

進一步提升維港沿岸水質

Further Enhancing
Coastal Water Quality
of Victoria Harbour

隨著新海濱長廊的發展，市民前往維港海濱已愈見方便，對擁有一個優美海濱環境的期望只會不斷增加。

With the development of new waterfront promenades, Victoria Harbour has become increasingly accessible to the public. Public expectation of a pleasant harbourfront will only increase.

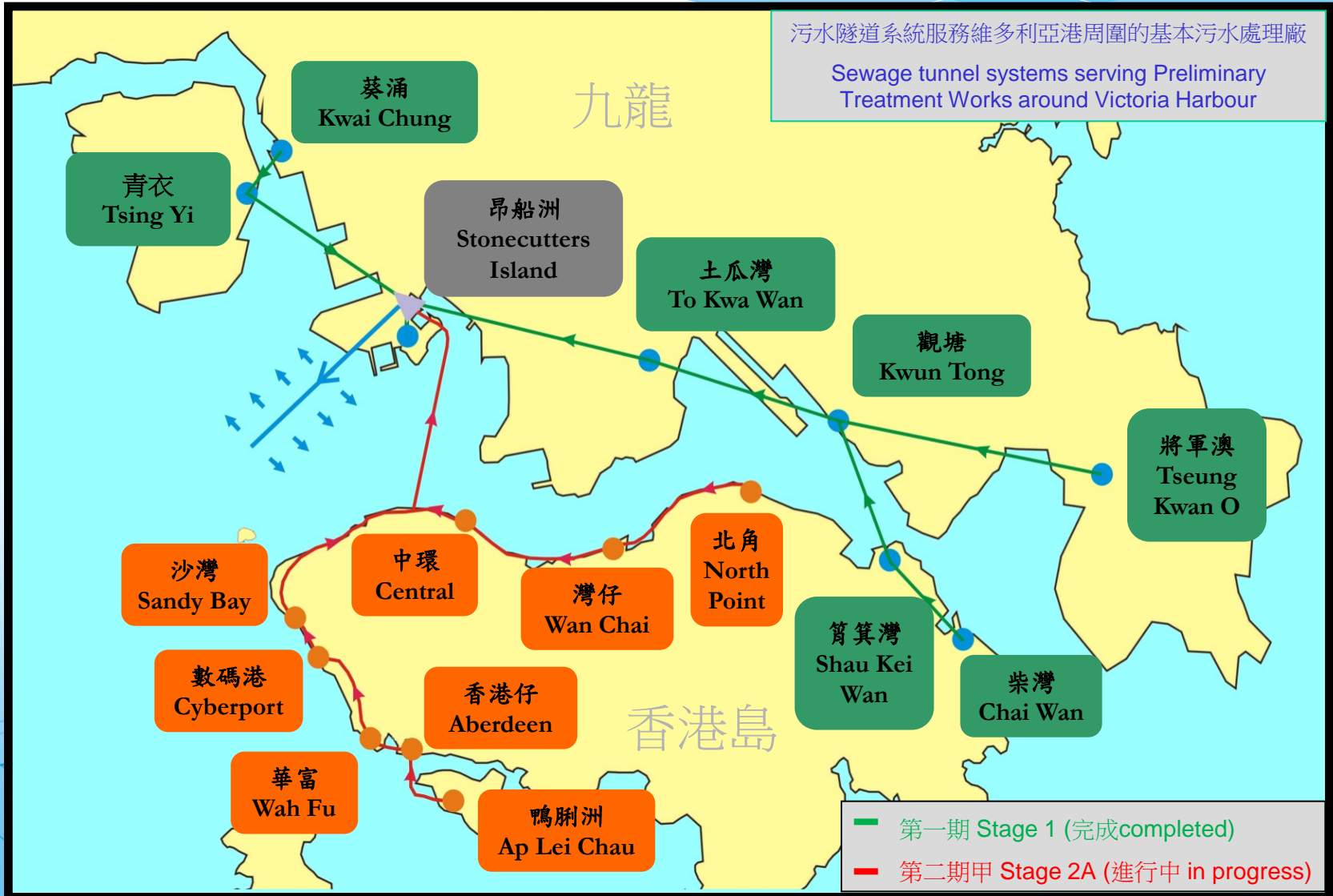


淨化海港計劃的成效

Achievements of Harbour Area Treatment Scheme (HATS)

淨化海港計劃

Harbour Area Treatment Scheme



淨化海港計劃

Harbour Area Treatment Scheme

淨化海港計劃第一期和第二期甲啓用後維多利亞港的水質改善：

Water quality improvement of Victoria Harbour upon the commissioning of HATS Stages 1 and 2A:

水質指標 Water Quality Objectives	淨化海港計劃第一期 化學強化一級處理 HATS Stage 1 CEPT	第二期甲 化學強化一級處理+消毒 Stage 2A CEPT + Disinfection
溶解氧 Dissolved Oxygen (DO)	增加 Increased by 10%	進一步增加 Further increased by 3%
非離子氨 Un-ionised Ammonia (UIA)	減少 Reduced by 31%	進一步減少 Further reduced by 12%
總無機氮 Total Inorganic Nitrogen (TIN)	減少 Reduced by 16%	進一步減少 Further reduced by 7%

淨化海港計劃

Harbour Area Treatment Scheme

- 淨化海港計劃第二期甲的實施將為維多利亞港主體水質帶來進一步明顯的改善。

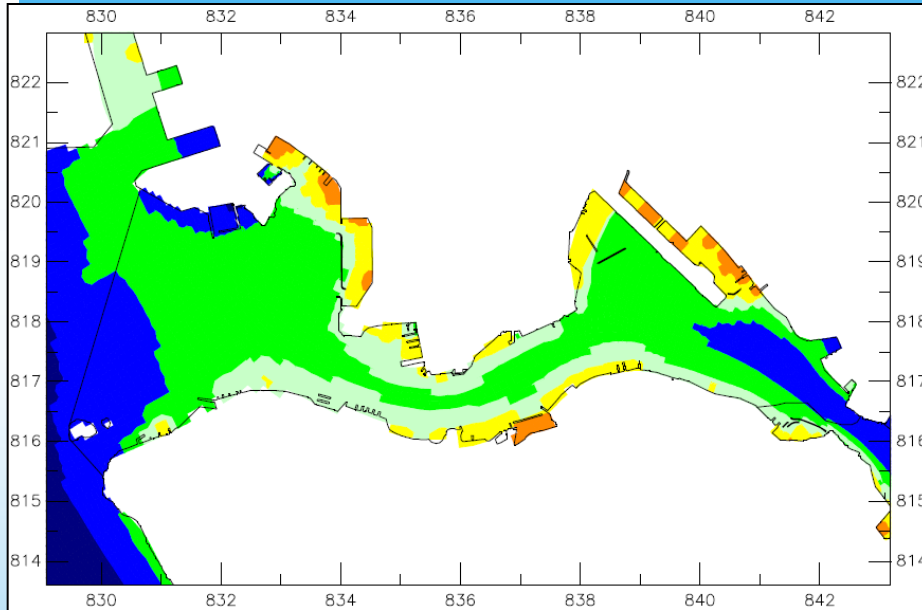
The implementation of HATS Stage 2A will bring about further significant improvements to the main water body and water quality of Victoria Harbour.

- 淨化海港計劃第二期乙將改善遠離市民主要活動地方的水質，不會為沿岸水質帶來明顯的改善。被排放到市區沿岸的殘餘污染物仍然造成近岸污染。

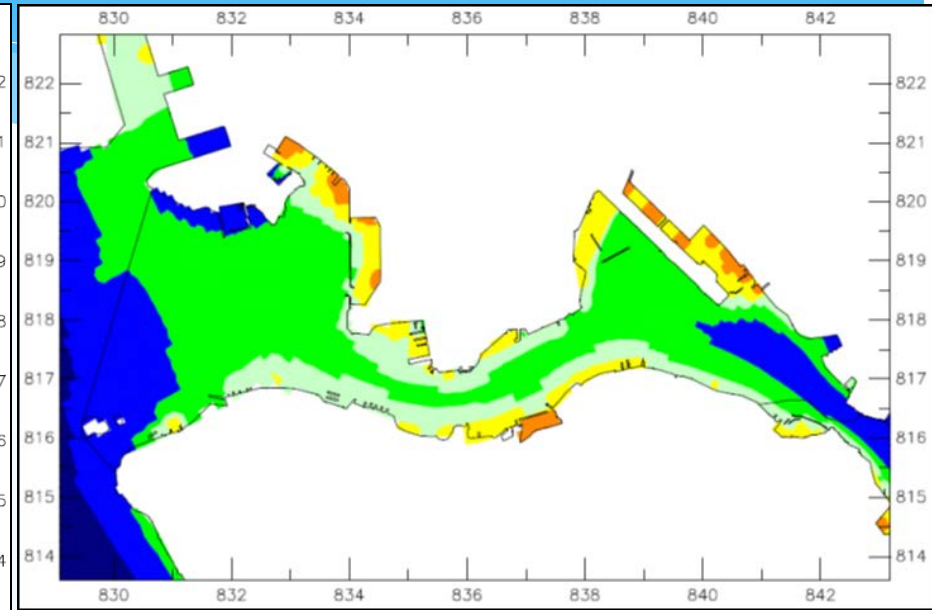
The improvements in water quality of HATS Stage 2B will be away from the main activity areas of the community and will not result in an observable improvement of the quality of coastal waters due to the residual pollution discharges.

大腸桿菌水平的預測

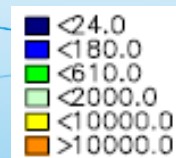
Prediction of E.Coli Levels



預測在淨化海港計劃
第二期甲的最終流量
Prediction at Ultimate Flow
of HATS Stage 2A



預測在淨化海港計劃第二期乙
後期階段的最終流量
Prediction at Ultimate Flow of
Late Phase of HATS Stage 2B



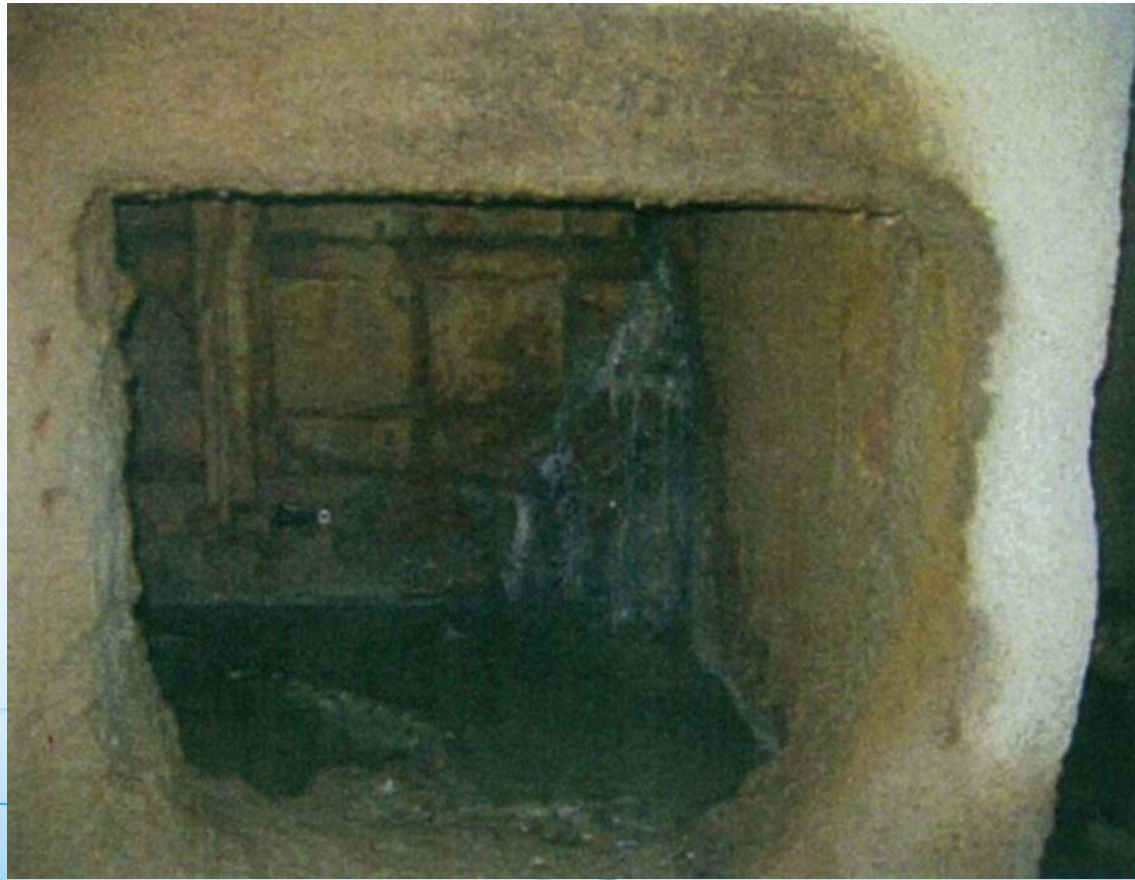
每百毫升的大腸桿菌數量
Number of E. coli count in 100ml
(平均水深的全年幾何平均數
Annual Geometric Mean Depth Averaged)

近岸水質的污染源頭

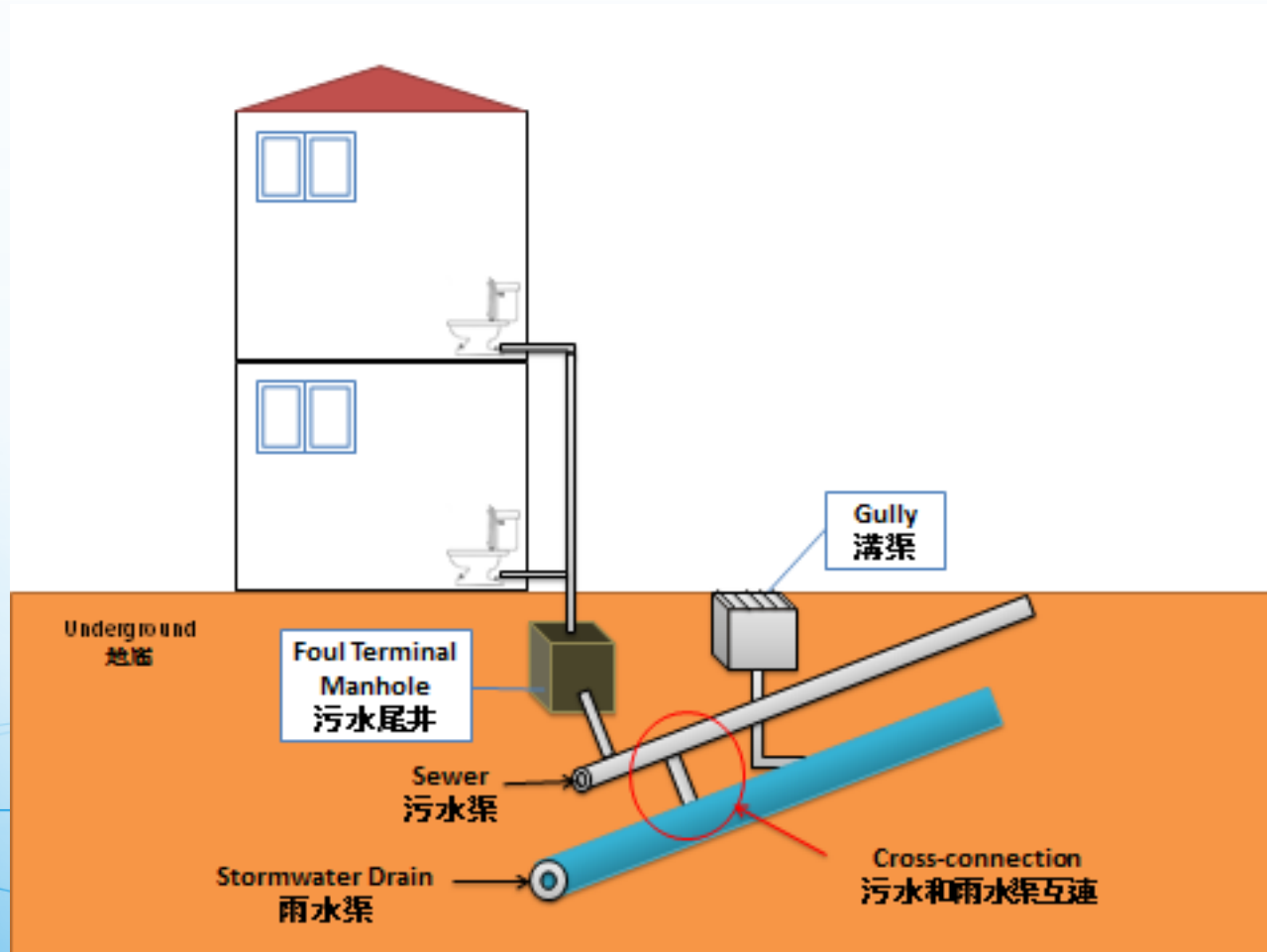
Pollution Sources of Coastal Waters

污水從損壞的污水渠流入雨水排水系統

Polluted flow from damaged foul sewers into stormwater drainage system

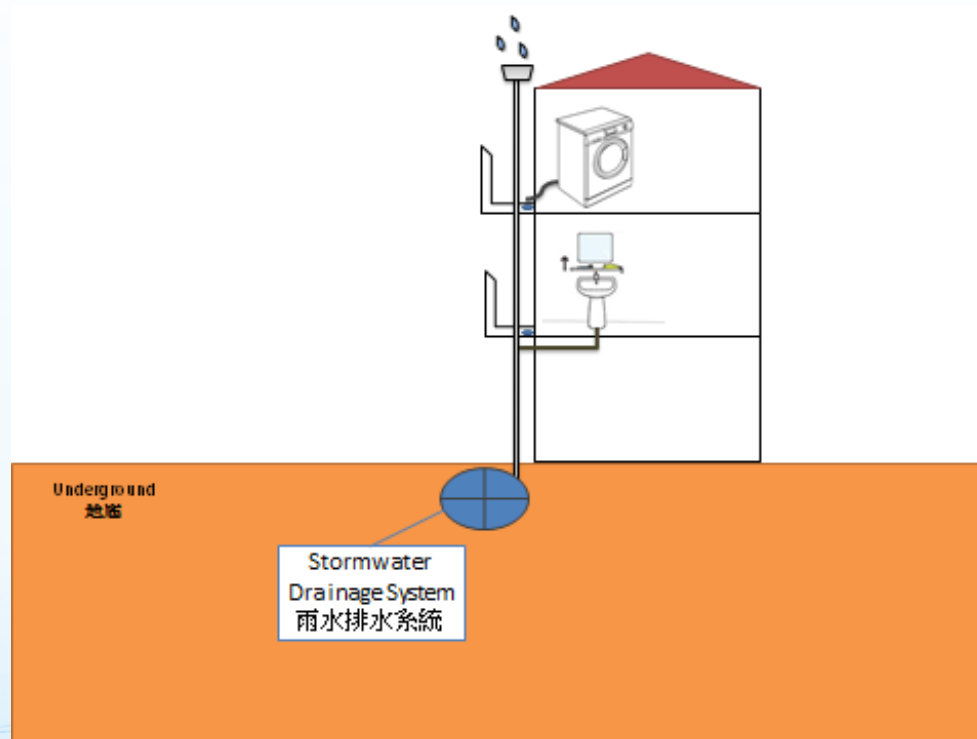


污水因公共污水和雨水渠互連而流入雨水排水系統 Polluted flow gets into stormwater drainage system as a result of public foul and storm mis-connected



大廈的污水流入雨水排水系統

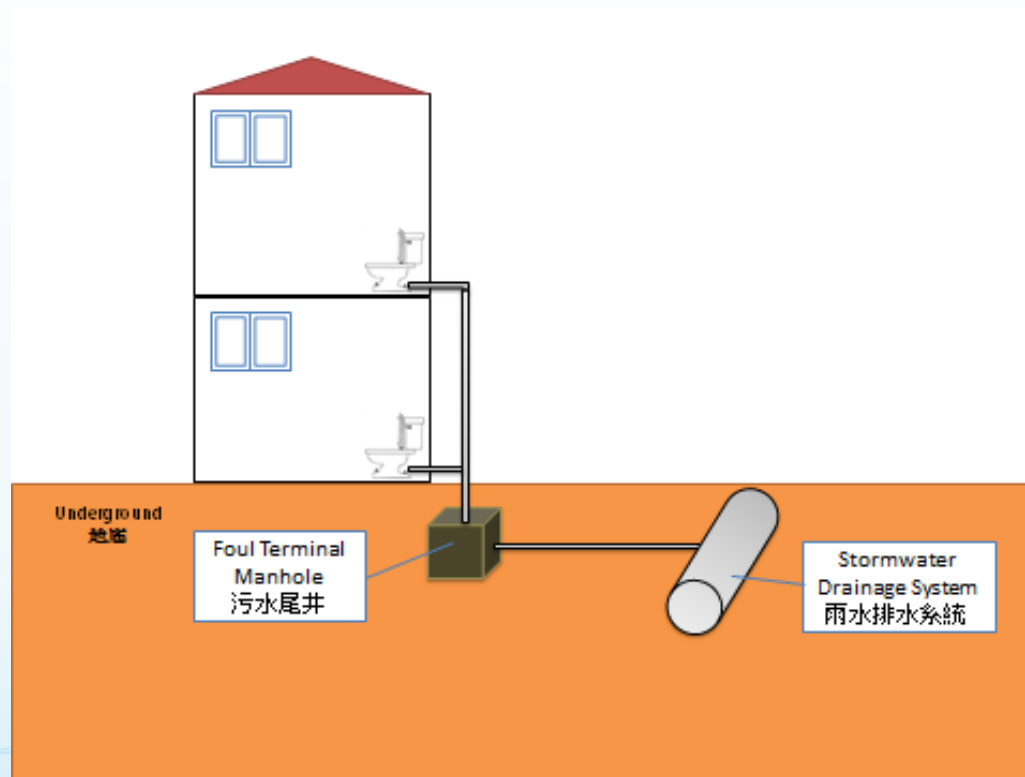
Polluted flow from buildings gets into stormwater drainage system



受污染的水被錯誤接駁到雨水落水管
“Contaminated” flow mis-connected to stormwater down pipes

大廈的污水流入雨水排水系統

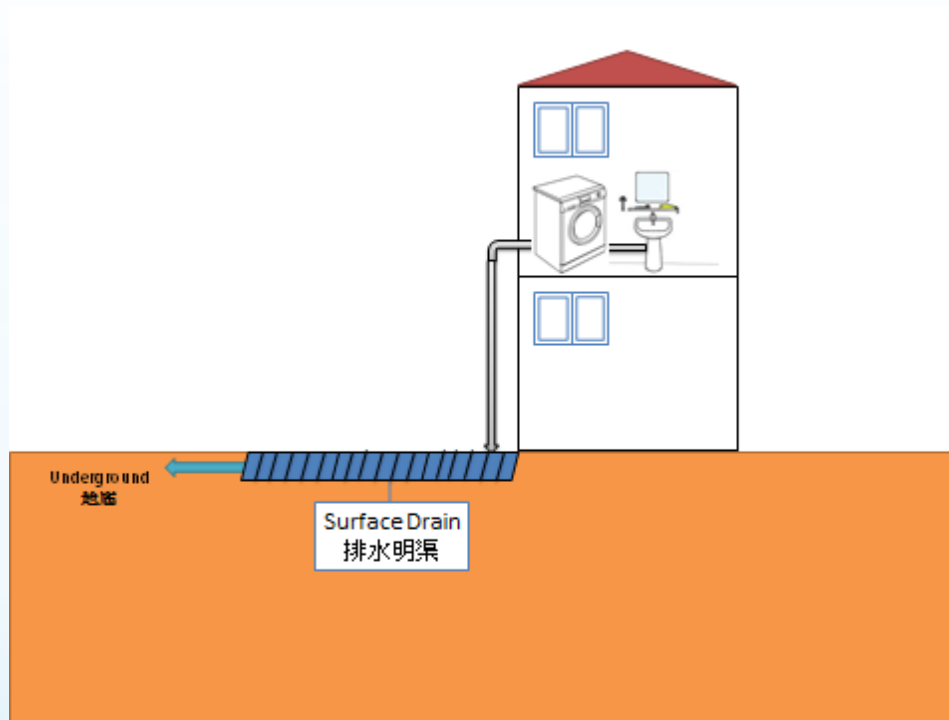
Polluted flow from buildings gets into stormwater drainage system



大廈的污水尾井連接到雨水排水系統
Foul terminal manholes connected to stormwater drainage system

大廈的污水流入雨水排水系統

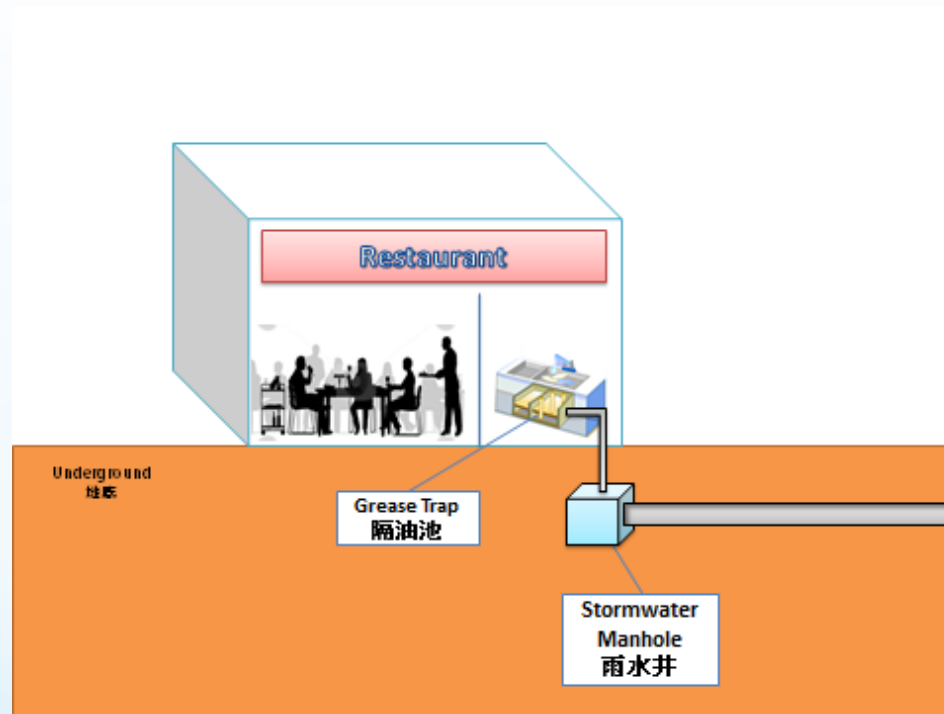
Polluted flow from buildings gets into stormwater drainage system



污水從建築物的落水管排放到小巷，再流入排水明渠及溝渠
Building down pipes discharging polluted flow onto alleyway and then surface drain & gullies

大廈的污水流入雨水排水系統

Polluted flow from buildings gets into stormwater drainage system



商鋪的污水管接駁到雨水排水系統
Wastewater pipes from individual shops
connected to stormwater drainage system

因路邊活動所產生的污水

**Polluted flow arising from
road side activities**

後巷洗滌活動

Back lane washing activities



非法傾倒污水到路邊溝渠

Illegal discharge of polluted flow to road side gullies



街市貨攤的污水經道路溝渠流入雨水排水系統

Polluted flow from on-street markets gets into stormwater drainage system through gullies



不當地洗車

Improper car washing



洗街

Street cleansing



因近岸污染所引致的滋擾

**Nuisance arising from
near shore pollution**

這些污染源頭對維港沿岸地區造成的滋擾：

Nuisance at waterfront areas of Victoria Harbour arising from these pollution sources,

例如 **For example**

- 海濱長廊的氣味滋擾

Odour nuisance at promenade

- 避風塘的污染和臭味問題

Pollution and odour at typhoon shelters

- 污染的沉澱物積聚在近岸

Contaminated sediment settled along the harbourfront



建議的顧問研究

Proposed consultancy study

顧問研究的目標

Objectives of the Consultancy Study

- 探討各種具體可行方案，以期有效減少近岸水質污染，藉此進一步改善維港兩岸的整體環境（外觀及氣味），長遠目標是提升維港沿岸的休閒、康樂及體育價值
To explore various practicable options to effectively reduce near shore water pollution to improve the environment of both sides of Victoria Harbour (both aesthetic and odour); with the long-term objective of enhancing the leisure and amenity value of the coastal areas of Victoria Harbour
- 訂出計劃以改善受歡迎的海濱地區的環境
To work out a programme to improve the environment of our popular waterfront areas

顧問研究的建議範圍

Proposed Scope of the Consultancy Study

1. 進行最初的基線調查，以確立在維多利亞港近岸污染水平的整體狀況

Carry out initial baseline survey to establish overall conditions of near shore pollution levels in Victoria Harbour

例如 For example:

- 檢討現有的污染數據 review available pollution data
- 進行目視檢查和氣味巡邏 carry out visual inspection and odour patrol
- 採集近岸水體和沉澱物樣本作分析 collect near shore water and sediment samples for analysis

顧問研究的建議範圍

Proposed Scope of the Consultancy Study

2. 檢討外國處理近岸水質污染或適用於維多利亞港的經驗
Review overseas experience in combating near shore water pollution that may be applicable to Victoria Harbour

例如 For example:

- 監管和行政改革，移除／盡量減少上游污染 regulatory and administrative reforms to remove/ minimize upstream pollution
- 雨水質量處理技術 stormwater quality treatment technologies
 - ◆ 路邊生物處理系統、蓄水池 road side bioretention system; detention tank
 - ◆ 總污染物渠隔 gross pollutant trap
 - ◆ 網格和模塊化路面、能滲透的瀝青鋪路 grid and modular pavement; porous asphalt paving
 - ◆ 滲濾溝 Infiltration trench
- 挖掘沉澱物或作生物處理 dredging or bioremediation of sediments

顧問研究的建議範圍

Proposed Scope of the Consultancy Study

3. 訂定優先需要改善的地區

Identify priority areas for improvement

考慮 Considerations :

- 海濱地區的可達性 accessibility of waterfront areas
- 海濱地區現時的用途及受歡迎程度 current uses and popularity of waterfront areas
- 於海濱地區已有規劃時間表的發展 developments with planned timetable along the waterfront areas
- 海濱地區正進行的改善工程 on-going improvement works in the waterfront areas
- 沿岸水域的污染程度 pollution level of coastal waters

顧問研究的建議範圍

Proposed Scope of the Consultancy Study

4. 進行地區性實據檢討，以確定影響沿岸水質的污染源

Carry out evidence-based reviews to identify pollution sources affecting regional coastal waters

例如 For example:

- ❑ 步行調查 walkover survey
- ❑ 在雨水渠出口作水質監測 water quality monitoring at stormwater outfalls
- ❑ 在雨水排放沙井作水質監測 water quality monitoring at stormwater drainage manhole
- ❑ 非法接駁調查 expedient connection survey
- ❑ 沙井檢查 manhole inspection
- ❑ 非點源污染調查 non-point source pollution survey

顧問研究的建議範圍

Proposed Scope of the Consultancy Study

5. 進行地區性環境調查，評估從近岸水質污染所引起的環境滋擾，如外觀和氣味

Carry out regional environmental investigation to assess the nuisance such as **aesthetic** and **odour** arising from the near shore water pollution

例如 For example:

- 氣味測定評估 olfactometry odour assessment
- 氣味分析 headspace analysis
- 沉澱物分析 sediment analysis

顧問研究的建議範圍

Proposed Scope of the Consultancy Study

6. 檢討針對近岸水質污染的現行計劃、法例條文和制度安排

Review the current programmes, legislative provisions and institutional arrangements to combat near shore water pollution

例如 For example:

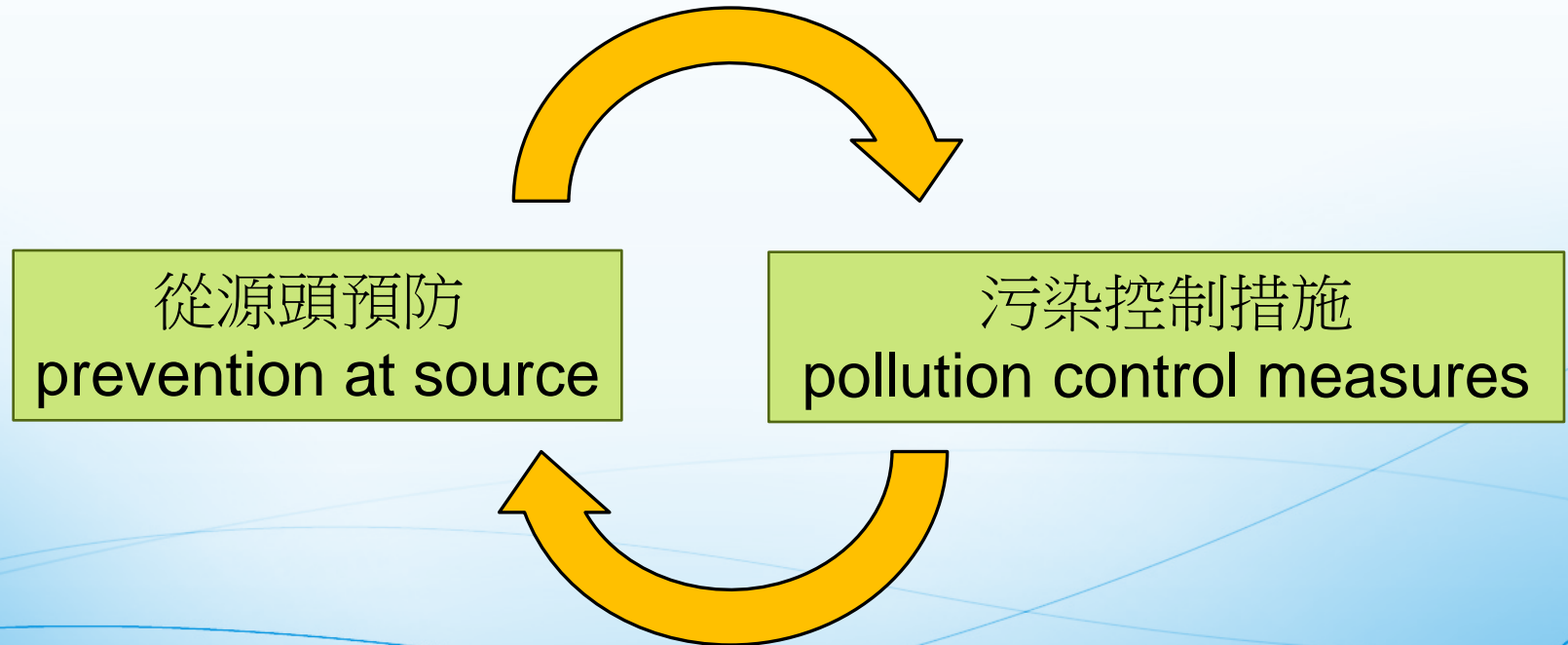
- ❑ 各政府部門透過執法控制污染源
source control through legislative enforcement
- ❑ 監察污水收集和雨水排水系統
surveillance of sewerage and stormwater drainage systems
- ❑ 清除雨水渠和暗渠出口的有機沉澱物和沉積物
removal of organic sediments and deposit from storm drains and culvert outlets
- ❑ 工程措施，如改善或安裝旱季截流器
engineering measures such as upgrading or installation of dry weather flow interceptors

顧問研究的建議範圍

Proposed Scope of the Consultancy Study

7. 提出務實的措施去控制和減少污染排放

Identify practicable measures for controlling and reducing the pollution discharges



顧問研究的建議範圍

Proposed Scope of the Consultancy Study

(i) 從源頭預防 prevention at source

例如 For example:

- ? 透過土地規劃重新安置污染黑點 land use planning to relocate pollution blackspots
- ? 排放標準 discharge standard
- ? 提供技術支援以鼓勵採用最佳做法 technical support to encourage the adoption of best practices
- ? 法例條文去提高執法功效 legislative provision to increase enforcement efficacy
- ? 透過公眾教育/參與可減少非法排放 public education / involvement to reduce illegal discharge
- ? 污水/排水系統的操作和保養 operation / maintenance of the sewerage / drainage systems

顧問研究的建議範圍

Proposed Scope of the Consultancy Study

(ii) 污染控制措施 pollution control measures

例如 For example:

- ❑ 工程方案 engineering solutions
 - ? 旱季截流器 dry weather flow interceptor
 - ? 原位生物處理沉積物 in-situ bioremediation treatment of sediments
 - ? 雨水渠出口安排 Arrangement of stormwater outfalls
- ❑ 清理行動 clean up action
 - ? 去除箱形暗渠和海床的沉積物 removal of sediments in box culverts or from seabed
 - ? 清除漂浮垃圾 removal of floating refuse
- ❑ 新穎的設計以減少／移除雨水渠中的氣味 Innovative design to reduce/remove odour from stormwater drains

顧問研究的建議範圍

Proposed Scope of the Consultancy Study

8. 制定建議去提升維港沿岸水質的整體質素；長遠目標提升休閒、康樂及體育價值

Draw up recommendations to enhance the water quality and in the long term the leisure and amenity value of the coastal areas of Victoria Harbour

例如 For example:

- 可行的解決方案和初步的時間表 practicable solutions with tentative timetable
- 配合正在海濱進行的改善工程進度的建議 suggestions on how to coordinate with ongoing improvement works at the waterfront areas
- 良好操作指引/規程 best practices or protocols
- 先導示範計劃 pilot demonstration scheme
- 長遠方案 long-term options

顧問研究的建議範圍

Proposed Scope of the Consultancy Study

實際的考慮 Practical considerations :

- 建議的措施可能造成的社會反響 likely reaction from the general public on the proposed measures
- 建議的工程措施可能造成的影響，例如：初步的環境、交通及排水影響，及其可持續性 likely impacts of proposed engineering measures, e.g. preliminary environmental, traffic and drainage impacts, together with their sustainability
- 成本效益 cost effectiveness
- 實施時間表 implementation programme

顧問研究的安排

Arrangement of the Consultancy Study

- 已於2014年3及4月，諮詢持份者的意見
Consulted stakeholders in March and April 2014
- 已於2014年6及7月，諮詢9個相關的區議會
及環境諮詢委員會
Consulted 9 relevant District Councils and the Advisory
Council on the Environment in June and July 2014
- 於下個立法會會期申請撥款
Seek funding within the next LegCo session

顧問研究的安排

Arrangement of the Consultancy Study

- 於2015年批出顧問研究合約
Award the consultancy study in 2015
- 在合約批出後24個月內完成顧問研究
Complete the consultancy study in 24 months

多謝
Thank You