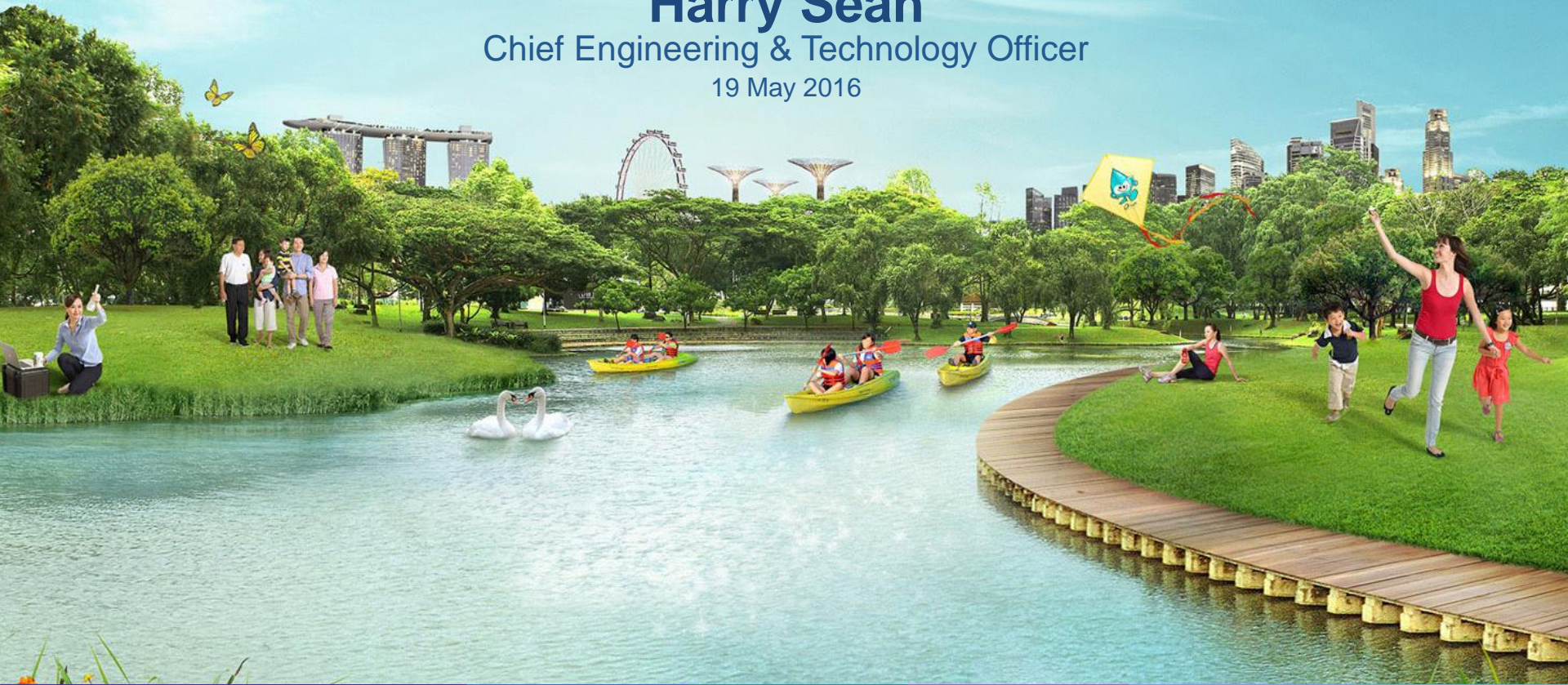


Water Resiliency in Singapore

Harry Seah

Chief Engineering & Technology Officer


19 May 2016



Singapore

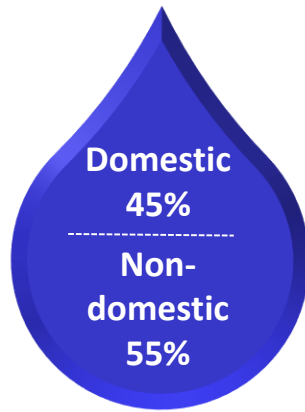


Land Area:	710km²
Population:	5.4million
Average Annual Rainfall:	2400mm
Average Water Demand:	1.8mil m³/day (400mgd)
Catchment Area :	66%

 **PUB** is a statutory board under the Ministry of Environment and Water Resources, and is the national water agency of Singapore

Water Challenges Ahead

2011

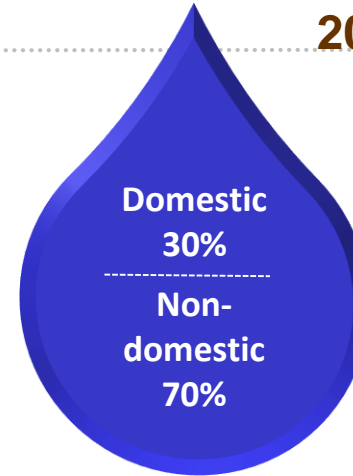


Demand

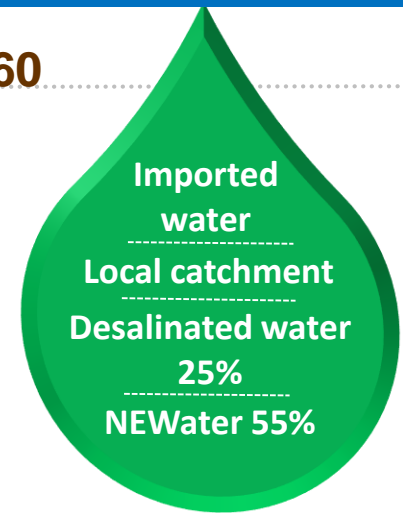


Supply

2060



Demand



Supply

Water demand in 2060 = 2 x Water demand in 2011

Energy

- Triple from 1050 to 3200 GWh/year
- Footprint increase from 1.7 to 2.5 kWh/m³

Sludge

- Double to more than 600,000 tonnes /year

Water Quality

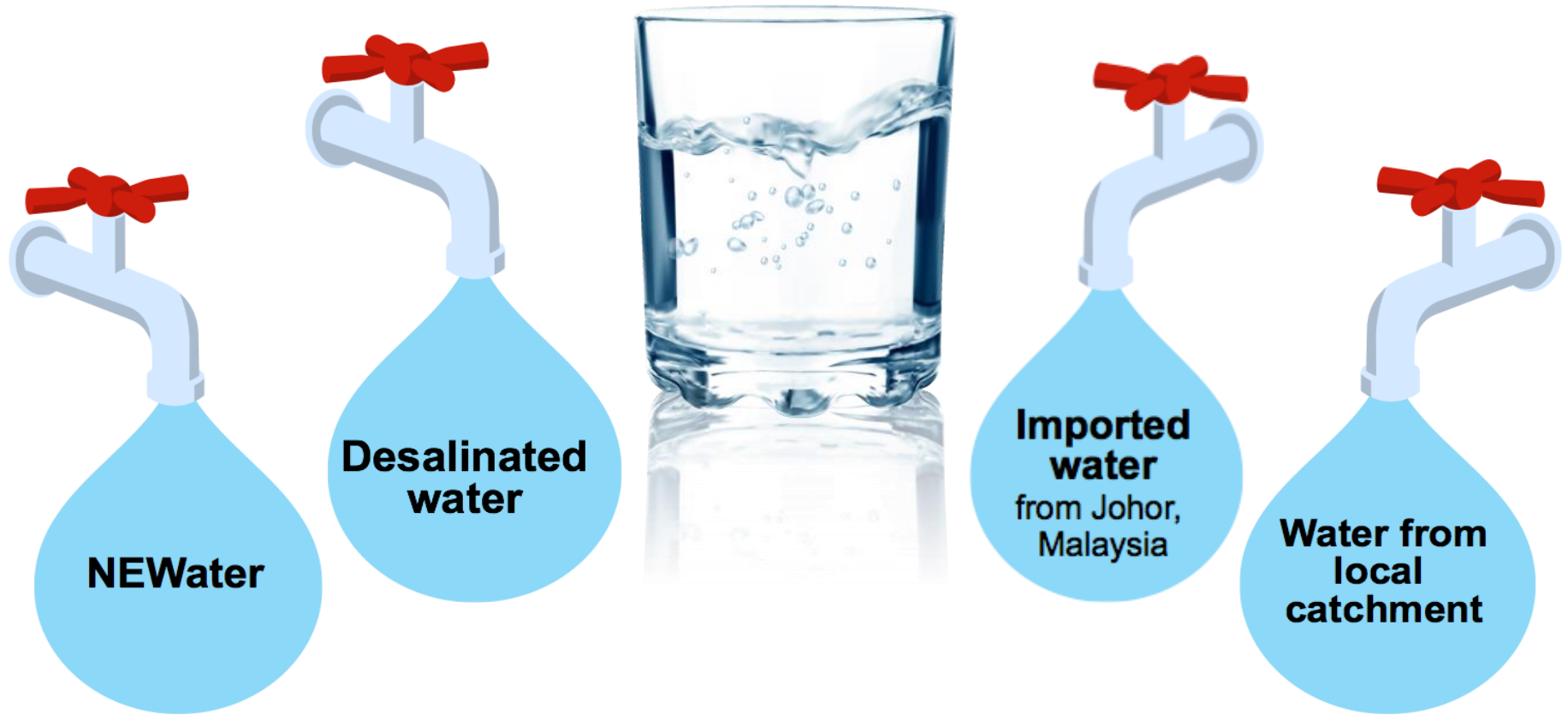
- Maintaining good water quality and security increasingly challenging

Land Use

- Siting of infrastructure increasingly challenging

Four National Taps

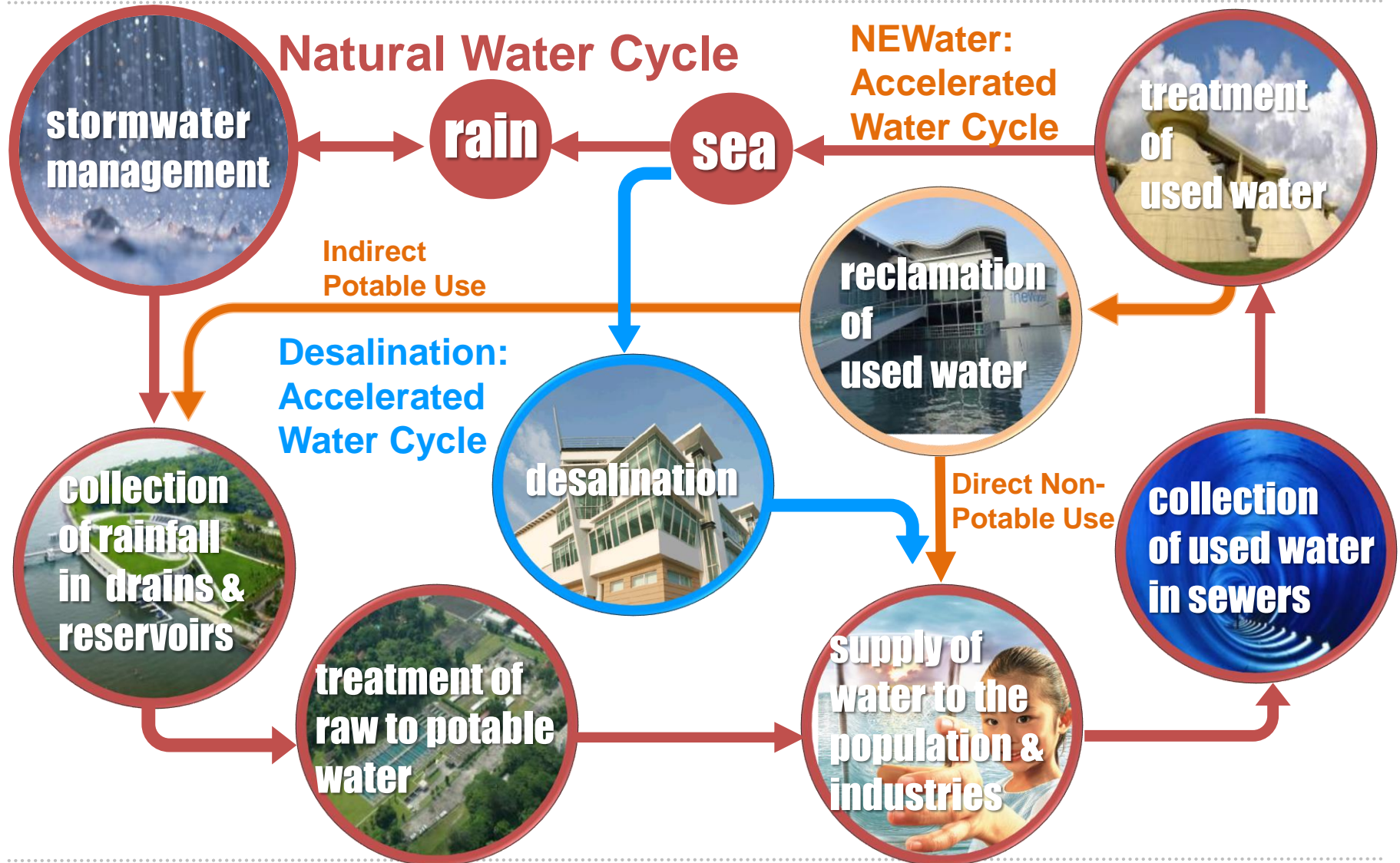
3



Drought Resistant

Weather Dependent

Closing the Water Loop



Thank You

