they have a voice but can genuinely see that their views have been taken into consideration and that the consultation wasn't simply a 'box ticking' exercise. The benefits from this co-design process can be substantial, as often these groups have a detailed understanding of their local environment and water systems and may even have relevant data they'd be willing to share with stakeholders, as we have found from our own community engagement work within CAMELLIA.

We have developed methodologies and tools to facilitate a co-design process with community groups, as well as utilising a Community Modelling approach to improve communication among experts and local communities. Examples of successful use of these approaches can be found in our current work with the Kipling Estate [2] and in management of flood risk in Otley and water quality in London [3], which is now being developed further to engage local communities with urban water management. Since public value and the environment are two of the key goals of the Strategy we believe that the as yet unpublished Stakeholder Engagement approach should pay specific attention to ensure communities are included.

Q14: Do you agree with our proposed focus, major strategic themes and overall approach for the competition?

We appreciate the focus on data that has been presented in the proposal. However, we believe that any discussion of software as a possible output is missing, in particular in the context of providing evidence and supporting collaborative decisions. We believe that software development should be integral to the innovation strategy, which we see as an opportunity for development of new simulation tools for industry that fill current innovation gaps. Since Ofwat has stated that they plan to focus on project delivery and implementation to a greater degree, we expect that software is a more likely output than might have been the case in previous rounds of Ofwat research funding. We believe this type of innovation could be funded under enabling activities stream.

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[1] https://www.camelliawater.org

[2] https://www.ucl.ac.uk/engineering-exchange/research-projects/2019/may/co-designing-community-garden

[3] Landström, C., 2019. *Environmental Participation: Practices engaging the public with science and governance*. Springer Nature.

This is particularly important if the UK water sector, supported by Ofwat, has an ambition to move towards truly integrated planning and explore coordination between WRMP and DWMP processes. We believe that the systems level tools that can support integrated assessment of both water supply and wastewater systems will be crucial to analyse potential unintended consequence as well as co-benefits for large integrated water management schemes such as wastewater recycling.

As an example of such software would be Imperial College London's CityWat simulation software [4]. This is an experimental software that, if successful, will facilitate rapid assessment of water infrastructure options. It simulates of water across the entire water cycle (rivers to supply to wastewater and back to rivers) to identify unexpected impacts and opportunities.

We believe that the innovation funding provides a unique opportunity for Ofwat to lead the UK water sector towards a truly integrated approach to water infrastructure planning, design and operation. We hope that we could support this transition, which is closely aligned with innovation thinking promoted by CAMELLIA.

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[4] Dobson, B. and Mijic, A., 2020. Protecting rivers by integrating supply-wastewater infrastructure planning and coordinating operational decisions, preprint. https://eartharxiv.org/64cvn/