

EGU24-20502, updated on 14 Dec 2024

<https://doi.org/10.5194/egusphere-egu24-20502>

EGU General Assembly 2024

© Author(s) 2024. This work is distributed under the Creative Commons Attribution 4.0 License.



## **Integrated Water Planning Portal: Feasibility study for a development-oriented digital twin to facilitate integrated water management through targeted data and model sharing.**

**Eduardo Rico Carranza**

Imperial College, Water Systems Integration, London, United Kingdom of Great Britain – England, Scotland, Wales (e.rico-carranza@imperial.ac.uk)

Recently, we have seen an increase in models that combine powerful technical simulations with efficient visualizations and user interfaces that support decision-making in environmental and urban policies. These tools, known as Digital Twins (DTs) have been currently applied to water management and cities, however, their use tends to be limited to reduced groups of technical experts, policymakers and city officials, with the models behind these tools not being openly available, even though they may be publicly funded. Simultaneously developers, who may be interested in using these models to assess their proposals, cannot access them and must develop their local models, in many cases trying to catch up with new legislation. A more efficient and open method could be implemented based on sharing evidence-based models through the planning application process. We call this an Integrated Water Planning Portal (IWPP), which consists of a web platform that gives developers access to a water systems model to test their proposals and use this work in the planning application process, which can be done through the same platform. In parallel to this, planners can use the portal to review this work, comment on it or give a final planning verdict. For such a system to work, robust data-sharing and model deployment protocols need to be implemented to strike a balance between accuracy, understandability and data protection. We present work on the feasibility of IWPP, based on prototype development and semi-structured interviews with stakeholders in the UK water management field. Evidence from this work suggests a targeted approach to modelling and data collection which is presented in a model framework. This approach satisfies the requirements of different stakeholders and provides a robust base for further development of tools such as IWPP.