

Harbour Area Treatment Scheme

Way Forward for Stage 2



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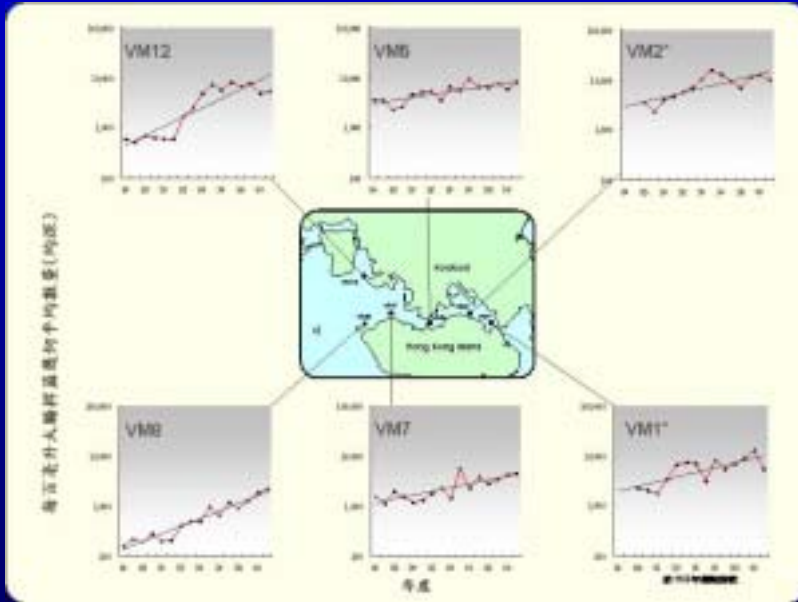
Before HATS Implementation

About 1.7 million tonnes of virtually untreated sewage were discharged into the Victoria Harbour daily, ready to fill up the Shek Lei Pui in around a day.



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Increasing trends in *E.coli* in the Victoria Harbour WCZ, 1986-2001



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Commissioning of HATS Stage 1 in December 2001



450,000 m³/day of sewage still being discharged virtually untreated

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HATS Stage 1

- Chemical treatment at Stonecutters Island
- Stop 600 tonnes of sludge from entering the harbour
- Pollutants removal rate:
 - 70% organics (BOD)
 - 80% suspended solids
 - 60% heavy metals
 - 25% total nitrogen
 - 50% phosphorus
 - 50% *E.coli*



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Before HATS Stage 1



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Sewage plume at Kwun Tong

After HATS Stage 1



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Sewage plume at Kwun Tong disappeared

Since Full Commissioning of HATS Stage 1

Marine Water Quality	Improvement	Deterioration
Central Harbour	DO, NH ₄ -N, TIN, P, <i>E.coli</i>	-
Eastern Harbour	DO, NH ₄ -N, TIN, P, <i>E.coli</i>	-
Western Harbour		
- Rambler's Channel	DO, NH ₄ -N, TIN, P, <i>E.coli</i>	-
- Ma Wan Channel	DO, TIN, P	NH ₄ -N, <i>E.coli</i>

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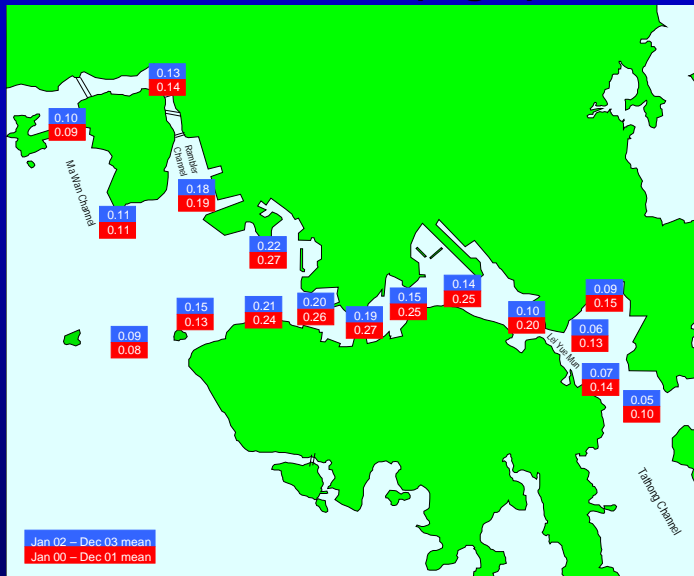
Dissolved Oxygen (mg/L)



DO in the Victoria Harbour Area has increased by 10%, resulting in an increase of DO WQO compliance rate from 65% in 2000-2001 to 97% in 2002-2003.

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Ammonia (mg/L)



Overall ammonia level in the Victoria Harbour area decreased by 25%. The unionized ammonia WQO maintained at 100% compliance rate.

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Total Inorganic Nitrogen (mg/L)



Overall TIN in the Victoria Harbour area decreased by 16%, resulting in the compliance rate for TIN WQO from 76% in 2000-2001 to 94% in 2002-2003

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Orthophosphate Phosphorus (mg/L)



Overall PO₄-P level in the Victoria Harbour area decreased by 36%.

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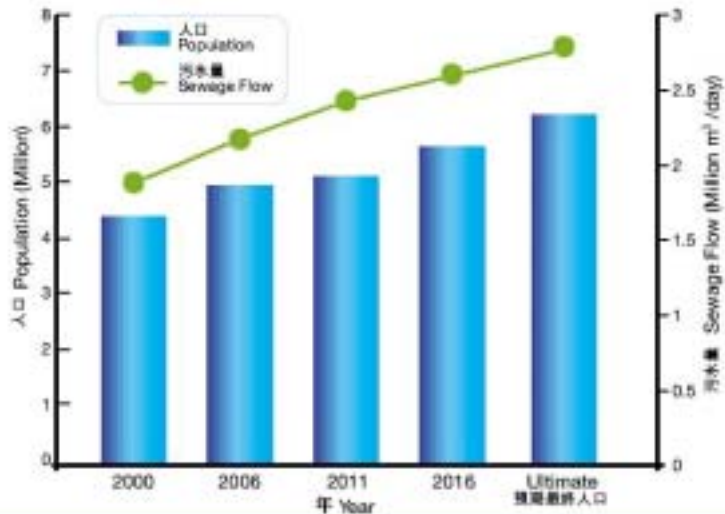
E.coli (counts/100 mL)



Whilst the overall bacteria (E. coli) levels in the Harbour have been reduced by some 50%, the levels in the western Harbour and the beaches along the Tsuen Wan coast have increased. This is why Stage 2 is needed.

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「淨化海港計劃」覆蓋區域內的人口和污水量 Population and Sewage Generation in HATS Catchment Area



HATS Stage 2 is necessary to deal with the increase in sewage flow

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IRP Recommended

- Environmental and Engineering Feasibility Study for the 4 IRP options
- Procurement Option Study
- BAF Trials



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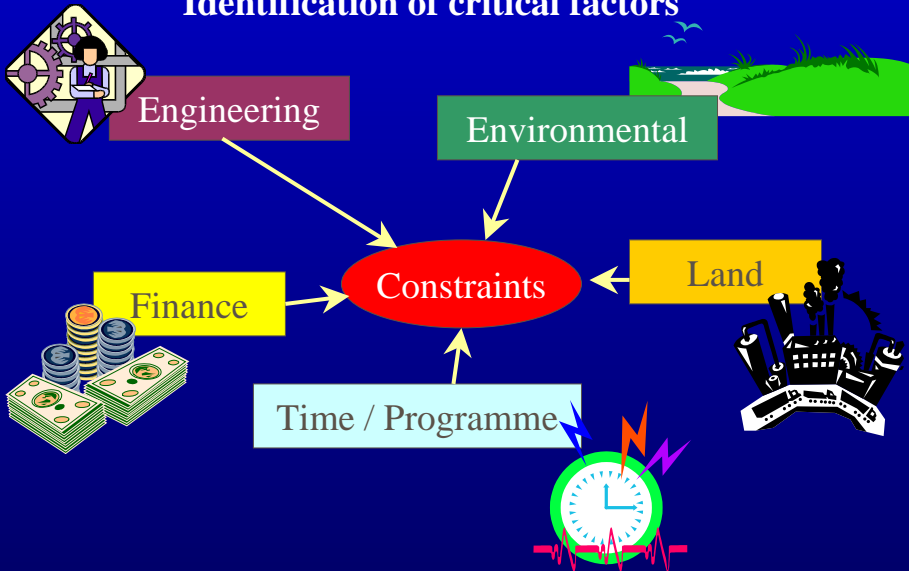
Trials and Studies for HATS

- Environmental and Engineering Feasibility Study (EEFS)
- Compact Sewage Treatment Technology Trials (CSTTT)
- Study on Procurement Options (SPO)
- HATS Stage 1 Flow Reassessment
- The Stonecutters Island Sewage Treatment Works Capacity Reassessment

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Our way forward – How to decide?

Identification of critical factors



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www.cleanharbour.gov.hk

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