

PUB seeks proposals on use of emerging technologies to boost data capabilities for development of coastal protection strategies

18 April 2022 – PUB, Singapore’s National Water Agency, has launched a Request-for-Proposal (RFP) to seek innovative proposals on the use of emerging technologies, such as machine learning, radar satellite and imagery, as well as crowdsourced data, for the collection and analysis of coastal and inland datasets that will support PUB in the formulation of coastal protection measures.

2 The announcement was made by Ms Grace Fu, Minister for Sustainability and the Environment, at the joint opening of the CleanEnviro Summit Singapore and Singapore International Water Week (SIWW) 2022. Funding for the RFP will come from the S\$51 million allocated to PUB by the National Research Foundation in September 2021, under the Competitive Funding for Water Research (CWR) programme. It is part of the Research Innovation and Enterprise (RIE) 2025 Plan.

3 Since assuming the role of the nation’s coastal protection agency in April 2020, PUB has been making steady progress in charting strategies to safeguard our coastal areas against rising sea levels and extreme rainfall due to the effects of climate change. Following the commencement of site-specific studies for Singapore’s City-East Coast in May 2021 as well as a portion of the north-west coast earlier this month, studies at Jurong Island and the remaining stretch of the north-west coast will start later this year.

4 PUB is also developing the Coastal-Inland Flood Model – an advanced computational hydrodynamics model that can assess the twin effects of coastal and inland flood risks. The RFP (*see Annex*) is part of PUB’s longer-term research plans to better understand the effects of waves, currents and ship wakes, to strengthen the development of coastal protection solutions and ensure they are effective, multi-functional, adaptive and sustainable.

5 Said Ms Hazel Khoo, Director of PUB's Coastal Protection Department: "Coastal Protection planning is a long-term process, and our measures will need to be developed based on robust data and science-based research, taking into account considerations unique to Singapore. Coastal Protection research is also a growing field in Singapore, with many opportunities for collaboration with local and international experts across different domains. We look forward to receiving innovative proposals from public and private entities, research institutes and institutes of higher learning to expand the breadth and depth of our knowledge base for this important endeavour."

6 The deadline for submission of proposals is 15 July 2022, 4pm (Singapore time, GMT +08:00). Interested parties may register for a roadshow on 12 May 2022 via the following link: <https://go.gov.sg/rfp2201-informationssession>. Registration for the roadshow closes on 29 April 2022.

7 Various funding schemes and information on how to apply for the RFP is available at <https://www.pub.gov.sg/globalhydrohub/Pages/RFP2201.aspx>

For media queries, please contact:

Ms Tan Lay Ping
HP: +65 8870 2688
Email: tan_lay_ping@pub.gov.sg

Mr Lee Min Kok
HP: +65 9756 5514
Email: lee_min_kok@pub.gov.sg

For enquiries on the RFP, please contact:

Email: PUB_globalhydrohub@pub.gov.sg.

About PUB, Singapore's National Water Agency

PUB is a statutory board under the Ministry of Sustainability and the Environment (MSE). It is the national water agency, which manages Singapore's water supply, water catchment, and used water in an integrated way. From April 2020, PUB also took on the responsibility of protecting Singapore's coastline from sea-level rise as the national coastal protection agency.

PUB has ensured a diversified and sustainable supply of water for Singapore with the Four National Taps (local catchment water, imported water, NEWater, desalinated water). PUB leads and coordinates whole-of-government efforts to protect Singapore from the threat of rising seas and the holistic management of inland and coastal flood risks.

PUB calls on everyone to play a part in conserving water, in keeping our waterways clean, and in caring for Singapore's precious water resources. If we all do our little bit, there will be enough water for all our needs – for commerce and industry, for living, for life.

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About Singapore International Water Week (www.siww.com.sg)

The Singapore International Water Week (SIWW) is the global platform to share and co-create innovative water solutions. Comprising the Lee Kuan Yew Water Prize, Water Leaders Summit, Water Convention, Young Water Leaders Programme, Water Expo, Thematic and Business Forums, Technical Visits and TechXchange, SIWW delivers a range of flagship programmes and platforms that brings together the global value chain of water to share the latest in business and technological innovations, as well as policy developments in water.

Singapore International Water Week 2022 will return as a physical event from 17-21 April at the Sands Expo & Convention Centre in Singapore, alongside the CleanEnviro Summit Singapore (CESG).

Annex: Focus areas of RFP

PUB is seeking proposals in the following areas:

- **Focus area 1:** Establish proof-of-concept for the feasibility of real-time, remote, and low-maintenance sensors, such as radar and satellite-based sensors, for PUB's long-term monitoring of Singapore's wave and current.
- **Focus area 2:** Develop an automated framework to quantify ship wake contribution¹ in Singapore's nearshore wave field, including a machine learning methodology to process vessel transiting information and nearshore wave data.
- **Focus area 3:** Establish proof-of-concept for the feasibility of using opportunistic CCTV footages, Unmanned Aerial Vehicle (UAV) with remote sensors and citizen-sourced smartphone images to provide automated and reliable estimate of the areal extent and depth of inland and coastal flooding.

¹ Singapore's coastal waves have significant interference from ship wakes due to high maritime traffic in local coastal water. Quantifying the contribution of ship wakes will help in the evaluation of climate change effects on local coastal waves by screening out its effect on wave measurements.