

## 28 June 2021 (Monday)

4.00pm-5.30pm (SGT) (GMT +8)

Session 4.4 – Water for Liveability

**Session Chair(s): Xavier Litrico, SUEZ (France)**

### **Improving Access To Water For Communities In Indian Cities**

V. Joshi. SUEZ India (India)

*Presenter is an invited speaker. No executive summary is available*

### **Safeswim: A Predictive Digital Twin For Recreational Water Quality In Auckland, New Zealand**

A. Osti, S. Couper, N. Brown, M. Neale. Mott MacDonald (New Zealand)

What if we could create the most livable city on the planet? Auckland is globally renowned for its beaches and waterways, but after rainfall the wastewater network can be overwhelmed, leading to sewer overflows. Following an independent review in 2016, Auckland Council set out a new strategy for its recreational water quality programme (Safeswim) to deliver international best practice management of public health risks around recreational bathing. Safeswim has delivered a public facing web platform that has given over 500,000 Aucklanders or visitors the confidence to make the most informed decision possible on health risks around swimming at 109 beaches across the city. This was achieved through integration of 10 key real-time data streams, requiring daily processing of over 8.5 billion data points, to feed a suite of real-time water quality models, ultimately delivering best-practice water quality predictions and attracting \$400 million in targeted funding for water quality outcomes.

### **Potential Of Floating Urban Development For Coastal Cities. A Global Analysis Of Flood Risk And Population Growth**

R. De Graaf-van Dinther B. Dal Bo Zanon, B. Roeffen, K. Czapiewska. Rotterdam University of Applied Sciences (Netherlands)

Population growth and urbanization mainly take place in vulnerable coastal areas. This article presents a global overview of these areas with both rapid population growth and high flood risk, in order to identify coastal areas that could benefit most from floating urban development. After identifying the most promising locations, a research by design case study is presented in an area where floating projects are already present to further test medium and large-scale concepts. A large scale floating maritime spatial project is shown, which integrates urban and ecosystem development with food and energy production in the North Sea. This plan provides a spatial concept for floating urban expansion in front of the coast of the Netherlands which may serve as a stepping stone towards global implementation of floating developments.

## **Semarang 2040: Re-orienting Central Java's Relationship With Water To Ensure An Economic Future**

T. Bunt, P. Letitre, B. Beagen, S. Carpaij. One Architecture (USA)

Semarang, Indonesia today is at the tipping point of environmental risk and unchecked development. Groundwater extraction has led to aquifer depletion and unprecedented subsidence rates, which in turn exacerbate flood risk. Meanwhile, the city is rapidly growing in vulnerable areas, undergoing substantial economic expansion accompanied by major capital investments in infrastructure and industry, putting the city's future viability at existential risk. At current trajectories, large portions of Semarang will be more than 2 meters below sea level within 20 years. Under a 1-year exercise commissioned by the Netherlands Enterprise Agency, a multidisciplinary group (anchored by geo-hydrologists, urban designers, and ecologists) developed a comprehensive framework for long-term resilience based on a combination of physical adaptation (through hybridized green/gray infrastructure), industrial reorganization (enabling water-neutral, circular economic models), and neighborhood scale capacity-building. The 2040 plan fundamentally reorients Central Java's relationship to water, and shifts the political focus from combating risk to seizing opportunity.

## **Amsterdam And The City Swim (ACS): Swimming In Surface Water In The Dense Urban Area of Amsterdam**

S. Holthuijsen. Waternet (Netherlands) (TBC)

Over the years, water quality in the surface water in and around Amsterdam has improved enormously. Nowadays, inhabitants of Amsterdam see beautiful water. They have the idea that swimming in this sparkling water is completely safe. They jump in on a nice summer day. More and more, events are organized in dense cities. This is a great opportunity to show the value of water. However, combined sewer systems, overflows and false connections are still existing assets in these cities and the functioning can and/or will affect the water quality. Monitoring shows many time frames during a summer season in which water quality sustains swimming. We have developed a monitoring network to provide people with the basic information on the momentaneous water quality. In this presentation Waternet explains the history of water quality in Amsterdam, in relation to the success of the City Swim since 2012, and the annulation in 2018, based on operational monitoring data.