National Capital Integrated Coastal Development

Pembangunan Terpadu Pesisir Ibukota Negara

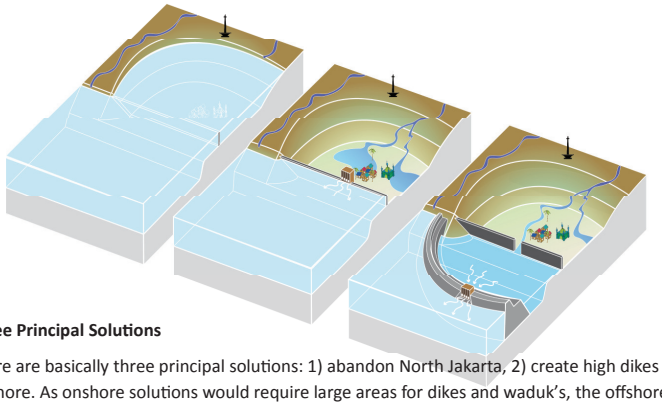
NCICD PTPIN

Jakarta: building a waterfront city to protect the

Jakarta: a deep densely populated polder

North Jakarta is sinking rapidly, mainly caused by ground water extractions (for drinking water purposes). The average land subsidence is 7,5 cm/year, but the sinking in some locations is around 17 cm/year. Every rainy season already results in flooding.

If land subsidence is not slowed down 80% of North Jakarta will be below sea level in 2030, with sea water levels up to 5 meter above street level. This will be a danger to around 4 million residents and over $ 200 billion of real estate and economic value.



Three Principal Solutions

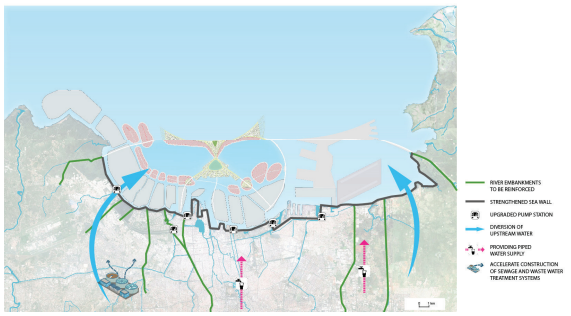
There are basically three principal solutions: 1) abandon North Jakarta, 2) create high dikes and large waduks onshore, in the city or 3) go offshore. As onshore solutions would require large areas for dikes and waduk's, the offshore solution was selected as preferred solution.

Immediate action is required; the short term measures

As the offshore solution will take time to construct and develop, a high priority programme was developed. This is called Phase A (2014-2018) and consists of:

- providing piped water supply to North Jakarta as an alternative for ground water extractions. This to slow down the land subsidence.
- strengthening and heightening the current sea defences with an average of 1,5 meter, providing protection for at least 10 years (depending on the future rate of subsidence)
- closing off some rivers and canals from the open sea to shorten the length of the sea defence system. Closing off however, implies upgrading of constructing drainage pumps to maintain a low water level.
- accelerated water sanitation (sewerage and waste water treatment systems) to allow closing off the bay of Jakarta without causing a 'black lagoon' due to the poor water quality in rivers and canals

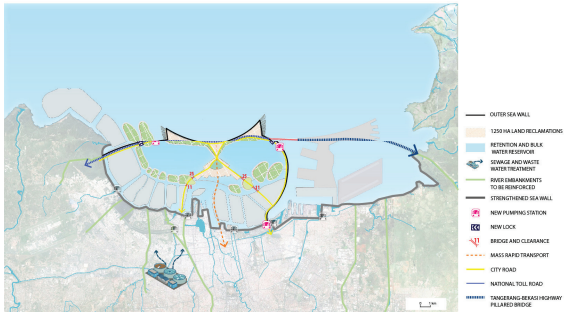
PHASE A



Short term measures: an opportunity for coastal revitalisation

Strengthening the sea defences and associated river embankments requires more than civil engineering. Upgrading the defences could create serious socio-economic impacts on (vulnerable) low-income communities. If done properly, the upgrading of sea defences could lead to revitalisation of the coastline: it provides much needed room for roads, housing and economic activities

PHASE B

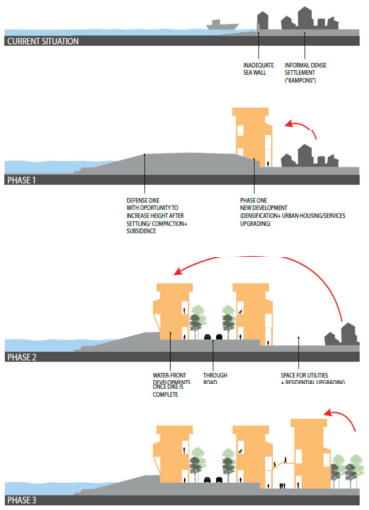


Medium and long term measures

In Phase B (2018-2040), the Outer Sea Wall in the west side of the bay will be constructed together with land reclamations and road connections. The subsidence in this part of the National Capital is at the highest rate, requiring a large sea wall with 'waduk' before 2025.

In stage C (starting in 2030), the east side of the bay will be closed off (the deadline depending on subsidence rate).

PHASE C



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Main contractors:
The Master Plan team: Witteveen+Bos, Grontmij, KuiperCompagnons, Ecorys, Deltares, Triple-A
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