

供水工作

Work in Water Supplies








竭誠盡心 全面管理

Meticulous Inspections and Attentive Management

“ 從供水水量到水質，
以至其中牽涉的各個技術層面，
水務署都一直貫徹奉行
嚴格準則。

**From quantity to quality
to every technical aspect in between,
WSD maintains
a high standard
for its water supplies. ”**



供水管理

Water Supply Management



完善管理規劃 實踐可持續發展

A Comprehensive Management Plan for a Sustainable Future

水務署推行各項水資源管理措施，加強應變力及作好準備，以應對氣候變化。

WSD has launched multiple water resource management initiatives to strengthen our resilience and preparedness in response to climate change.



▲ 香港仔水塘
Aberdeen Reservoir

檢討可持續供水策略

本署於二零零八年推行「全面水資源管理策略」（「策略」），以制訂水資源的可持續使用策略，確保本港供水安全及應付未來發展需要。「策略」強調透過推廣節約用水以控制供水需求增長，並開拓新水源。其提出的主要措施包括加強節約用水的公眾教育、推廣節水產品的使用、改善用水流失管理、擴大海水沖廁的覆蓋範圍、鞏固對現有水資源的保護，以及積極開拓新水源。

REVIEWING OUR STRATEGY FOR SUSTAINABILITY

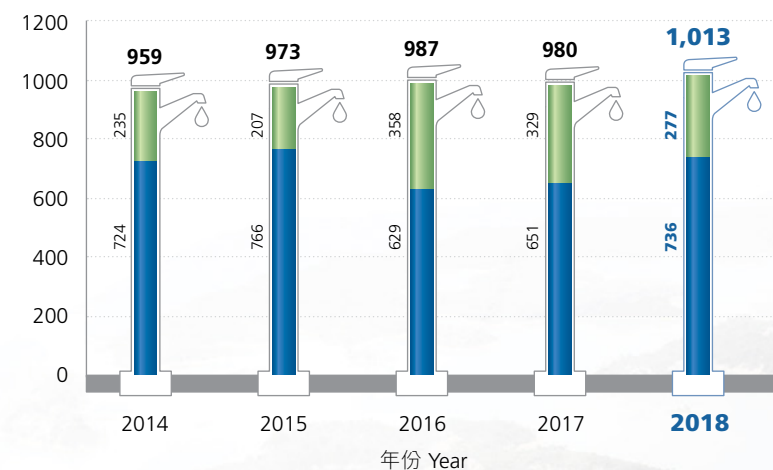
The Total Water Management Strategy (the Strategy) promulgated by WSD in 2008 has mapped out the strategy for sustainable use of water to ensure water security and support development in Hong Kong. The Strategy puts an emphasis on containing the growth of water demand through promoting water conservation and exploiting new water resources. The major initiatives are enhancing public education on water conservation, promoting the use of water-saving products, enhancing water leakage control, extending the use of salt water for toilet flushing, strengthening the protection of existing water resources and actively exploiting new water resources.

為應對目前挑戰及各方面的最新發展，確保供水的可持續性，「策略」的檢討工作已經進入最後階段，其涵蓋的內容包括：確認「策略」的成效；更新了用水需求和供應的預測方法，同時在考慮了氣候變化的因素下，預測至二零四零年的用水需求和供應；制定並評審各供水管理方案，就本港可持續供水策略提供建議；以及更新「策略」。有關檢討和建議的工作，將於二零一九年年底完成。

To safeguard the sustainability of water supplies taking account of the contemporary challenges and the latest developments on various fronts, a review on the Strategy has proceeded into the final stage to ascertain its effectiveness; update the forecast methodologies of water demand and supply, and projections up to 2040 taking into account impacts of climate change; formulate and evaluate water management options, and recommend strategies for ensuring the sustainability of water supplies in Hong Kong; and propose updates of the Strategy. The review findings and recommendations will be available in late 2019.

二零一四年至二零一八年全年食水供應量 Annual Quantity of Fresh Water Supply 2014 – 2018

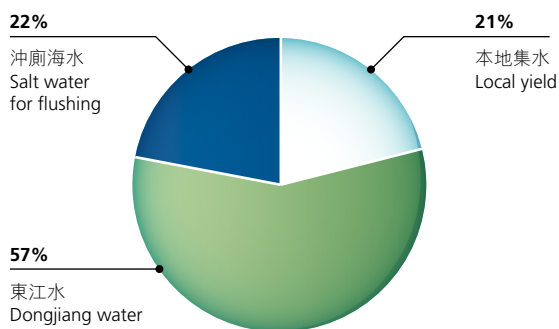
百萬立方米 million m³



■ 東江水 Dongjiang Water ■ 本地集水區收集的雨水 Yield from Hong Kong's Catchments

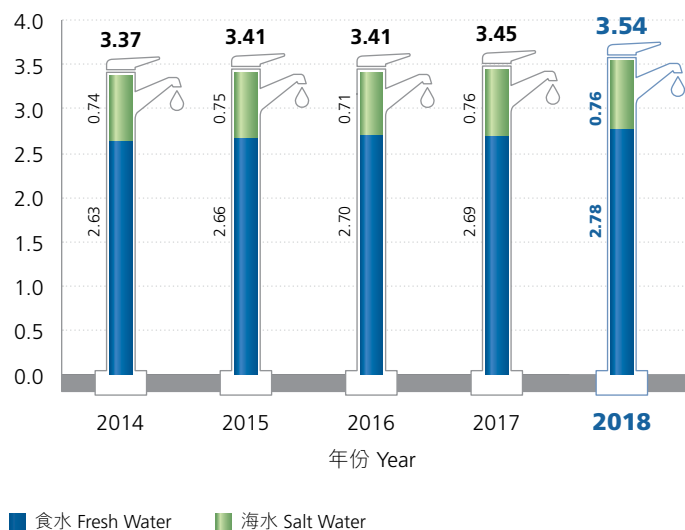
二零一八年總用量(食水及海水)
Total Water Consumption
(Fresh Water and Salt Water) in 2018

1,292 百萬立方米
million m³



二零一四年至二零一八年總平均每日用量(食水及海水)
Total Average Daily Water Consumption
(Fresh Water and Salt Water) 2014 – 2018

百萬立方米 million m³



二零一八年按用水類別劃分的食水用量
Annual Fresh Water Consumption by Sector 2018

用水類別 Sector

食水用量 Fresh Water Consumption

百萬立方米及佔總用量百分比 million m³ and percent of total

住宅用水 Domestic	557 (55.0%)
工業用水 Industrial	62 (6.1%)
服務業及商業用水 Service Trades	262 (25.9%)
政府用水 Government Establishments	46 (4.5%)
建築及船舶用水 Construction & Shipping	19 (1.9%)
臨時淡水沖廁 Flushing	67 (6.6%)
食水總用量 Total Fresh Water Consumption	1,013 (100%)

有效管理現行水資源

目前，本港供水包括本地集水區收集的雨水、輸入的東江水及沖廁用的海水。

EFFICIENTLY MANAGING EXISTING WATER SOURCES

Currently, Hong Kong's water supplies are composed of yield from local catchments, imported water from Dongjiang, and salt water for flushing.

本地集水

本地集水從集水區收集而來，這些集水區大部分位於受保護免受污染的郊野公園，本署在這些集水區會進行定期巡查及水質監控，以確保水質安全。

Local Yield

The yield is collected in catchment areas which are mostly within Country Parks that are well protected from contamination. WSD conducts regular inspections and water quality monitoring in these catchment areas to ensure water safety.



本地集水佔全港

Local yield accounts for Hong Kong's

20% – 30%

的食水供應
of fresh water supply

二零一四年至二零一八年全年降雨量 Annual Rainfall 2014 – 2018

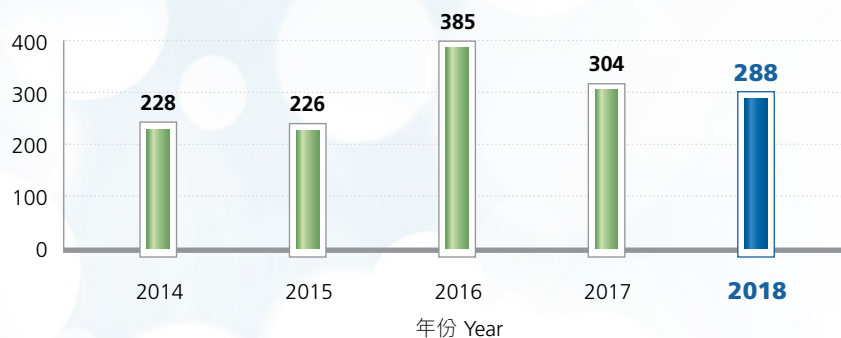
毫米 millimetres



註：長期平均降雨量為2,399毫米
Note: Long-term mean rainfall is 2,399 mm

二零一四年至二零一八年淨集水量 Annual Net Yield 2014 – 2018

百萬立方米 million m³



東江水

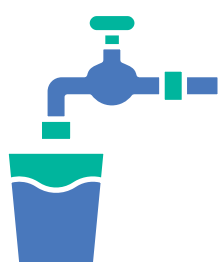
本署輸入東江水以彌補本地集水量的不足，從而應付食水需求。本港每年按實際需要輸入東江水至粵港供水協議訂明的每年供水量上限。當本地集水較為充足時，即會減少該年東江水的輸入量，避免浪費東江水，亦可減省輸水成本。

二零一八至一九年度是粵港兩地就二零一八年至二零二零年簽訂為期三年的供水協議的第二年。在該協議下，東江水價格按年上調0.3%。有關價格調整是按照粵港兩地相關消費物價指數和人民幣兌港幣匯率變動而訂定。東江水的價格在二零一九年為48.07億元，而二零一八年為47.93億元，二零二零年則為48.21億元。

Dongjiang Water

WSD imports Dongjiang water to fill the gap as Hong Kong's local yield is insufficient to meet its water demand. Each year, Hong Kong imports Dongjiang water as needed up to the annual supply ceiling stipulated in the Dongjiang water supply agreement between Guangdong and Hong Kong. When more local yield is available in a particular year, less Dongjiang water is imported. This avoids wasting Dongjiang water resources and saves pumping costs.

In 2018/19, Hong Kong entered its second year of the three-year Dongjiang water supply agreement for 2018 to 2020. Under the agreement, Dongjiang water prices will be increased by 0.3% annually, which was based on the changes of the relevant price indices of Guangdong and Hong Kong and the exchange rate between the Renminbi and the Hong Kong dollar. The price in 2019 was \$4,807 million, compared to \$4,793 million paid in 2018 and \$4,821 million to be paid in 2020.



東江水佔全港

Dongjiang water accounts for

70% – 80%

的食水供應
of Hong Kong's fresh
water supply



點滴話你知 Do you know?

粵港供水協議自二零零六年起採用「統包總額」方式，根據香港年度的本地集水量供應東江水，確保其供應可靠和具彈性，以切合本港的實際需要，令供水可靠程度達至99%。即是說，縱使百年一遇的旱情出現，本港仍能維持全日供水。

Since 2006, the "package deal lump sum" approach has been adopted in the Dongjiang water supply agreements between Guangdong and Hong Kong to ensure a reliable and flexible supply of Dongjiang water to meet the actual needs of Hong Kong according to the local yield collected in a particular year. This renders 99% reliability, i.e. the water supply in Hong Kong can be maintained round the clock even under extreme drought conditions with a return period of once in 100 years.

沖廁用海水

為節省珍貴的食水資源，本港大部分地區均採用海水沖廁，是世界上少數採用同類措施的地區。在二零一八至一九年度，本署完成了元朗水邊圍邨及屯門三聖邨等大型屋邨由淡水沖廁轉換至海水沖廁，每年可節省約60萬立方米食水。薄扶林及新界西北仍然使用淡水沖廁的地區亦正進行轉換至海水沖廁的工作。

隨着東涌新市鎮擴展，本署亦計劃於東涌實施海水沖廁。

85%

人口覆蓋率
population covered

Flushing with Salt Water

Using salt water for flushing has been widely adopted in Hong Kong to save precious fresh water resources. It is a rather unique practice in the world. In 2018/19, WSD completed converting the flushing supply to salt water for some large housing estates such as the Shui Pin Wai Estate at Yuen Long and Sam Shing Estate at Tuen Mun. This conversion will save about 0.6 million m³ of fresh water per annum.

Similar conversions are underway for buildings in Pok Fu Lam and areas still using fresh water for flushing in the North West New Territories.

Salt water for flushing in the Tung Chung area has also been planned for implementation in conjunction with the Tung Chung New Town extension.

開拓新水源

本署現正計劃開拓不受氣候變化影響的新水源，即海水化淡及循環再用水，以輔助現行供水，提升本港供水安全及應變力。

海水化淡

本署現正就將軍澳海水化淡廠的設計、建造及運作合約招標，化淡廠會在建築設計上盡量避免對環境造成影響，並能與周邊的未來發展和諧協調。另外，將軍澳海水化淡廠將採用先進的逆滲透技術，並會使用再生能源和低耗能水處理過程等。化淡廠的設計及建造工程預計在二零一九年十二月展開。

ADOPTING NEW WATER SOURCES

WSD has planned to supplement the existing water supplies with desalinated water and recycled water, new sources that are not susceptible to climate change, and thus offer enhanced water security and resilience for Hong Kong.

Sea Water Desalination

WSD is currently tendering for the design, construction and operation of a desalination plant in Tseung Kwan O. This plant will feature architectural design to minimise its impact on the environment and make it blend in with future development in the area. Besides, the plant will adopt advanced reverse osmosis technology, renewable energy usage and low-energy consumption processes. Design and construction of the plant is scheduled for commencement in December 2019.

預期成果 Anticipated Results

135,000 立方米

m³

每日食水產量

water production capacity per day

5%

可應付本港食水用量

To meet fresh water demand

未來可擴展至

Provision for future expansion to

270,000 立方米

m³

每日食水產量

water production capacity per day

10%

可應付本港食水用量

To meet fresh water demand

再造水

石湖墟污水處理廠現正進行工程，提升為淨水設施，增強處理上水、粉嶺及鄰近地區污水的能力，經淨水設施處理的排放水會用作生產再造水作沖廁及其他非飲用用途。此舉不但可節約食水，亦減少經處理的排放水的排放量。

本署已於二零一七年四月開始動工建造配水庫及敷設輸水幹管，為供應再造水作準備。再造水生產設施、抽水系統及分配水管等餘下的工程亦正在設計階段，它們的建造工程會按時展開。本署預計於二零二二年開始分階段向上水和粉嶺供應再造水作沖廁用途。

Water Reclamation

Shek Wu Hui Sewage Treatment Works is currently being upgraded to an Effluent Polishing Plant (EPP). It will increase its capacity for treating sewage from Sheung Shui, Fanling and adjacent development areas. Reclaimed water is to be produced from the treated effluent of the EPP. Using reclaimed water for flushing and other non-potable uses not only saves fresh water, but also reduces the amount of treated effluent discharge.

In April 2017, WSD also began to construct a service reservoir and lay trunk water mains to prepare for the supply of reclaimed water. The remaining works, including water reclamation facilities, a pumping system and local distribution mains, are now under design, and their construction is expected to begin on time. The supply of reclaimed water for flushing in Sheung Shui and Fanling will launch in phases, starting in 2022.

預期成果 Anticipated Results

上水和粉嶺將於二零二二年開始分階段實施計劃
Supply will launch in phases starting with Sheung Shui and Fanling from 2022 onwards



約 **500,000**

覆蓋人口
population covered

22,000,000 立方米
m³

食水每年得以節省
fresh water saved each year

2%

佔本港食水用量
of fresh water
consumption in
Hong Kong

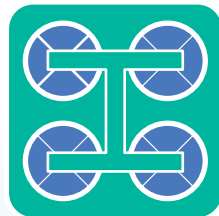
中水重用及雨水回收

本署將於二零二零年在安達臣道石礦場用地發展項目中，興建一套中央中水重用系統。系統由政府運作將處理在該發展區內收集到的中水，用作沖廁及其他非飲用用途。該系統將包括中水處理廠、抽水系統、貯存經處理中水的配水庫，以及收集中水和向客戶供應經處理中水的管道。該系統預計於二零二三年落成啟用，以配合該區的居民入伙。

Grey Water Recycling and Rainwater Harvesting

In 2020, WSD will begin to construct a centralised grey water recycling plant at the Anderson Road Quarry Site Development. The system will treat grey water collected from the development for flushing and other non-potable uses, and will include a grey water treatment plant, a pumping system, a service reservoir for storing treated grey water, and pipes to collect the grey water and supply treated grey water to customers. The system will be commissioned in 2023 to tie in with the population intake of the development.

預期成果 Anticipated Results



3,300 立方米
m³

每日處理量
treatment capacity per day

政府在其新項目中積極採用中水重用及雨水回收系統，以提倡廣泛應用相關技術，水務署天水圍大樓便是其中一個設有有關系統的項目。發展局和環境局在關於環保政府樓宇的聯合技術通告已羅列詳細指引，在新建政府項目安裝中水重用及雨水回收設施，以減少非飲用用途的食水用量。

與此同時，本署亦為香港綠色建築議會就「綠建環評既有建築2.0版」的評級檢討提供技術支援，提高私人樓宇使用中水重用及雨水回收系統的額外評級得分，以及在「綠建環評新建建築」的評級檢討提供類似技術支援，以鼓勵發展商提供相關系統，減少使用食水作非飲用用途。

To further promote the wide use of grey water recycling and rainwater harvesting systems, the Government advocates their applications in new Government projects, such as the WSD Tin Shui Wai Building. The Joint Development Bureau and Environment Bureau Technical Circular on Green Government Buildings has laid down detailed guidelines for installing recycling facilities for grey water and harvesting facilities for rainwater in new Government projects to reduce the fresh water demand for non-potable applications.

Moreover, under the Building Environmental Assessment Method (BEAM) Plus for Existing Buildings Version 2.0, WSD has provided technical support to Hong Kong Green Building Council in reviewing the scheme which increased the bonus credit awards to private buildings that include grey water recycling and rainwater harvesting systems. Similar technical support has also been provided to the Council in its review of the BEAM Plus for New Buildings to encourage developers to reduce the use of fresh water for non-potable uses through these systems.

水質

Water Quality



推行全方位措施 保障香港食水水質

A Multi-Dimensional Approach to Safeguarding Hong Kong's Drinking Water Quality

水務署嚴格管理和制訂水安全計劃，
全面保障香港食水水質及公眾健康。

*WSD protects Hong Kong's
drinking water quality and
hence public health through
comprehensive management and
water safety plans.*

香港是全球其中一個擁有安全食水供應的城市。
*Hong Kong is one of the cities in the world where
one can enjoy a safe drinking water supply.*



水質標準及監測

東江水

確保水質

廣東省當局一直採取有效措施，確保輸港東江水的水質符合粵港供水協議所訂定的國家《地表水環境質量標準》(GB3838-2002)第II類的標準，亦即適用於作生活飲用的地表水的最高國家標準。為此，廣東省當局推行了多項有效措施及項目，包括興建新污水處理廠、遷走污染性的工廠和農場、敷設專用輸水管道、建立東江流域水資源水量水質監控系統，以及在深圳水庫運作的生物硝化站等。

WATER QUALITY STANDARDS AND MONITORING

Dongjiang Water

Maintaining Quality

The Guangdong Authorities have taken effective steps to ensure that the quality of Dongjiang water being delivered to Hong Kong meets the national standard for Type II water in the "Environmental Quality Standards for Surface Water" (GB3838-2002) stipulated in the Dongjiang water supply agreement, which is the highest national standard applicable for the surface water abstracted for human consumption. This has been achieved through a combination of measures and projects by the Guangdong Authorities, including construction of new sewage treatment plants, removal of polluting factories and farms, commissioning of dedicated aqueducts, implementation of the Dongjiang Basin Water Quantity and Quality Monitoring and Control System, and the on-going operations of the bio-nitrification plant at the Shenzhen Reservoir.



緩解洪水對沙灣河水質造成的威脅

沙灣河流域水環境綜合整治工程現正如火如荼地進行。鑑於供港東江水經深圳水庫輸往香港，有關工程將可大幅減低沙灣河在暴雨期間排洪入深圳水庫而對東江水水質造成的影響。

24小時東江水水質監測

本署在接收東江水的木湖抽水站設有在線水質監測系統，對接收的東江水水質進行24小時監測。

Mitigating Flood Impact of Shawan River on Water Quality

The Comprehensive Remediation Project for the Water Environment of the Shawan River Basin is in full swing. This project will significantly reduce the impact on Dongjiang water quality due to flood water from Shawan River discharging into the Shenzhen Reservoir where the Dongjiang water is stored and subsequently delivered to Hong Kong, during heavy rainfall.

Round-the-Clock Dongjiang Water Quality Monitoring

At the Muk Wu Pumping Station where Dongjiang water is received, WSD monitors the quality of Dongjiang water received through 24-hour on-line water quality monitoring system.

東江水的平均氨氮及錳水平

Average Ammoniacal Nitrogen and Manganese Levels in Dongjiang Water

	單位 Unit	財政年度 Financial Year			GB3838-2002第II類標準值 Standard in GB3838-2002 (Type II)
		2016/17	2017/18	2018/19	
氨氮 Ammoniacal Nitrogen	毫克/公升 mg/L	0.03	0.04	0.04	≤0.5
錳 Manganese	毫克/公升 mg/L	0.03	0.03	0.03	≤0.1

食水

恪守國際標準

本署致力為客戶提供安全的食水。多年來，本署供應的食水水質均完全符合世界衛生組織制訂的《飲用水水質準則》（世衛準則）及其後於二零一七年訂定的香港食水標準。為保證食水的水質以保障公眾健康，本署按世衛準則制定及實施了食水水質管理系統，當中涵蓋健康目標、本署水安全計劃，以及監測系統等主要部分，作為一個綜合系統管理食水水質。本署正與發展局共同檢討香港食水標準，研究可否為若干參數訂立比世衛準則更嚴謹的標準。

Drinking Water

In Line with International Practices

WSD is committed to providing safe drinking water supply to our customers. Over the years, WSD has been supplying drinking water with quality in full compliance with the World Health Organization's Guidelines for Drinking-water Quality (WHO Guidelines) and the subsequent Hong Kong Drinking Water Standards (HKDWS) established in 2017. To assure the quality of drinking water for the protection of public health, WSD has implemented the Drinking Water Quality Management System (DWQMS), which was prepared with reference to the WHO Guidelines. The DWQMS has incorporated the major components of health-based targets, water safety plan of WSD and surveillance as an integrated system for management of drinking water quality. WSD is also working with Development Bureau in the process of reviewing HKDWS, with a view to assessing the appropriateness of having parameters with standards more stringent than those in the WHO Guidelines.



點滴話你知 Do you know?



香港食水標準是根據專家顧問的報告，於二零一七年制訂。有關報告參考了兩個國際組織（即世衛和歐盟）及七個海外國家（即英國、美國、加拿大、澳洲、新加坡、紐西蘭和日本）在訂立食水標準方面的策略、理據和做法。香港食水標準得到食水安全諮詢委員會¹認可。

The HKDWS was established in 2017 based on a review of an expert consultant on the approaches, rationales and practices of two international organisations (the WHO and the European Union) and seven overseas countries (i.e. the United Kingdom, the United States of America, Canada, Australia, Singapore, New Zealand and Japan) in establishing their drinking water standards. The HKDWS has been endorsed by the Drinking Water Safety Advisory Committee¹.

水質監測

本署推行水質監測計劃，透過抽取水樣本進行物理、化學、細菌學、生物學和輻射學化驗，監測整個處理、供應及分配過程中的食水水質。抽樣範圍包括濾水廠、配水庫、供水接駁點，以及隨機抽選的公眾可達客戶水龍頭（例如商場、診所、社區設施、運動場、街市、政府辦事處及屋邨管理辦事處等地的水龍頭），藉以監測食水水質。

Water Quality Monitoring

Under the water quality monitoring programme implemented by WSD, drinking water quality throughout the entire treatment, supply and distribution system is monitored via physical, chemical, bacteriological, biological, and radiological examinations of water samples. Water samples are collected from water treatment works (WTWs), service reservoirs, connection points and randomly selected publicly accessible customers' taps such as those in shopping centres, clinics, community facilities, sports grounds, markets, government offices and estate management offices to monitor the quality of drinking water.



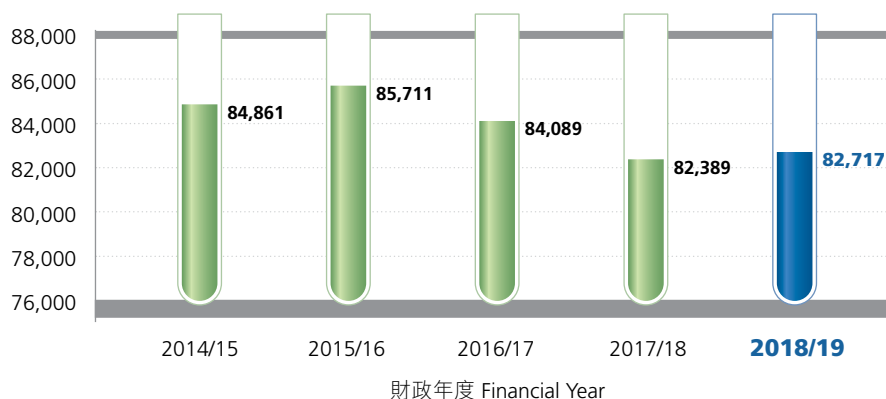
¹ 食水安全諮詢委員會於二零一八年一月成立，由學者、醫學專家及其他相關業界持份者所組成，就食水安全事宜向發展局提供意見。

The Drinking Water Safety Advisory Committee was set up in January 2018, comprising academics, medical experts and other stakeholders from related fields, to give advice to Development Bureau on drinking water safety issues.

>80,000



每年抽取及檢測的食水樣本總數 drinking water samples are taken and tested each year



註：以上的食水樣本是從濾水廠、配水庫、供水接駁點及公眾可達的客戶水龍頭抽取。

Note: These drinking water samples were taken at WTWs, service reservoirs, connection points and publicly accessible customers' taps.

為進一步保障本港的食水水質，本署自二零一七年十二月起展開水質監測優化計劃，在隨機抽出處所的客戶水龍頭收集食水樣本，檢測在內部供水系統中可能出現的六種金屬（即鉛、鎳、鉻、鎘、銅和銻）。

To further safeguard the drinking water quality of Hong Kong, WSD began the Enhanced Water Quality Monitoring Programme in December 2017. The programme collects drinking water samples from customers' taps of randomly selected premises. These samples are tested for the content of six metals (i.e. lead, nickel, chromium, cadmium, copper and antimony) that might be present in the internal plumbing system.

檢討水務法例提升食水安全

為進一步提升本港食水安全，本署於本財政年度繼續全面檢討《水務設施條例》(第102章)和《水務設施規例》(第102A章)，擬加強規管內部供水系統的設計、建造和保養，以及水喉物料。本署正諮詢相關持份者以檢討所有負責設計、建造及保養內部供水系統的人士(包括發展商、專業人士、承建商、持牌水喉匠、水喉工人、註冊代理人 and 客戶)的角色和職責，以及水喉物料的管制。本署舉行了多個工作小組會議以收集這些持份者的意見。有關修例建議預計於二零二零年年中完成，以便展開公眾諮詢。

LEGISLATIVE REVIEW FOR ENHANCING DRINKING WATER SAFETY

To enhance Hong Kong's drinking water safety, WSD continued a holistic review of the Waterworks Ordinance (Cap.102) and Waterworks Regulations (Cap.102A) during this financial year. This review intends to strengthen regulatory control over the design, construction and maintenance of internal plumbing systems as well as plumbing materials. WSD is consulting relevant stakeholders regarding the roles and responsibilities of all persons responsible for the design, construction and maintenance of internal plumbing systems (including developers, professionals, contractors, licensed plumbers, plumbing workers, registered agents and customers); and the control of plumbing materials. Working group meetings have been held to solicit views from these stakeholders. It is expected that the legislative proposals will be finalised by the mid 2020 to facilitate the subsequent public consultation.

水務基礎設施

Waterworks Infrastructure



精益求精 不斷提升供水可靠性

Continually Enhancing Water Supply Reliability

水務署持續投資建設本港的水務基礎設施，提升供水可靠性。

WSD continually invests in Hong Kong's waterworks infrastructure and enhances the reliability of water supplies.



本署基建項目納入不同綠化設施，圖中顯示的是大埔濾水廠的垂直綠化牆。

Various greening features have been integrated in WSD's infrastructure. The photo shows the vertical green wall in Tai Po WTW.

本署正在進行各項設施建造計劃以提升供水可靠性。正如「供水工作」一章中提及，目前正在推展各項開拓新水源的工程項目，包括1) 將軍澳海水化淡廠；2) 石湖墟再造水廠；及3) 安達臣道石礦場用地發展項目的中水重用設施。新基礎設施除了進一步提高供水的可靠性，本署同時亦十分關注土地資源的有效利用。正如「可持續發展及節約用水」一章中提及，本署正在研究將部分水務設施遷往岩洞的可行性，以期騰出本署目前佔用的土地作重新發展，以滿足社會其他更迫切的需要。

WSD is moving forward on various facility construction projects to enhance the reliability of the water supplies in Hong Kong. As mentioned in the chapter "Work in Water Supplies", projects are in progress for development of new water resources, including 1) Tseung Kwan O Desalination Plant; 2) Shek Wu Hui Water Reclamation Plant; and 3) grey water recycling facilities at the Anderson Road Quarry Site Development. Not only the new infrastructure will further enhance the reliability of water supplies, WSD is also cautious on efficient use of land resources. As discussed in the chapter "Sustainability & Conservation", WSD is studying the feasibility of relocating some waterworks facilities into caverns, with a view to releasing the land we are currently occupying for re-development to meet other more pressing needs of society.

濾水廠設施升級

運作可靠性及處理能力

大埔濾水廠的擴建已大致完成，濾水量由每日40萬立方米增加一倍至80萬立方米。本署預計沙田濾水廠(南廠)原地重置工程的前期工程將於二零二零年大致完成，而接續的主項工程的詳細設計亦即將完成，並預計建造工程於二零二零年動工。重置後的南廠預計將於二零二五年全面投入運作，以確保為公眾提供充足的優質食水。

升級消毒設施

本署正為十間主要濾水廠安裝現場氯氣生產設備，提升消毒設施，將可消除運輸和儲存液態氯過程中洩漏氯氣的風險。此項工程項目預計於二零二一年完成。

WATER TREATMENT FACILITY UPGRADES

Operational Reliability and Capacity

The Tai Po WTW expansion has been substantially completed, which has doubled its daily treatment capacity from 400,000m³ to 800,000m³. By early 2020, WSD expects to have substantially completed the advance works for the in-situ re-provisioning of the Sha Tin WTW (South Works). The detailed design of the project's subsequent main works will be completed and construction works are targeted for commencement in 2020, with a goal of full commissioning of the re-provisioned plant in 2025. This will ensure an adequate and quality supply of potable water to the public.

Upgrading Disinfection Facilities

WSD is upgrading the disinfection facilities in 10 major WTWs by installing on-site chlorine generation plants. This will eliminate the risk of chlorine leakage associated with the transportation and storage of liquid chlorine. This project is expected to be completed in 2021.





提升本港供水能力

滿足東涌及大埔的食水需求

為滿足東涌新市鎮在二零二零年後增加的食水需求，本署正在興建東涌二號食水配水庫，預計將於二零二零年年底啟用。

另一方面，下黃宜坳食水抽水站提升及其配套食水水管的敷設工程亦即將展開，以應付大埔南新房屋發展的需求。此外，本署亦正在進行上黃宜坳三號食水配水庫的設計工作，以滿足該區未來需求。

應付荃灣及葵涌沖廁用水需求

本署現正進行荃灣海水抽水站升級及其配套海水水管敷設工程的設計工作，以滿足區荃灣及葵涌區內新房屋發展的沖廁用水需求。

延伸沙田海水供應系統

本署目前正在就延伸沖廁海水供應系統至沙田水泉澳進行設計工作。

水務設施管理

本署致力達致世界級的水務設施管理，以優化設施表現，並在整個設施使用周期中盡量降低成本及故障風險。從籌劃、設計、開發、建造、營運、維修、翻新以至棄置，本署均會考慮設施的整個使用周期作出合適決定，令相關設施可應付未來挑戰，確保其可持續性，並提高運作可靠性及效率。本署亦致力在維持服務水平同時，作好故障風險管理，並根據風險分析就各項設施需進行的工作調配資源及定出優次。

本署根據整個使用周期的考慮，評估下列水務設施所需的改善、修復及更換方案：

EXPANDING HONG KONG'S WATER SUPPLY CAPACITY

Meeting Fresh Water Demand in Tung Chung and Tai Po

To meet Tung Chung New Town's increasing fresh water demand beyond 2020, Tung Chung No.2 Fresh Water Service Reservoir is being constructed with the target commissioning in late 2020.

Separately, construction is about to begin to uprate the existing Ha Wong Yi Au Fresh Water Pumping Station and lay associated fresh water mains to meet the imminent needs of new housing developments in Tai Po South. In addition, WSD is working on the design of Sheung Wong Yi Au No. 3 Fresh Water Service Reservoir to meet future needs in the area.

Catering for Flushing Water Demand in Tsuen Wan and Kwai Chung

WSD is currently working on the design to uprate the existing Tsuen Wan Salt Water Pumping Station and lay associated salt water mains to cater for flushing water demand arising from housing developments in the Tsuen Wan and Kwai Chung area.

Extending Salt Water Supply System in Shatin

WSD is currently working on the design to extend the salt water flushing system to Shui Chuen O in Shatin.

WATERWORKS ASSET MANAGEMENT

WSD strives to attain world-class performance in the management of waterworks assets to optimise their performance and to minimise the cost and failure risks of the assets over their life cycles. WSD takes a life cycle approach for the planning, design, development, construction, operation, maintenance, renewal and disposal of assets and makes appropriate decisions to meet future challenges, ensuring sustainability and improving operational reliability and efficiency. WSD also aims to manage risks of failure while maintaining service levels and to allocate resources and priorities for the various works required on the assets according to risk analysis.

WSD has assessed various options for improvement, rehabilitation and replacement based on life cycle approach for the following waterworks assets:



評估及更換機械和電力設備

本署將繼續為濾水廠和抽水站進行狀況評估，以制訂全面計劃更換這些水務設施內的老化機械和電力設備。

Assessing and Replacing Mechanical and Electrical Equipment

WSD will continue to conduct condition assessments for WTWs and pumping stations to formulate a comprehensive replacement programme for aged mechanical and electrical equipment installed in these waterworks assets.

6 個
nos 濾水廠已在二零一八
至一九年度進行評估
Water Treatment
Works assessed in
2018/19

24 個
nos 抽水站已在二零一八
至一九年度進行評估
Pumping Stations
assessed in 2018/19

更換抽水站內的老化水管

作為一個恆常項目，本署將繼續更換各海水、食水及原水抽水站內的老化水管，以提升抽水站的運作可靠性及效率。

Replacing Aged Pipework in Pumping Stations

WSD will continue to replace aged pipework at all salt water, fresh water and raw water pumping stations as an on-going programme to enhance operational reliability and efficiency in pumping stations.

安裝水閥電動驅動器

本署將繼續為濾水廠內的水閥安裝電動驅動器，提高運作效率。濾水廠將可透過分布式控制系統遙距監察和控制這些水閥。截至目前，本署已為屯門、荃灣、馬鞍山、北港和小蠔灣濾水廠內的水閥安裝電動驅動器。

Installing Electric Valve Actuators

WSD will continue to install electric actuators for the valves in WTWs to enhance the operational efficiency. The powered valves will be remotely monitored and controlled via the Distributed Control Systems of WTWs. To date, these actuators have been installed for the valves at the WTWs in Tuen Mun, Tsuen Wan, Ma On Shan, Pak Kong and Siu Ho Wan.

主要濾水廠的現代化改造

本署將繼續為濾水廠進行現代化改造工程，提升它們的分布式控制系統。牛潭尾、馬鞍山、北港、上水、荃灣、油柑頭和屯門的濾水廠的現代化改造工程已完成，而凹頭濾水廠的工程則將於二零一九年十二月完成。

Modernising Major Water Treatment Works (WTWs)

WSD will continue the modernisation works of upgrading Distributed Control Systems in WTWs. The modernisation works at the WTWs in Ngau Tam Mei, Ma On Shan, Pak Kong, Sheung Shui, Tsuen Wan, Yau Kom Tau and Tuen Mun have been completed. The works at Au Tau WTW will be completed in December 2019.

於新辦事處安裝全新區域監控及資料收集系統

本署新界西區辦事處在遷往天水圍後，於新辦事處的控制中心安裝了一套全新的區域監控及資料收集系統。新系統將提供足夠的監控能力，以應付新界西區未來十年的供水系統發展。

A New SCADA System in a New Office

With the relocation of WSD New Territories West (NTW) Regional Office to Tin Shui Wai, a new Regional Supervisory Control and Data Acquisition (SCADA) System has been installed in the Control Centre in the new office. This new Regional SCADA system offers sufficient control and monitoring capacity to cater for the growth of the water supply systems in the NTW region for the next decade.

改善脱水設備

本署已完成上水濾水廠脱水設備的改善工程，其運作可靠性及效率亦相應提高。

Enhancing the Dewatering Facilities

WSD has completed enhancing the dewatering plants at the Sheung Shui WTW and its operational reliability and efficiency have been improved correspondingly.

提升水管資產管理

本署一直致力保養政府水管。隨着「更換及修復水管計劃」完成後，水管爆裂個案由二零零零年約2,500宗，大幅減少至二零一八年約100宗。本署正在優化水管資產管理策略。此優化策略參考國際最新的最佳實務方案，將會採用風險為本的方針，冀在故障風險、服務水平及成本(包括社會成本，例如水管改善工程對交通及市民造成的影響)之間取得最佳平衡。本署將會繼續評估水管的風險，過程中將考慮各項因素，例如使用年期、物料、狀況、故障記錄，以及水管出現故障的後果等，並為被評估為高風險的水管進行改善工程。本署已批出兩份以風險為本的水管改善工程定期合約。

ENHANCING WATER MAIN ASSET MANAGEMENT

WSD is committed to maintaining the health of the government water mains. Between 2000 and 2018, water main burst cases have reduced significantly from about 2,500 to about 100, largely due to the completion of the Replacement and Rehabilitation of Water Mains Programme. WSD is currently enhancing the strategy for asset management of water mains. Based on the latest international best practices, the enhanced strategy will be risk-based with an aim to striking an optimal balance between the risk of failures, service levels, and costs including social costs, such as the impacts of water mains improvement works on traffic and the public. WSD will continually assess the risk of the water mains, taking into account factors such as their age, material, condition, record of failure, and consequence of failure, and carry out improvement works for those water mains assessed as high risk. WSD has commissioned two term contracts for risk-based improvement works for water mains.

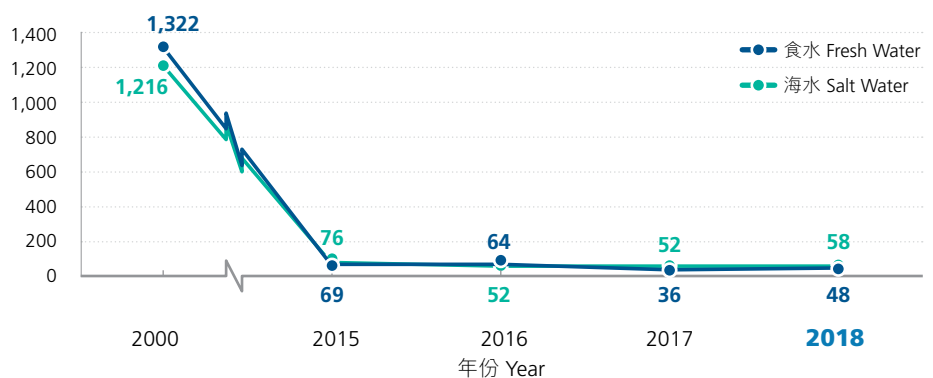


點滴話你知 Do you know?

本署自二零零零年起展開「更換及修復水管計劃」，分階段更換及修復總長度約達3,000公里的老化水管。該計劃於二零一五年大致完成。

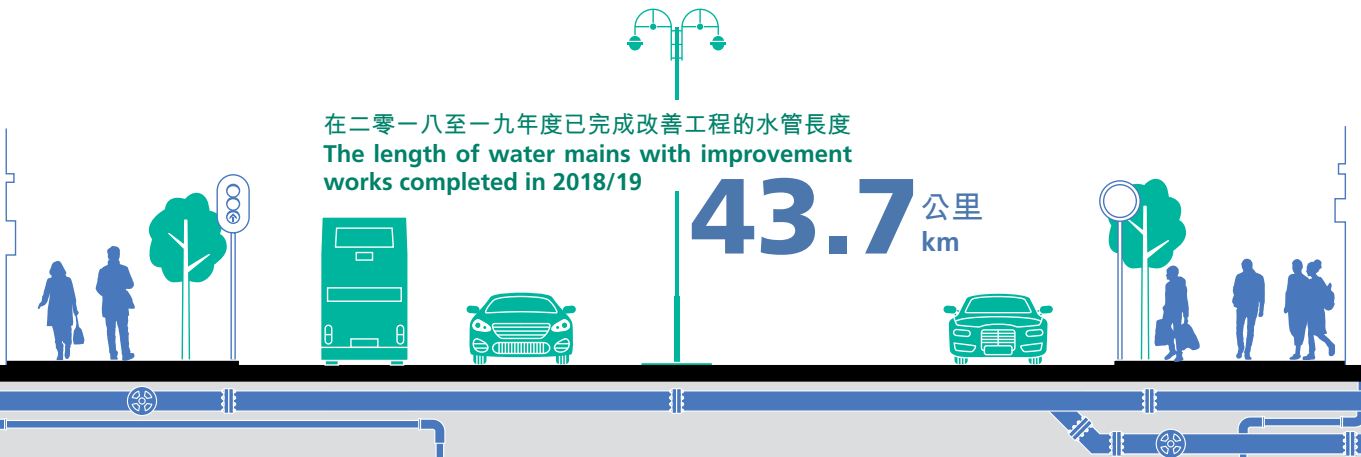
WSD launched the Replacement and Rehabilitation Programme of Water Mains in 2000 to replace and rehabilitate about 3,000 km of aged water mains in stages. The Programme was substantially completed in 2015.

水管爆裂個案統計數字 Statistics on Water Main Bursts



在二零一八至一九年度已完成改善工程的水管長度
The length of water mains with improvement works completed in 2018/19

43.7 公里
km



改善及維修斜坡

本署對轄下斜坡進行改善及保養工程，包括打泥釘、斜坡表面加固、在牆腳栽種植物、改善排水系統、提供安全通道走廊、一般栽種植被等，大幅減低了發生山泥傾瀉的風險，以及對公眾、本署員工和設施的威脅。

6,500

水務署負責保養的斜坡總數
Total no. of slopes under maintenance of WSD

UPGRADING AND MAINTENANCE OF SLOPES

WSD carries out upgrading and maintenance works to slopes under its purview such as soil-nailing, slope surface stabilisation, toe planter wall construction, drainage system improvements, safe access corridor creation and general planting, etc. These efforts have led to a dramatic decrease in the risk of failure of the slopes and in the danger they pose to the public, WSD staff and installations.

66

幅斜坡已在二零一八至一九年度進行預防性保養或改善工程
slopes received preventive maintenance or upgrades in 2018/19



視察水塘

本署定期安排員工和外聘專家顧問檢查水塘及配水庫，確保它們安全穩固。

81

由水務署人員在二零一八至一九年度進行的水塘及配水庫的詳細視察
detailed inspections of impounding reservoirs and service reservoirs by WSD staff in 2018/19

INSPECTION OF RESERVOIRS

WSD regularly arranges inspections on impounding reservoirs and service reservoirs by in-house staff and external expert advisors to ensure the safety and stability of the facilities.

43

由外聘專家顧問在二零一八至一九年度進行的水塘及配水庫視察
inspections of impounding reservoirs and service reservoirs by external expert advisors in 2018/19



供水工作大事回顧

Work in Water Supplies

Event Highlights



分享水務署最新工作進展

Disseminating information on WSD's Work and Progress

本署不時舉行各式各樣的活動，務求加強與客戶、不同持分者及公眾的聯繫溝通，並分享本署的最新資訊。

WSD hosts numerous events to share news and facilitate communications with customers, different stakeholders and the general public.

馬鞍山濾水廠開放日2018
Ma On Shan WTW Open Day 2018



約 **1,200**
名參觀人士
visitors



馬鞍山濾水廠開放日2018

為讓市民認識濾水廠處理食水的過程和相關技術，水務署於二零一八年四月二十一日舉行馬鞍山濾水廠開放日，為參觀人士提供導賞團及展覽，介紹本署最新的發展項目。參與的學生、區議員及公眾對活動的反應非常正面。

Ma On Shan WTW Open Day 2018

To introduce the water treatment process and its associated technologies to the public, WSD hosted the Ma On Shan WTW Open Day on 21st April 2018. Visitors enjoyed a guided tour and an exhibition showcasing WSD's new projects. The event received overwhelmingly positive feedback from students, district council members and the general public.

西貢區議會到訪馬鞍山濾水廠

西貢區議會主席吳仕福連同多位西貢區議會議員應本署邀請，於二零一八年十月十二日參觀馬鞍山濾水廠，了解其食水處理過程、水質監控程序及西貢區的供水情況。

Sai Kung District Council's Visit to Ma On Shan WTW

WSD invited the Sai Kung District Council (SKDC) to visit the Ma On Shan WTW on 12th October 2018. SKDC Chairman Mr. NG Sze-fuk led a group of SKDC members to learn more about the water treatment process, water quality monitoring procedures and water supply situation in the Sai Kung District.



創新科技嘉年華2018

本署於二零一八年十一月三日至十一日參與了此項由創新及科技局舉辦的活動，介紹「智慧資產管理」先導系統。此系統將抽水站的建築資訊模型與資產管理系統整合，為整個系統注入「智慧」元素，自動擷取水泵的實時數據，輔助和協調各方進行水泵維修保養工作。



InnoCarnival 2018

At this event organised by the Innovation & Technology Commission from 3rd to 11th November 2018, WSD introduced its pilot system "Smart Asset Management", which integrates the pumping stations' Building Information Model with an asset management system. By adding the "smart" element to the system, real-time data of water pumps can be retrieved automatically to facilitate and coordinate maintenance decisions among various parties.



水務諮詢委員會參觀東江供水設施

水務諮詢委員會(水諮會)成員在二零一八年十一月二十七日至二十九日到訪廣東，檢視東江水質及供水系統設施，並了解廣東省當局在維護東江水水質工作上的最新發展及措施。

Advisory Committee on Water Supplies' Visit to Dongjiang Water Supply Facilities

From 27th to 29th November 2018, members of The Advisory Committee on Water Supplies (ACWS) visited the Dongjiang Water Supply System to inspect the Dongjiang water and the facilities of the system, and learned about the latest developments and measures adopted in safeguarding the quality of Dongjiang water by the Guangdong Authorities.



點滴話你知 Do you know?

政府成立了水諮會，它是一個獨立組織，負責就供水事宜向政府提供意見，其成員包括公眾、學者、區議員、環保人士、專業人士、業界人士及有關政府決策局和部門的官員。每年水諮會都會考察東江供水系統，檢視東江水質及供水系統設施，並了解廣東省當局在維護東江水水質工作上的最新發展及措施。

The Government set up ACWS. It is an independent body that advises the Government on water supply matters, comprising members from the public, academics, district council members, green advocates, professionals, trades and officials from related Government bureau and departments. Each year, they visit the Dongjiang water supply system to inspect the Dongjiang water quality and the facilities of the system, as well as learn about the latest developments and measures adopted in safeguarding the quality of Dongjiang water by the Guangdong Authorities.



東區區議會參觀大潭水務文物徑

東區區議會議員於二零一八年十二月十四日參觀大潭水務文物徑和大潭水塘群，在認識香港島的供水歷史同時，表達對本署歷史建築物的濃厚興趣。隨後，議員與本署就東區進行的供水情況交換意見。

Eastern District Council's Visit to the Tai Tam Waterworks Heritage Trail

On 14th December 2018, members of the Eastern District Council visited the Tai Tam Waterworks Heritage Trail and the Tai Tam Group of Reservoirs to learn about Hong Kong Islands' water supply history and expressed great interest in WSD's heritage buildings. An exchange of views followed on the water supply situation in the Eastern District.



提升及維修項目

本署透過下列項目，持續擴建及升級基建設施及設備。

Enhancement and Maintenance Projects

WSD is continuing to expand and upgrade its infrastructures and facilities through the different projects listed below.

上水及粉嶺新房屋發展供水計劃 — 塘坑三號食水配水庫建造工程及敷設相關水管工程

Water Supply to New Housing Developments in Sheung Shui and Fanling – Construction of Tong Hang No.3 Fresh Water Service Reservoir and Associated Mainlaying

合約編號 Contract no.	3/WSD/18
合約價值 Contract value	3.485億元 \$348.50 million
承建商 Contractor	卓裕工程有限公司 U-Tech Engineering Company Limited
簽署日期 Signing date	二零一八年十月三日 3 rd October 2018



上環海水抽水站高電壓設備更換工程

Replacement of high voltage equipment at Sheung Wan Salt Water Pumping Station

合約編號 Contract no.	10/WSD/18
合約價值 Contract value	592萬元 \$5.92 million
承建商 Contractor	金城工程有限公司 Kum Shing Engineering Co. Ltd.
簽署日期 Signing date	二零一八年十月十一日 11 th October 2018



二零一六至二零一七年度水務署斜坡預防性維修、改善及相關的勘探工程

Preventive Maintenance Works, Upgrading Works and Associated Ground Investigation for WSD Slopes, 2016-2017 Programme

合約編號 Contract no.	12/WSD/17
合約價值 Contract value	2.09億元 \$209.00 million
承建商 Contractor	土力資源有限公司 Geotech Engineering Limited
簽署日期 Signing date	二零一八年十月十九日 19 th October 2018



智管網水壓管理及區域監測裝置建造工程

Construction of Pressure Management and District Metering Installations under Water Intelligent Network

合約編號 Contract no.	2/WSD/18
合約價值 Contract value	3.469億元 \$346.90 million
承建商 Contractor	中國地質工程集團及協力建業有限公司 China-Geo-Engineering Corporation and Concentric Construction Limited
簽署日期 Signing date	二零一八年十一月八日 8 th November 2018



上水及粉嶺新房屋發展供水計劃 — 改善大埔食水抽水站及相關工程

Water Supply to New Housing Developments in Sheung Shui and Fanling – Upgrading of Tai Po Fresh Water Pumping Station and Associated Works

合約編號 Contract no.	4/WSD/18
合約價值 Contract value	4,888萬元 \$48.88 million
承建商 Contractor	安樂工程有限公司 ATAL Engineering Limited
簽署日期 Signing date	二零一九年三月十八日 18 th March 2019

