

## **MEDIA RELEASE**

### **PUB BREAKS GROUND FOR CONVEYANCE SYSTEM OF DEEP TUNNEL SEWERAGE SYSTEM PHASE 2**

*An integral component of DTSS Phase 2, the enhanced deep tunnels convey every drop of used water for treatment and further reclamation into NEWater.*

20 November 2017 – PUB, Singapore’s national water agency, held a groundbreaking ceremony for the enhanced conveyance system of the Deep Tunnel Sewerage System (DTSS) Phase 2 to mark the start of construction works. Officiated by Guest of Honour, Minister for the Environment and Water Resources, Mr Masagos Zulkifli, the ceremony was held at the site of DTSS Phase 2’s first tunnelling shaft at Penjuru Rd.

The deep tunnels in Phase 2 will connect to the existing deep tunnels in Phase 1 serving the eastern part of Singapore and the public sewer network to create one seamless integrated system. The whole of Singapore will be served by the DTSS when Phase 2 is complete by 2025. Used water will be conveyed from the DTSS via gravity to three centralised water reclamation plants for treatment, before it undergoes further purification to produce NEWater, or discharged into the sea.

#### **Constructing DTSS Phase 2**

To be built using the tunnelling method, this massive 100km used water conveyance network for DTSS Phase 2 will run largely under the Ayer Rajah Expressway (AYE), crossing undersea at Tuas Bay and ending at deep inlet shafts within the future Tuas Water Reclamation Plant. 19 Tunnel Boring Machines will be used to dig at depths of between 35 metres to 55 metres below ground and under the sea to create 40km of deep tunnels and 10km of link sewers. The remaining 50km of link sewers will be constructed using a micro-tunnelling method known as pipe jacking.

The conveyance system in Phase 2 will incorporate advanced technologies to enhance its operations and maintenance. Engineered for an operational life expectancy of 100 years in a corrosive sewer environment, the deep tunnels will be lined for corrosion protection – especially against microbiologically-influenced corrosion, with an additional water-tight membrane coating the tunnel section running undersea. The deep tunnels will also be the first project in Singapore to use air jumpers in the operations of its air flow management system.

Advanced maintenance features of the deep tunnels include the use of embedded fibre optics for remote sensing and monitoring of structural integrity, and tunnel shafts innovatively designed with gates to isolate tunnel sections for used water flow diversion, enabling safe maintenance access with no disruption to used water conveyance.

“The construction of the conveyance system for DTSS Phase 2 will pose a new set of exciting challenges for us, as we look forward to dig deep to navigate through a variety of ground conditions in the Jurong Formation as well as tunnel beneath existing underground infrastructure and even under the sea. The DTSS is a more cost-effective and sustainable way of meeting Singapore’s used water needs and securing NEWater supply for the future than simply renewing and expanding the existing conventional used water infrastructure. PUB will continue to harness advanced technologies to enhance Singapore’s used water management system and ensure its water sustainability for the future”, said Mr Yong Wei Hin, Director of DTSS Phase 2, PUB.

### **About PUB, Singapore’s National Water Agency**

PUB is a statutory board under the Ministry of the Environment and Water Resources. It is the national water agency, and manages Singapore’s water supply, water catchment and used water in an integrated way.

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 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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