水務署
WATER SUPPLIES DEPARTMENT

年報Annual Report 2019/20

# 共承 惜水
# FOSTERING A RESPONSIBLE VISION

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## 共承 惜水

為了本港市民的生活及未來的福祉，水務署堅守可持續發展的理念，提供可靠充足的優質供水。為實踐這個理念，我們必定會與社會大眾**同行邁進，同心**培育熱切**關注**環境、水資源及食水水質的文化，積極**凝聚**各界持份者以至國際供水業界同儕的力量，**同創**可持續發展的未來。

## FOSTERING A RESPONSIBLE VISION

At Water Supplies Department (WSD), we uphold our vision of a sustainable future with reliable, adequate and quality water supplies for the lives and livelihoods of the people of Hong Kong and future generations. To realise this vision, we believe it is important to **advance** in collaboration with our community to foster a culture that strongly **cares** about our environment, water resources, and drinking water quality by actively **engaging** with our stakeholders and international counterparts.

## 抱負 Vision

**在滿足客戶對優質供水服務的需求，務求有卓越之表現。**

**To excel in satisfying customers' needs for the provision of quality water services.**

## 使命 Mission

- 以最符合成本效益的方式為客戶提供可靠充足的優質食水及海水。
  To provide a reliable and adequate supply of wholesome potable water and sea water to our customers in the most cost-effective way.
- 提供以客戶為本的服務。
  To adopt a customer-oriented approach in our services.
- 維持及激勵一支能幹、高效率及完全投入的工作隊伍，以服務社群。
  To maintain and motivate an effective, efficient and committed workforce to serve the community.
- 時刻關注對保護環境方面須負的責任。
  To remain conscious of our responsibilities towards the environment.
- 善用資源和科技，力求不斷改善服務。
  To make the best use of resources and technology in our striving for continuous improvement in services.



## 信念 Values

- 以客為本 • Customer satisfaction
- 確保質量 • Reliability
- 重視環保 • Environmental awareness
- 竭盡所能 • Dedication
- 精益求精 • Improvement
- 同心協力 • Teamwork

# 同行 邁進
# WE ADVANCE

從管理層以至前線同事，水務署上下一心，努力不懈提升服務表現，確保香港擁有可持續、安全及可靠的供水。

With the concerted efforts of everyone at WSD from management to front-line staff, we tirelessly strive to advance our performance in ensuring sustainable, safe and reliable water supplies in Hong Kong.

# 盡心協力
# 服務精益求精

## Advancing together for service excellence

**總濾水量**
**Total Water Treatment Capacity:**

**4.7**
**百萬立方米/日**
**million m³/day**

**食水質素**
**Fresh Water Quality**

**100%**
**符合香港食水安全標準**
**compliance with the Hong Kong Drinking Water Standards**

**客戶數目**
**Number of Accounts**

**3 077 800**

# 署長的話
# Director's Statement

RESILIENT 具應變力

安全 SAFE

RELIABLE 可靠

可持續 SUSTAINABLE

**黃仲良工程師***太平紳士*
*水務署署長*

**Ir WONG Chung-leung,** *JP*
*Director of Water Supplies*

**我們的責任是確保香港持續擁有安全可靠且具應變力的供水，並與社會大眾分享可持續發展的願景。**

**It is our responsibility to ensure that our city will continue to have a safe, reliable and resilient water supply, and to share the vision of a sustainable future with our community.**

水是日常生活的必需品，我們必須小心守護這珍貴資源，水務署在作出每個決策時都會遵照這核心基本原則。我們的責任是確保香港持續擁有安全可靠且具應變力的供水，並與社會大眾分享可持續發展的願景。這正好反映在本年報的主題 -**「共承 惜水」**，一個不只是聚焦現在或明天，而且是放眼更長遠未來的願景 - 以及我們在二零一九至二零年度致力推行的各項主要工作。

Water is essential to our daily lives; however, we must safeguard it carefully, for it is a precious resource. This core underlying principle guides every decision we make at WSD. It is our responsibility to ensure that our city will continue to have a safe, reliable and resilient water supply, and to share the vision of a sustainable future with our community. This is reflected in our theme for this year's annual report – **"Fostering a Responsible Vision"**, that is, a vision that encompasses not just today or tomorrow, but decades ahead, and beyond – and in the key efforts to which we have dedicated ourselves in 2019/20.

## 規劃具應變力及可持續的未來

足夠而可持續的水資源，對香港未來長遠發展尤其重要。我們於本財政年度完成了就二零零八年起推行的「全面水資源管理策略」（「策略」）之檢討工作，確定「策略」下的主要措施已取得預期進展及成果。是次「策略」檢討更新了至二零四零年的用水需求及供應預測，包括因應氣候變化而作出的調整，並更新了「策略」，以一系列水資源管理措施，維持香港長遠供水的可持續性。更新的「策略」採

## Planning a resilient, sustainable future

Ensuring sufficient, sustainable water resources is crucial for Hong Kong's continued development in the years to come. This financial year, we completed the review of our Total Water Management Strategy implemented since 2008 (the Strategy), which confirmed that we have successfully achieved the milestones of the major initiatives under the Strategy. This review updated the water demand and supply projections through 2040 with adjustments for climate change, and the Strategy with a host of water management initiatives to ensure the long-term sustainability of Hong Kong's water supplies.


*更新的「全面水資源管理策略」。*
*Updated Total Water Management Strategy.*

用雙管齊下的方式，著重**控制食水需求增長**及利用多元化的水資源**提升食水供應的應變能力**。

在控制食水需求增長方面，我們採取了三項主要措施，包括透過各種公眾教育與宣傳活動推廣節約用水；建立「智管網」及「智能管網管理電腦系統」管理用水流失；以及擴大使用次階水（包括海水及循環再用水）作非飲用用途，包括完成了安達臣道石礦場用地發展項目中水處理廠的設計，以及推展新界東北部再造水供應設施的建造。此外，我們會與公眾合作及爭取他們的支持，共同減少用水流失，並正研究就私人公用水管用水流失徵費，促使業主積極處理用水流失問題。

與此同時，我們透過發展海水化淡——一種不受氣候變化影響的策略性水資源，提升食水供應的應變能力。於二零一九年十二月，將軍澳海水化淡廠的第一階段工程正式展開，該廠採用最新的逆滲透技術生產符合《香港食水標準》的食水。我們預期在第一階段工程完成後，海水化淡廠的產量可應付本港約5%的總食水用量。

為進一步邁向可持續發展的未來，我們亦積極在水務設施開發可再生能源，包括在水塘安裝浮動太陽能板發電系統及在濾水廠興建水力發電站。除了在石壁水塘和船灣淡水湖已完成安裝的浮動太陽能板發電系統先導項目，以及在大欖涌水塘計劃中的項目外，我們正研究在船灣淡水湖安裝大型浮動太陽能發電場的可行性。

The updated Strategy adopts a two-pronged approach with emphasis on **containing fresh water demand growth** and **building resilience in the fresh water supply** with diversified water resources.

We have advanced three main initiatives to contain fresh water demand growth: water conservation through various educational and publicity programmes; water loss management through establishment of the Water Intelligent Network (WIN) and the Water Intelligent Network Management System (INMS); and expansion of use of lower grade water (including salt water and recycled water) for non-potable purposes, including completing the design for the Grey Water Treatment Plant at Anderson Road Quarry Site Development and proceeding with construction of the infrastructure for supply of reclaimed water for the north-eastern part of the New Territories. In addition to the above, we will work hand-in-hand with the community and enlist their support in combating water loss. We are exploring imposing water charges for the water loss in private communal water mains to incentivise property owners to take prompt rectification actions to curb the water loss.

At the same time, we are also building resilience in our fresh water supply through seawater desalination – a strategic water resource that is not susceptible to the effects of climate change. In December 2019, we commenced the construction of the first stage of our Tseung Kwan O Desalination Plant, which uses the latest reverse osmosis technology to produce fresh water that meets the Hong Kong Drinking Water Standards. Its first stage will meet approximately 5% of Hong Kong's total fresh water consumption.

Working towards the goal of a sustainable future, we are also developing renewable energy in our waterworks, including floating photovoltaic (PV) systems on reservoirs and hydropower plants at water treatment works (WTWs). In addition to the pilot floating PV systems installed at Shek Pik Reservoir and Plover Cove Reservoir and the one under planning at Tai Lam Chung Reservoir, we are studying the feasibility of implementing a large-scale floating solar farm at Plover Cove Reservoir.

*石壁水塘的浮動太陽能板發電系統。*
*Floating PV system at Shek Pik Reservoir.*

## 確保食水安全

在二零一九至二零年度，我們檢討了食水水質監測計劃，並就抽取水樣本的頻率、地點和規程，正推行一系列措施以進一步提升食水水質監測。我們將於二零二零年至二零二二年分階段實施上述檢討的各項建議。同時，我們亦正全面檢討《水務設施條例》，當中包括加強規管水喉物料及內部水管系統的建造。有關修例建議預計於二零二零年內展開公眾諮詢。

公眾在維護建築物的食水安全方面也有一定角色。食水在進入建築物內部水管系統後，水質有機會受到不同因素影響，例如水箱的清潔狀況或水喉物料等。因此，我們一直積極向公眾推廣「建築物水安全計劃」，並正籌劃於二零二零年七月推出「水安全計劃資助計劃」，以鼓勵私人住宅及綜合大廈的業主及物業管理人實施「建築物水安全計劃」，妥善管理其樓宇的食水安全風險。

## Ensuring a safe water supply

In 2019/20, in response to the review of our drinking water quality monitoring programme, we are launching a number of initiatives to enhance our drinking water quality monitoring, including the water sampling frequencies, locations and protocols. We will fully implement all of the review's recommendations in stages from 2020 to 2022. We are also conducting a holistic review of the Waterworks Ordinance to inter alia enhance regulatory control of plumbing materials and plumbing system construction, and expect to launch public consultation on the legislative amendment proposals in 2020.

The public also has a role to play in safeguarding drinking water safety in buildings. Drinking water quality could be affected after entering the plumbing system of a building by factors like the cleanliness of the water tank or the plumbing materials. For this reason, we have been promoting the implementation of the Water Safety Plan for Buildings (WSPB), and are now formulating a Water Safety Plan Subsidy Scheme, scheduled to be launched in July 2020, to encourage property owners and management agents of private residential and composite buildings to implement WSPB and effectively manage water safety risks in their buildings.

## 維持供水可靠

我們以具策略性而有系統的方式管理水務設施，以維持供水的可靠性。在水管資產管理方面，我們採用了符合國際最佳實務方案的風險為本方式，識別高風險的水管進行改善工程，並按其風險安排工程的優先次序，有效令水管爆裂個案在二零一九年大幅下降至約40宗。此外，我們正逐步為各項水務設施資產推行資產管理系統，並計劃於二零二零年年底為其中九項地面資產的管理系統取得ISO 55001:2014認證。

## Providing a reliable water supply

Ensuring the reliability of the water supply requires management of our waterworks assets in a strategic and systematic manner. We are adopting a risk-based approach that is in line with international best practices for water main asset management, for identifying and prioritising water mains with high risk for improvement works. Its effectiveness is well evidenced by the significant drop in the number of water main bursts to around 40 in 2019. We are also progressively implementing asset management system for our waterworks assets, starting with nine types of our surface assets with an aim to pursuing ISO 55001:2014 certification in late 2020.

## 連繫各界力量

要確保香港長遠供水的可持續性、安全和可靠，我們需要凝聚社會各界的支持，包括學術界、非政府組織及社會公眾等，創造協同效應從而邁向成功。我們與香港青年協會賽馬會Media 21媒體空間合辦的「惜水大使」計劃正是其中一項協同效應的成功例子，成功燃點節約用水的熱誠和把水資源知識薪火相傳至下一代。

## Forging synergies and forming collaborations

Ensuring Hong Kong's long-term water sustainability, safety and reliability requires the city's united support, including academia, non-government organisations and the general public. The synergies we create with them are indispensable avenues to success. Our "Cherish Water Ambassador" Scheme, co-organised with the Hong Kong Federation of Youth Groups Jockey Club Media 21, is an example of how synergies work to ignite a passion for water conservation and pass on knowledge about water resources to our next generation.


**...我們與世界各地的持份者、學術界及業界人士，一同探索新科技及分享創新構思，擴充我們的知識。**

**...we expand our knowledge base, explore new technologies and communicate innovative ideas with stakeholders, academics and industry peers around the world.**

為增加協同效益和開拓國際視野，我們積極探索與世界各地的交流合作。透過成為國際組織成員、參與論壇及會議等寶貴交流機會，我們與世界各地的持份者、學術界及業界人士，一同探索新科技及分享創新構思，擴充我們的知識。於二零一九年年底，我們協辦了「第8屆國際水協亞太地區會議及展覽」，與來自世界各地的水務專才和業界人士一起探討提升水資源應變力的最佳實務方案。我們亦於二零一九年九月參加了「首屆粵港澳大灣區水務論壇暨第十三屆深港珠澳供水界學術交流會」。此外，我們亦透過參與多個國際知名的組織，例如國際水協會、Leading Utilities of the World (LUOW) 及國際海水化淡協會，致力建立廣闊的交流網絡。我們其中一位總工程師更獲選為國際海水化淡協會理事會成員，進一步增進我們與世界各地同業的交流合作。

當然，凡此種種成果、措施和高水平的服務都有賴我們專業的團隊克盡己任。我即將於二零二零年十一月退休，卸下水務署署長一職。在任期間，能夠有機會與一眾傑出有為、勤懇熱誠的同事合作，實在深感榮幸，他們定能為香港提供安全、可靠和穩健的供水。我深信我們的團隊加上各界的支持，必定可以在未來繼續實踐本署抱負，提供優質的供水服務。

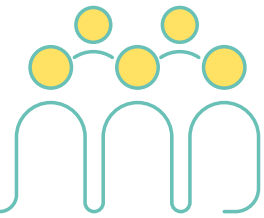
We also regularly explore collaborations outside Hong Kong to generate greater synergies and international insights. Through valuable opportunities for information exchange such as membership in international organisations, forums and conferences, we expand our knowledge base, explore new technologies and communicate innovative ideas with stakeholders, academics and industry peers around the world. In late 2019, we co-organised the 8th International Water Association Asia Pacific Regional Group (IWA-ASPIRE) Conference and Exhibition, where we discussed best practices for water resilience with international water experts and practitioners, and in September 2019, we participated in the 1st Guangdong-Hong Kong-Macao Greater Bay Area Water Forum cum 13th Shenzhen, Hong Kong, Zhuhai and Macao Seminar on Water Supply. We also strive to build a strong network with our international counterparts through active participation in world-renowned organisations such as the International Water Association (IWA), Leading Utilities of the World (LUOW) and the International Desalination Association (IDA). One of our Chief Engineers has been elected to the Board of Directors of IDA, opening up further opportunities for collaboration.

However, all of our many accomplishments, initiatives and consistent high level of services would not be possible without the hard work and diligence of our professional team. In November 2020, I will be retiring from my role as the Director of Water Supplies. I am proud to have had the opportunity to work with such a talented and dedicated team, and know that I am leaving the water safety, reliability and security of Hong Kong in good hands. I am confident that our team, with your support, will continue to excel in fulfilling our united mission for the provision of quality water services.


**黃仲良工程師**太平紳士
*水務署署長*

**Ir WONG Chung-leung,** *JP*
*Director of Water Supplies*

# 部門總覽
# Corporate Profile



穩定而優質的供水，對本港居民的生活不可或缺，同時亦是支持本港可持續發展的關鍵要素。香港特別行政區政府水務署的職責是維持供水可靠優質。

本港17個水塘集水區收集的本地雨水約佔香港總食水用量20%至30%，餘下部分的食水由廣東省的東江輸入，兩者均經過嚴格處理及監測，務求食水水質符合根據世界衞生組織（世衞）《飲用水水質準則》制訂的香港食水標準。此外，自一九五零年代以來，我們充分利用香港近海的地理優勢，將海水用作沖廁用途。食水及海水由兩個完全獨立的供水系統供應，透過龐大的配水庫和水管網絡，配送至各家各戶及商用物業。

為確保香港供水穩健及具應變能力，我們繼續透過海水化淡及中水重用等技術開拓新水源，進一步提升香港的供水保障及應對氣候變化的能力。

作為香港最大的能源用戶之一，我們已實施相關措施，透過開發可再生能源及提升能源效益，致力減少碳足跡。我們亦是香港特區政府首個部門獲得ISO 50001:2011能源管理系統認證。

我們的抱負是滿足客戶對優質供水服務的需求。為此，我們的人員致力提供以客為本的服務，確保客戶獲得最具效率及優質的服務。

Reliable and quality water supplies are indispensable to the lives and livelihoods of the people in Hong Kong, and are critical for supporting the Territory's sustainable development. The Water Supplies Department (WSD) of the Hong Kong SAR Government is charged with the responsibility of maintaining reliable and quality water supplies.

Approximately 20% to 30% of Hong Kong's fresh water supply comes from local yield collected in catchment areas of the Territory's 17 impounding reservoirs. The remaining fresh water supply comes from Dongjiang in Guangdong. Both the collected local yield and the imported Dongjiang water are subject to stringent treatment and monitoring so as to ensure that the quality of treated water meets the Hong Kong Drinking Water Standards (HKDWS), which currently follow the Guidelines for Drinking-water Quality published by the World Health Organization (WHO Guidelines). Moreover, since the 1950s, we have taken full advantage of Hong Kong's geographic proximity to the ocean to adopt salt water for flushing purposes. Fresh water and salt water are supplied through two entirely separate supply systems. Our extensive array of service reservoirs and water mains provide these water supplies for distribution to homes and commercial developments.

To ensure the security and resilience of Hong Kong's water supplies, we continue to develop new sources of water including desalination and recycled water. These additional sources of water will give Hong Kong enhanced water security and the ability to adapt to climate change.

As one of the city's largest energy consumers, we have implemented measures to reduce our carbon footprint as much as possible by developing renewable energy and enhancing energy efficiency. We are also the first HKSAR Government department to obtain ISO 50001:2011 Energy Management System certification.

Our vision is to excel in meeting our customers' needs for quality water services. With this in mind, our committed workforce has adopted a customer-oriented approach to ensure that our customers receive the most efficient and high-quality services.

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Ir WONG Chung-leung, JP
水務署署長
Director of Water Supplies

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Ir CHAU Sai-wai, JP
水務署副署長
Deputy Director of Water Supplies

3 彭愛玲工程師[1]
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助理署長／設計及建設
Assistant Director/New Works

4 陳仲勤工程師
Ir CHAN Chung-kun
助理署長／新界
Assistant Director/New Territories

5 鍾永基工程師[2]
Ir CHUNG Wing-kee, Philip[2]
助理署長／市區
Assistant Director/Urban

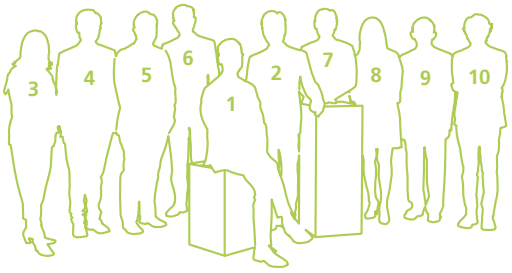
6 李大安工程師, 太平紳士
Ir LEE Tai-on, JP
助理署長／機械及電機
Assistant Director/Mechanical & Electrical

7 林聖傑先生
Mr LAM Saint-kit, Byron
助理署長／特別職務
Assistant Director/Special Duty

8 勞淑儀女士
Ms LO Shuk-yi
部門秘書
Departmental Secretary

9 黃俊光先生
Mr WONG Chun-kwong
助理署長／財務
Assistant Director/Finance

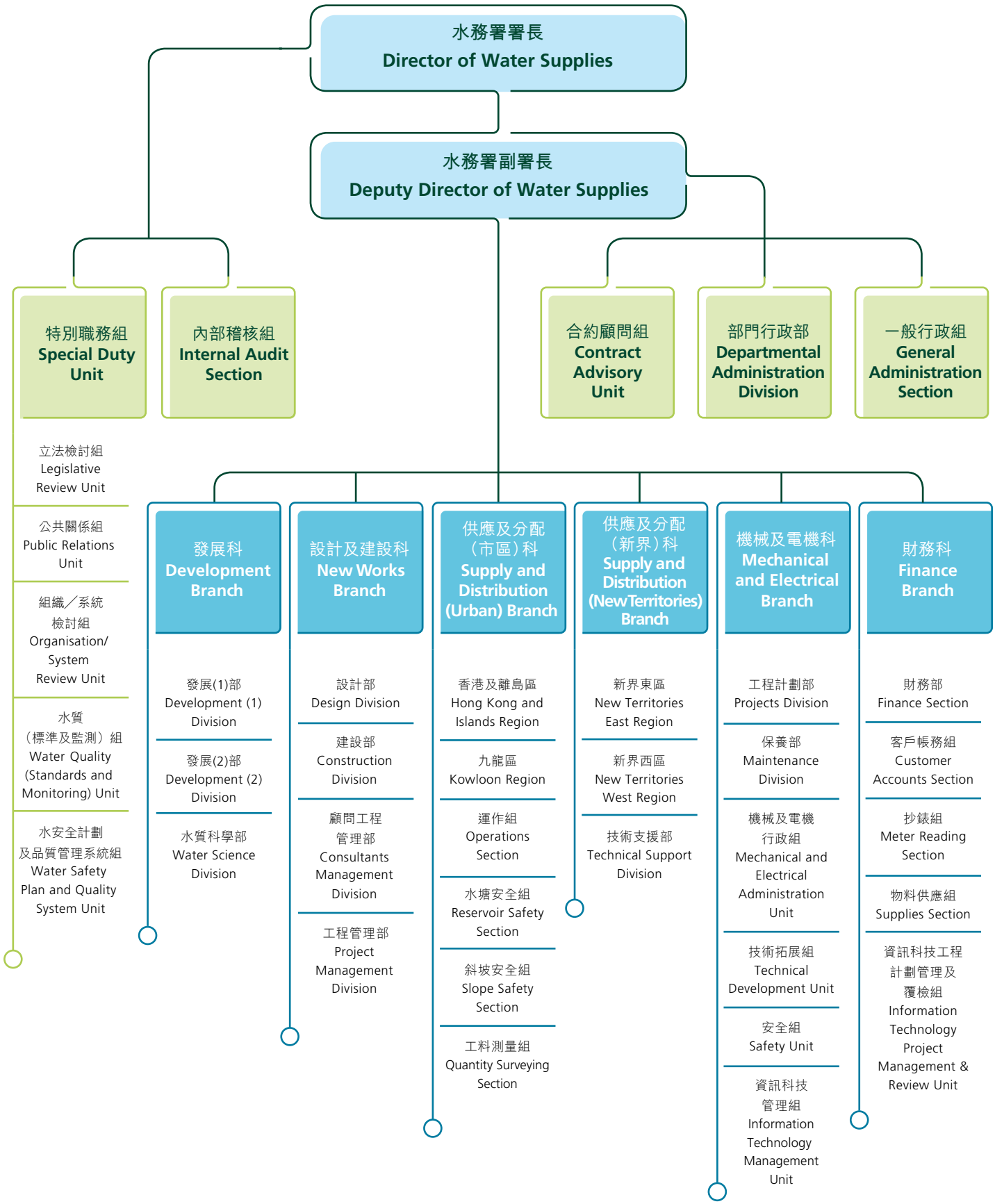
10 黃恩諾工程師
Ir WONG Yan-lok, Roger
助理署長／發展
Assistant Director/Development




[1] 彭工程師自二零二零年二月三日起出任助理署長／設計及建設。
Ir PANG was appointed Assistant Director/New Works on 3rd February 2020.

[2] 鍾工程師自二零二零年八月一日起出任助理署長／市區。
Ir CHUNG was appointed Assistant Director/Urban on 1st August 2020.

# 水務署組織圖
# WSD Organisation Chart



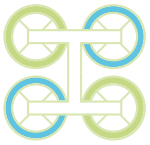
# 主要統計數字（截至二零二零年三月三十一日）
# Principal Statistics (as of 31st March 2020)

水塘數目
No. of Impounding Reservoirs

**17**
**個 nos**

總容量
Total Storage Capacity

**586**
**百萬立方米 million m³**



濾水廠數目
No. of Water Treatment Works

**20**
**個 nos**

總濾水量
Total Water Treatment Capacity

**4.7**
**百萬立方米/日 million m³/day**

食水抽水站
(包括食水和原水抽水站及泵房)
Fresh Water Pumping Stations
(including fresh & raw water pumping stations and pump houses)

數目
No.

**151**
**個 nos**

總抽水量
Total Pumping Capacity

**32.2**
**百萬立方米/日 million m³/day**

海水抽水站
(包括泵房)
Salt Water Pumping Stations
(including pump houses)

數目
No.

**35**
**個 nos**

總抽水量
Total Pumping Capacity

**2.1**
**百萬立方米/日 million m³/day**

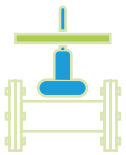
食水及海水抽水站
Combined Fresh Water & Salt Water Pumping Stations

數目
No.

**7**
**個 nos**

總抽水量
Total Pumping Capacity

**0.3**
**百萬立方米/日 million m³/day**

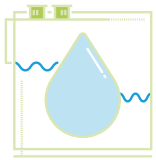


食水水管長度
(直徑20毫米至2 400毫米)
Length of Fresh Water Mains
(20 mm to 2 400 mm diameter)

**6 660** **公里 km**

海水水管長度
(直徑20毫米至1 200毫米)
Length of Salt Water Mains
(20 mm to 1 200 mm diameter)

**1 646** **公里 km**

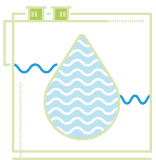


食水配水庫數目
No. of Fresh Water Service Reservoirs

**178**
**個 nos**

總容量
Total Storage Capacity

**4.4**
**百萬立方米 million m³**



海水配水庫數目
No. of Salt Water Service Reservoirs

**54**
**個 nos**

總容量
Total Storage Capacity

**0.3**
**百萬立方米 million m³**

# 主要工作表現指標
# Key Performance Indicators

| 指標<br>Indicators | 財政年度<br>Financial Year<br>2017/18 | 2018/19 | 2019/20 |
|---|---|---|---|
| 食水水質<br>100%符合香港食水標準*<br>Fresh Water Quality<br>100% compliance with the Hong Kong Drinking Water Standards* | 達到指標<br>Target achieved | 達到指標<br>Target achieved | **達到指標<br>Target achieved** |
| 海水水質<br>97%符合水務署所定的水質指標**<br>Salt Water Quality<br>97% compliance with WSD Water Quality Objectives** | 達到指標<br>Target achieved | 達到指標<br>Target achieved | **達到指標<br>Target achieved** |
| 食水供水水壓(15至30米)^<br>Fresh Water Supply Pressure<br>(15–30 metres) ^ | 100% | 100% | **100%** |
| 海水供水水壓(15米)^<br>Salt Water Supply Pressure<br>(15 metres) ^ | 100% | 100% | **100%** |
| 因預先計劃進行的工程而暫停供水的時間長度<br>(98%於八小時內)<br>Water Supply Suspension Duration for Planned Work<br>(98% within 8 hours) | 達到指標<br>Target achieved | 達到指標<br>Target achieved | **達到指標<br>Target achieved** |
| 水錶準確程度<br>(偏差程度不超過±3%)<br>Water Meter Accuracy<br>(inaccuracy not exceeding ±3%) | 97.7% | 97.7% | **98.2%** |

* 水務署自二零一七年九月起開始採用香港食水標準為指標，而在此之前，則一直採用世界衞生組織制定的《飲用水水質準則》為指標。
The Hong Kong Drinking Water Standards have been adopted by WSD in the target since September 2017. Before that, the World Health Organization's Guidelines for Drinking-water Quality were adopted in the target.

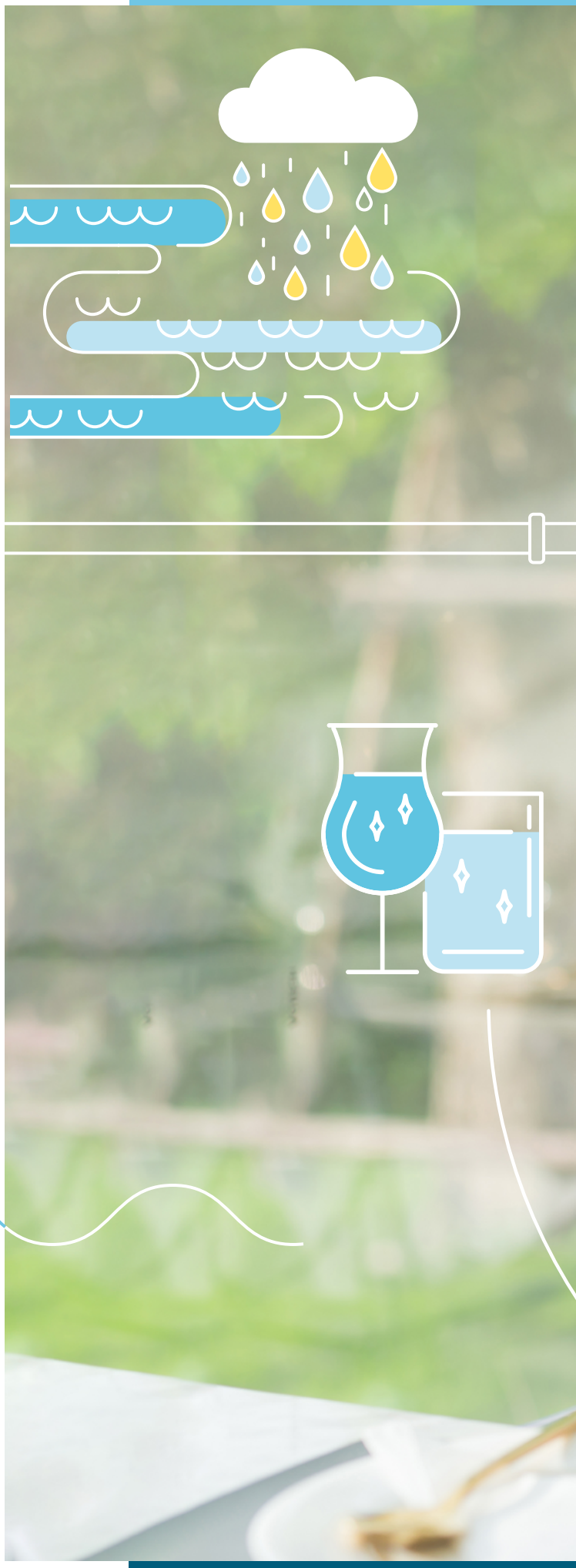
** 此指標於二零一九至二零年度經修訂為「海水水質 — 97%符合水務署所定的水質指標」，二零一八至一九年度則為「海水水質—96%符合水務署所定的水質指標」，而二零一七至一八年度所採用的指標為「海水水質（供水接駁位置）— 96%符合水務署所定的水質指標」。
The target for 2019/20 has been revised as "Salt water quality – 97% compliance with WSD Water Quality Objectives". The target for 2018/19 was "Salt water quality – 96% compliance with WSD Water Quality Objectives". The target in 2017/18 was "Salt water quality (at connection points) – 96% compliance with WSD Water Quality Objectives".

^ 配水系統內（不包括系統盡頭）最低的剩餘水壓。
Minimum residual pressure in the distribution systems except at their extremities.

# 同心 關注
# WE CARE

我們一直以本港市民的生活與福祉為依歸。為此，我們致力推行「全面水資源管理策略」及「食水水質管理系統」，並適時作出檢討和調整，確保香港供水長遠的可持續性、應變能力及安全性。與此同時，我們繼續具策略地及有系統地投放資源在水務資產上，以加強其可靠性及運作上的可持續性。

We care about the lives and livelihoods of all people in Hong Kong, both today and in the future. For this reason, we are committed to implementing our Total Water Management Strategy and Drinking Water Quality Management System with timely reviews and adjustments to ensure the long-term sustainability, resilience and safety of our water supplies. At the same time, we continue to invest in our assets in a strategic and systematic manner, to enhance their reliability and operational sustainability.



# 完善規劃 共創穩健未來

# Meticulous planning today for a promising tomorrow

**2019**
**全年食水供應量**
**Annual Quantity of Fresh Water Supply**
**總共 Total 996 百萬立方米 million m³**

# 全面水資源管理
# Total Water Management

萬宜水庫
*High Island Reservoir*

## 建立可持續發展的未來
## Building a Sustainable Future

*水務署致力為香港現今及未來提供可靠的供水和確保水資源的可持續性，並以兼顧香港的經濟及生態發展為原則，守護現有資源。*

*At WSD, we are committed to providing reliable water supplies and ensuring water sustainability for Hong Kong's current and future generations, safeguarding existing resources in synergy with the city's economic and ecological development.*

### 現有水資源

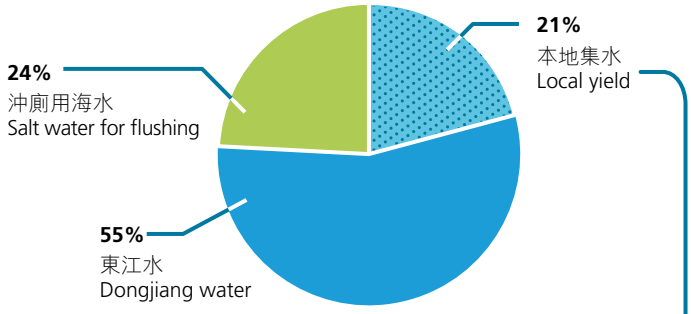
本港的水資源包括本地集水區收集的雨水、由廣東輸入的東江水及沖廁用海水。多年來有賴這些水資源，香港得以享有可靠的用水供應。

### EXISTING WATER RESOURCES

Hong Kong's water resources comprise rainwater from local catchments, imported water from Dongjiang in Guangdong, and salt water for toilet flushing. These water resources have allowed Hong Kong to enjoy a reliable water supply over the years.

**二零一九年全港總用水量**
**Total Water Consumption of Hong Kong in 2019**

1303 百萬立方米 million $m^3$



### 二零一九年按用水類別劃分的食水用量
### Annual Fresh Water Consumption by Sector 2019

| 用水類別 Sector | 食水用量 Fresh Water Consumption<br>百萬立方米及佔總用量百分比 million m³ and percent of total |
|---|---|
| 住宅用水 Domestic | **558 (56.0%)** |
| 工業用水 Industrial | **59 (5.9%)** |
| 服務業及商業用水 Service Trades | **248 (25.0%)** |
| 政府用水 Government Establishments | **48 (4.8%)** |
| 建築及船舶用水 Construction & Shipping | **19 (1.9%)** |
| 臨時淡水沖廁 Flushing | **64 (6.4%)** |
| **食水總用量 Total Fresh Water Consumption** | **996 (100%)** |

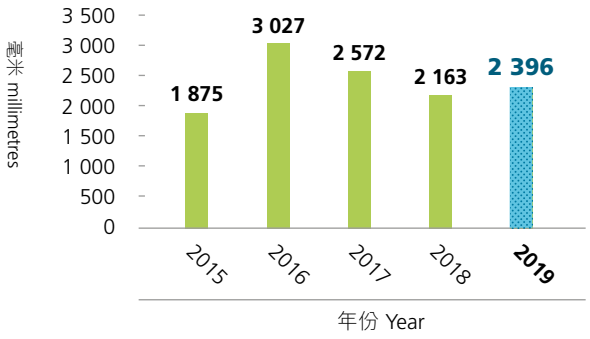
## 本地集水

本地集水從集水區收集而來，大部分集水區均位於受嚴格規管保護，免受污染的郊野公園。我們採用多重屏障方式，在各集水區監控發展、定期進行巡查及監測水質情況，以確保水質安全。在集水量方面，每年的本地集水量並不穩定，加上氣候變化的影響，我們預計未來本地集水量的變動將會更大。

## Local Yield

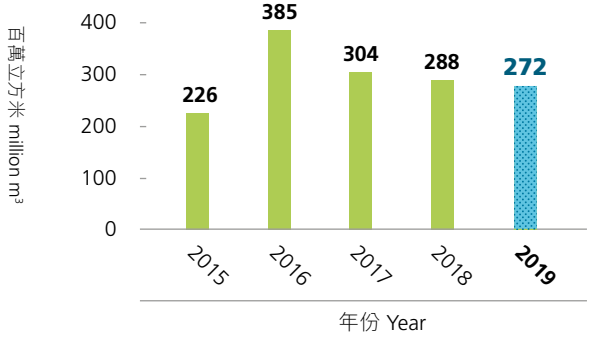
The yield is collected in catchment areas, most of which are within Country Parks that are well regulated and protected from contamination. We adopt a multiple-barrier approach to control development, regularly conduct inspections and monitor water quality in these areas to ensure water safety. In terms of quantity, local yield is not stable every year, and can be subject to drastic fluctuations. Coupled with the effect of climate change, we predict even greater fluctuations in the future.

### 二零一五年至二零一九年全年降雨量
### Annual Rainfall 2015 – 2019




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

### 二零一五年至二零一九年全年淨集水量
### Annual Net Yield 2015 – 2019



## 東江水

我們根據本港用水的實際需要，在粵港供水協議訂明的每年供水量上限範圍內輸入東江水，以彌補本地集水量不足，滿足用水需求。在本地集水量較多的年份，我們會減少輸入東江水。這靈活彈性的供水安排既可避免浪費水資源，同時亦節省輸水成本。

在二零一九至二零年度，我們踏入了二零一八年至二零年為期三年的東江水供水協議的最後一年。參照粵港兩地相關的消費物價指數及人民幣兌港幣匯率變化，協議內的水價按年上調0.3%。二零二零年，本港輸入東江水的支出預計為48.21億元，而二零一八年及二零一九年的支出分別為47.93億元及48.07億元。

## Dongjiang Water

We import Dongjiang water as needed to fill the gap between Hong Kong's local yield and water demand, up to the annual supply ceiling stipulated in the supply agreement between Guangdong and Hong Kong. If more local yield is available in a particular year, less Dongjiang water is imported. This flexible arrangement avoids wasting water resources and saves pumping costs.

In 2019/20, Hong Kong entered the third year of its three-year Dongjiang water supply agreement for 2018 to 2020. Under this agreement, Dongjiang water prices increase by 0.3% annually, based on the changes in the relevant consumer price indices of Guangdong and Hong Kong and the exchange rate between the Renminbi and the Hong Kong dollar. In 2020, Hong Kong's expenditure on Dongjiang water will be $4,821 million, compared to $4,793 million and $4,807 million paid in 2018 and 2019 respectively.

## 沖廁用海水

目前，我們的海水供應網絡覆蓋全港約達85%的人口，每年供應約3億立方米的海水，節省了同等分量的食水，比率約佔總供水量的24%。於二零一九至二零年度，海水供應網絡已延伸至薄扶林、屯門東及元朗的住宅大廈，每年節省約50萬立方米的食水。

## Salt Water for Flushing

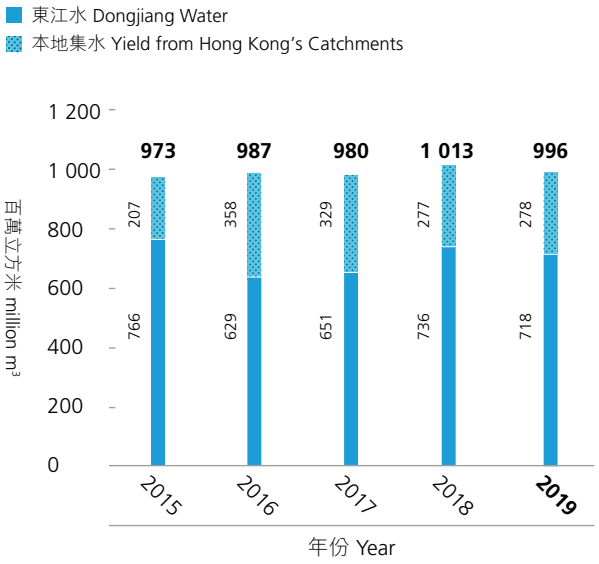
Currently, our salt water supply network covers about 85% of the population. About 300 million $m^3$ of salt water is supplied per annum, conserving an equivalent amount of fresh water, i.e. about 24% of the total water supply. In 2019/20, we connected the salt water supply network to residential buildings in Pok Fu Lam, Tuen Mun East and Yuen Long, which saved about 0.5 million $m^3$ of fresh water per annum.

## 點滴話你知
## DO YOU KNOW?

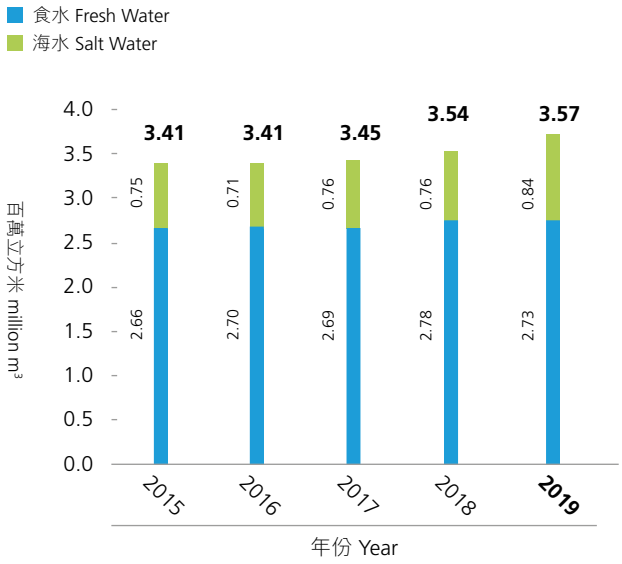
一九五零年代末，香港引入海水沖廁，至今仍是全球少數廣泛使用海水沖廁的地方之一。

Using salt water for toilet flushing was introduced in Hong Kong in the late 1950s. Hong Kong has been one of the few places in the world that extensively applies salt water for flushing.

### 二零一五年至二零一九年全年食水供應量
### Annual Quantity of Fresh Water Supply 2015 – 2019




### 二零一五年至二零一九年日均用量（食水及海水）
### Total Average Daily Water Consumption (Fresh Water and Salt Water) 2015 – 2019




## 全面水資源管理策略2019

為了於本港推行更穩健及可持續的水資源系統，以裨益民生及支持香港的長遠發展，自二零零八年起，我們推行「全面水資源管理策略」（「策略」），倡議先節後增，藉推廣節約用水以控制食水需求增長，並開拓新水源。為配合社會發展需要，我們於二零一九年完成了「策略」的檢討及更新工作，將氣候變化、人口增長、經濟發展等多項挑戰及本地因素納入考量。是次檢討更新了至二零四零年的用水需求及供應推算，制定新的水資源管理措施，並對現行措施作出必要的調整，以確保香港供水長遠的可持續性。

## TOTAL WATER MANAGEMENT STRATEGY 2019

To achieve a more secure and sustainable water resource system in Hong Kong to benefit people's livelihoods and support the long-term development of Hong Kong, we have implemented the Total Water Management Strategy (the Strategy) since 2008 which advocated containing the growth of water demand by promoting water conservation and exploiting new water resources. To keep up with society's development, we completed a review on the Strategy with timely updates in 2019, taking into account a number of contemporary challenges and local realities such as climate change, population growth and economic development. The review updated water demand and supply projections up to 2040 and sought for new water management initiatives and adjustments to the existing measures, if necessary, for ensuring the long-term sustainability of water supply in Hong Kong.

## 展望至二零四零年

用水需求推算是以政府統計處的基線人口作為估算基礎，按預期的人口增長推算，在不採取任何用水需求管理措施的情況下，香港於二零四零年的每年食水需求估計將增至11.1億立方米。

## Projection to 2040

The water demand projection was conducted with the baseline estimated population provided by the Census and Statistics Department. Under the expected population growth scenario, the annual fresh water demand is projected to increase to 1 110 million $m^3$ in 2040, in the absence of water demand management measures.

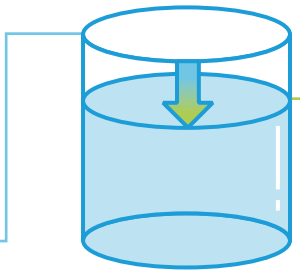
參與檢討「策略」的國際專家顧問經過對現時食水供應安排的評估，並結合因氣候變化而導致每年降雨量減少等因素，確認在實施用水需求管理措施的情況下，現時供水安排能夠保障香港擁有可靠的水資源供應至二零四零年，即使遇上百年一遇的極端乾旱情況，亦能夠維持穩定的供水。

Having assessed the current fresh water supply arrangements taking into consideration annual rainfall reductions due to climate change, the international experts of the consultants whom we engaged to conduct the Strategy review confirmed that the current water supply arrangements with implementation of demand management measures will secure water supply reliability for Hong Kong up to 2040 such that round-the-clock water supply can be maintained even under extreme drought conditions with a return period of one in 100 years.

**至二零四零年之全年食水需求推算**
**Annual Fresh Water Demand Projection by 2040**

沒有用水需求管理措施的情況下：
Without demand management measures:

1110 百萬立方米 million $m^3$



實施用水需求管理措施的情況下：
With demand management measures:

990 百萬立方米 million $m^3$

## 雙管齊下

更新後的「策略」（「策略2019」）採取雙管齊下的方式，著重控制食水需求增長及提升食水供應的應變能力，並在國際專家評估下，針對應變能力、經濟因素及可持續性三項因素，制訂各項應對措施的優次。控制食水需求增長的主要措施包括加強節約用水的宣傳、管理用水流失，以及擴大使用次階水作非飲用用途。我們已推行多個節約用水及管理用水流失的項目，提高公眾及其他持份者的惜水意識，鼓勵大家身體力行珍惜寶貴的水資源。有關各項措施的細節已載列於第23頁至35頁「控制食水需求增長」章節中。在供水管理方面，建造第一階段將軍澳海水化淡廠有助提升本地供水應變能力，以應對氣候變化造成可靠供水減少的影響。有關此工程項目的細節已載列於第36至37頁「海水化淡」章節中。

「策略2019」措施落實後，香港的水資源將變得更多元化，其組合如下：

## A Two-Pronged Approach

Our updated Strategy (Strategy 2019) adopts a two-pronged approach with emphasis on containing fresh water demand growth and building resilience in the fresh water supply using a prioritised list of initiatives ranked by their resilience, economics and sustainability, based on the evaluations of the international experts. The key initiatives of containing fresh water demand include strengthening promotion of water conservation, water loss management and expansion of use of lower grade water for non-potable purposes. We have launched a number of water conservation and water loss management projects to empower the public and other stakeholders to take actions to cherish our valuable water resources. Details of these initiatives are covered in Containing Fresh Water Demand Growth on Pages 23 to 35. On the front of supply management, the construction of the first stage of the desalination plant in Tseung Kwan O helps build resilience in fresh water supply capable of coping with reduction of reliable water supply under the adverse climate change effect. Details about the desalination project are covered in Seawater Desalination on Pages 36 to 37.

With the measures under the Strategy 2019 in place, the water resources in Hong Kong will be diversified with the following estimated composition:

**根據「策略2019」預計的香港水資源組合**
**Estimated Composition of Hong Kong's Water Sources under Strategy 2019**

| 45%-60% | 25% | 10%-25% | 5% |
|---|---|---|---|
| 東江水<br>Dongjiang water | 作非飲用用途的海水及循環再用水<br>Salt water and recycled water for non-potable uses | 本地集水<br>Local yield | 海水化淡的食水<br>Desalinated water |

## 持續監察及檢討

我們亦制訂了一系列後備措施，確保有足夠能力應對比預期更嚴峻的情況。若未來情況與目前的估算有所偏差，我們即可執行適當的後備應對方案。我們將繼續定期檢討「策略2019」，並適時作出更新以應對各種變化，如用水需求、氣候變化對本地集水所造成的影響，以及各水資源的成本效益、相關科技發展、可靠性及對環境的影響等。

## Continuous Monitoring and Review

We have also formulated a host of backup measures to ensure our ability to adapt to worse-than-expected scenarios. If the future conditions deviate from our present projections, we can implement appropriate backup measures as necessary. We will continue to regularly review Strategy 2019 and update it as needed to adjust to changes in water demand and the effect of climate change on local yield, as well as the cost-effectiveness, technological development, reliability and environmental impact of various water resources, and so forth.

## 控制食水需求增長

控制食水需求增長是「策略2019」中管理用水需求的一大重點。政府於二零一七年及二零一八年的《施政綱領》中承諾，最早於二零三零年達致人均食水用量減少10%的目標（二零一六年為基準年）。為此，我們正推行三項主要措施，包括節約用水、管理用水流失，以及擴大使用次階水作非飲用用途。

## CONTAINING FRESH WATER DEMAND GROWTH

Containing fresh water demand growth plays a pivotal role in Strategy 2019's demand management. As pledged in the Policy Agenda 2017 and 2018, the Government is striving to reduce Hong Kong's fresh water per capita consumption by 10% by 2030 at the earliest, using 2016 as the base year. We are taking forward three main initiatives to achieve this goal: water conservation, water loss management, and expansion of use of lower grade water for non-potable uses.

## 節約用水

我們採取多管齊下的措施宣傳節約用水，全力推行惜水文化，鼓勵公眾實踐惜水生活。我們會繼續努力不懈，透過政府及公眾攜手合作，共同應對未來嚴峻的挑戰，邁向成功。

## Water Conservation

To promote water conservation, we use measures that drive cultural and behavioural changes in the public to cherish water. We are continuously seeking synergies created by collaborations with the Government and the public to overcome the acute challenges ahead and lead us to success.

# 專題故事
# Featured Story

水知園
H$_2$OPE CENTRE

作為二零一九年的其中一項重要里程，我們於二零一九年十二月十三日正式啟用了位於水務署天水圍大樓的全新水資源教育中心 — 「水知園」。這個全新的永久設施取代旺角辦事處的臨時水資源教育中心，提供互動平台，讓公眾了解水資源和節約用水的重要性。

2019's major milestones included commissioning a new Water Resources Education Centre, namely "H$_2$OPE Centre", in our Tin Shui Wai Building on 13th December 2019. This new, permanent facility followed the relocation of the temporary Water Resources Education Centre at our Mong Kok Office. Our new facility serves as an interactive platform that helps the public learn about water resources and the importance of water conservation.

12 主題展區 exhibition zones

>50 不同的展品 different exhibits

全新水資源教育中心的展覽區面積較之前增加了1.4倍至約720平方米，設有12個主題展區，展示50多件不同展品。參觀者可以透過深入淺出的互動遊戲和展品，認識更多有關水資源和節約用水的豐富資訊。

The new centre's exhibition area has been expanded 1.4 times to 720 m$^2$, with more than 50 different exhibits spread throughout 12 exhibition zones. Through interesting interactive games and displays, the centre offers abundant information about water resources and water conservation.

中心設有**立體球幕影院**，將有關水資源的資訊活靈活現地展示在參觀者眼前，其中動畫電影《超級沙瓦多》生動地講述一個保護環境及拯救地球的故事。

The centre's **3D dome theatre** offers visitors an immersive experience that teaches about water resources, including "Super Salvador", an animated movie about environmental protection and rescuing the Earth.


**「水+循環」**展區讓小朋友變身小工程師，探索各種遊戲和任務，親身體驗水的循環過程，深入了解水資源。

The **"Water + Cycle"** exhibition zone lets kids become little engineers to learn about water cycle and gain a thorough understanding of water resources through various hands-on tasks and games.


**「水+來源」**展區設置一系列互動展品和遊戲，包括模擬於水塘釣魚、擔任水務督察等，藉此向參觀者介紹香港水塘和集水區。

The **"Water + Source"** exhibition zone introduces reservoirs and catchment areas in Hong Kong through an array of interactive exhibits and games, including simulated fishing in reservoirs and role-play as waterworks inspectors.

## 用水效益標籤計劃

為鼓勵客戶選用節水產品，我們於二零零九年推出「自願參與用水效益標籤計劃」。而有關計劃在截至二零二零年三月，已涵蓋沐浴花灑、水龍頭、洗衣機、小便器用具、節流器及水廁等器具。

我們亦正著力分階段實施強制性「用水效益標籤計劃」，自二零一八年二月一日起，所有住宅處所的廚房及所有處所的浴室和洗手間的水管工程，均須採用符合「用水效益標籤計劃」所規定的用水效益級別的產品。目前，我們正研究透過修改法例，將有關計劃由自願參與轉為強制實施，方便消費者選擇及購買具用水效益的產品。

## Water Efficiency Labelling Scheme

Launched in 2009, our voluntary Water Efficiency Labelling Scheme (WELS) encourages customers to use water-saving products. As of March 2020, this WELS covers showers for bathing, water taps, washing machines, urinals, flow controllers and water closets.

We have also been implementing our mandatory WELS in stages. Since 1 February 2018, the mandatory use of WELS products of prescribed water efficiency has been required in kitchens (domestic premises), and bathrooms and toilets (all premises) for all plumbing works. We are now working on legislative amendments to migrate voluntary WELS participation to mandatory implementation, to facilitate consumers' choices and purchases of water-efficient products.

## 用水效益最佳實務指引

為提升用水效益，我們一直積極倡導各政府部門的合作，共同為泳池、公園、街市、洗手間、垃圾收集站及懲教院所制訂用水效益最佳實務指引，提供平衡的節約用水措施建議，在無損整體服務水平的情況下，可實踐於日常運作之中。此外，我們亦致力與酒店及餐飲業的協會合作，為業界制訂用水效益最佳實務指引。這一切的努力均有助我們凝聚各界持份者，共同為節約用水作出更大的貢獻。

## Best Practice Guidelines

To enhance water use efficiency, we are leading inter-departmental cooperation to develop water management Best Practice Guidelines (BPG) for swimming pools, parks, markets, toilets, refuse collection points and correctional institutions, formulating balanced water-saving measures that can be implemented in day-to-day operations without compromising overall performance. We are also collaborating with hotel and catering associations on BPG for their sector's water usage. These water conservation efforts allow us to gather greater contributions from various stakeholders.

## 「齊來慳水十公升2.0」運動

於本財政年度，我們延續於二零一四年首次舉辦的「齊來慳水十公升」運動，呼籲公眾養成節約用水的好習慣，積極於日常生活中達致每人每日慳水十公升或更多。運動展開以來，我們為公共租住屋邨提供免費安裝節流器，藉此提升客戶的用水裝置效益，並計劃於二零二二年或之前為所有公共租住屋邨完成安裝工作。於二零一九年，我們舉辦了巡迴展覽及互動遊戲，將此安裝計劃宣傳並拓展至私人屋苑及私立學校。有賴公眾的大力支持和參與，此運動得以成功開展，有效地提高社會珍惜水資源的意識。

## "Let's Save 10L Water 2.0" Campaign

This financial year, we continued our "Let's Save 10L Water" Campaign, which was first launched in 2014, to call for the public to actively reduce their daily domestic water consumption by 10 litres or more by developing water saving habits. Throughout the campaign, we have offered free installation of flow controllers in public rental housing estates to save water by increasing the water efficiency of water devices, and targeted to complete these installations in all public rental housing estates by 2022. In 2019, we extended this initiative to private housing estates and private schools through roving exhibitions and interactive games. With the public's great support and participation, this campaign has succeeded in improving social awareness about cherishing water resources.

截至二零二零年三月，
As of March 2020,

171 000
個住戶來自
households in
146
個公共租住屋邨
public rental
housing estates

318
間幼稚園
kindergartens

870
個私人屋苑住戶
private estate
households

已安裝節流器。
have installed
flow controllers.

*「創新節水花灑頭設計大賽」簡報會*
*"Innovative Water Efficient Showerhead Design Competition" Briefing Session*


*「創新節水花灑頭設計大賽」海報*
*Poster for "Innovative Water Efficient Showerhead Design Competition"*


*有關「私人屋苑免費安裝節流器」的巡迴展覽*
*Roving Exhibition for "Free Installation of Flow Controllers at Private Housing Estates"*

於二零一九年，此運動亦贊助了多個企劃，鼓勵社區各界不同持份者積極節約用水。在二零一九年十一月，我們舉辦了「創新節水花灑頭設計大賽」，是香港首個以花灑頭為主題的環保比賽。是次大賽有關節約用水的新意念啟發了參賽者及公眾，同時宣揚使用節水裝置。決賽及頒獎禮分別擬定於二零二零年七月及十月舉行，每個組別的得獎作品將會在巡迴展覽中展出。我們亦將舉辦更多新活動，包括即將舉行的「挑戰沖涼4分鐘」及「全民慳水比賽」。

In 2019, this campaign also sponsored various programmes encouraging different stakeholders in the community to actively conserve water. In November 2019, we launched our Innovative Water Efficient Showerhead Design Competition, the first eco-friendly competition for showerheads in Hong Kong. This competition inspired contestants and the public with new ideas about water conservation and promoted the use of water-efficient devices. The Finals and Award Ceremonies have been scheduled for July and October 2020 respectively. The winning water-efficient devices for each section will be showcased in roving public exhibitions. More new initiatives will be coming soon, including our upcoming 4-minute Shower Challenge and Water Saving Competition.

## 「惜水學堂」節約用水教育計劃

培養年青一代的節水意識是成功實現長遠節水目標的重要關鍵。因此，我們推行「惜水學堂」節約用水教育計劃，結合理論與實踐，加深學生對水資源的了解，提高他們對節約用水和水資源可持續發展的關注。於二零一五至一六年度，我們成功於小學推出此計劃，並於二零一八至一九年度將計劃延伸至幼稚園。

於二零一九至二零年度，我們以「珍惜點滴」為題舉辦了一場親子填色比賽，共收到超過13 000份參賽作品，鼓勵家長與孩子一起守護水資源。此外，我們還重新編制小學教材套內容，透過豐富的教案、課堂工作紙、教學影片及互動電子遊戲等，令教材更多元化，滿足教學需要。此教材套亦特別涵蓋探討氣候變化的課題，啟發學生思考，培養節約用水的習慣，引導他們更深入地了解和認識本地及全球的水資源。此外，我們計劃於二零二零至二一學年推出網上平台，以協助學校推行此計劃。

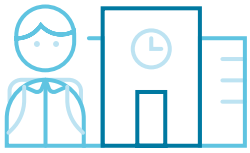
## "Cherish Water Campus" Integrated Education Programme

Nurturing the younger generations is instrumental for successful long-term water conservation. Our "Cherish Water Campus" Integrated Education Programme broadens students' knowledge about water resources and raises their awareness about water conservation and water sustainability by integrating theory with practice. We successfully rolled out this programme in primary schools in 2015/16 and in kindergartens in 2018/19.

In 2019/20, we organised a parent-child colouring competition under the theme "Save Every Drop" to encourage families to work together to cherish water, receiving over 13 000 entries. In addition, we revamped our teaching kit for primary schools to better meet teaching needs through diversified teaching materials, including lesson plans, worksheets, teaching videos and interactive electronic games. The kit also featured climate change discussion topics to cultivate students' reflection and water-conservation behaviour, and to strengthen their understanding and awareness of local and global water resources. We plan to launch an online portal during the 2020/21 school year to help schools implement this programme.

參與此計劃的學校包括：
Number of schools participated in this programme:

310
間小學
primary schools



290
間幼稚園
kindergartens

## 管理用水流失

### 「智管網」

我們正逐步設立「智管網」，以監控用水流失。「智管網」將香港的食水分配管網分成約2 400個監測區域，其中部分監測區域將劃分為水壓管理區域，並配有減壓裝置調節水壓至合適水平，以減少滲漏引致的用水流失。

截至二零一九年年底，我們已設立約1 300個監測區域，每個監測區域均裝有監測設備和感應器，以監測區域內用水流失的情況，從而實施針對性措施，包括：

*i. 主動探測滲漏；*
*ii. 水壓管理；*
*iii. 快速維修滲漏水管；及*
*iv. 更換及修復水管。*

另一方面，我們預計於二零二零年推出全新的「智能管網管理電腦系統」。該系統將協助收集各監測區域大量管網數據及分析它們用水流失的情況，從而定出針對性措施及跟進各監測區域的優次。

## Water Loss Management

### Water Intelligent Network

We have been progressively establishing our Water Intelligent Network (WIN) to monitor water loss. WIN divides Hong Kong's fresh water distribution networks into about 2 400 District Metering Areas (DMAs). Some of these DMAs are designated as Pressure Management Areas (PMAs) and equipped with pressure reduction devices that can modulate water pressure to a suitable level to reduce the quantity of water loss due to leakage.

As of the end of 2019, we have established about 1 300 DMAs. Monitoring and sensing equipment will be installed in each DMA to monitor water loss therein and implement of the following targeted measures:

*i. active leakage detection;*
*ii. pressure management;*
*iii. speedy repair of water main leaks; and*
*iv. replacement and rehabilitation of water mains.*

On another front, our brand-new Water Intelligent Network Management System (INMS), expected to be in service in 2020, will assist in collecting the vast amount of network data from the DMAs and analysing water loss therein in order to determine appropriate measures and priorities of the DMAs for follow-up actions.

## 點滴話你知
## DO YOU KNOW?

香港的供水管網總長度超過8 300公里，大部分埋藏於公路之下。為了確保地勢較高的位置有足夠的水壓，地勢較低的水管須承擔較大水壓，因而容易導致滲漏及用水流失。此外，擠迫的地下設施、繁忙的交通，以及頻繁的道路施工均有機會導致水管滲漏，要在龐大而複雜的地下供水管網中確定滲漏點是一項非常具挑戰性的任務。

Hong Kong's water supply network covers more than 8 300 km of pipes, which are mostly buried under public roads. To provide sufficient water pressure at higher elevations, the pipes at lower elevations are subject to high pressure, which can cause leaks and water loss, as can congested underground utilities, heavy traffic and frequent road works. Locating these leak points in our huge and complex underground water supply network was a very challenging task.

## 專題故事
## Featured Story

# 「智管網」及與社區的共同努力
# WIN and Our Collaborative Efforts with the Community

「智管網」的逐步推行讓我們能發現隱藏於私人處所的滲漏。其中兩個成功個案分別位於將軍澳魚灣村道及港島東區英皇道。在二零一九年，我們在「智管網」的協助下發現這兩個地點所屬的監測區域用水量異常，我們的專責團隊立即採取行動，在現場進行音聽視察、滲漏噪聲相關探測和測漏分段測試等，確定了上述住宅區內出現兩處嚴重滲漏點。透過與相關業主的合作，最終成功快速定位及修復這兩處滲漏點，避免每日流失逾4 200立方米食水，即等於約兩個標準奧運比賽泳池的容量。

我們亦採取了多項措施，協助業主、物業管理公司及承建商對私人水管進行滲漏檢測及修復，包括編制合同條款範本、滲漏檢測服務採購規格及本地滲漏檢測服務供應商參考列表等。此外，香港建造學院亦推出了地下水管測漏證書課程，為從業人員提供專業的培訓，促進行業發展。

The progressive implementation of WIN allows us to identify hidden leaks in private premises. In two notable cases in 2019, WIN helped us detect an unusual amount of water consumption in the DMAs in Yau Yue Wan Village Road, Tseung Kwan O and King's Road, Eastern District respectively. Our water loss management teams responded immediately, locating two very severe hidden leaks within these residential estates by conducting on-site visual and sounding inspections, leak noise correlation surveys and leak detection step tests. Through our collaborative efforts with the owners of the private mains, these leaks were successfully and speedily located and repaired, saving over 4 200 $m^3$ of fresh water per day – enough water to fill up almost two standard-size Olympic swimming pools.

We also introduced a number of measures to help property owners, management agents and contractors conduct leak investigations and repairs on their private water mains, such as publishing sample contract clauses, specifications for procurement of leak investigation services, and a reference list of local leak detection service providers. Moreover, the Hong Kong Institute of Construction has launched a certificate course in leak detection for underground water pipes to provide enhanced professional training for leak detection practitioners and facilitate trade development.

*香港建造學院舉辦的地下水管測漏證書課程，為水管測漏人員加強專業培訓和促進行業發展。*

*The course on Certificate in Leak Detection on Water Mains offered by the Hong Kong Institute of Construction provides enhanced professional training for leak detection workers and facilitates trade development.*

*透過分析「智管網」所收集的水流量、水壓等數據，監察供水管網是否有出現滲漏的情況。*

*The water flow and pressure data as well as other data collected by WIN is analysed for monitoring of water loss of the water distribution network.*

## 自動讀錶系統

所有合適的新私人發展項目、公營及政府發展項目，現均須按要求安裝自動讀錶系統。此系統提升讀錶準確度，還能為客戶提供適時用水數據及其他有用資訊，從而提高他們節約用水的意識。

## Automatic Meter Reading System

Requirements for Automatic Meter Reading (AMR) implementation have been incorporated in all appropriate new private developments, and new public and Government developments. Besides improving accuracy in water meter readings, AMR could raise customer awareness of water conservation through the timely provision of water consumption data and other useful information.

## 擴大使用次階水

我們計劃擴展使用包括海水及循環再用水（即再造水、重用中水及回收雨水）的次階水作沖廁用途，其網絡覆蓋由香港總人口的85%增加至90%。計劃主要針對新發展區及現正使用食水沖廁的地區，務求進一步降低非飲用用途的食水需求。

## Expansion of Use of Lower Grade Water

We are targeting to expand network coverage of lower grade water including salt water and recycled water (viz. reclaimed water, recycled grey water and harvested rainwater) for flushing from 85% to 90% of Hong Kong's total population, particularly in new development areas and areas currently being supplied with fresh water for flushing, to further reduce our fresh water demand for non-potable uses.

### 擴大海水供應網絡

我們將繼續擴大使用海水沖廁的範圍，以降低食水用量。我們現正為東涌新市鎮建造海水供應系統，以替換該區目前使用的食水沖廁系統，有關工程預計於二零二三年竣工。新系統亦能供應海水至東涌新市鎮擴展區。

### Expansion of Salt Water Supply Network

We continue to expand the use of salt water for flushing to reduce fresh water consumption. Since Tung Chung New Town is currently being supplied with fresh water for flushing, we are constructing a replacement salt water supply system that will be completed in 2023. The salt water supply system will also supply salt water to Tung Chung New Town Extension.

### 供應再造水

石湖墟污水處理廠目前正進行工程，以升格為具備三級污水處理水平的淨水設施。工程除了可提升該廠處理來自上水、粉嶺及周邊發展區污水的能力外，經淨水設施處理的排放水更可用作生產再造水作沖廁及其他非飲用用途，這不但可節省珍貴的食水資源，還能減少經處理的排放水的排放量。

我們已於二零一七年四月開始興建配水庫及敷設輸水幹管，為每年供應多達2 200萬立方米再造水至上水、粉嶺等新界東北地區作準備，以代替現時的食水沖廁。再造水生產設施、抽水系統及分配水管等餘下工程現正處於設計階段，待立法會財務委員會於二零二零至二一年度通過撥款後，

### Supply of Reclaimed Water

The Shek Wu Hui Sewage Treatment Works is being upgraded to an Effluent Polishing Plant (EPP) with tertiary treatment process. This will increase its capacity for treating sewage from Sheung Shui, Fanling and adjacent development areas, and allow us to produce reclaimed water by further processing the EPP's treated effluent. Using reclaimed water for flushing and other non-potable uses not only saves precious fresh water resources, but also reduces the amount of treated effluent discharge.

In April 2017, we began to construct a service reservoir and lay trunk water mains to pave the way for the supply of reclaimed water with a total volume of up to 22 million $m^3$ per year to the northeast New Territories, including Sheung Shui and Fanling, which were being supplied with fresh water for flushing. The remaining works, including water reclamation facilities, a pumping system and local distribution mains, are now under design and targeted to commence

可望於二零二一年第三季動工，並於二零二四年第一季起分階段供應再造水作沖廁用途。

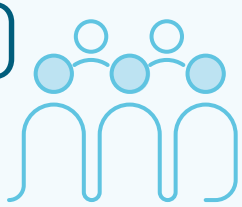
construction in the third quarter of 2021 upon funding approval from the Legislative Council Finance Committee during the 2020-21 legislative session. The supply of reclaimed water for flushing will be launched in phases starting from the first quarter of 2024.

## 預期成果 Anticipated Results

再造水的供應將由上水和粉嶺開始於二零二四年第一季起分階段落實，預計將：

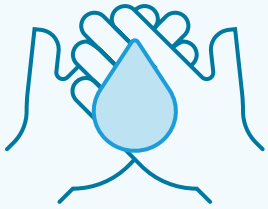
To be launched in phases beginning in the first quarter of 2024, starting with Sheung Shui and Fanling, the supply will:

覆蓋約 Cover about **500 000** 人口 people



每年節省食水 Save fresh water per year

約 about **22** 百萬立方米 million $m^3$



### 中水重用及雨水回收

於二零二零年下半年，我們將在安達臣道石礦場用地發展項目中興建一套每日可處理最高達3 300立方米的中水重用系統。該中央中水重用系統包括中水處理廠、抽水系統、貯存經處理中水的配水庫，以及用於收集中水和向該發展區輸送經處理的中水作沖廁及其他非飲用用途的管道。整個系統預計於二零二三年投入服務，以配合該區人口發展。

### Grey Water Recycling and Rainwater Harvesting

In the second half of 2020, we will begin constructing a grey water recycling system with a maximum treatment capacity of 3 300 $m^3$ per day at the Anderson Road Quarry Site Development. The centralised grey water recycling system consists of a grey water treatment plant, a pumping system, a service reservoir for storing treated grey water, and water mains for grey water collection and distribution of the treated grey water within the development for flushing and other non-potable uses. It will be commissioned in 2023 to tie in with the population intake of the development.

## 專題故事
## Featured Story

# 政府牽頭採用中水重用及雨水回收系統
# Government Leading by Example in Adopting Grey Water Recycling and Rainwater Harvesting


*水知園*
*$H_2$OPE Centre*

政府頒布了內部指引，積極在新的政府發展項目中採用中水重用及雨水回收系統，帶領業界採用這兩種系統。在此倡議下，截至二零一九年年底，約有110個政府工程項目中的新建大樓已配備中水重用及／或雨水回收系統，當中包括水務署天水圍大樓。

水務署天水圍大樓配備中水重用及雨水回收系統，每日處理量分別可達19立方米和9立方米。從大樓收集的所有污水（廁所污水除外），經處理後重用作沖廁用途。系統同時亦收集雨水，用於灌溉及清潔地板。

The Government is leading by example in adopting grey water recycling and rainwater harvesting systems by promulgating internal guidelines for installing these water recycling facilities in new government projects. Following this initiative, new buildings of approximately 110 government projects have been equipped with grey water recycling and/or rainwater harvesting systems as at end 2019, including the WSD Tin Shui Wai Building.

The WSD Tin Shui Wai Building is equipped with grey water recycling and rainwater harvesting systems with a design daily capacity of 19 $m^3$ and 9 $m^3$ respectively. All wastewater generated in the office building, excluding toilet streams, is collected and treated for reuse for toilet flushing. The systems also harvest rainwater for reuse in irrigation and floor cleansing.

為鼓勵私營企業採用中水重用及雨水回收，我們在二零一九年與香港綠色建築議會合作，共同就綠建環評新建建築2.0版進行檢討。在新推出的綠建環評中，私人樓宇若採用中水重用及雨水回收系統，將會獲得額外評級得分，藉此鼓勵更多發展商安裝相關設施。

To encourage the private sector to adopt grey water recycling and rainwater harvesting, we collaborated with the Hong Kong Green Building Council in 2019 to review the Building Environmental Assessment Method (BEAM) Plus Assessment Tool v2.0 for new buildings. Under the new BEAM Plus tool, bonus credit awards can be granted to private buildings that adopt grey water recycling and rainwater harvesting systems, hence incentivising more project owners to adopt these water recycling facilities.

*為了加深公眾對循環再用水的認識，「水知園」特別設立展示區，利用玻璃窗配合動畫投射，向參觀者展示中水重用及雨水回收系統的運作。*

*To enhance the public's understanding of water recycling, the $H_2OPE$ Centre illustrates the operation of its grey water recycling and rainwater harvesting systems through designated windows and projected animations.*

## 提升食水供應的應變力

### 海水化淡

將軍澳海水化淡廠第一階段的落成將會提升香港食水供應的應變力。該廠將採用先進的逆滲透技術，而早前一項先導研究中已証實此技術能有效生產符合香港食水標準的食水。

將軍澳海水化淡廠第一階段工程的設計、建造及運作合約於二零一九年十二月正式開始。目前，承建商正著手設計該廠的各項組件，並開始建造部分設施。該廠預計將於二零二三年啟用，其後在合約的運作期內由承建商負責運作及維修。

## BUILDING RESILIENCE IN FRESH WATER SUPPLY

### Seawater Desalination

We are building resilience in our fresh water supply through our first stage desalination plant in Tseng Kwan O. This plant will adopt the latest reverse osmosis technology, which is confirmed to be effective in producing potable water that complies with the Hong Kong Drinking Water Standards in a previous pilot study.

The "Design, Build and Operate" contract for the first stage of the Tseung Kwan O Desalination Plant commenced in December 2019. Currently, the Contractor is focusing on designing various components of the desalination plant and constructing some of its facilities. The desalination plant is expected to be commissioned in 2023. Afterwards, the Contractor will be responsible for the plant's operation and maintenance during its operation period.

**預期成果 Anticipated Results**

食水產量
Water production capacity

135 000 立方米/日 $m^3$/day

可應付 To meet 5% 本港食水用量 fresh water demand

預留擴展空間為日後增加
Provision for future expansion of

食水產量至
Water production capacity to

270 000 立方米/日 $m^3$/day

可應付 To meet 10% 本港食水用量 fresh water demand

*將軍澳海水化淡廠構想圖*
*Photomontage of the Tseung Kwan O Desalination Plant*

為了讓海水化淡廠融入將軍澳第137區未來的發展，並減少該廠對環境造成的影響，我們整合多項符合可持續發展的環保設施，採用可再生能源及低耗能工序，並以獲得「綠建環評新建建築」的鉑金級認證為目標。為加強與多個專業範疇的持份者之間的合作和協調，我們亦採用建築信息模擬（BIM）技術，將工程項目資訊集中於同一個數據庫內，確保設計流程更高效及便利後續審批。為響應發展局所推行的「建造業2.0」，我們將多項創新建造科技引入此工程項目，包括「供製造和裝配的設計」(DfMA)、「組裝合成」建築法(MiC)、「數碼工程監督系統」(DWSS)及智慧安全裝置。

We designed the desalination plant to make it blend in with future development in Tseung Kwan O Area 137 and minimise its impact on the environment by integrating sustainable green features and adopting renewable energy sources and low-energy consumption processes. Our goal is to obtain a Platinum rating for the plant under the BEAM Plus Scheme for New Buildings. We will also apply Building Information Modelling (BIM) to enhance collaboration and coordination between multi-disciplinary stakeholders, centralising project information in a common data environment to ensure a more efficient design process and to facilitate subsequent checking and approval. To echo "Construction 2.0" Initiatives advocated by the Development Bureau, we have adopted innovative construction technology such as Design for Manufacture and Assembly (DfMA), Modular Integrated Construction (MiC), Digital Works Site Supervision (DWSS) system and smart safety devices in this project.

# 食水安全及供水可靠性
# Water Safety and Reliability

## 保障香港水質，確保供水可靠
## Safeguarding Hong Kong's Water Quality and Reliability

*水務署致力透過周全的水安全計劃及資產管理，為香港提供安全可靠的供水服務。*

*At WSD, we strive to provide Hong Kong with safe and reliable water supplies through comprehensive water safety plans and asset management.*

### 食水安全

香港是全球其中一個擁有全面安全食水供應的城市。於水安全計劃下，本港所有食水均經我們的濾水廠嚴格處理，確保水質完全符合香港食水標準，以保障公眾健康。

### WATER SAFETY

Hong Kong is one of those cities in the world that enjoy a completely safe drinking water supply. All of the city's drinking water is stringently treated at our water treatment works (WTWs), operating under a water safety plan to protect the public's health and ensure that our water quality fully complies with the Hong Kong Drinking Water Standards.

## 水質監測

我們全面監測整個供水系統的水質，包括集水區及相關設施、木湖抽水站的東江水接收點、水塘、濾水廠、配水庫、分配系統以至用戶水龍頭，抽取原水及食水樣本進行物理、化學、細菌學、生物學和輻射學化驗。在二零一九至二零年度，我們共抽取及測試了超過15萬個樣本。

## 確保東江水水質

廣東省當局負責確保輸港東江水的水質達到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水的地表水的最高國家標準。為此，廣東省當局採取多項措施及方案，包括興建污水處理廠、防止污染、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及在深圳水庫興建生物硝化站等。另外，沙灣河流域水環境綜合整治工程於二零一九年完成，大幅降低因沙灣河排洪至深圳水庫時對東江水水質所造成的影響。

我們在接收東江水的木湖抽水站設置在線水質監測系統，對東江水水質進行24小時監測。

## Water Quality Monitoring

We comprehensively monitor Hong Kong's fresh water quality in the entire water supply system by conducting physical, chemical, bacteriological, biological and radiological examinations of raw water and drinking water samples throughout our entire water supply system, from catchment areas and related facilities, the receiving point of Dongjiang water at Muk Wu Pumping Station, impounding reservoirs to WTWs, service reservoirs, distribution systems, and up to consumer taps. In 2019/20, we collected and tested over 150 000 samples.

## Maintaining Dongjiang Water Quality

The Guangdong authorities are responsible for ensuring that the quality of Dongjiang water delivered to Hong Kong meets the national standard for Type II water in the "Environmental Quality Standards for Surface Waters" (GB3838-2002) as stipulated in the Dongjiang water supply agreement, the highest national standard applicable for surface water abstracted for human consumption. To do so, they have used multiple measures and projects, including sewage treatment plant construction, pollution prevention, dedicated aqueducts, implementation of the Dongjiang Basin Water Quantity and Quality Monitoring and Control System, and a bio-nitrification plant at the Shenzhen Reservoir. In addition, the Comprehensive Remediation Project for the Water Environment of the Shawan River Basin was completed in 2019, significantly reducing the impact on Dongjiang water quality due to Shawan River flooding discharging into the Shenzhen Reservoir.

Via our online water quality monitoring system, we monitor Dongjiang water quality round-the-clock at our Muk Wu Pumping Station, where the Dongjiang water is received in Hong Kong.

**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) |
|---|---|---|---|---|---|
| | | 2017/18 | 2018/19 | 2019/20 | |
| 氨氮 Ammoniacal Nitrogen | 毫克/公升 mg/L | 0.04 | 0.04 | 0.03 | ≤0.5 |
| 錳 Manganese | 毫克/公升 mg/L | 0.03 | 0.03 | 0.03 | ≤0.1 |

## 食水

在水質監測計劃下，我們會在濾水廠、配水庫、供水接駁點，以及隨機抽選的公眾可達用戶水龍頭（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處等地方的水龍頭）抽取食水樣本以監測水質。此外，我們亦於二零一七年十二月起推行水質監測優化計劃，加強監測用戶水龍頭的水質。我們從18個區議會分區中隨機以每十萬人口抽取八個用戶的抽樣率抽出用戶，從他們處所的水龍頭中收集食水樣本，檢測有可能在內部供水系統出現的六種金屬，即銻、鎘、鉻、銅、鉛和鎳。

## Drinking Water

Under our water quality monitoring programme, we collect drinking water samples from WTWs, service reservoirs, connection points and randomly selected publicly accessible consumer taps such as those in shopping centres, clinics, community facilities, sports grounds, markets, government offices and estate management offices to monitor the water quality. In addition, we launched our Enhanced Water Quality Monitoring Programme in December 2017 to strengthen our quality control at consumer taps in Hong Kong. With this programme we randomly select consumers from 18 District Council districts in Hong Kong based on a sampling rate of 8 premises per 100 000 population and collect drinking water samples from the taps in their premises to test for 6 metals – antimony, cadmium, chromium, copper, lead and nickel – which might be present in internal plumbing systems.

**食水樣本**
**Drinking Water Samples**

| 財政年度<br>Financial Year | 食水樣本總數<br>No. of Drinking Water Sample |
|---|---|
| 2015/16 | 85 711 |
| 2016/17 | 84 089 |
| 2017/18 | 82 389 |
| 2018/19 | 82 717 |
| **2019/20** | **81 221** |

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用戶水龍頭抽取。
Note: These drinking water samples were taken at WTWs, service reservoirs, connection points and publicly accessible consumer taps.

## 水安全計劃

水安全計劃透過設立優良的水質管理系統，確保食水質素，有效地保障公眾健康。自二零零七年起，我們根據世界衞生組織（世衞）在二零零四年推出的《飲用水水質準則》，制訂和實施我們的水安全計劃。

### 食水水質管理系統

於二零一七年，我們對水安全計劃進行檢討，並參考國際專家的建議及西澳洲的做法，制定了一套綜合的食水水質管理系統。在二零一九年，我們在恆常內部審核以外，亦進行了第三方審核，以驗證系統的效率，並提出改善

## Water Safety Plan

A Water Safety Plan (WSP) is an effective way to protect the public's health by setting up a good management system to ensure a high quality of drinking water. Since 2007, we have developed and implemented our WSP based on the 2004 Guidelines for Drinking-water Quality from the World Health Organization (WHO).

### Drinking Water Quality Management System

In 2017, we reviewed and enhanced our WSP by developing an integrated Drinking Water Quality Management System (DWQMS), based on the recommendations of international experts as well as overseas practices in Western Australia. In 2019, in addition to our ongoing internal audits, a third-party audit was conducted to

建議。整體而言，該次審核確認我們的食水水質管理系統已發展得十分完善和能夠貫徹地推行，並受到密切監察。我們會將綜合審核結果及建議納入於系統中，以進一步提升系統成效。

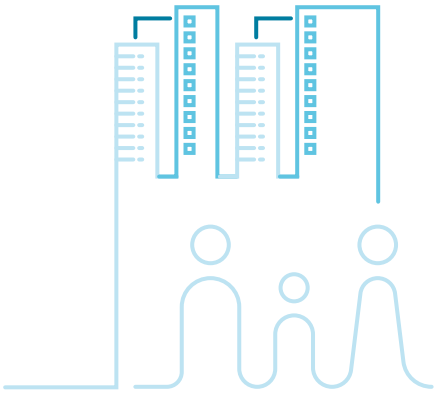
examine this system, verify its effectiveness, and identify areas for improvement. Overall, the audit confirmed that our DWQMS was well-developed, properly implemented and closely monitored. We will be incorporating the auditors' observations and recommendations into the system for further improvements.

## 建築物水安全計劃

為協助業主及物業管理人實施建築物水安全計劃，我們制訂了一套適用於一般建築物以及學校、安老院舍和醫院等特定建築物的指引及範本。

## Water Safety Plan for Buildings

To facilitate property owners and management agents implementing a Water Safety Plan for Buildings (WSPB), we developed guidelines and templates suitable for general buildings, as well as specific buildings such as schools, residential care homes for the elderly and hospitals.



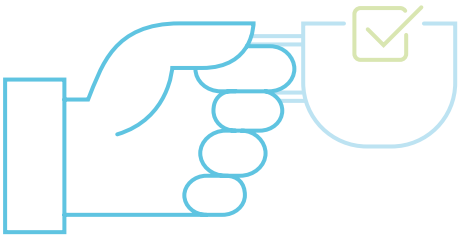
超過 More than **1 800** 座建築物 buildings

已推行此計劃，同時參加了大廈優質供水認可計劃 — 食水（管理系統）
have implemented the plan and joined the associated Quality Water Supply Scheme for Buildings – Fresh Water (Management System) (QMS)

涉及 covering **>400 000** 住戶 households

政府亦率先在旗下樓宇推行建築物水安全計劃，而香港房屋委員會亦承諾由二零一八年第四季起，於四年內在全港所有公共租住屋邨實施此計劃。

The government has also taken the lead on implementing the WSPB on its premises, and the Hong Kong Housing Authority has committed to implementing the WSPB in all of its public rental housing estates within four years since the fourth quarter of 2018.



所有公共租住屋邨共
The plan will benefit about

**730 000** 住戶 households

將受惠於此計劃（佔全港住戶總數的28%）
across all public rental housing estates (28% of Hong Kong's total households)

私人住宅方面，行政長官在《2019年施政報告》中宣布推行水安全計劃資助計劃，以鼓勵業主及物業管理人於他們的樓宇實施建築物水安全計劃，進一步保障香港的食水安全。此計劃將於二零二零年七月開始接受申請。

For the private sector, in her 2019 Policy Address, the Chief Executive announced the launch of a Water Safety Plan Subsidy Scheme to encourage property owners and management agents to implement the WSPB on their premises to further safeguard Hong Kong's drinking water safety. The scheme will begin to accept applications in July 2020.

## 專題故事
## Featured Story

# 全力推行建築物水安全計劃
# Sparing No Effort to Facilitate the WSPB's Implementation

醫院的供水系統較一般樓宇更為複雜，通常設有中央冷熱水系統，若未有妥善管理，便會容易滋生微生物。當我們於二零一八年著手制訂相關水安全計劃範本時，成立了一個工作小組，成員包括醫院代表，務求運用他們的專業知識和實務經驗，為我們提供醫院內部供水系統的實用建議。經過深入研究及討論後，工作小組構思了一份醫院專用的建築物水安全計劃初稿，並於兩間醫院進行先導測試，結果令人滿意。初稿略經修訂後，正式範本已於二零一九年六月推出。在二零二零年三月，首間香港醫院按照我們的範本制訂建築物水安全計劃，並成為優質供水認可計劃的一員。此範本更獲得世衛接納，刊載於一個由世衛及國際水協會共同管理的網頁供全球參考。

Hospital plumbing systems are more complex than those in general buildings, and usually contain both centralised cold and hot water systems that can harbour microbial growth if not properly managed. When we set out to develop a WSP template for Hong Kong's hospitals in 2018, we established a working group composed of hospital staff with extensive knowledge and hands-on experience to advise us about hospital internal plumbing systems. After thorough study and discussion, the working group devised a draft hospital WSPB, with pilot trials in two hospitals that demonstrated good results. After fine-tuning the template, we officially launched it in June 2019. In March 2020, the first Hong Kong hospital finished implementing WSPB and joined the QMS. The template has also been well received by the WHO, and is posted on a website jointly managed by them and the International Water Association for international reference.

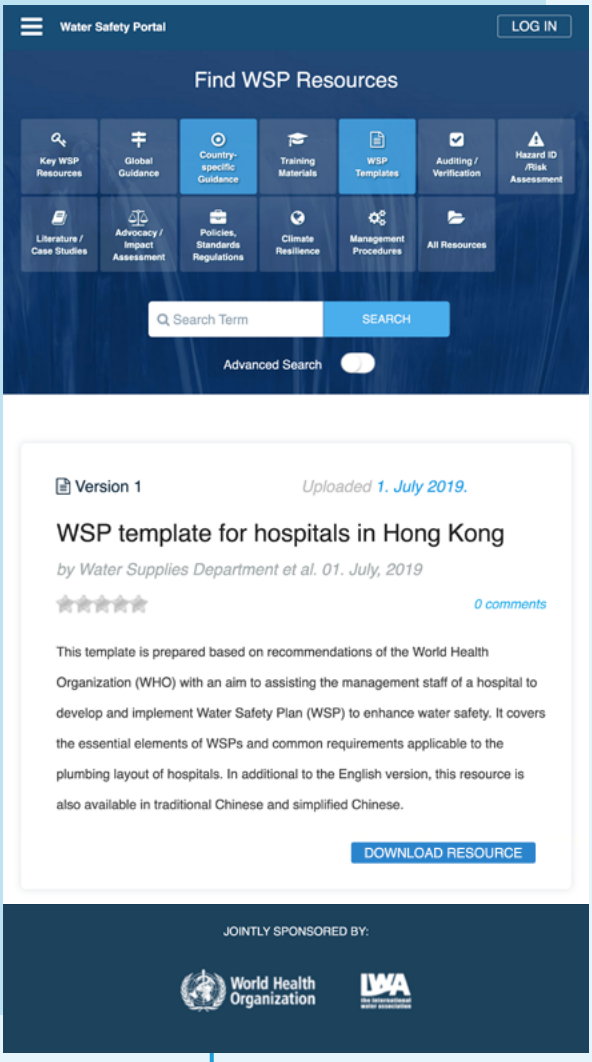
2018

為香港醫院制訂相關水安全計劃範本
set out to develop a WSP template for Hong Kong's hospitals

於兩間醫院進行先導測試
Pilot trials at two hospitals

World Health Organization

IWA the international water association




## 2019

推出正式範本及刊載於一個由世衛及國際水協會共同管理的網頁
WSPB template officially launched and posted on website jointly managed by WHO and the International Water Association

## 2020

首間香港醫院按照我們的範本制訂建築物水安全計劃，並成為優質供水認可計劃的一員
The first Hong Kong hospital finished implementing WSPB and joined the QMS

## 加強水喉物料的規管及使用規定

在內部供水系統中，由於食水水箱的內層用料直接接觸食水，因此我們於二零一九年公布加強表面物料使用的監管，物料如瓷磚間隙填補物料、瓷磚、油漆/塗料和水泥產品均須要事先取得水務監督發出的「一般認可」，方可在新建水喉裝置的食水水箱中使用。

具備符合國際標準ISO 17067產品證書的水喉產品，由於在生產過程中已須要定期接受產品品質監察，因此可獲豁免「一般認可」水喉產品監察計劃的規定。其中，我們在二零一九年六月正式接納四個來自英國、澳洲及德國符合ISO 17067標準的產品認證計劃。我們鼓勵水喉供應商引入更多獲取上述標準證書的水喉產品予本地市場使用，全面提升水喉物料質素。此措施深受發展商及承建商等持份者歡迎。

## Enhancing Plumbing Material Control and Commissioning Requirements

The internal surfaces of potable water tanks used for inside service are usually lined with materials that will directly contact potable water during the daily operations of the tanks. Because of this, in 2019 we announced enhanced controls over materials such as tile grout, ceramic tile, paint/coating and cementitious products, requiring that these lining materials obtain the Water Authority's General Acceptance (GA) before they could be used to construct potable water tanks in new plumbing installations.

Plumbing products with product certificates certified in accordance with International Standard ISO 17067 are subject to a regular programme of monitoring product quality at manufacturing level and are thus exempted from our surveillance programme on plumbing products with GA. In June 2019, we officially recognised four certification schemes in the United Kingdom, Australia and Germany, which satisfy the requirements of ISO 17067. We encouraged plumbing suppliers to introduce more plumbing products with the above-recognised certificates into the local market to enhance the quality of plumbing materials. This initiative has been well received by the stakeholders, including developers and contractors.

## 檢討水務法例提升食水安全

為提升香港食水安全，我們繼續就《水務設施條例》(第102章)和《水務設施規例》(第102A章) 進行全面檢討，從而加強內部供水系統的設計、建造和保養及水喉物料的規管。我們亦為修例建議進行營商環境影響評估，並預計將在二零二零年年中完成有關建議的制訂工作，然後進行公眾諮詢。

## Legislative Review for Enhancing Drinking Water Safety

To enhance Hong Kong's drinking water safety, we continued our holistic review of the Waterworks Ordinance (Cap.102) and Waterworks Regulations (Cap.102A). This review will strengthen our regulatory control over the design, construction and maintenance of internal plumbing systems and plumbing materials. We are also conducting a business impact assessment on the legislative proposals. We expect to draw up the legislative proposals by mid-2020, followed by a period of public consultation.

## 供水可靠性

### 資產管理

#### 水務設施資產管理

為提升水務設施的表現並同時降低成本及減少故障風險，我們致力在水務設施的維修及管理上達致世界級水平。我們根據ISO 55001資產管理系統標準來管理所有水務資產，此系統涵蓋各類資產的「生命周期」，包括籌劃、設計、興建、建造、運作、維修保養、更新以至棄置，讓我們作出適當的決策，以應對未來挑戰，確保符合可持續性，並提高運作可靠性及效率。系統亦讓我們能夠做好故障風險管理，同時提供優質的服務水平，並根據風險分析進行資源調配及制訂行事優先次序。

## WATER RELIABILITY

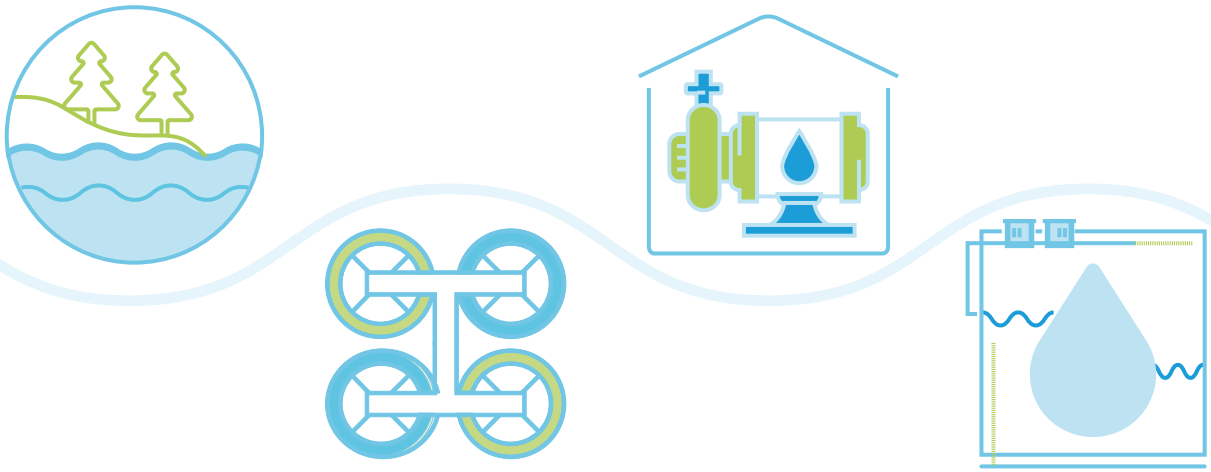
### Asset Management

#### Waterworks Asset Management

To optimise our the performance of our waterworks while minimising costs and failure risks, we strive to attain world-class quality for waterworks maintenance and management. In accordance with ISO 55001 standards, we are implementing an Asset Management System to manage all of our waterworks assets. This system uses a "life-cycle" approach that encompasses planning, design, development, construction, operation, maintenance, renewal and disposal of all assets, allowing us to make appropriate decisions to meet future challenges, ensure sustainability and improve our operational reliability and efficiency. The system also allows us to manage risks of failure whilst maintaining a high level of service, and to allocate resources and priorities for the various kinds of work required according to risk analysis.

我們致力在二零二零年為水塘、濾水廠、抽水站、配水庫及斜坡等取得ISO 55001標準認證，確保供應可靠及充足的優質食水及沖廁用水。

We aim to obtain ISO 55001 standard certification for our impounding reservoirs, WTWs, pumping stations, service reservoirs, slopes, etc., for the reliable and adequate supply of wholesome potable and flushing water in 2020.



### *詳細及獨立的水塘視察*

鑑於二零一九冠狀病毒病疫情，我們外聘的海外專家顧問未能於二零二零年第一季到訪香港進行視察。同樣在此期間，由水務署人員進行的視察次數亦有所減少。然而，我們進行了風險評估及為視察計劃進行重新排序。我們將於疫情穩定時，增加外聘專家顧問及水務署人員的視察次數，以確保盡快按優次恢復視察。

### *Detailed and Independent Reservoir Inspections*

In view of the COVID-19 epidemic, our external expert advisors from overseas could not visit Hong Kong during the first quarter of 2020 to conduct inspections. Similarly, the number of detailed inspections by internal staff was also reduced during that period. Nevertheless, we have conducted risk assessments and re-prioritised our inspection programme. We will increase the number of inspections by external expert advisors as well as internal staff when the epidemic becomes stabilised to ensure that the most-needed inspections can resume as early as possible.

在二零一九至二零年度，我們為水塘及配水庫進行了以下視察：
In 2019/20, we conducted the following inspections of our impounding and service reservoirs:

62 次由水務署人員進行的詳細視察
detailed inspections conducted by internal staff

32 次由外聘專家顧問進行的視察
inspections conducted by external expert advisors

### *由水務署保養及進行預防性保養或改善工程的斜坡*

我們定期為轄下斜坡進行保養及改善工程，包括打泥釘、加固斜坡表面、在斜坡底部建造矮牆以栽種植物、改善排水系統、栽種一般植被、提供安全通道走廊等，大幅降低了發生山泥傾瀉的風險，以及減少對公眾、水務員工和設施構成的威脅。

### *Slopes under WSD Maintenance and that Received Preventive Maintenance or Upgrades*

We regularly maintain and upgrade the slopes under our purview via soil-nailing, slope surface stabilisation, toe planter wall construction, drainage system improvements, general planting, provision of safe access corridor and so forth. These efforts significantly decrease the risk of slope failure and the corresponding danger it can pose to the public, our staff and waterworks installations.

在二零一九至二零年度，我們負責保養約
In 2019/20, we oversee approximately

6 500 幅斜坡 slopes

並為其中 Of these, 65 幅 slopes

進行了預防性保養或改善工程
received preventive maintenance or upgrades

## 提升水管資產管理

我們負責管理龐大的水管資產，並致力提升管理質素。水管爆裂個案數字一直維持在低水平，在二零一九年只有約40宗。我們將繼續採用以風險為本的水管資產管理策略，以維持政府供水網絡的健康狀況，減低水管爆裂或滲漏的風險。我們會根據水管爆裂或滲漏的後果、水管使用年期和物料、過往爆裂或滲漏記錄、周遭環境等各項因素，評估水管爆裂或滲漏的風險，並為評定為高風險的水管優先進行改善工程，包括進行更換或修復，以降低水管爆裂或滲漏的風險。此外，我們亦會為位於「爆喉熱點」(即重複出現水管爆裂的地點)的水管進行改善工程。

## Enhancing Water Main Asset Management

We are committed to enhancing the management of our huge water main assets. Water main burst cases have remained at a relatively low level. In 2019, about 40 main burst cases were recorded. We will continue to implement a risk-based water main asset management strategy to maintain the healthiness of the government water supply networks and to reduce the risk of water main bursts or leaks. We will assess the risk of the water mains, taking into account various factors including the consequences of bursts or leaks, ages and materials of the water mains, past records of bursts or leaks, surrounding environment, etc. and accord priorities for improvement works to those water mains assessed with high risk, including replacement or rehabilitation to reduce the risk of water main bursts or leaks. In addition, we will carry out improvement works to water mains in "main burst hot spots" (i.e. locations with repeated water main bursts).

## 提升供水可靠性

### 沙田濾水廠原地重置工程（南廠）

透過沙田濾水廠（南廠）原地重置工程，將可確保為公眾提供充足的優質食水。作為「建造業2.0」的先導項目，此項工程積極融合創新的建築方法及科技，包括BIM、DWSS、MiC等，從而提高生產效率、提升建造質素，並改善工地安全及促進環保效益。竣工BIM模型所包含的資產資料，將可在設施正式啟用後用於資產及設施管理。我們的目標是為此項目在「綠建環評」計劃中獲取鉑金評級。

## Enhancing Water Supply Reliability

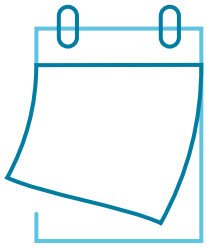
### In-Situ Reprovisioning of Sha Tin WTW (South Works)

The re-provisioned Sha Tin WTW (South Works) will ensure an adequate and quality supply of potable water to the public. As a Construction 2.0 pilot project, this project actively incorporates innovative construction methods and technology to promote productivity, uplift build quality, improve site safety and enhance environmental performance, including BIM, DWSS, and MiC. As-built BIM models containing asset information will be used to enhance asset and facility management once the facility is fully commissioned. Our goal is to obtain a Platinum rating under the BEAM Plus Scheme.

原地重置工程的前期工程：
Advance works for the in-situ re-provisioning:

2020 四月 April

大致完成
**Substantially Completed**



主項工程動工：
Commencement of main works:

預計於
**Targeted for**

2020 八月 August

全面投入運作：
Full facility commissioning:

預計於
**Scheduled for**

2026

### 小蠔灣濾水廠擴展工程

為滿足北大嶼山的可持續發展需要，我們正為小蠔灣濾水廠擴展工程進行詳細設計，以將其每日濾水量增加一倍。此項目從設計階段已廣泛採用BIM技術。作為我們對可持續發展承諾的一部分，我們期望為此項目在「綠建環評」計劃中獲取金級或更高評級認證。

### Siu Ho Wan WTW Extension

To cope with North Lantau's sustainable developments, we are working on the detailed design for Siu Ho Wan WTW extension to double its daily water treatment capacity. We have adopted BIM extensively in this project, starting from the design stage. As part of our commitment to sustainable development, our goal is to achieve BEAM Plus Gold or higher accreditation for this project.

小蠔灣濾水廠擴展工程完成後的每日濾水量
Daily water treatment capacity of Siu Ho Wan WTW after completion:

150 000 立方米 $m^3$ 》 300 000 立方米 $m^3$

### 配合新發展區的供水

新界新發展區計劃對確保香港的中期及長期土地供應十分重要，並為房屋發展提供主要土地來源。我們正與不同政府部門合作，為包括古洞北、粉嶺北及洪水橋/厦村等新發展區規劃、設計和建造所需要的水務設施，並會加入智能設計的新方案，例如使用循環再用水作為沖廁水和採用智能水壓管理，以提高供水系統的可持續性及可靠性。

我們亦為牛潭尾濾水廠擴展工程進行可行性研究，將其每日濾水量增加至44萬立方米，以滿足新界西北發展計劃（包括元朗南、洪水橋/厦村新發展區、橫洲、丹桂村及朗邊）預期所帶來的用水需求增長。目前，可行性研究已大致完成，並正進入勘查研究階段。

### Facilitating the Water Supply in the New Development Areas

The New Development Area (NDA) projects in the New Territories are essential both for Hong Kong's medium and long-term land supply and as a major source of housing development. We are working alongside various government departments to plan, design and construct the waterworks infrastructures for these NDAs, including Kwu Tung North, Fanling North and Hung Shui Kiu/Ha Tsuen, incorporating smart initiatives such as using recycled water for flushing and intelligent pressure management to enhance the sustainability and reliability of the water supply systems.

We also conducted a feasibility study on the extension of Ngau Tam Mei WTW to increase its daily water treatment capacity to 440 000 $m^3$ to meet the water demand growth arising from the planned developments in the Northwest New Territories, including Yuen Long South, the Hung Shui Kiu/Ha Tsuen NDA, Wang Chau, Tan Kwai Tsuen and Long Bin. This study has been substantially completed, and we are now proceeding to the investigation stage.

牛潭尾濾水廠擴展工程完成後的每日濾水量
Daily water treatment capacity of Ngau Tam Mei WTW after completion:

230 000 立方米 $m^3$ 》 440 000 立方米 $m^3$

## 東江水水管改善工程

為了持續地確保東江水供應的可靠性及靈活性，我們將於二零二零年年底展開一項改善工程，更換東江水P4水管已老化的玻璃纖維強化塑膠管部分。在設計階段，我們便採用了BIM技術，以提高此項目的質素及效率。

## Dongjiang Water Main Improvements

As part of our ongoing efforts to ensure a reliable and flexible supply of Dongjiang water, we will commence a project to replace the aged glass reinforced plastic (GRP) section of the P4 Dongjiang water mains in late 2020. In the design stage, we have adopted BIM technology to enhance the quality and efficiency of this project.

*目前東江水水管的現場環境*
*The site environment of the existing Dongjiang water mains*


*透過無人機攝影測量法獲取的點雲記錄*
*Point cloud records taken via unmanned aerial vehicle photogrammetry*

# 可持續運作
# Operational Sustainability

船灣淡水湖的浮動太陽能板發電系統
*Floating PV System at Plover Cove Reservoir*

## 在運作中實踐環保
## Conserving Environment in Operation

*我們一直致力透過節約能源、發展可再生能源及減低環境影響等多項環保措施，在運作中實踐保護環境及減緩氣候變化的理念。*

*We are dedicated to protecting our environment as well as mitigating climate change in our operation through an array of green initiatives on energy conservation, renewable energy development and environmental mitigation.*

### 節約能源及開拓替代能源

#### 能源管理系統

我們竭力透過推行一系列節約能源的措施，提升供水運作中的能源效益。為進一步加強能源管理，我們正著手提升ISO 50001認證至最新版本，預計於二零二零年年底完成。該認證覆蓋整個供水鏈，包括收集、貯存、輸送及處理原水、以及食水與海水的供應及分配。

### ENERGY CONSERVATION AND ALTERNATIVE ENERGY FOR SUSTAINABILITY

#### Energy Management System

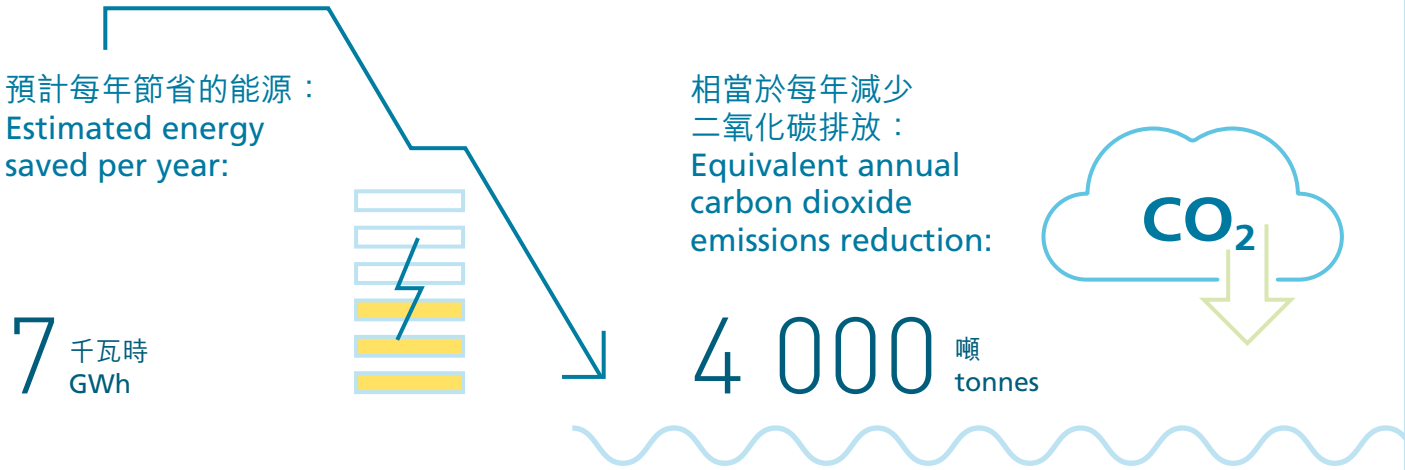
We strive to optimise the energy use in water supply operations by implementing a host of energy saving measures. To further improve our energy management, we are upgrading our ISO 50001 certification to the latest version, targeted for completion at the end of 2020. This certification covers the entire water supply chain, from collection, storage, transfer and treatment of raw water to the supply and distribution of fresh water and salt water.

## 海傍海水抽水站安裝次氯酸鈉液體投放系統

目前，我們運作22個海傍海水抽水站，為香港近85%的人口平均每日供應76萬立方米的海水作沖廁用途。一般情況下，我們使用電解氯化設備將海水電解為次氯酸鈉溶液，為海水進行消毒。我們正逐步將電解氯化設備更換為成本效益更高、更節能的次氯酸鈉液體投放系統，藉此節省電解氯化設備所消耗的電力。

## Installation of Sodium Hypochlorite Dosing Systems at Seafront Salt Water Pumping Stations

Currently, we operate 22 seafront salt water pumping stations, which supply an average of 760 000 $m^3$ of salt water per day for toilet flushing to nearly 85% of Hong Kong's population. Conventionally, electrochlorination plants have been used to produce a sodium hypochlorite solution through the electrolysis of salt water to disinfect salt water. We are gradually replacing them with more cost effective and energy-efficient sodium hypochlorite dosing systems, thereby saving the electrical energy required for the electrochlorination plants.




## 減少碳足印

我們已對五項設施完成碳審計工作，並將根據所收集的數據採取適當的應對措施，減少溫室氣體排放。

***以下設施已完成碳審計工作，包括：***

- *長沙灣大樓*
- *九龍灣大樓*
- *北角大樓*
- *天水圍大樓*
- *龍翔道機電工場*

## Carbon Footprint Reduction

We have completed carbon audits for five of our facilities, and will use the data collected to implement appropriate measures to reduce their greenhouse gas emissions.

***Carbon audits have been completed for:***

- *Cheung Sha Wan Building*
- *Kowloon Bay Building*
- *North Point Building*
- *Tin Shui Wai Building*
- *Lung Cheung Road Mechanical and Electrical Workshop*

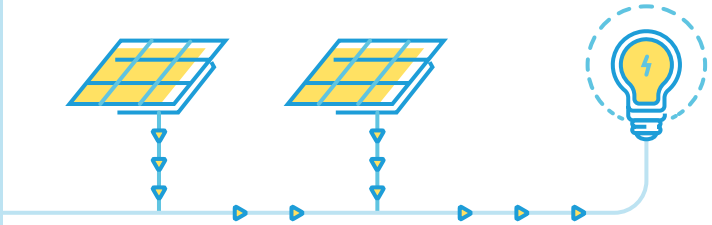
## 浮動太陽能板發電系統

隨著於石壁水塘及船灣淡水湖的先導項目成功開展後，我們正計劃於大欖涌水塘安裝一組100千瓦的浮動太陽能板發電系統，以開拓更多可再生能源的應用。

## Floating Photovoltaic Systems

Following the success of our pilot projects at Shek Pik and Plover Cove reservoirs, we are currently determining how to implement a 100kW-capacity floating photovoltaic (PV) system at Tai Lam Chung Reservoir in a bid to explore more applications of renewable energy sources.

我們目前正研究於船灣淡水湖建造大型浮動太陽能板發電場的可行性。
We are currently studying the feasibility of implementing a large-scale floating solar farm at Plover Cove Reservoir.



*石壁水塘的浮動太陽能板發電系統*
*Floating PV System at Shek Pik Reservoir*

## 水力發電站

繼香港首個水力發電站於屯門濾水廠落成後，第二個水力發電站亦已於二零一九年年底於沙田濾水廠順利完成建造，並將於二零二零年第三季開始投入使用。位於馬鞍山濾水廠的水力發電站的設計工作亦已完成，預計工程於二零二四年竣工。

## Hydropower Generation Plants

Following the commissioning of Hong Kong's first hydropower plant at Tuen Mun WTW, at the end of 2019 we completed construction of a second hydropower plant at Sha Tin WTW, and operations will begin in the third quarter of 2020. We have also completed the design for the hydropower plant at Ma On Shan WTW, targeted to complete in 2024.

*沙田濾水廠的水力發電站*
*Hydropower Plant at Sha Tin WTW*

### 點滴話你知
### DO YOU KNOW?

水力發電站可將流入濾水廠的原水的位能轉化為電能，供濾水廠使用。

Hydropower plants convert the potential energy from raw water flowing into the WTWs into electrical power that the WTWs can use.

## 內聯閉式水力發電裝置

我們正著手於「智管網」的部分獨立監測區域安裝內聯閉式水力發電裝置，為感應及監測設備及數據傳輸裝置提供電力。在創新及科技局的科技統籌（整體撥款）計劃資助下，我們已從香港理工大學採購了20套內聯閉式水力發電裝置，並將其中兩套安裝於「智管網」進行試運。

## In-line Hydropower Harnessing Devices

We are installing sets of in-line hydropower harnessing devices (IHHD) in some of the DMAs that we are establishing under WIN to power sensing and monitoring equipment and data transmission devices. We have procured 20 sets of IHHD from Hong Kong Polytechnic University, funded by the Innovation and Technology Bureau's TechConnect Block Vote, and have deployed two IHHD sets to WIN sites as a trial.

*內聯閉式水力發電裝置*
*In-line Hydropower Harnessing Device*

# 減低環境影響

## 現場生產氯氣

我們繼續為十間主要濾水廠升級消毒設施，並預計於二零二一年完成。屆時，我們的現場氯氣生產系統將告竣工及投入使用，因而避免運輸及儲存液態氯氣過程中洩漏氯氣的風險。

# ENVIRONMENTAL MITIGATION

## On-site Chlorine Generation

We continue to upgrade the disinfection facilities of 10 of our major WTWs, and expect this work to be completed progressively in 2021. By then, we will have completed and commissioned our on-site chlorine generation plants, thus eliminating the risks of chlorine leakage during the transportation and storage of liquid chlorine.

## 減低建造工程的影響

我們的設計及建設科竭力於規劃、設計及建造等各個環節中，盡量降低水務建造工程對環境造成的影響。每年，我們均會參照《ISO 14001:2015環境管理體系》認證訂立新的方向和目標，不斷提升我們在環境管理體系及環保方面的表現。

## Minimising Construction Impacts

Our New Works Branch strives to minimise the environmental impact of our waterworks construction works throughout their planning, design and construction. Each year, we establish new objectives and targets under the ISO 14001:2015 Environmental Management System (EMS) to continually improve our EMS and environmental performance.

## 提高生物多樣性

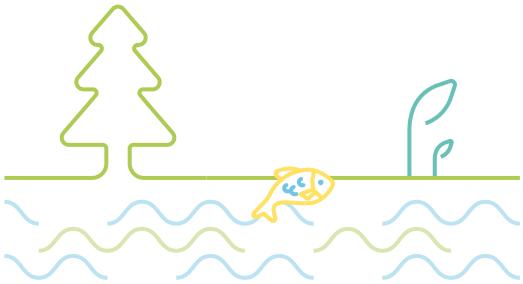
我們一直支持香港的可持續發展，響應環境局的《香港生物多樣性策略及行動計劃2016-2021》，探索各項可行措施，協助提高香港的生物多樣性。

## Enhancing Biodiversity

We support Hong Kong's sustainable development, and have been exploring practical ways to enhance its biodiversity in conjunction with the Environment Bureau's Hong Kong Biodiversity Strategy and Action Plan 2016-2021 (BSAP).

## 《香港生物多樣性策略及行動計劃》 Hong Kong Biodiversity Strategy and Action Plan:

- **漁農自然護理署 Agriculture, Fisheries and Conservation Department**
- **渠務署 Drainage Services Department**
- **食物環境衞生署 Food and Environmental Hygiene Department**
- **水務署 Water Supplies Department**



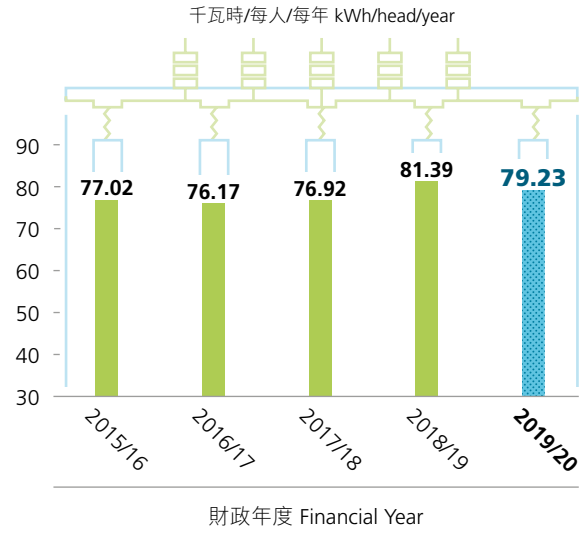
透過改良維修工作流程，
盡量減少相關工作對生態環境造成的影響，
加強對自然溪澗及引水道的保護。

Enhance the conservation of natural streams and catchwaters by improving practices in our maintenance works to minimise ecological impacts arising from these works.

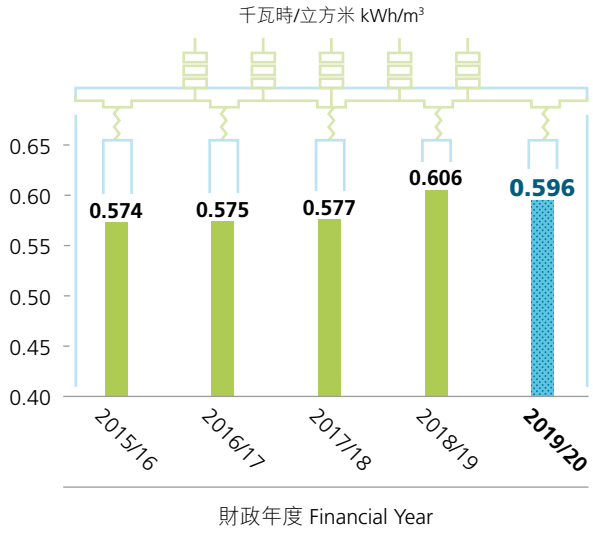
在漁農自然護理署（漁護署）的支持下，我們於多個引水道區域試驗推行了多項對野生動物友善的措施，包括於改善工程中設置動物逃生通道及採用環保物料。我們亦與多個環保團體合作，嘗試將收集到的部分雨水分流給下游的大嶼山東涌河，作為一項生態研究工作的一部分。研究結果顯示，此措施能夠幫助恢復下游淡水生態環境，提升區內的生物多樣性。

With the support of the Agriculture, Fisheries and Conservation Department (AFCD), we carried out trials of wildlife-friendly measures in catchwater areas, including installing animal escape routes and using ecologically friendly materials in our improvement works. We also collaborated with several green groups on a trial to discharge part of the yield to the Tung Chung River in Lantau as part of an ecological study. Results have shown that this could help revitalise freshwater habitats downstream, thus enhancing their biodiversity.

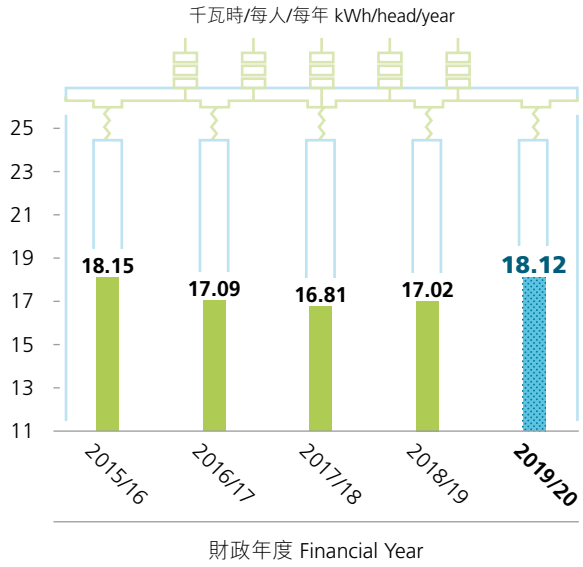
## 人均耗電量（食水及原水）
## Per Capita Electricity Consumption (Fresh Water and Raw Water)



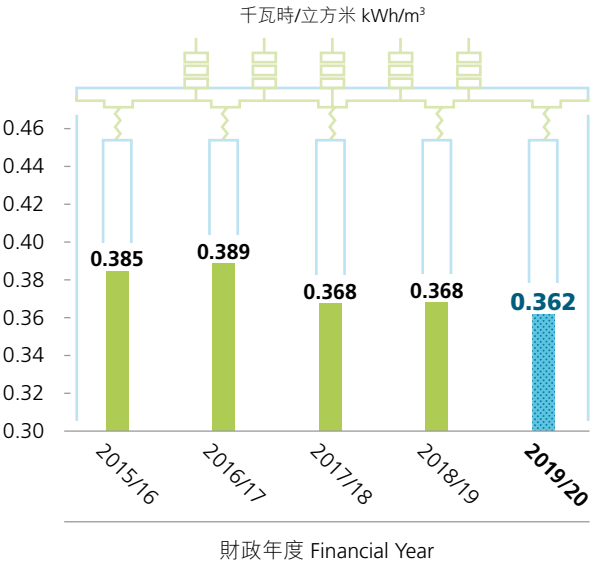

## 每單位耗電量（食水及原水）
## Unit Electricity Consumption (Fresh Water and Raw Water)



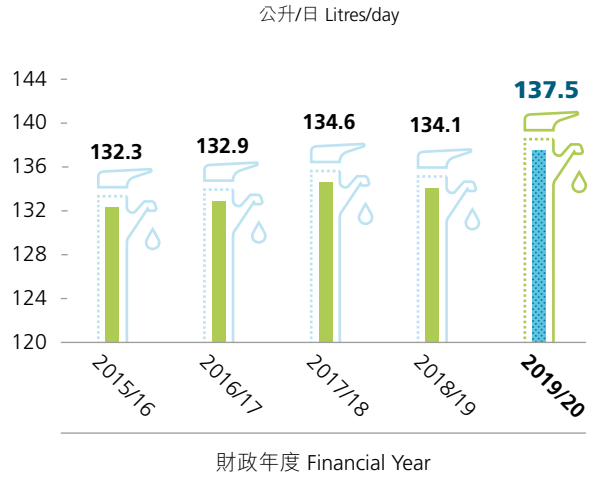

## 人均耗電量（海水）
## Per Capita Electricity Consumption (Salt Water)



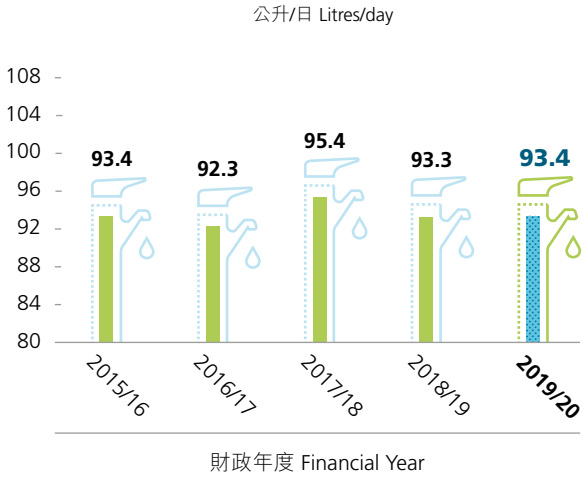

## 每單位耗電量（海水）
## Unit Electricity Consumption (Salt Water)



## 人均住宅食水用量
## Per Capita Domestic Fresh Water Consumption

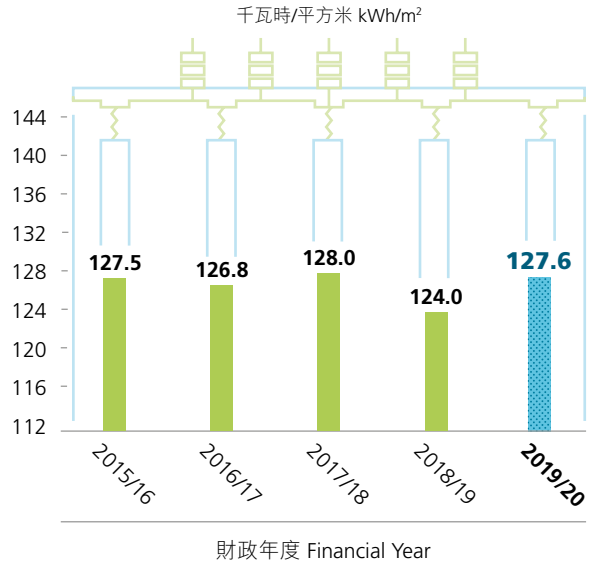



## 人均沖廁水用量（食水及海水）
## Per Capita Flushing Water Consumption (Fresh Water and Salt Water)

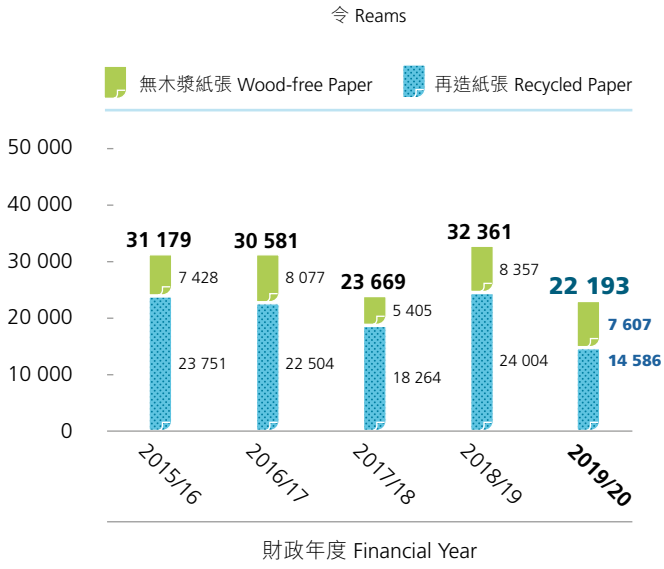



註：人均沖廁水用量（食水及海水）是根據本港的沖廁水總用量計算而得。
Note : Per Capita Flushing Water Consumption (Fresh Water and Salt Water) is based on Hong Kong's total flushing water consumption.

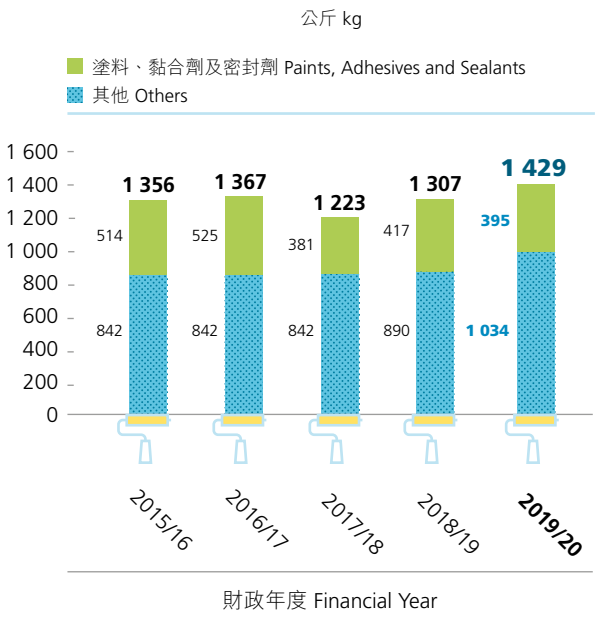
## 辦公室每單位樓面面積的耗電量
## Office Electricity Consumption Per Unit Floor Space



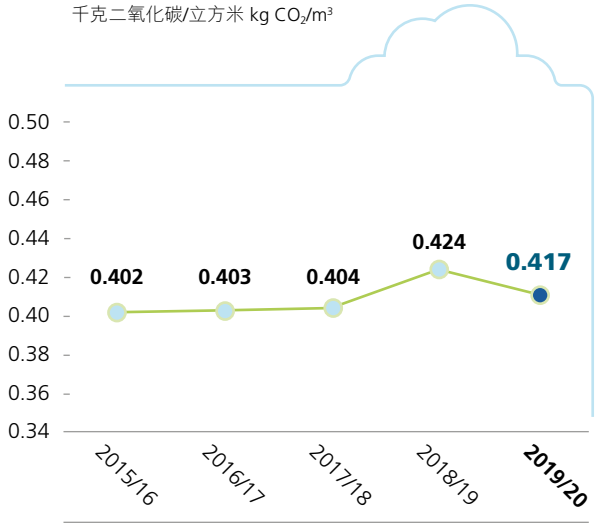

## 耗紙量
## Paper Consumption



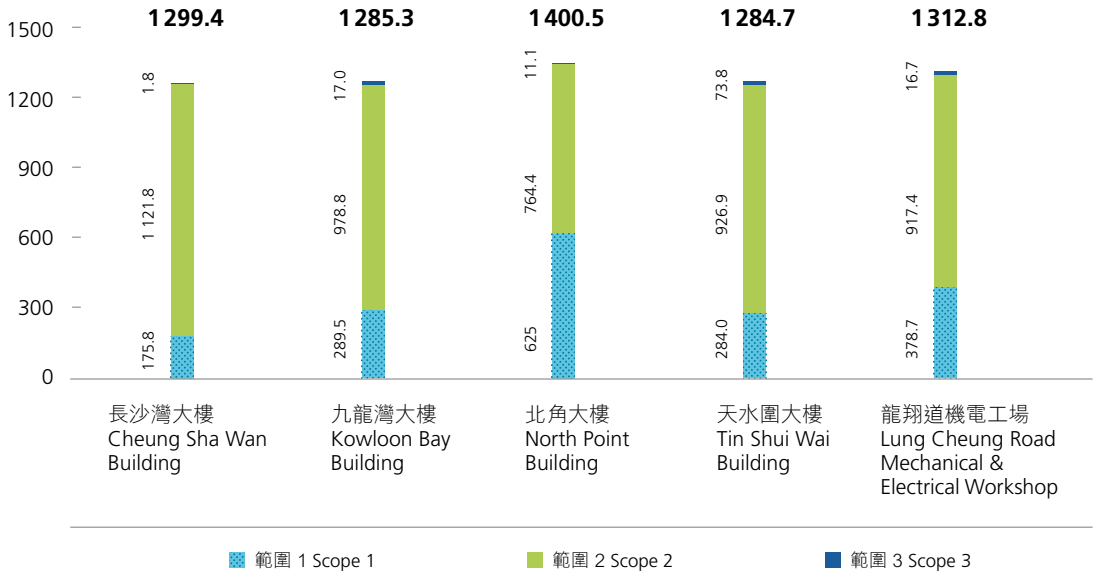
## 內部工作所需揮發性有機化合物耗用量
## VOC Consumption for In-house Work




## 水務署因使用電力處理食水而出現的溫室氣體排放
## Green House Gas Emissions Due to Electricity Used for Fresh Water Processing by WSD




## 碳審計報告
## Carbon Audit Report




註： 範圍1－直接溫室氣體排放量
範圍2－使用能源間接引致的溫室氣體排放量
範圍3－其他間接溫室氣體排放量

Note: Scope 1 – Direct GHG Emissions
Scope 2 – Energy Indirect GHG Emissions
Scope 3 – Other Indirect GHG Emissions

## 公用集調車輛資料
## Information on Vehicle Pool Transport

| | 投入運作的政府車輛 No. of Government Vehicles in Operation | | | 總燃料耗用量（公升） Total Fuel Consumption (Litres) | | | 總車程（公里） Total Mileage (km) | | |
|---|---|---|---|---|---|---|---|---|---|
| 財政年度 Financial Year | 2017/18 | 2018/19 | **2019/20** | 2017/18 | 2018/19 | **2019/20** | 2017/18 | 2018/19 | **2019/20** |
| 柴油 Diesel | 58 | 85 | **86** | 67 818 | 144 386 | **199 676** | 357 842 | 771 660 | **1 062 437** |
| 汽油 Petroleum | 158 | 123 | **116** | 479 787 | 398 065 | **313 666** | 2 216 830 | 1 997 606 | **1 345 504** |
| 混合（汽油/電力） Hybrid (Petrol/ Electric) | 3 | 3 | **1** | 12 077 | 2 067 | **298** | 174 524 | 38 858 | **6 439** |
| 液化石油氣 LPG | 11 | 11 | **11** | 51 379 | 43 503 | **49 097** | 139 457 | 121 690 | **135 514** |
| 電力 Electricity | 16 | 15 | **13** | – | – | **–** | 98 845 | 122 293 | **81 510** |

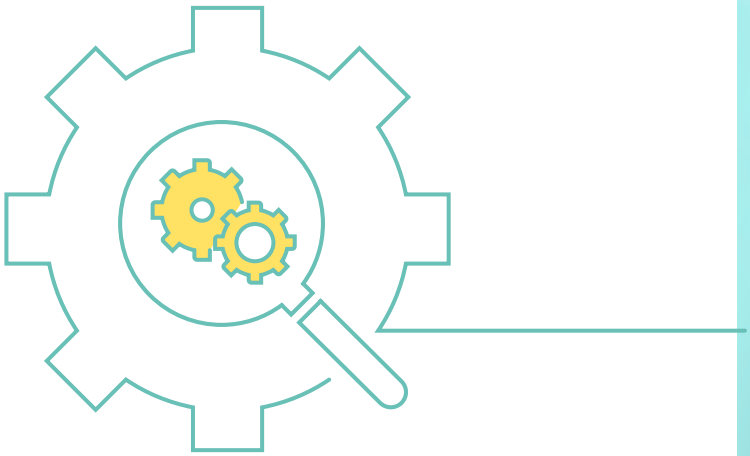
## 廢氣排放 Emissions

| (以公噸計) (Figures in Tonnes) | 二氧化碳 $CO_2$ | | | 二氧化硫 $SO_2$ | | | 氮氧化物 $NO_x$ | | | 可吸入懸浮粒子 RSP | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 財政年度 Financial Year | 2017/18 | 2018/19 | **2019/20** | 2017/18 | 2018/19 | **2019/20** | 2017/18 | 2018/19 | **2019/20** | 2017/18 | 2018/19 | **2019/20** |
| **直接廢氣排放 Direct Emissions** | | | | | | | | | | | | |
| 車輛（柴油） Vehicle fleet (Diesel) | 154 | 347 | **522** | - | - | **-** | 2 | 4 | **1** | - | - | **-** |
| 車輛（汽油） Vehicle fleet (Petrol) | 1 075 | 899 | **741** | - | - | **-** | 1 | 1 | **1** | - | - | **-** |
| 車輛（液化石油氣） Vehicle fleet (LPG) | 97 | 73 | **82** | - | - | **-** | - | - | **-** | - | - | **-** |
| **間接廢氣排放 Indirect Emissions** | | | | | | | | | | | | |
| 耗用電 (九龍及新界) Electricity Consumed (Kowloon and New Territories) | 315 317 | 342 785 | **322 807** | 86 | 94 | **65** | 261 | 310 | **297** | 8 | 8 | **8** |
| 耗用電（港島） Electricity Consumed (Hong Kong Island) | 52 184 | 54 533 | **53 632** | 14 | 19 | **12** | 51 | 51 | **48** | 1 | 1 | **1** |
| **總量 Total** | 368 826 | 398 637 | **377 784** | 100 | 113 | **77** | 314 | 366 | **347** | 10 | 10 | **9** |

# 同創 凝聚
# WE ENGAGE

珍惜水資源是每個人須肩負的責任。我們致力凝聚各持份者，透過提升團隊能力及給予肯定、舉辦各項宣傳及教育活動爭取公眾支持，以及增強與海內外國際伙伴的協作，務求發揮更強的協同效應。

Treasuring water is everyone's responsibility. We are dedicated to strengthening synergies with our stakeholders by enhancing our teams' competence and recognition, enlisting public support through publicity and educational programmes, and cultivating collaboration with our regional and international peers.



# 多管齊下
# 凝聚惜水動力

## Gathering momentum through multi-pronged collaboration


# 上下一心
# Our Team

## 提升能力　服務大眾
## Improving Our Ability to Serve the Public

*鼓勵員工持續進修以提升技能及增進知識是為大眾提供優質服務的首要條件。我們透過多項措施提升員工的關鍵才能、促進他們的身心健康，以及鼓勵傑出表現。*

*Providing outstanding service starts with encouraging our staff to continuously enhance their skills and knowledge. We oversee multiple initiatives to improve core competencies, promote well-being and encourage exceptional performance.*

### 知識管理

### 一站式平台提升關鍵才能

我們積極促進知識分享，讓員工能夠輕易汲取新知識和應用最佳實務方法，同時鼓勵同事之間互相學習，提升整體工作能力。我們的內部知識管理平台「點聚」為員工提供一站式平台，集中存放及分享水務相關知識、研究資料及最新科技發展的檔案及影片。為鼓勵員工持續進修及發展技能，我們正為「點聚」開發一條培訓頻道，此頻道會整合所有即將舉行的培訓活動，並協助員工報名。

### KNOWLEDGE MANAGEMENT

### A One-Stop Platform for Core Improvement

We actively promote knowledge sharing, which enables our staff to easily access and incorporate new understanding and best practices, while encouraging them to take the initiative to help their peers build capabilities. Our internal Knowledge Management (KM) Portal offers a one-stop platform where documents and videos featuring information, research and technological developments related to waterworks can be stored and shared centrally. To encourage continuous learning and capacity development, we are developing a Training Channel for the KM Portal. This channel will consolidate all upcoming training events and facilitate staff to enroll in courses.

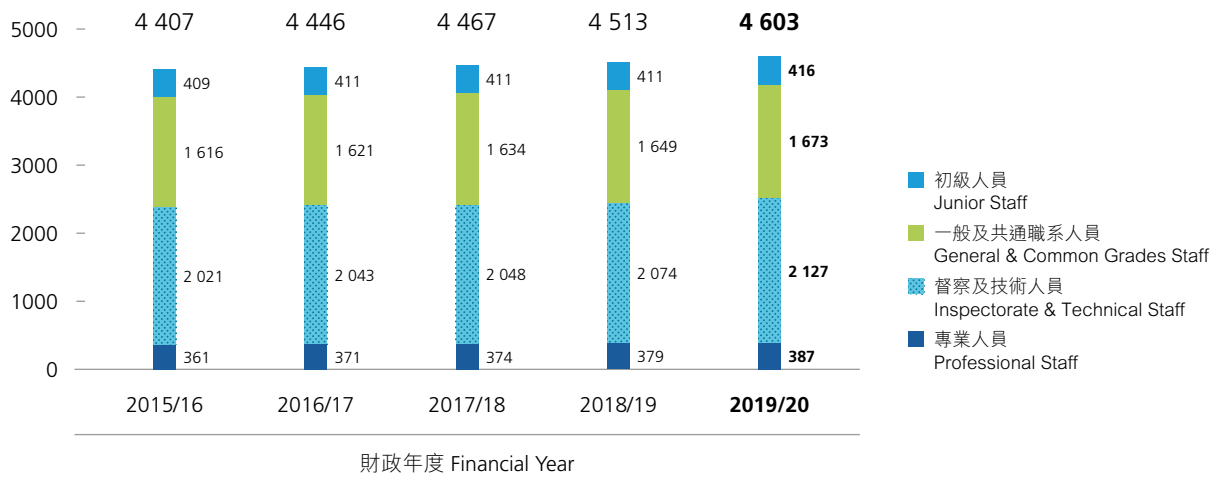
## 知識分享活動

我們在二零一九至二零年度定期舉行多個主題活動，例如設有實時直播的知識管理茶座。在其中一場知識管理茶座，立法會財務委員會轄下工務小組委員會主席盧偉國議員博士工程師分享了對「為工務小組委員會作好準備工作」的見解。我們在六個辦公室直播了這場講座，讓超過200位專業人員參與其中。

## Sharing Knowledge through Organised Events

We regularly held themed events throughout 2019/20 such as our KM Cafés which were facilitated by real-time broadcasting. In one KM Café, Ir Dr Hon LO Wai-kwok, Chairman of the Public Works Subcommittee (PWSC) of the Legislative Council's Finance Committee, shared his insight regarding "Better Preparation for PWSC". We broadcast this lecture live to six of our offices, allowing more than 200 professional staff to participate.


### 員工編制 Staff Establishment




二零一九至二零年度，我們提供了
In 2019/20, we provided

**8 666** **個員工培訓工日 Man-days of training**

### 培訓工日 Training Man-days

| 財政年度 Financial Year | 2017/18 | 2018/19 | 2019/20 |
|---|---|---|---|
| 培訓工日 Training Man-days | 8 290 | 8 483 | **8 666** |

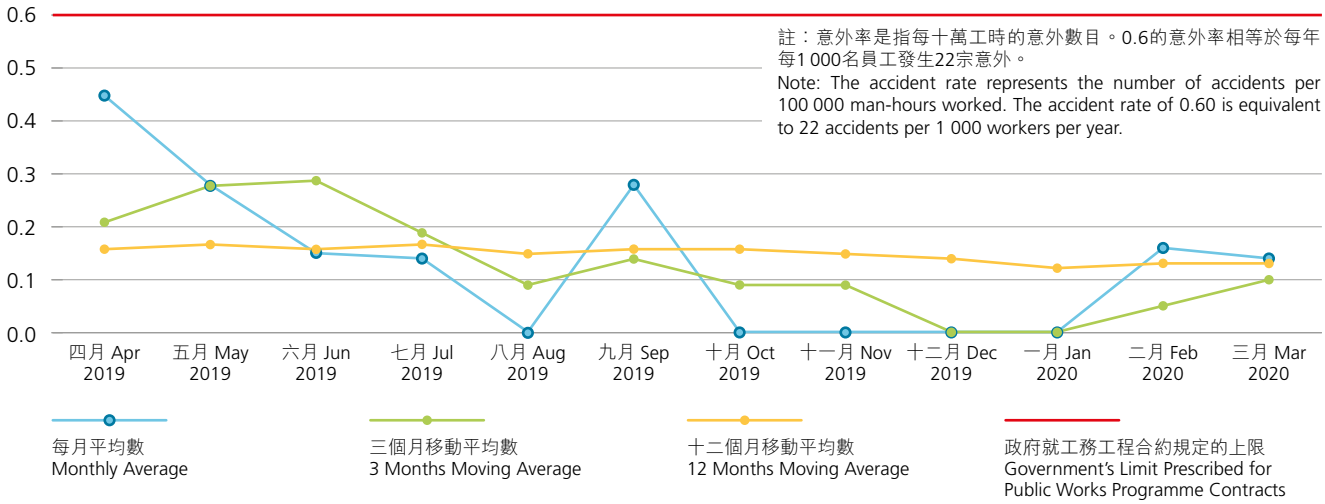
## 職業安全

職業安全對我們而言至關重要。我們的水務工程合約意外率一直遠低於政府就工務工程合約規定的上限，對此我們感到十分自豪。展望將來，我們將致力進一步降低意外率。

## OCCUPATIONAL SAFETY

Occupational safety is of utmost importance to us. We are proud that our waterworks contract accident rate consistently remains significantly below the Government's limit for public works programme contracts, and we are dedicated to lowering that rate even further in the future.

### 二零一九至二零年度水務工程合約意外率
### Accident Rate in Waterworks Contracts 2019/20




## 員工活動及嘉許

水務署致力推動工作與生活平衡的健康職場文化。在二零一九至二零年度，我們的員工積極參與不同的體育比賽，包括發展局體育委員會舉辦的游泳比賽及籃球聯賽、由建造業議會舉辦的建造業運動會及開心跑，以及多個慈善或公開活動，例如《護·聯網》愛跑、新世界維港泳及香港街馬等。此外，我們的義工團隊亦透過探訪及協助老人和傷健人士，以及籌款募捐等各種慈善活動，表達對社會的承擔和關懷。面對疫情帶來的挑戰，我們的義工服務時數仍能夠超過3 000小時。為表揚他們的貢獻，社會福利署的推廣義工服務督導委員會頒發了金、銀、銅嘉許狀予我們熱心的義工。

## STAFF ACTIVITIES AND RECOGNITION

At WSD, maintaining a positive work-life balance is central to our work culture. In 2019/20, our staff actively participated in various sports competitions, including the Swimming Gala and Basketball Tournament organised by the Development Bureau Sports Committee, the Construction Industry Sports Day and Happy Run organised by the Construction Industry Council, as well as a number of charity or open events such as the Lifewire Run, the New World Harbour Race and the Hong Kong Streetathon. Our Volunteer Team also expressed our commitment and care for our community by visiting and assisting the elderly and disabled, helping with fundraising, and more. Despite the challenges posed by the epidemic, we were able to dedicate over 3 000 man-hours to volunteer work. For their efforts, our staff volunteers have been recognised with Gold, Silver and Bronze awards by the Social Welfare Department's Steering Committee on the Promotion of Volunteer Service.

此外，我們在環保管理上的努力亦得到肯定，在2019「香港環境卓越大獎」公共及社區服務界別獲頒發銀獎。我們的傑出員工亦分別獲頒行政長官公共服務獎狀、公務員事務局局長嘉許狀及2019年申訴專員嘉許獎公職人員獎，對此我們深感鼓舞。

In addition, our hard work on environmental management was recognised with a Silver Award at the Hong Kong Awards for Environmental Excellence 2019 – Public and Community Services. We were also pleased to have our outstanding staff awarded with the Chief Executive's Commendation for Government/Public Service, The Secretary for the Civil Service's Commendation Award and The Ombudsman's Awards 2019 for Officers of Public Organisations.

*行政長官公共服務獎頒獎儀式*
*Chief Executive's Commendation for Government/Public Service Awards Presentation Ceremony*

*申訴專員嘉許獎頒獎典禮2019*
*The Ombudsman's Awards Presentation Ceremony 2019*


## 二零一九至二零年度水務署義工服務
## WSD Staff Volunteer Service in 2019/20

**>65**
個慈善活動
charity events

**17**
位員工獲頒
嘉許狀
staff awarded

**3 153**
個義工服務時數
volunteer service
man-hours

**水務署義工服務時數**
**WSD Staff Volunteer Service Man-hours**

| 財政年度 Financial Year | 2015/16 | 2016/17 | 2017/18 | 2018/19 | 2019/20 |
|---|---|---|---|---|---|
| | 5 005 | 4 930 | 4 902 | 5 217 | 3 153* |

*由於社會事件及二零一九冠狀病毒病疫情的影響，許多二零一九年及二零年舉行的活動均需取消。
*Note: A lot of activities were cancelled in 2019 due to social events in Hong Kong, and in 2020 due to the COVID-19 epidemic.


# 連繫社會
# Our Community

## 共創惜水未來
## Sharing Our Dedication

*我們一直秉承以客為本的核心理念，竭誠提供適時、有效、貼心的服務，並致力與客戶共同創造可靠穩健的未來。*

*As one of our core values, Customer Satisfaction measures our success in delivering responsive, effective, customer-oriented service and in empowering our customers to construct a reliable, resilient future.*

### 提升服務以滿足客戶增長

隨著香港人口不斷增長及商業市場不斷擴展，我們的客戶群亦越來越廣。於二零一九年至二零年度，我們繼續探索各種新方向及改善措施，力求為客戶提供更優質的服務體驗，應對日益增長的市場需求及提升客戶滿意度。

### ENHANCING SERVICES TO MEET CUSTOMER GROWTH

As the population and business environment in Hong Kong continues to expand, so does our customer base. To meet the growing market demands and enhance our customers' satisfaction, we explored new ways and improvements to offer better customer experiences in 2019/20.

**客戶數目**
**Number of Accounts**

| 財政年度 Financial Year | 2015/16 | 2016/17 | 2017/18 | 2018/19 | 2019/20 |
|---|---|---|---|---|---|
| | 2 907 100 | 2 955 400 | 2 988 700 | 3 042 700 | **3 077 800** |

## 轉數快

為進一步方便客戶，我們提供更多元化的繳費方式。自二零一九年十一月一日起，客戶可透過任何支援「轉數快」的銀行流動應用程式或電子錢包，掃描帳單上的二維碼繳交水費。

## Faster Payment System

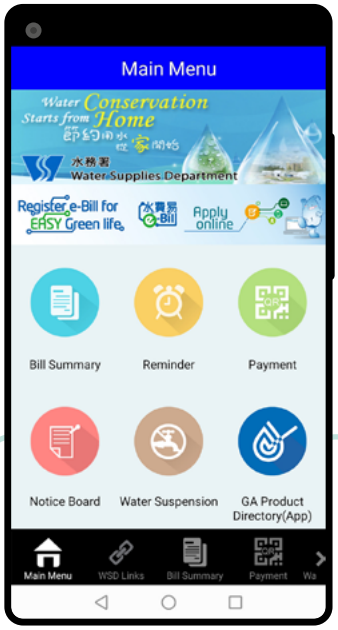
To bring greater convenience to customers, we further diversified the modes of payment for water bills. Starting from 1st November 2019, customers can use any supported mobile banking app or e-wallet to pay their water bill via the Faster Payment System (FPS), simply by scanning the FPS QR code on the bill.

## 水務署流動應用程式

我們緊貼科技發展，定期升級流動應用程式，以充分滿足客戶需要。於二零一九至二零年度，我們根據區議會新劃分的選區，更新了流動應用程式的分區暫停供水通告發佈方式。客戶現可從400多個分區中選擇，接收已選取的分區停水通告。

## WSD Mobile App

We regularly improve our mobile app to take advantage of new technology and better meet our customers' needs. In 2019/20, we updated the way our app handles water suspension notices for sub-districts in accordance with the new District Council election constituencies. Customers can now choose to receive water suspension notices from among more than 400 different sub-districts of the selected concerned districts.




iOS版本
iOS version

Android版本
Android version

免費下載「水務署流動應用程式」
Download the WSD Mobile App for free

## 電子帳單服務

客戶可透過電子帳單服務以更便捷及環保的方式管理水費帳單。截至二零二零年三月三十一日，逾10萬客戶已選擇轉換至電子帳單，他們可兼享多項增值服務，包括即時以電郵接收最新帳單、接收繳費提示電郵，以及查閱過去兩年的用水和繳費記錄等。

## e-Bill Service

Our e-bill Service offers customers a more convenient and environmentally friendly water billing management service. As of 31st March 2020, more than 100 000 of our customers have switched to electronic billing. This service includes numerous value-added benefits, such as instantly receiving new bills by email, getting email payment reminders, and viewing water consumption records and payment history for the last two years.


**108 800**

位客戶已選用電子帳單服務
customers have opted into our e-Bill Service

**19%**

增長（相較二零一八至一九年度）
growth compared to 2018/19

## 處理村屋供水申請的優化流程

為進一步提升服務效率和靈活性，我們為新建村屋推行了一系列新措施。於二零一九年九月，我們預先審批了11款標準水管設計圖則及5款標準水錶箱，並設立電子申請方式，讓客戶能夠提交符合相關標準設計的水管工程計劃。這些措施大大減少了所需的審批時間，令建造工程早日開展。我們亦於二零一九年十一月推行了一項新安排，容許申請者建議政府供水點的位置，確保接駁水管走線的可行性。

## Streamlined Water Supply Applications for Village-type Houses

To further enhance the efficiency and flexibility of our services, we have adopted a range of new initiatives for village-type house construction. In September 2019, we pre-approved 11 standard plumbing designs and five standard meter box arrangements, and created an electronic channel where customers can submit plumbing proposals that use these standard designs. These arrangements have significantly reduced the time needed to process and approve proposals, allowing projects to commence construction earlier. We also introduced a new arrangement in November 2019 that allowed applicants to propose the location of Government supply points, to ensure that the alignment of connecting pipe is feasible.

### 二零一九至二零年度的新措施
### New Arrangement in 2019/20

預先審批工程圖則
Pre-approved designs

推出電子申請
Electronic applications

靈活供水點安排
Flexible supply points

# 點滴話你知
# DO YOU KNOW?

申請人在準備新建村屋時，有時即使水管工程計劃已獲得審批，但假若鄰近私人土地的地主拒絕水管途經其地段再接駁到指定政府供水點，申請人仍須修改水管走線安排。二零一九年推行的新措施，正好能減少因供水點問題而需更改已獲批核水管工程計劃的情況。

Sometimes, village-type house projects must amend their approved plumbing proposals with an alternate connecting pipe route because an adjacent landowner has refused permission for the connecting pipe to run through the adjacent land to reach the designated Government supply point. Our new arrangement in 2019 helps reduce the chance of modifying approved plumbing proposals due to the designation of infeasible supply points during approval.

## 與社會攜手凝聚力量

二零一九至二零年度期間，我們籌劃並參與了多項推廣保育與節約水資源的活動。

## CREATING SYNERGIES WITH OUR COMMUNITY

In 2019/20, we organised and joined a number of events and activities related to water conversation and water preservation.

### 「活水 • 行 2019」

活動由愛德基金會主辦，旨在為中國內地偏遠山區籌集善款，建設供水設施。我們參與此活動並在場設置遊戲攤位，鼓勵公眾在日常生活中培養節約用水的好習慣。

### Walk for Living Water 2019

13 四月APR 2019

The Amity Foundation held this event to raise funds for building water supply facilities in remote mountainous areas in the Mainland of China. We participated in this event and set up game booths to promote good water saving habits in daily life.

## 「香港水足印定向2019」

此項城市定向比賽由和富社會企業主辦、香港公開大學及本署協辦，以水資源教育中心「水知園」為其中一個檢查點。活動目的是透過別開生面的定向比賽，提升大家在日常生活中的節水意識。除了協辦此活動，我們的同事亦積極組隊參與比賽，並在場設置遊戲攤位推廣節約用水。

## Hong Kong Water Race 2019

14 四月APR 2019

This city orienteering event was co-hosted by Wofoo Social Enterprise, the Open University of Hong Kong and our department. Our Water Resources Education Centre – $H_2OPE$ Centre was one of the checkpoints. The aim of the event was to promote water conservation in daily life through funny racing activities. Besides hosting the event, we also joined the race and set up game booths to promote water conservation.

>4 000 位參加者 participants

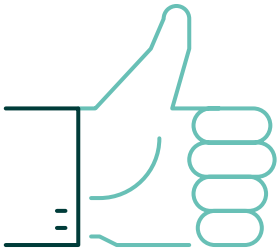

## 賽馬會惜水 • 識河計劃「識水嘉年華2019」

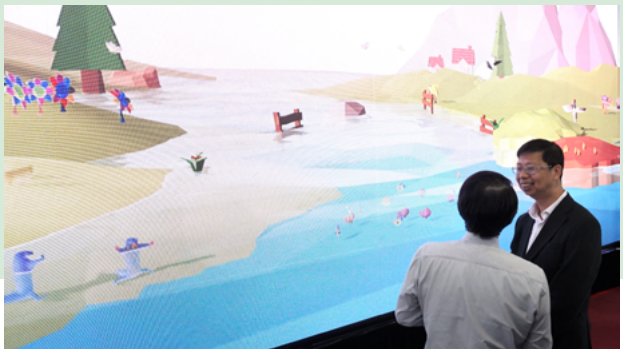
我們參與了賽馬會惜水•識河計劃「識水嘉年華2019」。此項公眾教育活動由香港大學社會科學學院推行，並獲得香港賽馬會慈善信託基金贊助，於香港海洋公園海濱樂園廣場舉行，旨在倡導減少水足跡及保護本地河流。

## JC-WISE Water Fun Fest 2019

19 四月APR 2019
-
01 五月MAY 2019

We participated in the JC-WISE Water Fun Fest 2019 at Ocean Park's Waterfront Plaza, which was a public education campaign on reducing water footprint and protecting our local rivers. It was initiated by the University of Hong Kong's Faculty of Social Sciences and funded by the Hong Kong Jockey Club Charities Trust.



## 「點滴揹水2019」

05 五月MAY 2019

水務署副署長周世威先生應主辦機構點滴是生命邀請擔任活動主禮嘉賓，此活動旨在籌募善款，資助中國內地、尼泊爾及柬埔寨興建儲水及消毒設施。我們的義工隊亦參與了此活動，並設置遊戲攤位，宣揚節水理念。

## Walk & Run for Water 2019

Our Deputy Director of Water Supplies Mr CHAU Sai-wai officiated this event, which was organised by A Drop of Life. It helped raise funds to build water storage and sanitation facilities in the Mainland of China, Nepal and Cambodia. Our Volunteer Team joined and operated game booths to promote water conservation.


## 葵青區議會到訪牛潭尾濾水廠

21 五月MAY 2019

葵青區議會主席羅競成先生與該區區議員及民政事務署代表，一同到訪牛潭尾濾水廠，深入了解濾水廠的運作及水質監測流程。是次考察團由水務署署長黃仲良先生親自接待。

## Kwai Tsing District Council's Visit to Ngau Tam Mei Water Treatment Works (WTW)

Kwai Tsing District Council Chairman Mr LAW King-shing led a group of council members and Home Affairs Department staff to visit Ngau Tam Mei WTW to gain more understanding on the water treatment process and water quality monitoring procedures. The group was received by our Director of Water Supplies, Mr WONG Chung-leung.

05 六月JUN 2019
22 六月JUN 2019

## 香港綠色日2019

這項活動致力於全港宣揚惜水意識，我們應邀出席了「香港綠色日」2019啟動禮及閉幕禮暨著「綠」智激鬥，藉此支持環保促進會的工作，鼓勵公眾實踐綠色生活。

## Hong Kong Green Day 2019

This event promoted the importance of cherishing water in society. We joined the Kick-off Ceremony and the Closing Ceremony cum Green Mission Challenge to show support to the Green Council in encouraging citizens to "Go Green, Act Green!"


29 六月JUN 2019

## 「惜水大使」計劃—「水語－短片創作大賽」及「校園惜水推廣活動大賽」頒獎典禮

當日活動屬「惜水大使」計劃的一環，由我們聯同香港青年協會賽馬會M21媒體空間共同主辦，為參加者提供平台，發表以「水語」為題而創作的短片，宣揚節水理念。同場還舉行了「校園惜水推廣活動大賽」頒獎典禮，嘉許得獎者在校園和社區推廣節水生活，提升公眾珍惜水資源的意識。

## "Cherish Water Ambassador" Scheme: "Water Speaks Video Competition" and "In-School Promotional Activities" Awards Ceremony

We held this event, which was part of our "Cherish Water Ambassador" Scheme, in collaboration with Hong Kong Federation of Youth Groups Jockey Club Media 21. At the event, participants joining the competition debuted their short videos themed around "Water Speaks" to promote the message of water conservation. The event also presented awards to winners of the Inter-School Water Conservation Promotional Activities aiming to raise public awareness on our precious water resources by promoting a water-saving lifestyle in campuses and the community.

招募了
Recruited
250
位「惜水大使」
Cherish Water Ambassadors

舉辦了
Organised
20
場校園及社區推廣活動
promotional campus and community activities





## 灣仔區議會到訪大潭水務文物徑

灣仔區議會主席吳錦津先生聯同該區區議員及民政事務署代表，一同參觀位於大潭的多個水務歷史建築，包括法定古蹟，了解本地供水歷史。是次到訪由水務署署長黃仲良先生親自接待。

## Wan Chai District Council's Visit to the Tai Tam Waterworks Heritage Trail

26 七月JUL 2019

Wan Chai District Council Chairman Mr NG Kam-chun and other members accompanied by the Home Affairs Department visited the historic waterworks structures at Tai Tam and learned the history of water supply. Some of the structures have been declared as statutory monuments. The group was received by our Director of Water Supplies, Mr WONG Chung-leung.

## 「滴滴遊蹤深導行」參觀活動2019/20

十月OCT 2019
三月MAR 2020

我們舉辦「滴滴遊蹤深導行」參觀活動2019/20，為個人和團體提供多個水務設施的導賞團。為了向公眾展述香港供水的相關工作，導賞團共設有三個主題，每個主題包括兩項設施參觀，希望藉此讓參加者以輕鬆有趣的方式，了解水務署的日常工作、節約用水的重要性及供水系統的發展歷程。

## "Excursion with Water Save Dave" Visiting Programme 2019/20

We provided guided individual and group tours of our WTW facilities through our "Excursion with Water Save Dave" Visiting Programme 2019/20. Designed to illustrate the effort in producing every single drop of Hong Kong's water, these tours had three different themes, and each theme included two visiting locations. Through the programme, participants could learn more about the daily work of WSD, the importance of water conservation and the development of our water supply system in a leisurely way.


***導賞團主題：***

- *我們的水資源*
- *水務文物徑*
- *食水處理與質量控制*

***參觀地點：***

- *船灣淡水湖*
- *萬宜水庫*
- *大潭水務文物徑*
- *九龍水務文物徑*
- *牛潭尾濾水廠*
- *馬鞍山濾水廠*

***Guided tour themes:***

- *Our Water Resources and Nature*
- *Waterworks Heritage Trails*
- *Fresh Water Treatment and Quality Control*

***Visiting locations:***

- *Plover Cove Reservoir*
- *High Island Reservoir*
- *Tai Tam Waterworks Heritage Trail*
- *Kowloon Waterworks Heritage Trail*
- *Ngau Tam Mei WTW*
- *Ma On Shan WTW*

## 「水知園」開幕禮暨「齊來慳水十公升2.0」運動啟動儀式

13 十二月DEC 2019

為進一步向公眾宣揚珍惜水資源的意識，我們在天水圍開設全新教育中心—「水知園」，開幕禮於二零一九年十二月舉行，同時藉此機會啟動「齊來慳水十公升2.0」運動。

## $H_2OPE$ Centre Opening Ceremony cum "Let's Save 10L Water 2.0" Campaign Kick-off

To step up our efforts in promoting and educating the public on cherishing precious water resources, we opened a new education centre named $H_2OPE$ Centre at Tin Shui Wai in December 2019. We hosted a ceremony to mark its opening and also took that opportunity to launch our "Let's Save 10L Water 2.0" Campaign in one go.


## 「惜水學堂」頒獎典禮

20 十二月DEC 2019

是次頒獎典禮於坑口社區會堂禮堂舉行，藉以嘉許積極參與二零一八至一九學年「惜水學堂」節約用水教育計劃的小學，並同時頒發了「惜水學堂」學前教育計劃「珍惜點滴」親子填色比賽2019的獎項。

## "Cherish Water Campus" Award Ceremony

We held an award ceremony at the Hang Hau Community Hall to commend the primary schools that actively participated in our 2018/19 "Cherish Water Campus" Integrated Education Programme (IEP), and to present the awards for the IEP–Kindergarten "Save Every Drop" Parent-Child Colouring Competition 2019.

頒發了
Presented
>170 個獎項 awards




## 「環保嘉年華」2020

作為支持機構之一，我們參與了於九龍公園羅馬廣場舉行的「環保嘉年華」2020，支持主辦機構環保促進會倡導環保低碳的生活。

## Green Carnival 2020

12 一月JAN 2020

As a supporting organisation, we joined the carnival organised by Green Council at the Kowloon Park Piazza with an aim to promote a green and low-carbon lifestyle.



# 放眼世界
# Our Global Network


## 加強海內外國際合作　啟迪供水新思維
## Finding Inspiration through Regional and International Cooperation

*為了實踐為香港提供優質供水服務的抱負，我們不時參與海內外國際會議，以掌握業界的最新創新科技與最佳實務方案，與時並進。*

*As part of our vision to excel in providing quality water services in Hong Kong, we regularly seek out our peers in the industry to explore the latest innovations, technologies and best practices through regional and international conferences.*

### 「第8屆國際水協亞太地區會議及展覽」

為推動與全球水務專才、業界人士及學者的交流與合作，我們一直積極參與各項活動，「第8屆國際水協亞太地區會議及展覽」便是其中一個例子。該活動於二零一九年十月三十一日至十一月二日在香港舉行，由國際水協會、其亞太地區組織及中國香港地區委員會合辦，並由水務署、渠務署以及香港水務及環境管理學會協辦。

### 8TH IWA-ASPIRE CONFERENCE AND EXHIBITION 2019

We actively promote communications and collaborations with water professionals, practitioners and academics around the world through various events. One prime example was the 8th International Water Association Asia Pacific Regional Group (IWA-ASPIRE) Conference and Exhibition, which took place in Hong Kong from 31st October to 2nd November 2019. It was organised by IWA, IWA-ASPIRE and the IWA Regional Committee of Hong Kong, China (IWAHK), and co-organised by WSD, the Drainage Services Department and the Chartered Institution of Water and Environmental Management Hong Kong (CIWEM HK).

是次會議主題為「以智慧擴建穩健的水資源，以科技創造韌性的水環境」，探討的內容涵蓋供水、污水及雨水管理，以至全面水資源管理、綠化、節能及可持續發展。活動期間，全球海內外代表共聚一堂，分享最佳實務與獲取新知識，共同啟迪靈感，探索應對水資源挑戰的智能方案。在會議期間同期舉辦的展覽亦吸引不同機構踴躍參與。

The conference theme was "Smart Solutions for Water Resilience", with topics ranging from water supplies, wastewater and stormwater management to total water management, greening, energy saving and sustainability. Throughout the event, international and regional delegates came together to share best practices, acquire new knowledge, and get inspired to find smart solutions to water-related challenges. An exhibition ran alongside the Conference, with enthusiastic participation from different organisations.

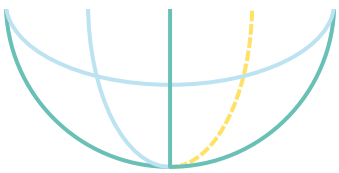
*會前工作坊*
*Pre-conference Workshops*



*開幕禮*
*Opening Ceremony*

## 會議
## Conference

>1300
位參加者來自
delegates from



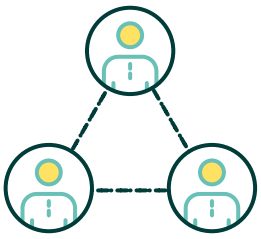
>30
個國家
countries

>40
場小組討論及工作坊
sessions and workshops


*專家主題論壇*
*Expert Plenary Discussion*


*主題演講*
*Plenary Keynote Session*

## 展覽
## Exhibition



>30
間機構參與
participating
organisations

>1300
位參加者
individual participants


*展覽*
*Exhibition*

## 國際海水化淡協會

為掌握海水化淡的最新發展和先進科技，以應用於建設中的將軍澳海水化淡廠，我們加入了國際海水化淡協會（IDA）。IDA在海水化淡領域具全球領導地位，提供最新資訊及專業發展。我們的總工程師林盛添先生憑藉對先進供水科技應用的熱忱，獲選為IDA第十九屆理事會成員，任期為二零一九年至二零二一年。二零一九年十月，林先生前往於杜拜舉行的「IDA世界大會2019」，出席了第十九屆理事會的首次會議，促進了香港及中國內地與國際海水化淡業界間的交流。

## INTERNATIONAL DESALINATION ASSOCIATION

In order to keep abreast of the latest developments and advanced technologies in desalination for the construction of our Tseung Kwan O Desalination Plant, we joined the International Desalination Association (IDA), the world's leading resource for information and professional development in the desalination industry. Mr LAM Shing-tim, our Chief Engineer who embraces the use of advanced water supply technologies, was elected to the IDA Board of Directors for Term 19, which runs from 2019 to 2021. In October 2019, Mr Lam attended the first Term 19 board meeting at Dubai during the IDA World Congress 2019, connecting Hong Kong and the Mainland of China to the international desalination community.

# 點滴話你知
# DO YOU KNOW?

IDA致力研發及推廣海水化淡及相關技術在世界各地的適當應用，包括應用於供水、循環再用水、污水管控、水淨化、濾水及其他水質科學及技術等。該協會由來自全球60個國家逾3 000名會員組成，包括科學家、工程師、企業、政府顧問及研究人員、供水用戶及學者。

IDA develops and promotes the appropriate use of desalination and desalination technology globally for water supply, water reuse, water pollution control, water purification, water treatment and other water sciences and technology. The association comprised more than 3 000 members from 60 countries around the world, including scientists, engineers, corporations, government consultants and researchers, end-users and academics.

## 「首屆粵港澳大灣區水務論壇暨第十三屆深港珠澳供水界學術交流會」

是次論壇於二零一九年九月十八日至二十日於珠海舉行，主題為「合作多贏，共創粵港澳大灣區水務發展新時代」。此論壇為粵港澳大灣區水務機構構建交流平台，以探討合作機遇、交流水資源及污水管理方面的創新思維及最新科技，以及促進粵港澳大灣區水務業界的持續發展。論壇上，我們就多個水務相關主題分享了經驗及心得，包括現場生產氯氣、「智管網」、「智能管網管理系統」等。我們亦透過演講、專家小組討論、實地考察等方式，與大灣區的水務專才展開富有成果的討論。

## 1ST GUANGDONG-HONG KONG-MACAO GREATER BAY AREA WATER FORUM CUM 13TH SHENZHEN, HONG KONG, ZHUHAI AND MACAO SEMINAR ON WATER SUPPLY

This forum was held in Zhuhai from 18th to 20th September 2019, under the theme "Collaborating for Success: Creating a New Era for the Water Supply Industry in the Greater Bay Area". The event created a common platform for water utilities in the Greater Bay Area (GBA) to explore collaboration opportunities, exchange innovative ideas and the latest technologies in water and wastewater management, and foster the continued development of the GBA's water sector. At the forum, we shared our experience and insight on various water-related topics, including on-site chlorine generation and our Water Intelligent Network and Water Intelligent Network Management System. We also initiated fruitful discussions with GBA water professionals through presentations, expert panel discussions, and site visits.


*水務署署長黃仲良先生帶領團隊出席是次論壇*
*Director of Water Supplies, Mr WONG Chung-leung led a team of our staff to attend the Forum*

## 「2019建造創新博覽會」

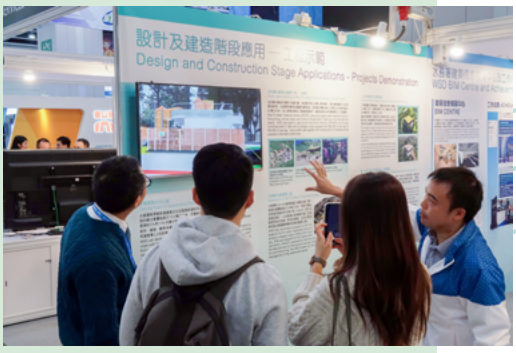
是次博覽會由發展局及建造業議會合辦，國家住房和城鄉建設部轄下的科技與產業化發展中心協辦，於二零一九年十二月十七日至二十日在香港會議展覽中心舉行，是香港歷來最大型的建造業科技展覽。我們在博覽會中展示了水務設施的最新發展，並在展位內介紹了BIM技術在設計、建造、日常運作到維護等整個項目周期內的應用。我們透過動畫、虛擬實境（VR）及擴增實境（AR），讓參觀者以互動體驗形式了解BIM如何惠及水務項目的不同持份者。

## CONSTRUCTION INNOVATION EXPO 2019

We showcased our latest developments in waterworks facilities at this Expo, which was jointly organised by the Development Bureau and the Construction Industry Council, and co-organised by the Centre of Science and Technology Industrial Development of the Ministry of Housing and Urban-Rural Development of the People's Republic of China. The Expo was held from 17th to 20th December 2019 at the Hong Kong Convention and Exhibition Centre, and was the construction industry's largest technological exhibition ever in Hong Kong. At our booth, we introduced how we have adopted BIM technologies throughout the design, construction, daily operation and maintenance stages of our projects' life cycles. Using video animations, virtual reality (VR) and augmented reality (AR), we offered visitors an interactive experience where they could appreciate how BIM benefits every stakeholder in the project.

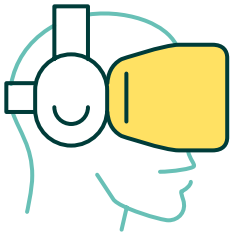

*管理層大力支持是次活動。*
*Firm support from the Management.*

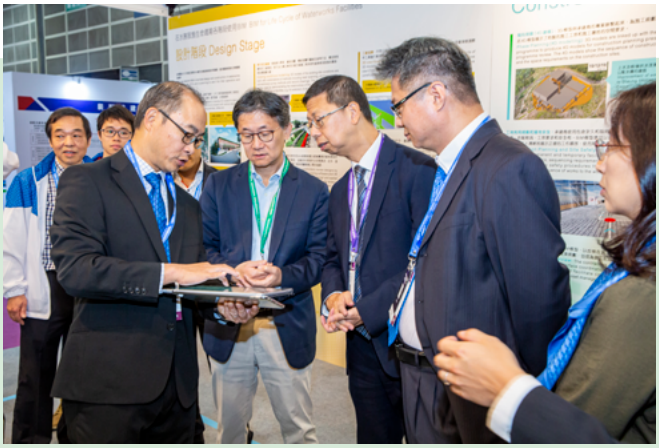

*我們於「2019建造創新博覽會」的展位。*
*Our booth at the Construction Innovation Expo 2019.*




*工作人員為參觀者介紹BIM技術。*
*Introducing BIM technology to visitors.*

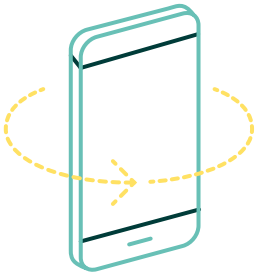

*透過VR技術參觀濾水廠。*
*Virtually touring our WTWs using VR technology.*





*使用智能裝置運用AR技術。*
*Using a tablet to apply AR technology.*

*運用AR技術管理地底及地面水管資產。*
*Applying AR technology to manage underground and surface waterworks assets.*



*透過智能眼鏡展示AR技術。*
*Demonstrating AR technology with smartglasses.*

# 財務及水費
# Finance And Water Charges

## 水費

與世界其他主要城市相比，香港客戶為優質食水所繳付的費用相對低廉。除了一九九六年七月修訂的非本地船隻用水收費外，水費自一九九五年二月至今亦一直維持不變。

## WATER CHARGES

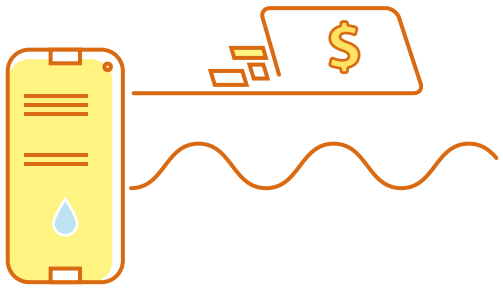
Customers in Hong Kong pay less for high-quality fresh water than their counterparts in most major cities around the world. Water charges have not been revised since February 1995 (other than the charge for non-local vessels, which was last revised in July 1996).

## 收費幅度

住宅用戶的食水水費（沖廁用水除外）按以下四級制，以四個月為期計算：

## SCALE OF CHARGES

Fresh water for domestic use (other than flushing) is charged by four-month periods, with rates set out in a four-tier system as follows:



| | 每單位（1立方米）收費<br>Charging rate per unit of one cubic metre |
|---|---|
| 第一級 — 首12個單位<br>Tier 1 for the first 12 units | 免費<br>Free |
| 第二級 — 繼後的31個單位<br>Tier 2 for the next 31 units | $4.16 (註一)(Note 1) |
| 第三級 — 再繼後的19個單位<br>Tier 3 for the next 19 units | $6.45 (註二)(Note 2) |
| 第四級 — 餘下單位<br>Tier 4 for the remainder | $9.05 (註三)(Note 3) |

作其他用途的食水，會根據其用途按下表所列收費：

Fresh water for other uses is charged at different rates as follows, based on the purpose of consumption:

| 用途<br>Purpose | 每單位（1立方米）收費<br>Charging rate per unit of one cubic metre |
|---|---|
| 商業<br>Trade | **$4.58** (註四)(Note 4) |
| 建築<br>Construction | **$7.11** (註五)(Note 5) |
| 航運（非本地船隻）<br>Shipping (Non-local Vessels) | **$10.93** (註六)(Note 6) |
| 航運（本地船隻）<br>Shipping (Local Vessels) | **$4.58** (註七)(Note 7) |
| 航運以外用途（非本地船隻），並以預付票繳交水費<br>Any purpose other than Shipping (Non-local Vessels) where payment is made against a prepaid ticket | **$4.58** (註七)(Note 7) |
| 沖廁水每四個月的收費率<br>Flushing per four-month period | |
| — 首30個單位 for the first 30 units | **免費 Free** |
| — 餘下單位 for the remainder | **$4.58** (註七)(Note 7) |

海水沖廁費用全免。
Sea water for flushing is supplied free of charge.

註一：一九七九年推出水費分級制度時，第二級收費的目標是大致收回每單位的淨生產成本，即按照水錶記錄的耗水量計算每單位的總生產成本（包括固定資產平均淨值的目標回報率）減去每單位的差餉補貼。於二零一九至二零年度，每單位的淨生產成本為11.7元，遠超4.16元的收費水平，主要因為水費自一九九五年起並無任何變動。

註二：一九七九年推出水費分級制度時，第三級收費的目標是大致收回每單位的總生產成本，即按照水錶記錄的耗水量計算每單位的平均生產成本（包括固定資產平均淨值的目標回報率）。於二零一九至二零年度，每單位的總生產成本為17.4元，遠超6.45　元的收費水平，主要因為水費自一九九五年起並無任何變動。

註三：第四級收費定價比第三級收費高出約40%，以阻止過量及浪費用水。

註四：一九九二年前，商業用途的收費與住宅用戶第二級收費相同。自一九九二年起，商業用途的收費修訂至高於住宅用戶第二級收費水平，旨在減少對非住宅用戶的補貼。

註五：一九九二年前，建築用途的收費與住宅用戶第三級收費相同。自一九九二年起，建築用途的收費修訂至高於住宅用戶第三級收費水平，旨在減少對非住宅用戶的補貼。

註六：航運（非本地船隻）收費於一九九六年作出修訂，當時收費水平訂為高於每單位總生產成本的40%，目的是阻止非本地船隻在香港取水。

註七：此等收費與商業用途收費相同。

Note 1. When the tariff structure was introduced in 1979, the charge for the second tier was to recover approximately the net unit production cost, which meant the full unit production cost (including a target rate of return on average net fixed assets (ANFA)) less the average contribution from rates per unit, calculated based on the quantity of the metered consumption. In 2019-20, the net unit production cost is $11.7, which is materially higher than the charging rate of $4.16, mainly because water tariffs have not been changed since 1995.

Note 2. When the tariff structure was introduced in 1979, the charge for the third tier was to recover approximately the full unit production cost, which meant the average production cost per unit (including a target rate of return on ANFA), calculated based on the quantity of the metered consumption. In 2019-20, the full unit production cost is $17.4, which is materially higher than the charging rate of $6.45, mainly because water tariffs have not been changed since 1995.

Note 3. The fourth tier is set about 40% higher than the third tier to discourage extravagant and wasteful use of water.

Note 4. Prior to 1992, the charging rate for trade purposes was equal to the second-tier rate for domestic purposes. Commencing from 1992, the charging rate for trade purposes was set higher than the second-tier rate for domestic purposes mainly to reduce the subsidy to non-domestic consumers.

Note 5. Prior to 1992, the charging rate for construction purposes was equal to the third-tier rate for domestic purposes. Commencing from 1992, the charging rate for construction purposes was set higher than the third-tier rate for domestic purposes mainly to reduce the subsidy to non-domestic consumers.

Note 6. The charging rate for shipping (non-local vessels) was last revised in 1996. At that time, it was set at 40% above the full unit production cost to discourage the taking of water in Hong Kong.

Note 7. These charging rates were set at the rate equal to the charging rate for trade purposes.

水務經營帳目自一九九八年至九九年度起已錄得虧損，需依靠政府一般收入補助。二零一九至二零年度錄得虧損16.756億元，成本回收率為85.1%。政府會繼續定期檢討水費，審慎考慮各項因素，包括承擔能力、水務設施的財政表現、當時的經濟形勢，以及立法會議員的意見。

Waterworks operations have seen deficits since 1998-99, and thus are subsidised by general Government revenues. In 2019-20, the deficit was $1,675.6M and the cost recovery rate was 85.1%. The Government continues to review the water tariff periodically, taking into consideration a number of factors, including affordability, financial performance of waterworks operations, the prevailing economic situation, and the views of Legislative Council members.

除水費外，《水務設施規例》（第102A章）亦列明25項法定收費項目。我們一直遵照政府的「用者自付」原則檢討這些收費項目，旨在悉數收回提供服務的成本。於二零一八至一九年度，25項法定收費項目已作調整，修訂自二零一九年三月二十九日起生效。

Other than water charges, there are 25 statutory fee items stipulated in the Waterworks Regulations (Cap. 102A). WSD periodically review these fee items in accordance with the Government-wide "user pays" principle, which aims to recover the full cost of providing services. During the year 2018-19, 25 statutory fee items have been revised effective from 29 March 2019.

## 水費收入總覽

於二零一九至二零年度，約14%住宅用戶毋須支付任何水費；42%達到第二級水費，需繳付每單位4.16元水費；20%需繳付第三級水費，即每單位6.45元；餘下24%需繳付第四級水費，即每單位9.05元的水費。於二零一九至二零年度，280萬住宅用戶（包括無須繳付水費之用戶）每月平均水費為49元。根據政府統計處的住戶開支統計調查，水費及排污費開支約相等於住戶每月平均開支的0.3%。

## PROFILES OF THE REVENUE FROM WATER CHARGES

During this financial year, about 14% of domestic customers were not required to pay water charges, 42% paid up to the tier 2 rate of $4.16 per unit, 20% paid up to the tier 3 rate of $6.45 per unit, and 24% paid up to the tier 4 rate of $9.05 per unit. For WSD's 2.8 million domestic customers, the average water charge in 2019-20, including those not required to pay any charge, was $49 per month. According to the Census & Statistics Department household expenditure survey, the water and sewage charges amounts to about 0.3% of the average monthly household expenditure.

## 水費收入（按用戶類別劃分）

過去五年按用戶類別劃分的水費收入分析如下：

## WATER CHARGES (BY SECTOR)

An analysis of the water charges by sector over the past five years is as follows:

| | 財政年度（百萬元）Financial Year ($million) | | | | | |
|---|---|---|---|---|---|---|
| 用用戶類別 Sector | 2015/16 | 2016/17 | 2017/18 | 2018/19 | 2019/20 | % (19/20) |
| 商業 Trade | 940 | 946 | 970 | 974 | **727(905)** | **26.9(31.2)** |
| 住宅 Domestic | 1,503 | 1,518 | 1,552 | 1,556 | **1,643(1,643)** | **60.7(56.6)** |
| 政府 Government | 159 | 156 | 156 | 164 | **172(172)** | **6.3(5.9)** |
| 其他# Others# | 212 | 211 | 195 | 187 | **165(182)** | **6.1(6.3)** |
| **總收入 Total** | 2,814 | 2,831 | 2,873 | 2,881 | **2,707(2,902)** | **100.0(100.0)** |

括號內數字為實際水費收入加上水費寬減額。
Figures in brackets are water charges received without concession.

# 包括沖廁用淡水
# Includes fresh water for flushing

## 收入及開支分析

水費收入包括一般水費、各項收費、牌費，以及可收回支出的工程費用。在編製水務賬目時，會以應計賬目基準呈列財務表現及狀況，其中包括各項非現金收入項目，主要為差餉補貼、免費用水補貼及政府用水。總運作成本主要包括員工開支、購買東江水的成本、折舊、運作及行政開支。過去五年的收入及開支分析如下：

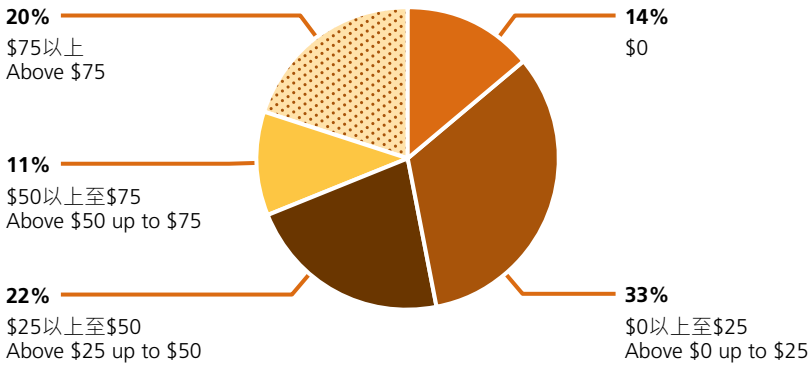
## ANALYSIS OF REVENUE AND EXPENDITURE

Revenue collections include chargeable water supplies, fees, licences, and reimbursable works. In preparing the Waterworks Operating Accounts which present WSD's financial results and positions on an accrual accounting basis, the revenues include non-cash items, mainly contributions from rates, contributions on free allowance, and water supplies to Government establishments. The total operating costs include mainly staff costs, Dongjiang water purchase costs, depreciation, operating and administration expenses. An analysis of the revenue and expenditure over the past five years is as follows:

**收入（百萬元）**
**Revenue ($million)**

| **財政年度**<br>**Financial Year** | **2015/16** | **2016/17** | **2017/18** | **2018/19** | **2019/20** |
|---|---|---|---|---|---|
| 一般水費<br>Chargeable Supplies | 2,654.9 | 2,674.9 | 2,716.9 | 2,717.2 | **2,534.8** |
| 差餉補貼<br>Contribution from Rates | 3,409.5 | 3,187.1 | 3,330.1 | 2,574.8 | **3,146.7** |
| 差餉寬減補貼<br>Contribution on Concession of Rates | 1,164.9 | 1,576.1 | 1,611.9 | 2,665.0 | **2,340.3** |
| 水費寬減補貼<br>Contribution on Concession of Water Charges | - | - | - | - | **195.2** |
| 免費用水補貼<br>Contribution on Free Allowance | 1,009.2 | 1,067.4 | 1,048.6 | 1,055.0 | **1,083.3** |
| 政府用水<br>Supplies to Government Establishments | 158.9 | 156.4 | 156.0 | 163.8 | **172.0** |
| 各項收費及其他<br>Fees, charges and others | 37.1 | 44.5 | 42.6 | 60.3 | **72.6** |
| **總額**<br>**Total** | 8,434.5 | 8,706.4 | 8,906.1 | 9,236.1 | **9,544.9** |

## 二零一九/二零年度住宅用戶每月水費分佈圖
## Distribution of Household Average Monthly Bills 2019/20




## 開支（百萬元）
## Expenditures ($million)

| 財政年度 Financial Year | 2015/16 | 2016/17 | 2017/18 | 2018/19 | 2019/20 |
|---|---|---|---|---|---|
| 員工開支 Staff costs | 1,659.2 | 1,729.6 | 1,917.1 | 2,077.9 | **2,195.0** |
| 運作及行政開支 Operating and administration expenses | 1,918.7 | 1,948.7 | 2,024.1 | 2,023.6 | **2,094.1** |
| 購買東江水的成本 Purchase cost of Dongjiang water | 4,296.1 | 4,569.7 | 4,782.2 | 4,796.5 | **4,810.9** |
| 折舊 Depreciation | 1,699.1 | 1,815.7 | 1,917.1 | 2,013.6 | **2,120.5** |
| **總額 Total** | 9,573.1 | 10,063.7 | 10,640.5 | 10,911.6 | **11,220.5** |

本署致力以符合成本效益的方式提供服務，並在固定資產、設備、資訊科技及人力資源方面投入大量資源，藉此提高運作效益及員工生產力，務求滿足市民對更優質服務的需求。社會大眾以及我們的用戶可以放心，我們會實行嚴謹的財務紀律，在提供優質服務滿足用戶需要之餘，不忘提升成本效益。這是我們實現抱負和使命的基本法則。

WSD is committed to providing services as cost effectively as possible, and has made substantial investments in fixed assets, equipment, information technology and human resources to improve operational efficiency and staff productivity to meet the public's demand for a higher quality of services. Water supplies customers and the public at large can rest assured that WSD will exercise strict financial discipline and be very cost conscientious in delivering quality services to meet customer demands. This is WSD's underlying approach to achieve its vision and missions.

# 水務 - 經營帳目
# Waterworks – Operating Accounts

## 二零一九/二零年度回顧
## REVIEW OF THE YEAR 2019-20

截至二零二零年三月三十一日止的財政年度
For the year ended 31 March 2020

| 工作方面 | Activities |
|---|---|
| 按照水錶記錄的淡水耗水量下降0.3%至6.67億立方米 | Metered fresh water consumption decreased by 0.3% to 667 million cubic metres |

| 財務表現 | Financial Performance |
|---|---|
| 收入上升3.3% | Revenue increased by 3.3% |
| 開支上升2.8% | Expenditure increased by 2.8% |
| 稅後虧損由二零一八 / 一九年度的16.755億元升至二零一九 / 二零年度的16.756億元 | Deficit after taxation increased from $1,675.5 million in 2018-19 to $1,675.6 million in 2019-20 |
| 按固定資產平均淨值計算的回報率由二零一八 / 一九年度的-2.7%增至二零一九 / 二零年度的-2.6% | Return on Average Net Fixed Assets increased from -2.7% in 2018-19 to -2.6% in 2019-20 |

## 經營帳目
## OPERATING ACCOUNT

截至二零二零年三月三十一日止的財政年度
For the year ended 31 March 2020

| | | 註 Note | 2020 (百萬元) $M | 2019 (百萬元) $M |
|---|---|---|---|---|
| 收入 | Revenue | 2 | **9,544.9** | 9,236.1 |
| 開支 | Expenditure | 3 | **11,220.5** | 10,911.6 |
| **稅前虧損** | **Deficit before taxation** | | **(1,675.6)** | (1,675.5) |
| 稅項 | Taxation | 1(e), 1(f), 4 | **-** | - |
| **稅後虧損** | **Deficit after taxation** | 1(j) | **(1,675.6)** | (1,675.5) |

附註為這帳目的一部分。
The annexed notes form part of these accounts.

## 衡量財務表現的指標
## FINANCIAL PERFORMANCE MEASURES

截至二零二零年三月三十一日止的財政年度
For the year ended 31 March 2020

| | | 註 Note | 2020 (百萬元) $M | 2019 (百萬元) $M |
|---|---|---|---|---|
| 固定資產平均淨值 | Average net fixed assets (ANFA) | 1(i), 5 | **64,793.4** | 63,208.4 |
| 實際回報額 | Actual return | | **(1,675.6)** | (1,675.5) |
| 目標回報額 | Target return | | **1,684.6** | 1,643.4 |
| 按固定資產平均淨值計算的實際回報率 | Actual return as % of ANFA | 1(h) | **(2.6%)** | (2.7%) |
| 按固定資產平均淨值計算的目標回報率 | Target return as % of ANFA | | **2.6%** | 2.6% |

附註為這帳目的一部分。
The annexed notes form part of these accounts.

## 財務狀況表
## STATEMENT OF FINANCIAL POSITION

截至二零二零年三月三十一日止的財政年度
For the year ended 31 March 2020

| | | 註 Note | 2020 (百萬元) $M | 2019 (百萬元) $M |
|---|---|---|---|---|
| **可動用淨資產** | **Net assets employed** | | | |
| **固定資產** | **Fixed assets** | 1(b),1(c), 5 | **65,636.8** | 63,950.0 |
| 流動資產 | Current assets | 1(d), 6 | **2,995.2** | 2,853.2 |
| 流動負債 | Current liabilities | 7 | **(2,768.0)** | (2,719.5) |
| **流動資產淨值** | **Net current assets** | | **227.2** | 133.7 |
| | | | **65,864.0** | 64,083.7 |
| **財政來源** | **Financed by** | | | |
| **公共資本帳目** | **Public capital account** | 1(j), 8 | **65,864.0** | 64,083.7 |

附註為這帳目的一部分。
The annexed notes form part of these accounts.

## 帳目附註

### 1. 會計政策

(a) 會計基礎

此帳目是根據歷史成本基礎來制定，並略加修訂以包括名義的收支。

(b) 固定資產

(i) 除政府收回的土地外，固定資產不包括水務設施和集水區位處的土地。至於政府收回的土地，其收回成本已包括在有關的工程成本內。

(ii) 至於工程項目，成本包括實際直接開支，和施工期間有關設計、規劃和監督等的員工開支。

(iii) 所有其他固定資產，除了建造中的資產以成本值計算外，均以其成本值減去累積折舊列出。

(c) 折舊

(i) 折舊是根據固定資產成本值減去使用期末的剩餘值，採用直線攤銷法按其預計使用年期分期攤銷。每年折舊率為：

| | |
|---|---|
| 隧道、堤壩、收回土地及造林等 | 1% |
| 土木工程 | 2% |
| 喉管 — 淡水 | 2% |
| — 海水 | 5% |
| 機電工程、機器及設備 | 4%-20% |
| 水錶 | 8.33% |
| 電腦硬件、軟件及系統 | 10% |
| 車輛 | 10%-20% |

(ii) 建造中的資產並沒有折舊撥備。

(d) 現有存貨

現有存貨是以加權平均法，按成本值計值。

## Notes to the Accounts

### 1. Accounting Policies

(a) Basis of Accounting

The accounts have been prepared on the historical cost basis of accounting, modified to include notional receipts and payments.

(b) Fixed Assets

(i) No cost is included for land which is occupied by installations or sterilised by catchment areas except that, where it has been resumed, the cost of resumption has been included in the capital cost of the project concerned.

(ii) For capital projects, the costs include the actual direct expenditure and staff costs for design, planning and supervision during the construction period.

(iii) All other fixed assets are stated at cost less accumulated depreciation except assets under construction which are stated at cost.

(c) Depreciation

(i) Depreciation is provided on a straight-line basis to amortise the cost of fixed assets less residual value over their estimated useful lives. The annual rates of depreciation used are:

| | |
|---|---|
| Tunnels, dams, resumption and afforestation, etc. | 1% |
| Civil engineering works | 2% |
| Water mains – fresh | 2% |
| – salt | 5% |
| Mechanical/electrical works, plant and machinery | 4%-20% |
| Meters | 8.33% |
| Computer hardware, software and system | 10% |
| Motor vehicles | 10%-20% |

(ii) No depreciation is provided on assets under construction.

(d) Stocks in Hand

Stocks in Hand are valued at cost using the weighted average cost method to the extent that it is material.

### (e) 稅項

名義利得稅乃按年度預期的應課溢利，以報告期末日期的現行稅率，及過往年度的應付稅項調整而作出所需要的撥備。由於這項公用事業於本年度沒有應課稅溢利，因此無需在帳目上作出名義利得稅的撥備。

### (e) Taxation

Notional profits tax is provided, where necessary, based on the expected taxable surplus for the year, using the tax rates prevailing at the reporting period end date, and any adjustment to tax payable in respect of previous years. No provision for notional profits tax has been made in the accounts, as the utility has no taxable surplus for the year.

### (f) 遞延稅項

遞延稅項指就資產及負債帳面值與計算應課稅溢利所用相應稅基間之所有重大暫時差額而作出的適當確認。遞延稅項資產則於應課稅溢利有可能抵銷可扣稅暫時差額時予以確認。由於這項公用事業沒有應課稅溢利可用作抵銷可扣稅暫時差額，因此無需在帳目上就所有重大暫時差額作出遞延稅項撥備。

### (f) Deferred Tax

Deferred tax is recognised, where appropriate, for all material temporary differences between the tax bases of assets and liabilities and their carrying amounts in the accounts. Deferred tax assets are recognised to the extent that it is probable that taxable surplus will be available against which the temporary differences can be utilised. No provision for deferred tax in respect to all material temporary differences has been made in the accounts, as the utility has no taxable surplus against which the temporary differences can be utilised.

### (g) 僱員福利

僱員福利（包括薪金、酬金、退休金、房屋津貼和年假）會被確認為對僱員當年度所提供之相關服務而列作應計開支。

### (g) Employee Benefits

Employee benefits, including salaries, gratuities, pensions, housing benefits and annual leave, are accrued and recognised as an expense in the year in which the associated services are rendered by employees.

### (h) 按固定資產平均淨值計算的實際回報率

按稅後溢利或虧損與固定資產平均淨值的比率計算。

### (h) Actual Return on ANFA

This is calculated as a percentage of surplus/deficit after taxation to average net fixed assets (ANFA).

### (i) 固定資產平均淨值

固定資產平均淨值是指總固定資產值減去累積折舊在期初及期末兩項數值的簡單平均數。

### (i) Average Net Fixed Assets

The average net fixed assets (ANFA) represents the simple average of the opening and closing value of total fixed assets less accumulated depreciation.

### (j) 虧損

由於水務監督沒有獨立的法定身份，其財政資源或虧損均視為政府一般收入的一部分。而有關虧損亦會於這項公共資本帳目中調節。

### (j) Deficit

Since the Water Authority does not have a separate legal identity, its financial resources form part of the General Revenue. All deficits are deemed to be financed by the General Revenue and adjusted to the Public Capital Account of the utility.

## 2. 收入 2. Revenue

| | | 2020 (百萬元) $M | 2019 (百萬元) $M |
|---|---|---|---|
| 收費供水 | Chargeable supplies | **2,534.8** | 2,717.2 |
| 差餉補貼 | Contribution from rates | **3,146.7** | 2,574.8 |
| 政府對寬減計劃的補貼 | Contribution from Government on concessions | **2,535.5** | 2,665.0 |
| 政府為用戶提供免費用水的補貼 | Contribution from Government on free allowance to consumers | **1,083.3** | 1,055.0 |
| 政府樓宇用水 | Supplies to Government establishments | **172.0** | 163.8 |
| 收費、牌照及可收回支出的工程 | Fees, licences and reimbursable works | **27.4** | 28.3 |
| 存款利息 | Interest from deposits | **45.2** | 32.0 |
| | | **9,544.9** | 9,236.1 |

政府對寬減計劃的補貼包括差餉及水費兩部分:

(i) 政府對二零一八/一九年度及二零一九/二零年度的差餉寬減計劃的補貼分別為26.650億元及23.403億元,以彌補於該年度因實行差餉寬減措施而造成的差額。

(ii) 政府對二零一九/二零年度的水費寬減計劃的補貼為1.952億元,以彌補於二零一九年十二月一日至二零二零年三月三十一日因實行非住宅用戶的淡水收費寬減措施而造成的差額。

政府為用戶提供免費用水補貼的計算方法,是把二零一八/一九年度及二零一九/二零年度分別為11.6元和11.7元的淡水每單位淨生產成本(已包括按固定資產平均淨值計算的目標回報額,在該兩個年度為每單位2.5元),乘以按照水錶記錄淡水耗用量內的免費用水補貼用量。

The Government contribution on concessions comprises two parts:

(i) contribution from Government on concession of rates of $2,665.0M in 2018-19 and $2,340.3M in 2019-20 to cover the shortfall in contribution from rates resulting from the concession of rates granted during the years; and

(ii) contribution from Government on concession of water charges of $195.2M in 2019-20 to cover the shortfall in chargeable supplies resulting from concession of water charges for fresh water consumption for non-domestic purposes from 1 December 2019 to 31 March 2020.

The calculation of Government contribution on free allowance to consumers is based on the fresh water net unit production cost of $11.6 and $11.7 for the years 2018-19 and 2019-20 respectively, which has included a target return on ANFA of $2.5 per unit for both of the years, multiplied by the quantity of metered fresh water consumption within the free allowance quantity.

## 3. 開支 3. Expenditure

| | | 2020 (百萬元) $M | 2019 (百萬元) $M |
|---|---|---|---|
| 員工開支 | Staff costs | **2,195.0** | 2,077.9 |
| 運作及行政開支 | Operating and administration expenses | **2,094.1** | 2,023.6 |
| 購買東江水的成本 | Dongjiang water purchase cost | **4,810.9** | 4,796.5 |
| 折舊 | Depreciation | **2,120.5** | 2,013.6 |
| | | **11,220.5** | 10,911.6 |

## 4. 稅項 4. Taxation

| | | 2020 (百萬元) $M | 2019 (百萬元) $M |
|---|---|---|---|
| 名義利得稅 | Notional profits tax charge for the year | **0.0** | 0.0 |
| 以下項目的遞延稅項資產／（負債）未被確認：<br>－未使用的稅項虧損 | Deferred tax assets/(liabilities) not recognized in respect of:<br>-Unused tax loss | **43,215.9** | 40,285.2 |
| 由折舊免稅額所產生的重大暫時差異 | Material temporary difference arising from depreciation allowances | **(26,198.1)** | (24,987.6) |

## 5. 固定資產

## 5. Fixed Assets

| | | 樓宇、過濾器、喉管等 Buildings, Filters, Mains, etc.. (百萬元) $M | 機器及設備 Plant and Machinery (百萬元) $M | 電腦硬件、軟件及系統 Computer Hardware, Software & System (百萬元) $M | 海水沖廁設施 Salt Water Flushing (百萬元) $M | 船灣淡水湖 Plover Cove (百萬元) $M | 萬宜水庫 High Island (百萬元) $M | 水錶 Meters (百萬元) $M | 車輛 Motor Vehicles (百萬元) $M | 建造中的資產 Assets Under Construction (百萬元) $M | 總額 Total (百萬元) $M |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **成本** | **Cost** | | | | | | | | | | |
| 二零一九年四月一日 | At 1 April 2019 | 66,490.4 | 294.4 | 418.8 | 14,350.7 | 702.0 | 1,661.2 | 504.5 | 101.0 | 6,516.8 | **91,039.8** |
| 添置 | Additions | - | 16.1 | 5.7 | - | - | - | - | 5.6 | 3,784.0 | **3,811.4** |
| 轉發 | Transfers | 3,088.8 | - | 8.5 | 385.8 | - | - | - | - | (3,483.1) | **-** |
| 處置/註銷 | Disposals/Write off | (9.3) | (21.8) | (0.7) | (3.8) | - | - | (14.2) | (5.0) | - | **(54.8)** |
| **二零二零年三月三十一日** | **At 31 March 2020** | **69,569.9** | **288.7** | **432.3** | **14,732.7** | **702.0** | **1,661.2** | **490.3** | **101.6** | **6,817.7** | **94,796.4** |
| **累積折舊** | **Accumulated Depreciation** | | | | | | | | | | |
| 二零一九年四月一日 | At 1 April 2019 | 18,746.4 | 206.8 | 350.4 | 5,767.9 | 467.2 | 1,217.0 | 288.9 | 45.2 | - | **27,089.8** |
| 該年折舊 | Charge for the year | 1,426.4 | 20.2 | 13.1 | 574.4 | 9.3 | 28.5 | 38.8 | 9.8 | - | **2,120.5** |
| 處置/註銷後轉回 | Written back on Disposals/Write off | (6.5) | (21.7) | (0.5) | (3.2) | - | - | (14.2) | (4.6) | - | **(50.7)** |
| **二零二零年三月三十一日** | **At 31 March 2020** | **20,166.3** | **205.3** | **363.0** | **6,339.1** | **476.5** | **1,245.5** | **313.5** | **50.4** | **-** | **29,159.6** |
| **帳面淨值** | **Net Book Value** | | | | | | | | | | |
| **二零二零年三月三十一日** | **At 31 March 2020** | **49,403.6** | **83.4** | **69.3** | **8,393.6** | **225.5** | **415.7** | **176.8** | **51.2** | **6,817.7** | **65,636.8** |
| 二零一九年三月三十一日 | At 31 March 2019 | 47,744.0 | 87.6 | 68.4 | 8,582.8 | 234.8 | 444.2 | 215.6 | 55.8 | 6,516.8 | 63,950.0 |

帳目不包括搬遷食水及海水配水庫往岩洞的(a)可行性研究及(b)勘查研究、設計及工地勘測所涉及的資本開支。

The capital expenditure relating to the (a) feasibility study and (b) investigation study, design and site investigation for the relocation of fresh water and salt water service reservoirs into caverns have been excluded.

## 6. 流動資產 6. Current Assets

| | | 2020 (百萬元) $M | 2019 (百萬元) $M |
|---|---|---|---|
| 現有存貨 | Stocks in Hand | **159.6** | 137.7 |
| 應收帳項 | Debtors | **549.9** | 481.0 |
| 與庫務署的往來帳 | Current Account with Treasury | **2,285.7** | 2,234.5 |
| | | **2,995.2** | 2,853.2 |

## 7. 流動負債 7. Current Liabilities

| | | 2020 (百萬元) $M | 2019 (百萬元) $M |
|---|---|---|---|
| 用戶和承建商的按金 | Consumers' and contractors' deposits | **2,275.7** | 2,224.4 |
| 應付帳項 | Creditors | **492.3** | 495.1 |
| | | **2,768.0** | 2,719.5 |

## 8. 公共資本帳目

公共資本帳目指政府在這項公用事業的投資。

## 8. Public Capital Account

The Public Capital Account represents the Government's investment in this utility.

| | | 2020 (百萬元) $M | 2019 (百萬元) $M |
|---|---|---|---|
| 四月一日結餘 | Balance as of 1 April | **64,083.7** | 62,647.2 |
| 本年度的虧損 | Deficit for the year | **(1,675.6)** | (1,675.5) |
| 政府的額外現金投資 | Additional cash investment by the Government | **3,455.9** | 3,112.0 |
| 三月三十一日結餘 | Balance as at 31 March | **65,864.0** | 64,083.7 |

## 9. 承擔

於二零二零年三月三十一日及二零一九年三月三十一日，未於經營帳目作出撥備的未償還承擔如下：

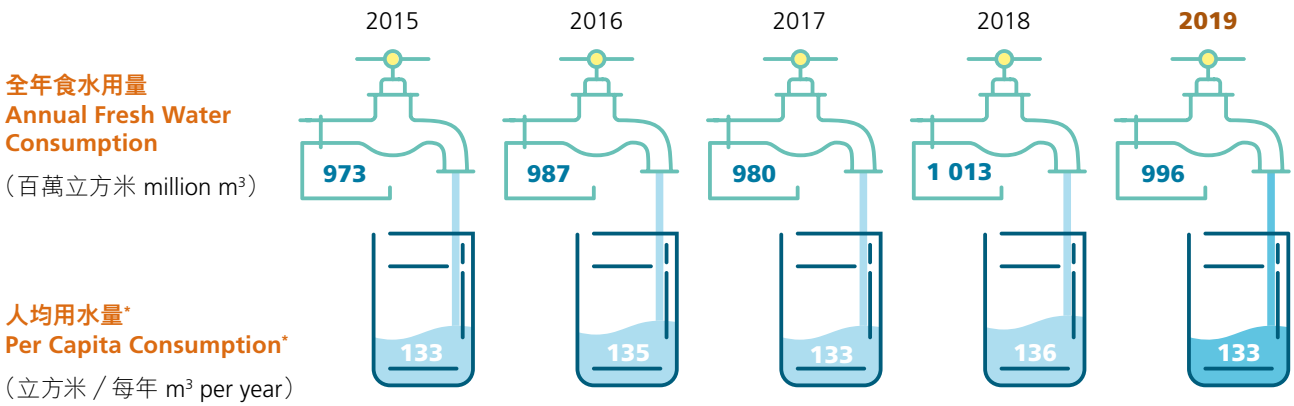
## 9. Commitments

Outstanding commitments as of 31 March 2020 and 31 March 2019 not provided for in the operating accounts were as follows:

| | | 2020 (百萬元) $M | 2019 (百萬元) $M |
|---|---|---|---|
| (i) 基本工程項目、物業、機器及設備以及非經常資助金 | (i) Capital works projects, property, plant and equipment and capital subvention | **19,108.5** | 11,983.5 |
| (ii) 非經常性開支 | (ii) Non-recurrent expenditure | **-** | - |
| (iii) 投資 | (iii) Investments | **-** | - |
| (iv) 貸款及非經常性撥款補助金 | (iv) Loans and non-recurrent grants | **-** | - |
| 三月三十一日結餘 | Balance as of 31 March | **19,108.5** | 11,983.5 |

# 數據一覽
# Data Summary

## 全年食水用量及人均用水量
## ANNUAL FRESH WATER CONSUMPTION AND PER CAPITA CONSUMPTION




## 全港人口及獲食水供應人口
## POPULATION IN HONG KONG AND POPULATION SERVED WITH FRESH WATER

| | 2015 | 2016 | 2017 | 2018 | **2019** |
|---|---|---|---|---|---|
| 全港人口* Population in Hong Kong* （百萬 million） | 7.31 | 7.34 | 7.39 | 7.45 | **7.51** |
| 獲食水供應人口 Population Served with Fresh Water （百萬 million） | 7.30 | 7.34# | 7.39# | 7.45# | **7.51#** |

* 根據政府統計處公佈的年中人口數字。
Based on the mid-year population figures released by the Census and Statistics Department.

\# 全港超過99.9%人口獲食水供應。
Over 99.9% of the population in Hong Kong is served with fresh water.

## 全年海水用量及獲海水供應人口
## ANNUAL SALT WATER CONSUMPTION AND POPULATION SERVED WITH SALT WATER

| | 2015 | 2016 | 2017 | 2018 | **2019** |
|---|---|---|---|---|---|
| **全年海水用量 Annual Salt Water Consumption** （百萬立方米 million $m^3$） | **272** | **260** | **278** | **279** | **307** |
| **獲海水供應人口 Population Served with Salt Water** （百萬 million） | **5.85** | **6.14** | **6.22** | **6.27** | **6.33** |

*灣仔二號海水抽水站*
*Wan Chai No.2 Salt Water Pumping Station*

## 二零一九年四月至二零二零年三月的食水水質

### 注意事項：

- 香港特別行政區政府已採用世界衞生組織在二零一一年制定的《飲用水水質準則》（第四版）中相關準則值／暫定準則值（《世衞準則》），作為香港食水標準。
- 所有食水樣本均從濾水廠、配水庫、供水接駁點和公眾可達的用戶水龍頭抽取。
- 在此期間抽取的食水樣本的測試結果完全符合香港食水標準。

## DRINKING WATER QUALITY FOR THE PERIOD OF APRIL 2019 - MARCH 2020

### Points to Note:

- The Government of the Hong Kong Special Administrative Region has adopted the corresponding guideline values (GVs) / provisional guideline values (PGVs) in the fourth edition of the World Health Organization's Guidelines for Drinking-water Quality (WHO Guidelines), published in 2011 as the Hong Kong Drinking Water Standards (HKDWS).
- Drinking water samples were taken at WTWs, service reservoirs, connection points and publicly accessible consumer taps.
- The testing results of the drinking water samples taken during this period fully complied with the HKDWS.

**甲部：微生物項目**
**Part A: Microbiological parameters**

| 項目 Parameter | 單位 Unit | 監測結果 Monitoring Data (04/2019 - 03/2020) | | | 香港食水標準 HKDWS | 達標 Compliance |
|---|---|---|---|---|---|---|
| | | 最低值 Minimum | 最高值 Maximum | 平均值 Average | | |
| 埃希氏大腸桿菌 E. coli | 菌落數／100毫升 cfu* per 100 mL | 0 | 0 | 0 | 0 | √ |
| 總大腸桿菌群(註釋1) Total Coliforms (Note 1) | 菌落數／100毫升 cfu* per 100 mL | 0 | 0 | 0 | - | - |
| 隱孢子蟲(註釋1) Cryptosporidium (Note 1) | 卵囊數量／100公升 no. of oocyst per 100L | 0 | 0 | 0 | - | - |
| 賈第蟲(註釋1) Giardia (Note 1) | 孢囊數量／ 100公升 no. of cyst per 100L | 0 | 0 | 0 | - | - |

*Colony forming unit (cfu)

註釋：

1 雖然香港食水標準沒有為總大腸桿菌群、隱孢子蟲或賈第蟲制訂標準值，但本署仍然會監測這些項目在食水中的含量。

Notes:

1 Although the HKDWS does not have a standard value for Total Coliforms, Cryptosporidium or Giardia, WSD also monitors these parameters in drinking water.

## 乙部：化學項目
## Part B: Chemical parameters

| 項目 Parameter | 單位 Unit | 監測結果 Monitoring Data (04/2019 - 03/2020) | | | 香港食水標準 HKDWS | 達標 Compliance |
|---|---|---|---|---|---|---|
| | | 最低值 Minimum | 最高值 Maximum | 平均值 Average | | |
| 丙烯酰胺 Acrylamide | 微克/ 公升 µg/L | < 0.4 | < 0.4 | < 0.4 | ≤ 0.5 | √ |
| 草不綠 Alachlor | 微克/ 公升 µg/L | < 5.0 | < 5.0 | < 5.0 | ≤ 20 | √ |
| 涕滅威 Aldicarb | 微克/ 公升 µg/L | < 2.5 | < 2.5 | < 2.5 | ≤ 10 | √ |
| 艾氏劑和異艾氏劑 Aldrin and Dieldrin | 微克/ 公升 µg/L | < 0.008 | < 0.008 | < 0.008 | ≤ 0.03 | √ |
| 銻 Antimony | 毫克/ 公升 mg/L | < 0.001 | < 0.001 | < 0.001 | ≤ 0.02 | √ |
| 砷 Arsenic | 毫克/ 公升 mg/L | < 0.001 | < 0.001 | < 0.001 | ≤ 0.01 | √ |
| 莠去津和其氯均三嗪代謝物 Atrazine and its chloro-s-triazine metabolites | 微克/ 公升 µg/L | < 25 | < 25 | < 25 | ≤ 100 | √ |
| 鋇 Barium | 毫克/ 公升 mg/L | 0.003 | 0.020 | 0.013 | ≤ 0.7 | √ |
| 苯 Benzene | 微克/ 公升 µg/L | < 2.5 | < 2.5 | < 2.5 | ≤ 10 | √ |
| 苯并(a)芘 Benzo (a) pyrene | 微克/ 公升 µg/L | < 0.0020 | < 0.0020 | < 0.0020 | ≤ 0.7 | √ |
| 硼 Boron | 毫克/ 公升 mg/L | < 0.02 | 0.05 | 0.02 | ≤ 2.4 | √ |
| 溴酸鹽 Bromate | 微克/ 公升 µg/L | < 2.5 | 2.5 | < 2.5 | ≤ 10 | √ |
| 一溴二氯甲烷 Bromodichloromethane | 微克/ 公升 µg/L | < 15 | 22 | < 15 | ≤ 60 | √ |
| 溴仿 Bromoform | 微克/ 公升 µg/L | < 25 | < 25 | < 25 | ≤ 100 | √ |
| 鎘 Cadmium | 毫克/ 公升 mg/L | < 0.001 | < 0.001 | < 0.001 | ≤ 0.003 | √ |

| 項目 Parameter | 單位 Unit | 監測結果 Monitoring Data (04/2019 - 03/2020) | | | 香港食水標準 HKDWS | 達標 Compliance |
|---|---|---|---|---|---|---|
| | | 最低值 Minimum | 最高值 Maximum | 平均值 Average | | |
| 呋喃丹 Carbofuran | 微克/ 公升 µg/L | < 1.2 | < 1.2 | < 1.2 | ≤ 7 | √ |
| 四氯化碳 Carbon tetrachloride | 微克/ 公升 µg/L | < 0.50 | < 0.50 | < 0.50 | ≤ 4 | √ |
| 氯酸鹽 Chlorate | 微克/ 公升 µg/L | < 25 | 98 | < 25 | ≤ 700 | √ |
| 氯丹 Chlordane | 微克/ 公升 µg/L | < 0.050 | < 0.050 | < 0.050 | ≤ 0.2 | √ |
| 氯 Chlorine | 毫克/ 公升 mg/L | < 0.1 | 1.5 | 0.7 | ≤ 5 | √ |
| 亞氯酸鹽 Chlorite | 微克/ 公升 µg/L | < 25 | < 25 | < 25 | ≤ 700 | √ |
| 氯仿 Chloroform | 微克/ 公升 µg/L | < 50 | < 50 | < 50 | ≤ 300 | √ |
| 綠麥隆 Chlorotoluron | 微克/ 公升 µg/L | < 2.5 | < 2.5 | < 2.5 | ≤ 30 | √ |
| 毒死蜱 Chlorpyrifos | 微克/ 公升 µg/L | < 7.5 | < 7.5 | < 7.5 | ≤ 30 | √ |
| 鉻 Chromium | 毫克/ 公升 mg/L | < 0.001 | < 0.001 | < 0.001 | ≤ 0.05 | √ |
| 銅 Copper | 毫克/ 公升 mg/L | < 0.003 | 0.081 | < 0.003 | ≤ 2 | √ |
| 青乙酰胂 Cyanazine | 微克/ 公升 µg/L | < 0.15 | < 0.15 | < 0.15 | ≤ 0.6 | √ |
| 2,4-滴 2,4-D (or 2,4-dichlorophenoxyacetic acid) | 微克/ 公升 µg/L | < 7.5 | < 7.5 | < 7.5 | ≤ 30 | √ |
| 丁基-2,4 二氯酚羥基醋酸 2,4-DB (or 4-(2,4-dichlorophenoxy) butyric acid) | 微克/ 公升 µg/L | < 22 | < 22 | < 22 | ≤ 90 | √ |
| 滴滴涕和代謝物 DDT and metabolites | 微克/ 公升 µg/L | < 0.50 | < 0.50 | < 0.50 | ≤ 1 | √ |
| 二(2-乙基己基) 鄰苯二甲酸鹽 Di (2-ethylhexyl) phthalate | 微克/ 公升 µg/L | < 2 | < 2 | < 2 | ≤ 8 | √ |

| 項目 Parameter | 單位 Unit | 監測結果 Monitoring Data (04/2019 - 03/2020) | | | 香港食水標準 HKDWS | 達標 Compliance |
|---|---|---|---|---|---|---|
| | | 最低值 Minimum | 最高值 Maximum | 平均值 Average | | |
| 二溴乙腈 Dibromoacetonitrile | 微克/ 公升 µg/L | < 0.5 | 0.84 | < 0.5 | ≤ 70 | √ |
| 二溴一氯甲烷 Dibromochloromethane | 微克/ 公升 µg/L | < 25 | < 25 | < 25 | ≤ 100 | √ |
| 1,2-二溴-3-氯丙烷 1,2-Dibromo-3-chloropropane | 微克/ 公升 µg/L | < 0.25 | < 0.25 | < 0.25 | ≤ 1 | √ |
| 1,2-二溴乙烷 1,2-Dibromoethane | 微克/ 公升 µg/L | < 0.10 | < 0.10 | < 0.10 | ≤ 0.4 | √ |
| 二氯乙酸鹽 Dichloroacetate | 微克/ 公升 µg/L | < 2 | 15 | 5.7 | ≤ 50 | √ |
| 二氯乙腈 Dichloroacetonitrile | 微克/ 公升 µg/L | < 2.5 | < 2.5 | < 2.5 | ≤ 20 | √ |
| 1,2-二氯苯 1,2-Dichlorobenzene | 微克/ 公升 µg/L | < 250 | < 250 | < 250 | ≤ 1000 | √ |
| 1,4-二氯苯 1,4-Dichlorobenzene | 微克/ 公升 µg/L | < 75 | < 75 | < 75 | ≤ 300 | √ |
| 1,2-二氯乙烷 1,2-Dichloroethane | 微克/ 公升 µg/L | < 7.5 | < 7.5 | < 7.5 | ≤ 30 | √ |
| 1,2-二氯乙烯 1,2-Dichloroethene | 微克/ 公升 µg/L | < 12 | < 12 | < 12 | ≤ 50 | √ |
| 二氯甲烷 Dichloromethane | 微克/ 公升 µg/L | < 5.0 | 5.0 | < 5.0 | ≤ 20 | √ |
| 1,2-二氯丙烷 1,2-Dichloropropane | 微克/ 公升 µg/L | < 5.0 | < 5.0 | < 5.0 | ≤ 40 | √ |
| 1,3-二氯丙烯 1,3-Dichloropropene | 微克/ 公升 µg/L | < 5.0 | < 5.0 | < 5.0 | ≤ 20 | √ |
| 2,4-滴丙酸 Dichlorprop (or 2,4-DP) | 微克/ 公升 µg/L | < 25 | < 25 | < 25 | ≤ 100 | √ |
| 樂果 Dimethoate | 微克/ 公升 µg/L | < 1.5 | < 1.5 | < 1.5 | ≤ 6 | √ |
| 1,4-二噁烷 1,4-Dioxane | 微克/ 公升 µg/L | < 1.5 | 1.9 | < 1.5 | ≤ 50 | √ |
| 乙二胺四乙酸 Edetic acid (EDTA) | 微克/ 公升 µg/L | < 30 | < 30 | < 30 | ≤ 600 | √ |

| 項目 Parameter | 單位 Unit | 監測結果 Monitoring Data (04/2019 - 03/2020) | | | 香港食水標準 HKDWS | 達標 Compliance |
|---|---|---|---|---|---|---|
| | | 最低值 Minimum | 最高值 Maximum | 平均值 Average | | |
| 異狄氏劑 Endrin | 微克/ 公升 µg/L | < 0.15 | < 0.15 | < 0.15 | ≤ 0.6 | √ |
| 表氯醇 Epichlorohydrin | 微克/ 公升 µg/L | < 0.4 | < 0.4 | < 0.4 | ≤ 0.4 | √ |
| 乙苯 Ethylbenzene | 微克/ 公升 µg/L | < 75 | < 75 | < 75 | ≤ 300 | √ |
| 2,4,5-涕丙酸 Fenoprop (or 2,4,5-TP) | 微克/ 公升 µg/L | < 2.2 | < 2.2 | < 2.2 | ≤ 9 | √ |
| 氟化物 Fluoride | 毫克/ 公升 mg/L | 0.18 | 0.64 | 0.49 | ≤ 1.5 | √ |
| 六氯丁二烯 Hexachlorobutadiene | 微克/ 公升 µg/L | < 0.15 | < 0.15 | < 0.15 | ≤ 0.6 | √ |
| 羥基化莠去津 Hydroxyatrazine | 微克/ 公升 µg/L | < 50 | < 50 | < 50 | ≤ 200 | √ |
| 異丙隆 Isoproturon | 微克/ 公升 µg/L | < 2.0 | < 2.0 | < 2.0 | ≤ 9 | √ |
| 鉛 Lead | 毫克/ 公升 mg/L | < 0.001 | < 0.001 | < 0.001 | ≤ 0.01 | √ |
| 林丹 Lindane | 微克/ 公升 µg/L | < 0.50 | < 0.50 | < 0.50 | ≤ 2 | √ |
| 2-甲基-4-氯苯氧基乙酸 MCPA (or (2-methyl-4-chlorophenoxy)acetic acid) | 微克/ 公升 µg/L | < 2.0 | < 2.0 | < 2.0 | ≤ 2 | √ |
| 2-甲基-4-氯丙酸 Mecoprop (or MCPP) | 微克/ 公升 µg/L | < 2.5 | < 2.5 | < 2.5 | ≤ 10 | √ |
| 汞 Mercury | 毫克/ 公升 mg/L | < 0.00005 | < 0.00005 | < 0.00005 | ≤ 0.006 | √ |
| 甲氧滴滴涕 Methoxychlor | 微克/ 公升 µg/L | < 5.0 | < 5.0 | < 5.0 | ≤ 20 | √ |
| 甲氧毒草安 Metolachlor | 微克/ 公升 µg/L | < 2.5 | < 2.5 | < 2.5 | ≤ 10 | √ |
| 微囊藻毒素-LR(總) Microcystin-LR (total) | 微克/ 公升 µg/L | < 0.5 | < 0.5 | < 0.5 | ≤ 1 | √ |
| 禾草特 Molinate | 微克/ 公升 µg/L | < 1.5 | < 1.5 | < 1.5 | ≤ 6 | √ |

| 項目 Parameter | 單位 Unit | 監測結果 Monitoring Data (04/2019 - 03/2020) | | | 香港食水標準 HKDWS | 達標 Compliance |
|---|---|---|---|---|---|---|
| | | 最低值 Minimum | 最高值 Maximum | 平均值 Average | | |
| 一氯胺 Monochloramine | 毫克/ 公升 mg/L | < 1.0 | < 1.0 | < 1.0 | ≤ 3 | √ |
| 一氯醋酸鹽 Monochloroacetate | 微克/ 公升 µg/L | < 2 | < 2 | < 2 | ≤ 20 | √ |
| 鎳 Nickel | 毫克/ 公升 mg/L | < 0.001 | 0.003 | < 0.001 | ≤ 0.07 | √ |
| 硝酸鹽(以$NO_3$-計) Nitrate (as $NO_3$- ) | 毫克/ 公升 mg/L | < 2.5 | 12 | 4.2 | ≤ 50 | √ |
| 次氨基三乙酸 Nitrilotriacetic acid | 微克/ 公升 µg/L | < 30 | < 30 | < 30 | ≤ 200 | √ |
| 亞硝酸鹽(以$NO_2$-計) Nitrite (as $NO_2$- ) | 毫克/ 公升 mg/L | < 0.004 | 0.008 | < 0.004 | ≤ 3 | √ |
| N-亞硝基二甲胺 N-Nitrosodimethylamine | 微克/ 公升 µg/L | < 0.025 | < 0.025 | < 0.025 | ≤ 0.1 | √ |
| 二甲戊樂靈 Pendimethalin | 微克/ 公升 µg/L | < 5.0 | < 5.0 | < 5.0 | ≤ 20 | √ |
| 五氯酚 Pentachlorophenol | 微克/ 公升 µg/L | < 2.2 | < 2.2 | < 2.2 | ≤ 9 | √ |
| 硒 Selenium | 毫克/ 公升 mg/L | < 0.003 | < 0.003 | < 0.003 | ≤ 0.04 | √ |
| 西瑪三嗪 Simazine | 微克/ 公升 µg/L | < 0.50 | < 0.50 | < 0.50 | ≤ 2 | √ |
| 二氯異氰尿酸鈉（以氰尿酸計） Sodium dichloroisocyanurate (as cyanuric acid) | 毫克/ 公升 mg/L | < 10 | < 10 | < 10 | ≤ 40 | √ |
| 苯乙烯 Styrene | 微克/ 公升 µg/L | < 5.0 | < 5.0 | < 5.0 | ≤ 20 | √ |
| 2,4,5-涕 2,4,5-T (or 2,4,5-trichlorophenoxy acetic acid) | 微克/ 公升 µg/L | < 2.2 | < 2.2 | < 2.2 | ≤ 9 | √ |
| 特丁律 Terbuthylazine | 微克/ 公升 µg/L | < 1.8 | < 1.8 | < 1.8 | ≤ 7 | √ |
| 四氯乙烯 Tetrachloroethene | 微克/ 公升 µg/L | < 10 | < 10 | < 10 | ≤ 40 | √ |

| 項目 Parameter | 單位 Unit | 監測結果 Monitoring Data (04/2019 - 03/2020) | | | 香港食水標準 HKDWS | 達標 Compliance |
|---|---|---|---|---|---|---|
| | | 最低值 Minimum | 最高值 Maximum | 平均值 Average | | |
| 甲苯 Toluene | 微克/ 公升 µg/L | < 175 | < 175 | < 175 | ≤ 700 | √ |
| 三氯乙酸鹽 Trichloroacetate | 微克/ 公升 µg/L | < 2 | 9.4 | 3.9 | ≤ 200 | √ |
| 三氯乙烯 Trichloroethene | 微克/ 公升 µg/L | < 18 | < 18 | < 18 | ≤ 20 | √ |
| 2,4,6-三氯酚 2,4,6-Trichlorophenol | 微克/ 公升 µg/L | < 50 | < 50 | < 50 | ≤ 200 | √ |
| 氟樂靈 Trifluralin | 微克/ 公升 µg/L | < 5.0 | < 5.0 | < 5.0 | ≤ 20 | √ |
| 鈾 Uranium | 毫克/ 公升 mg/L | < 0.0002 | 0.0004 | < 0.0002 | ≤ 0.03 | √ |
| 氯乙烯 Vinyl chloride | 微克/ 公升 µg/L | < 0.20 | < 0.20 | < 0.20 | ≤ 0.3 | √ |
| 二甲苯 Xylenes | 微克/ 公升 µg/L | < 125 | < 125 | < 125 | ≤ 500 | √ |

註釋：

以上的統計數字並不包括本署自二零一七年十二月起展開的水質監測優化計劃（優化監測計劃）所收集的數據。該計劃於全港隨機抽出客戶，從他們的水龍頭收集食水樣本，檢測有可能在內部供水系統出現的六種金屬，即銻、鎘、鉻、銅、鉛和鎳，以監測客戶水龍頭的食水水質。相關監測數據的統計數字每周於本署優化監測計劃的網頁（www.wsd.gov.hk/tc/dwsewqmp）內公佈。

Notes:

The above statistics do not include the data collected under the Enhanced Water Quality Monitoring Programme (Enhanced Programme) launched by WSD since December 2017. The programme takes drinking water samples from consumer taps in the premises of consumers randomly selected over the territory for testing six metals, namely antimony, cadmium, chromium, copper, lead and nickel, which could be present in an internal plumbing system, to monitor the relevant drinking water quality at consumer taps. The statistics of the monitoring data of the Enhanced Programme are published on WSD's website (www.wsd.gov.hk/en/dwsewqmp) on a weekly basis.

## 丙部：輻射項目
## Part C: Radiological parameters

| 項目 Parameter | 單位 Unit | 監測結果 Monitoring Data (04/2019 - 03/2020) | | | 香港食水標準篩查水平 (註釋1) HKDWS Screening Level (Note 1) | 低於篩查水平 Below Screening Level |
|---|---|---|---|---|---|---|
| | | 最低值 Minimum | 最高值 Maximum | 平均值 Average | | |
| 總α活度 Gross alpha activity | 貝可/ 公升 Bq/L | < 0.1 | < 0.1 | < 0.1 | < 0.5 | √ |
| 總β活度 Gross beta activity | 貝可/ 公升 Bq/L | < 0.2 | < 0.2 | < 0.2 | < 1.0 | √ |

註釋：

1 食水中的總α及總β活度的輻射篩查水平分別為每公升0.5貝可和每公升1.0貝可。若食水中的有關放射性活度低於篩查水平，則無需調查或詳細分析個別放射性核素。

Notes:

1 The screening levels for radiation in drinking water for gross alpha activity and gross beta activity are 0.5 Bq/L and 1.0 Bq/L respectively, below which no further investigation or detailed analysis for specific radionuclides is required.

## 丁部：其他項目
## Part D: Other parameters

| 項目 Parameter | 單位 Unit | 監測結果 Monitoring Data (04/2019 - 03/2020) | | |
|---|---|---|---|---|
| | | 最低值 Minimum | 最高值 Maximum | 平均值 Average |
| pH值(水溫25°C時) pH at 25 °C | pH | 7.1 | 9.1 | 8.4 |
| 色度 Colour | Hazen unit | < 5 | < 5 | < 5 |
| 混濁度 Turbidity | NTU | < 0.1 | 2.9 | 0.2 |
| 導電率(水溫25°C時) Conductivity at 25 °C | μS/cm | 60 | 197 | 135 |
| 溫度 Temperature | ℃ | 17.2 | 33.0 | 25.5 |
| 總鹼度(以CaCO3計) Total alkalinity (as $CaCO_3$) | 毫克/公升 mg/L | 7 | 40 | 24 |
| 總硬度(以CaCO3計) Total hardness (as $CaCO_3$) | 毫克/公升 mg/L | < 5 | 61 | 36 |
| 鈣 Calcium | 毫克/公升 mg/L | 0.9 | 19 | 11 |

| 項目 Parameter | 單位 Unit | 監測結果 Monitoring Data (04/2019 - 03/2020) | | |
|---|---|---|---|---|
| | | 最低值 Minimum | 最高值 Maximum | 平均值 Average |
| 鎂 Magnesium | 毫克/公升 mg/L | 0.42 | 2.3 | 1.4 |
| 氯化物 Chloride | 毫克/公升 mg/L | < 5 | 17 | 10 |
| 硫酸鹽 Sulphate | 毫克/公升 mg/L | 5 | 26 | 13 |
| 正磷酸鹽(以$PO_4$計) Ortho-phosphates (as $PO_4$) | 毫克/公升 mg/L | < 0.01 | 0.01 | < 0.01 |
| 鐵 Iron | 毫克/公升 mg/L | < 0.01 | 0.08 | < 0.01 |
| 鋁 Aluminium | 毫克/公升 mg/L | < 0.01 | 0.27 | 0.03 |
| 二氧化硅(以$SiO_2$計) Silica (as $SiO_2$) | 毫克/公升 mg/L | 0.6 | 19 | 10 |
| 錳 Manganese | 毫克/公升 mg/L | < 0.01 | 0.04 | < 0.01 |

註釋：

以上項目量度香港食水的一般物理和化學特性。香港食水標準並不包括這些項目，因此沒有以上項目的標準值。

Notes:

The above parameters relate to the general physical and chemical properties of the drinking water in Hong Kong. The HKDWS does not include these parameters and hence there are no standard values for them.

# 附錄
# Appendices

## 附錄一
## Appendix I

### 客戶諮詢中心

#### 香港區

**灣仔客戶諮詢中心**
灣仔告士打道7號入境事務大樓1樓

#### 九龍區

**大角咀客戶諮詢中心**
大角咀鐵樹街41號地下

#### 新界區

**大埔客戶諮詢中心**
大埔汀角路1號大埔政府合署4樓

**沙田客戶諮詢中心**
沙田上禾輋路1號沙田政府合署3樓

**屯門客戶諮詢中心**
屯門屯喜路1號屯門政府合署7樓

### CUSTOMER ENQUIRY CENTRES

#### Hong Kong

**Wan Chai Customer Enquiry Centre**
1/F, Immigration Tower, 7 Gloucester Road, Wan Chai

#### Kowloon

**Tai Kok Tsui Customer Enquiry Centre**
G/F, 41 Tit Shu Street, Tai Kok Tsui

#### New Territories

**Tai Po Customer Enquiry Centre**
4/F, Tai Po Government Offices, 1 Ting Kok Road, Tai Po

**Sha Tin Customer Enquiry Centre**
3/F, Sha Tin Government Offices, 1 Sheung Wo Che Road, Sha Tin

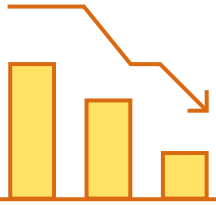
**Tuen Mun Customer Enquiry Centre**
7/F, Tuen Mun Government Offices, 1 Tuen Hi Road, Tuen Mun

# 附錄二
# Appendix II

## 客戶查詢及申請服務的統計數字
## Statistics on Customer Enquiries and Requests for Service

| 個案數目 Number of Enquiries and Requests | 年份 Year | | | | |
|---|---|---|---|---|---|
| | 2015 | 2016 | 2017 | 2018 | 2019 |
| 書面、傳真及電郵 Letter, Fax and Email | 215 428 | 225 097 | 247 665 | 259 039 | **266 624** |
| 電話 Telephone | 833 284 | 842 414 | 847 330 | 860 650 | **836 767** |
| 親身 Counter | 253 698 | 290 368 | 335 271 | 329 551 | **317 921** |
| **總數 Total** | **1 302 410** | **1 357 879** | **1 430 266** | **1 449 240** | **1 421 312** |

# 附錄三
# Appendix III



## 客戶投訴的統計數字
## Statistics on Customer Complaints

| 投訴數目 Number of Complaints | 年份 Year | | | | |
|---|---|---|---|---|---|
| | 2015 | 2016 | 2017 | 2018 | 2019 |
| 與帳戶有關的投訴# Account-Related# | 140 | 142 | 145 | 138 | **94** |
| 與帳戶無關的投訴 Non-Account-Related | 7 787 | 7 767 | 7 498 | 6 454 | **5 828** |
| **總數 Total** | **7 927** | **7 909** | **7 643** | **6 592** | **5 922** |

# 由區議會、立法會及申訴專員轉介與帳戶有關的投訴。
Account-related complaints from District Councils, Legislative Council and The Ombudsman.

# 附錄四
# Appendix IV


## 二零一九至二零年度繳費方式的統計數字
## Statistics on Mode of Payment 2019/20

| 繳費方式 Mode of Payment | 交易數目 No. of Cases | 百分比 Percentage (%) |
|---|---|---|
| 親身繳費 In person | **3 784 000** | 46.3 |
| 郵寄 By post | **58 000** | 0.7 |
| 自動轉帳 Autopay | **878 000** | 10.8 |
| 繳費靈 Payment by Phone Service (PPS) | **693 000** | 8.5 |
| 自動櫃員機 ATM | **320 000** | 3.9 |
| 網上繳費 Internet | **2 438 000** | 29.8 |
| **總數 Total** | **8 171 000** | **100.0** |

財政年度：由每年四月一日起至翌年三月三十一日止

Financial Year: 1 April to 31 March

年份：由每年一月一日起至十二月三十一日止

Year (Calendar Year): 1 January to 31 December

### 匯率

除另有說明外，本年報所用「元」均指港元。自一九八三年十月十七日起，政府透過一項有關發行紙幣的措施，將港元與美元聯繫，以7.8港元兌1美元為固定匯率。

### Exchange Rates

When dollars are quoted in this report, they are, unless otherwise stated, Hong Kong dollars. Since 17 October 1983, the Hong Kong dollar has been linked to the US dollar, through an arrangement in the note-issue mechanism, at a fixed rate of HK$7.80 = US$1.

## 水務署
## WATER SUPPLIES DEPARTMENT

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