



水務署  
WATER SUPPLIES DEPARTMENT

穩健供水 優創未來

Enhancing Water Security  
for a **BETTER FUTURE**

年報 Annual Report 2017 / 18



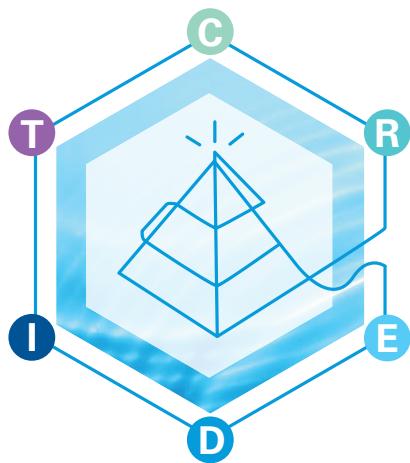


## 抱負 Vision

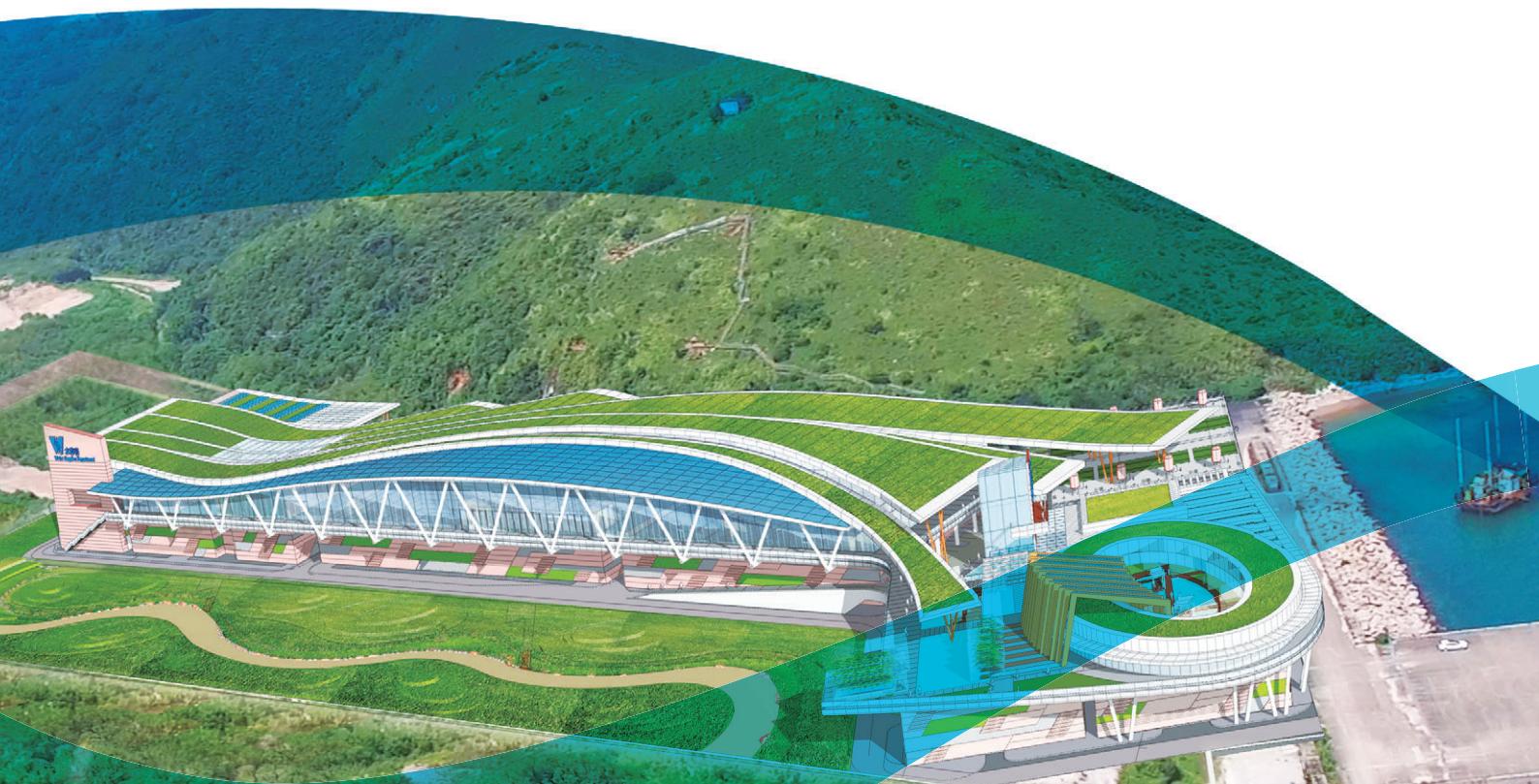
在滿足客戶對優質供水服務的需求，務求有卓越之表現。

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

## 信念 Values



- |      |   |                        |
|------|---|------------------------|
| 以客為本 | C | ustomer satisfaction   |
| 確保質量 | R | eliability             |
| 重視環保 | E | nvironmental awareness |
| 竭盡所能 | D | edication              |
| 精益求精 | I | mprovement             |
| 同心協力 | T | eamwork                |



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## 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.

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# 部門總覽

## Corporate Profile

穩定及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負責維持香港的食水及海水供應，確保供應可靠充足。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二至三成。本港餘下部分的食水由廣東省的東江輸入。本地雨水和輸入的東江水均經過嚴格處理及監測，務求食水水質符合香港食水標準。這標準採用了世界衛生組織(世衛)的《飲用水水質準則》。此外，自二十世紀五十年代以來，我們充分利用香港近海的地理優勢，將經處理的海水用作沖廁用途。食水及海水透過兩個完全獨立的供水管網。所有供水會透過龐大的配水庫和管網，配送至各家各戶及商用物業。

為確保供水穩健，我們透過海水淡化、再造水、中水重用及雨水回收等技術，努力開拓新水源。這些水源將成為重要支柱，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，水務署已實施相關措施，透過開發可再生能源，致力減少碳足跡。此外，水務署是首個獲得ISO 50001能源管理系統認證的政府部門。

我們的抱負是滿足客戶對優質供水服務的需求。為此，水務署的團隊致力提供以客戶為本的服務，確保我們的客戶獲得最有效及優質的服務。

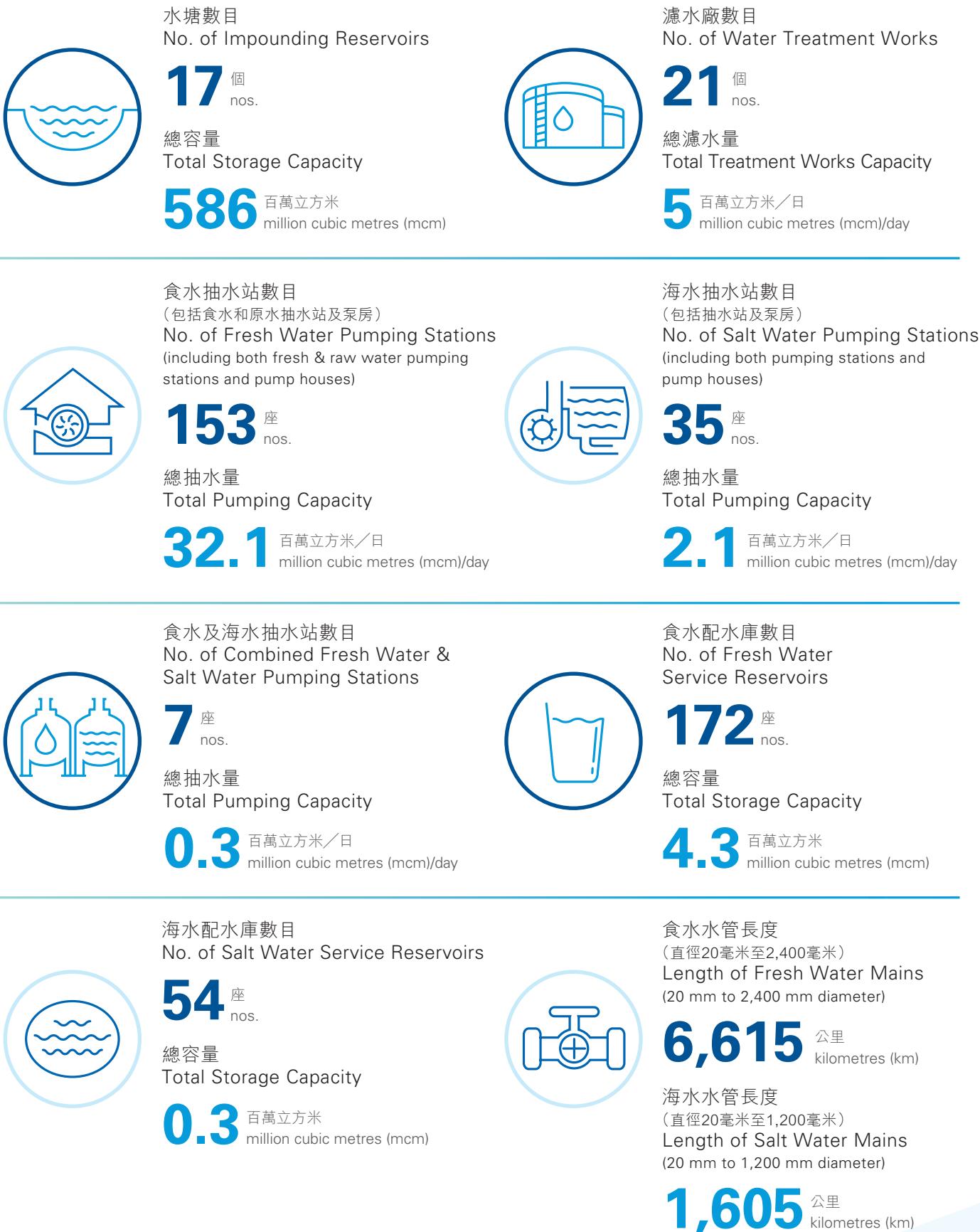
Reliable and quality water supply is indispensable to the livelihoods of the people in Hong Kong and is critical to support the Territory's sustainable developments. The Hong Kong SAR Government's Water Supplies Department (WSD) is charged with the responsibility of maintaining reliable and adequate water supplies. Local yield collected in catchment areas of the 17 impounding reservoirs accounts for about 20% to 30% of Hong Kong's total fresh water consumption. The remaining proportion of our 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 in order that the quality of treated water meets the Hong Kong Drinking Water Standards which 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 sea to adopt sea water for flushing purposes. Fresh water and sea water are supplied through two entirely separate supply networks. The water supplies are provided through an extensive array of service reservoirs and water mains for distribution to homes and commercial developments.

To ensure that water supplies remain secure, we make concerted efforts to exploit new water sources by means of technologies such as desalination, water reclamation, grey water reuse and rainwater harvesting. These water sources will become the pillars that support Hong Kong with enhanced water security and ability to adapt to climate change.

As one of the largest energy consumers in Hong Kong, WSD has also implemented measures to reduce carbon footprint as much as possible through the development of renewable energy sources. Moreover, we are the first government department to be awarded the ISO 50001 Energy Management System certification.

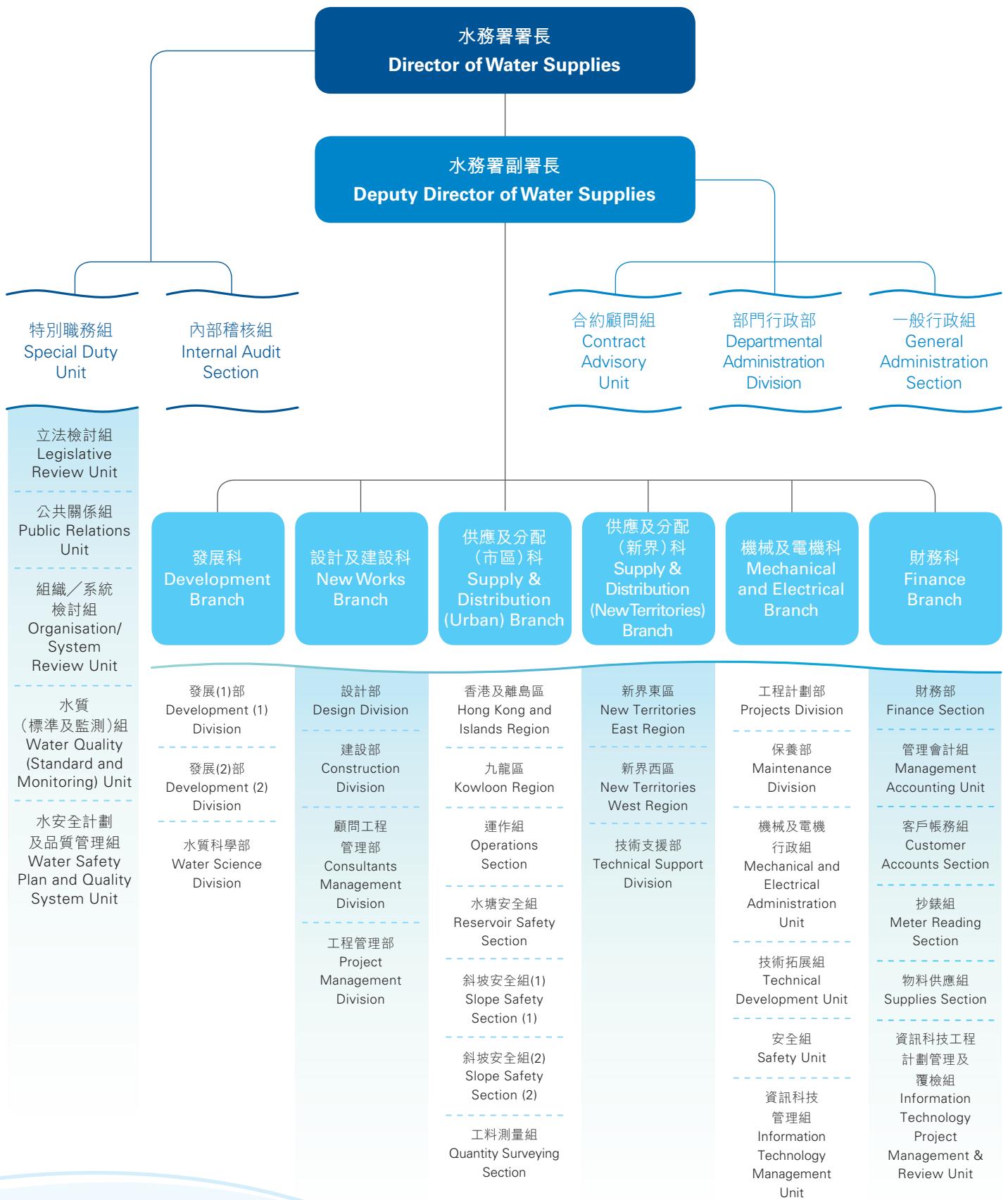
Our vision is to meet our customers' expectations for quality water supply services. With this in mind, WSD's committed workforce has adopted customer-oriented approach to ensure that our customers receive the most effective and high quality services.

## 主要統計數字(截至二〇一八年三月三十一日) Principal Statistics (as at 31<sup>st</sup> March 2018)



# 水務署組織圖

## WSD Organisation Chart





**1 黃仲良工程師, 太平紳士  
Ir WONG Chung-leung, JP**  
水務署署長  
Director of Water Supplies

**2 周世威工程師, 太平紳士  
Ir CHAU Sai-wai, JP**  
署理水務署副署長及助理署長／發展  
Acting Deputy Director of Water  
Supplies and Assistant Director/  
Development

**3 陸偉雄工程師, 太平紳士  
Ir LUK Wai-hung, JP**  
署理水務署副署長及助理署長／  
設計及建設  
Acting Deputy Director of Water  
Supplies and Assistant Director/  
New Works

**4 林正文工程師  
Ir LAM Ching-man**  
助理署長／市區  
Assistant Director/Urban

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

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

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

**8 李大安工程師  
Ir LEE Tai-on**  
助理署長／機械及電機  
Assistant Director/Mechanical &  
Electrical

**9 譚偉源先生  
Mr. TAM Wai-yuen**  
部門秘書  
Departmental Secretary

# 大事紀要

## Events in Brief

水務署的所有員工均積極參與各式各樣有關水務的活動，善用每個機會提高市民節約用水的意識。  
**WSD staff have been actively participating in all kinds of water-related activities, seizing every opportunity to raise public awareness in water conservation.**



二〇一七年四月 • April 2017



### 活水•行2017 Walk for Living Water 2017

水務署於二〇一七年四月二十九日全力支持由愛德基金會主辦的「活水•行」，為中國內地偏遠山區籌建用水設施。參加者於馬鞍山海濱長廊肩挑扁擔和水桶步行，在感受缺水地方取水艱辛的同時，加深對全球缺水危機的意識。水務署及主辦單位於會場設置多個遊戲攤位，教育市民如何在日常生活中節約用水，而水務署義工隊亦為活動提供協助。

On 29<sup>th</sup> April 2017, WSD fully supported the "Walk for Living Water" organised by the Amity Foundation to raise funds for building water facilities in the remote mountainous areas in Mainland China. Participants carried water using bamboo poles and buckets for a walkathon at the Ma On Shan Promenade. The event raised participants' awareness of global water scarcity by experiencing the hardship of water-deprived regions. WSD and the organiser set up a number of game booths to educate the public how water could be saved in our daily lives. WSD Volunteer Team also provided assistance at the event.



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二〇一七年五月 • May 2017



## 點滴捐水行2017 Walk for Water 2017

水務署於二〇一七年五月七日參與由點滴是生命舉辦的「點滴捐水行」，為中國內地、尼泊爾及柬埔寨的居民籌款建設儲水和淨水設施。活動假淺水灣海灘舉行，參加者以竹籃揹負水樽步行約3公里，體驗取水的艱辛。時任水務署署長林天星先生擔任活動的主禮嘉賓之一。水務署設置攤位遊戲，向參加者推廣節約用水的重要，而水務署義工隊亦有到場協助。

On 7<sup>th</sup> May 2017, WSD joined the "Walk for Water" organised by A Drop of Life, raising funds for building water storage and sanitation facilities in Mainland China, Nepal and Cambodia. Participants carried bottled water with baskets at their back to walk for around 3 km at the Repulse Bay, to experience the hardship of fetching water. The former Director of Water Supplies, Mr. Enoch LAM, was one of the officiating guests of the event. WSD set up game booths to promote the importance of water conservation whilst WSD Volunteer Team also provided assistance at the event.

## 水足印定向2017 Hong Kong Water Race 2017

由和富社會企業主辦，水務署及香港公開大學協辦的「香港水足印定向」於二〇一七年五月二十日在沙田馬場舉行。活動吸引逾四千名市民參加，透過城市定向比賽和完成與「水」有關的任務，啟發他們於日常生活中節約用水。水務署除了組隊參賽外，亦於會場設置遊戲攤位，以宣傳節約用水，而水務署義工隊亦有到場協助。



"Hong Kong Water Race", organised by Wofoo Social Enterprises and co-organised by WSD and the Open University of Hong Kong, was held on 20<sup>th</sup> May 2017 at the Shatin Racecourse. Over 4,000 participants joined the event. Through participating in the orienteering competition and water-related tasks, participants were inspired to conserve water in their daily lives. WSD joined the race and set up game booths to promote water conservation. WSD Volunteer Team also provided assistance at the event.

## 大事紀要 Events in Brief

二〇一七年五月 • May 2017

**2017沙田龍舟競賽**  
**Shatin Dragon Boat Race 2017**

在二〇一七年，水務署龍舟隊共參與六項龍舟競賽，於端午節舉行的「沙田龍舟競賽」中，摘下「偉金杯」季軍的佳績。水務署透過一系列的龍舟訓練及比賽，凝聚一眾志同道合的同事，發揮高度的團體精神，並令同事在工作與生活之間有更好的平衡。



In 2017, the WSD Dragon Boat Team took part in six dragon boat races and was awarded the 2<sup>nd</sup> runner up in the "Welcome Cup" of the Shatin Dragon Boat Race at Tuen Ng Festival. Through a series of dragon boat training and competitions, WSD brought together a group of like-minded colleagues who demonstrated a strong team spirit and promoted work-life balance among colleagues.

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二〇一七年六月 • June 2017

**「世界環境日」—零碳FUN墟2017**  
**World Environmental Day – Zero Carbon Fun Fair 2017**

水務署於二〇一七年六月十一日參與由環境運動委員會舉辦的「零碳FUN墟」，於會場內設置攤位介紹「用水效益標籤計劃」，鼓勵公眾使用節水器具，實踐環保生活。「滴惜仔」亦有到場向公眾傳達節約用水的訊息。

On 11<sup>th</sup> June 2017, WSD joined the "Zero Carbon Fun Fair" organised by the Environmental Campaign Committee. WSD set up a booth to promote the Water Efficiency Labelling Scheme and encouraged the public to use water-saving devices to achieve green living. "Water Save Dave" was also present to drive home the message of water conservation to the general public.





### 香港工程師學會創意嘉年華2017 The HKIE Fiestia 2017

水務署於二〇一七年六月十一日在香港工程師學會舉辦的「香港工程師學會創意嘉年華2017」內設置展覽攤位，向市民介紹本署分別於石壁水塘和船灣淡水湖安裝的先導性浮動太陽能發電系統。攤位除放置了內容豐富的展板，更特設互動觸控屏幕，讓市民認識浮動太陽能發電系統的位置、好處、技術特點和發展潛力，讓大眾明白本署在提供穩定及優質的供水之餘，亦致力研發及應用綠色科技，保護環境。

WSD set up an exhibition booth at the "HKIE Fiesta 2017" organised by the Hong Kong Institution of Engineers on 11<sup>th</sup> June 2017 to introduce to the public the pilot floating photovoltaic systems installed at Shek Pik Reservoir and Plover Cove Reservoir. Apart from informative display boards, an interactive touch panel was also installed at the exhibition booth. The public were able to get to know the locations, advantages, technical features and potential of the floating photovoltaic systems, as well as WSD's efforts in developing and applying green technologies for environmental conservation whilst maintaining a reliable and quality water supply.



### 合約編號11/WSD/16—荃灣海水抽水站抽水泵電動機、供電設備及控制系統更換工程 合約簽署儀式

#### ***Signing Ceremony of the Contract No. 11/WSD/16 – Replacement of Pump Motors, Switchboard and Control System at Tsuen Wan Salt Water Pumping Station***

本署批出一份價值一千八百八十八萬元的工程合約予盈電工程有限公司，就荃灣海水抽水站抽水泵電動機、供電設備及控制系統進行更換工程。合約簽署儀式於二〇一七年六月二十日舉行。

A contract worth \$18.88 million was awarded to REC Engineering Company Limited for replacement of pump motors, switchboard and control system at Tsuen Wan Salt Water Pumping Station. The contract signing ceremony was held on 20<sup>th</sup> June 2017.

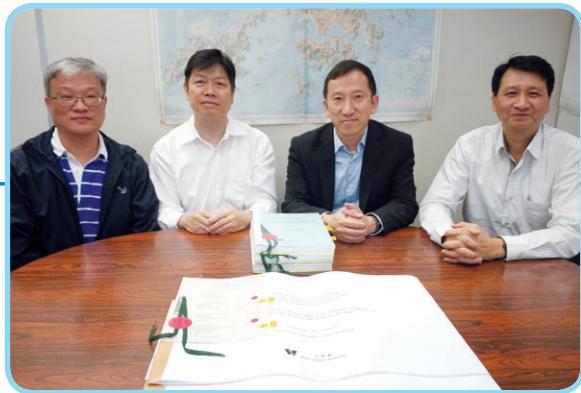


## 大事紀要 Events in Brief

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二〇一七年八月 • August 2017

**合約編號 12/WSD/16 – 凹頭濾水廠監察及  
控制系統更新工程合約簽署儀式**  
***Signing Ceremony of Contract No.  
12/WSD/16 – Provision of a New  
Distributed Control System at Au Tau  
Water Treatment Works***



本署批出一份價值一千九百九十五萬元的工程合約予文信工程有限公司，就凹頭濾水廠監察及控制系統進行更新工程。合約簽署儀式於二〇一七年八月二十四日舉行。

A contract worth \$19.95 million was awarded to Maxson Company Limited for provision of a new distributed control system at Au Tau Water Treatment Works. The contract signing ceremony was held on 24<sup>th</sup> August 2017.

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二〇一七年十月 • October 2017

**「綠惜活力」水陸歷奇挑戰賽暨惜水嘉年華  
“Water Conservation” Adventurous Challenge cum Carnival**

水務署於二〇一七年十月二十一日與香港青年協會於船灣淡水湖協辦「綠惜活力」水陸歷奇挑戰賽暨惜水嘉年華，鼓勵青年人珍惜食水。時任水務署署長林天星先生向在場人士分享全球水資源匱乏及用水需求增加的情況。水務署除派出隊伍參加賽跑、惜水任務及獨木舟接力隊制賽外，亦設置攤位遊戲及展覽。是次活動提供了一個互動平台，讓水務署及青年人聯手推廣節約用水及保護珍貴的水資源。



On 21<sup>st</sup> October 2017, WSD and the Hong Kong Federation of Youth Groups jointly organised the “Water Conservation” Adventurous Challenge cum Carnival at the Plover Cove Reservoir to encourage teenagers to cherish water. The former Director of Water Supplies, Mr. Enoch LAM, shared with the participants the global situation of water scarcity and increasing water demand. Apart from sending teams to compete in the team match of relay running, water conservation tasks and canoeing, WSD also set up game booths and exhibitions to promote water conservation. The event provided an interactive platform for WSD and the younger generation to join hands to promote water conservation and protection of precious water resources.

## 浮動太陽能發電系統攝影比賽

### *Floating Solar Power System Photography Competition*

水務署於二〇一七年十月至十二月期間舉辦了「浮動太陽能發電系統攝影比賽」，邀請參加者拍攝位於石壁水塘或船灣淡水湖的浮動太陽能板，目的是透過攝影作品捕捉大自然景色與綠色科技和諧融合，令市民更了解浮動太陽能發電系統的特點與好處，從而推動節約能源，實踐低碳生活方式，共建綠色香港。

WSD launched the "Floating Solar Power System Photography Competition" during October to December 2017. The competition invited entries of capturing the floating photovoltaic system either at Shek Pik Reservoir or Plover Cove Reservoir. It aimed to promote the features and benefits of the floating photovoltaic system to citizens through shots that captured the harmonious integration of natural scenery and the green technology, and thereby encouraging energy conservation, adoption of low-carbon lifestyles, and enhancement of Hong Kong's sustainability.

為方便參賽者前往石壁水塘和船灣淡水湖拍攝作品，攝影比賽於二〇一七年十月至十一月期間特別為公眾安排逾30個攝影團。由於反應熱烈，各團名額旋即額滿。

To facilitate participants' photo-taking at Shek Pik Reservoir and the Plover Cove Reservoir, more than 30 photography tours were specially arranged for the public from October to November 2017. With an overwhelming public response, the tour places were quickly filled.

攝影比賽共收到逾千幅參賽作品。評審會議於二〇一八年二月八日假香港大會堂展覽館舉行，由評審委員選出冠、亞、季軍及優異獎，合共11幅得獎作品。而得獎作品由三月十四日至六月二十三日在全港多個地點巡迴展出，同時展覽亦設有介紹有關浮動太陽能發電系統資訊的展板。

The competition received an enthusiastic response with more than 1000 entries. An adjudication meeting was held on 8<sup>th</sup> February 2018 at Exhibition Gallery of Hong Kong City Hall. A total of 11 winning entries, including the champion, 1<sup>st</sup> runners-up, 2<sup>nd</sup> runners-up and merit awards, were selected by the adjudication panel. The roving exhibitions for the winning entries were held from 14<sup>th</sup> March to 23<sup>rd</sup> June at places in Hong Kong. Panels with information on the floating photovoltaic systems were also displayed at the exhibition.



## 大事紀要 Events in Brief

二〇一七年十月 • October 2017

**「提升香港食水安全行動計劃」講座  
*Seminars on "Action Plan for Enhancing Drinking Water Safety in Hong Kong"***

政府於二〇一七年九月二十一日推出「提升香港食水安全行動計劃」（「行動計劃」），以多管齊下的方式進一步保障香港食水安全。水務署於二〇一七年十月十四日及十六日舉辦了兩場公眾講座，向大眾介紹行動計劃的細節。講座內容包括講解「行動計劃」五大組成部分，即「食水標準及水質監測優化計劃」、「水喉物料監管及新建水喉裝置驗收規定」、「水安全計劃」、「食水安全規管理制度」和「宣傳及公眾教育」，並設問答環節解答大眾對「行動計劃」的提問。



The Government launched the Action Plan for Enhancing Drinking Water Safety in Hong Kong (Action Plan) on 21<sup>st</sup> September 2017 to further safeguard drinking water safety in Hong Kong through a multi-pronged approach. WSD organised two public seminars on 14<sup>th</sup> and 16<sup>th</sup> October 2017 to introduce the details of the Action Plan to the public. Besides explaining the five major components of the Action Plan, viz. "Drinking Water Standards and Enhanced Water Quality Monitoring Programme", "Plumbing Material Control and Commissioning Requirements for New Plumbing Installations", "Water Safety Plans", "Water Safety Regulatory Regime" and "Publicity and Public Education", Question & Answer session was also held to answer the public's enquiries on the Action Plan.



**國際環保博覽2017  
*ECO Expo Asia 2017***

由環境局與香港貿易發展局合辦的第12屆「國際環保博覽」於二〇一七年十月二十六日至二十九日假香港亞洲國際博覽館舉行。

Jointly organised by the Environment Bureau and the Hong Kong Trade Development Council, the 12<sup>th</sup> edition of ECO Expo Asia was held at the AsiaWorld-Expo from 26<sup>th</sup> to 29<sup>th</sup> October 2017.

為響應今年的主題「創新環保方案 • 構建綠色城市」，水務署於博覽會向商界、公營機構及市民介紹「浮動太陽能發電系統」，以展示水務署在提倡能源效益及環境保護的工作和最新成果。本署更應邀參與博覽會的研討會。

Echoing the theme of this year of "Innovative Solutions for Greener Cities", WSD introduced the "Floating Photovoltaic System" to the business sector, public bodies and citizens at the exhibition by showcasing the work and latest achievements of WSD in promoting energy efficiency and environmental protection. WSD was also invited to participate in the seminars of the Expo.



## 創新科技嘉年華2017 InnoCarnival 2017

水務署於二〇一七年十月二十一日至二十九日在創新科技署舉辦的「創新科技嘉年華2017」中設置攤位，向市民介紹為配合現代化供水網絡管理而研發的先導智能水務資訊系統。市民透過我們同事的講解，明白系統如何在供水源頭至客戶終端蒐集接近實時的數據及供水狀況數據分析，從而有效加強水務署對供水網絡的中央監察。



WSD set up an exhibition booth at the "InnoCarnival 2017" organised by the Innovation and Technology Commission from 21<sup>st</sup> to 29<sup>th</sup> October 2017 to introduce to the public our pilot smart water supplies information system that was being developed to tie in with the modernised water supply network management. Through explanation by our staff, the public understood how the system performed nearly real-time data collection and data analysis of the conditions of the water supplies from source to customer ends and thus enhanced WSD's central monitoring of the water supply network.



二〇一七年十一月 • November 2017



## 「大廈優質供水認可計劃－食水(管理系統)」講座 *Seminars on Quality Water Supply Scheme for Buildings – Fresh Water (Management System)*

為促進業主和物業管理人採用建築物水安全計劃，水務署在徵詢了水務諮詢委員會的意見後，將建築物水安全計劃與「大廈優質供水認可計劃－食水(2.0版)」計劃結合成新計劃，並命名為「大廈優質供水認可計劃－食水(管理系統)」，以進一步保障大廈食水的安全。本署於十一月六、九及二十七日舉辦多場講座，協助各持份者制訂及推行建築物水安全計劃，及鼓勵他們參加「大廈優質供水認可計劃－食水(管理系統)」。

To promote building owners' and property management agents' adoption of the Water Safety Plan for Buildings (WSPB), WSD, in consultation with the Advisory Committee on Water Supplies, combined WSPB with the "Quality Water Supply Scheme for Buildings – Fresh Water (Plus)" to form a new scheme entitled Quality Water Supply Scheme for Buildings – Fresh Water (Management System) (QMS) to further safeguard the safety of drinking water in buildings.

WSD organised seminars on 6<sup>th</sup>, 9<sup>th</sup> and 27<sup>th</sup> November 2017 to assist stakeholders in developing and implementing WSPB for their buildings, and to encourage them to join the QMS.

## 大事紀要 Events in Brief

二〇一七年十一月 • November 2017

### 「惜水學堂」頒獎典禮 “Cherish Water Campus” Award Ceremony

為表揚在二〇一六／一七學年積極參與「惜水學堂」節約用水教育計劃的小學，水務署於二〇一七年十一月十日假油塘社區會堂舉行「惜水學堂」頒獎典禮。本屆獲獎單位包括三十三個辦學團體、五十八間參與的「惜水學堂」小學，以及逾百名校長及師生。

To commend the primary schools which actively participated in the “Cherish Water Campus” Integrated Education Programme in the 2016/17 school year, a award ceremony was held on 10<sup>th</sup> November 2017 at Yau Tong Community Hall. 33 school sponsoring bodies, 58 participating primary schools and over 100 principals, teachers and students were awarded.

時任水務署署長林天星先生於典禮上，向學生們分享了節約用水的心得，並鼓勵他們繼續向家人和朋友傳遞珍惜食水的訊息。此外，大會安排了小學生及幼稚園學生表演雜技和話劇，向觀眾傳遞惜水知識。

The former Director of Water Supplies, Mr. Enoch LAM shared water saving tips with students and encouraged them to spread the messages of water conservation to their families and friends. Besides, there were impressive acrobatic and drama performances by primary school students and kindergarten students to deliver the knowledge of water conservation to the audience.

出席典禮的嘉賓還有教育局副秘書長（課程及質素保證科）康陳翠華女士、教育局總服務主任（幼稚園及幼兒中心聯合辦事處）李周若蘭女士及水務諮詢委員會主席陳漢輝博士，以及多個辦學團體、小學和幼稚園的代表。

Other guests at the ceremony included Deputy Secretary for Education (Curriculum and Quality Assurance Branch), Mrs. HONG CHAN Tsui-wah, Chief Services Officer (Joint Office for Kindergartens and Child Care Centres) of Education Bureau, Mrs. LI CHOW Yeuk-lan, Conny, and the Chairman of the Advisory Committee on Water Supplies, Dr. CHAN Hon-fai, as well as representatives from school sponsoring bodies, primary schools and kindergartens.

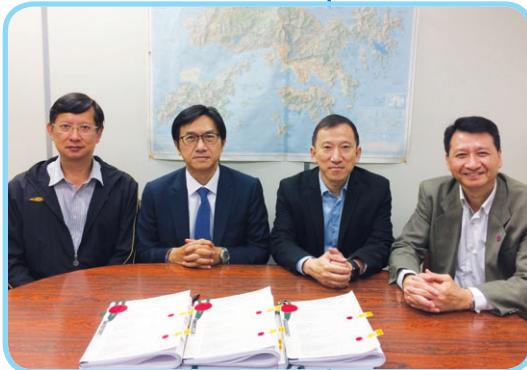


**合約編號9/WSD/17－小西灣海水抽水站提升工程合約簽署儀式**

***Signing Ceremony of the Contract No. 9/  
WSD/17 – Uprating of Siu Sai Wan Salt Water  
Pumping Station***

本署批出一份價值三千四百萬元的工程合約予西島泵（香港）有限公司，就小西灣海水抽水站進行提升工程。合約簽署儀式於二〇一七年十一月十三日舉行。

A contract worth \$34 million was awarded to Torishima (Hong Kong) Limited for the uprating works at Siu Sai Wan Salt Water Pumping Station. The contract signing ceremony was held on 13<sup>th</sup> November 2017.



**水務諮詢委員會參觀東江供水設施**  
***The Advisory Committee on Water Supplies' Visit to Dongjiang Water Supply Facilities***

水務諮詢委員會成員在二〇一七年十一月二十一日至二十二日到訪廣東，視察東江供水設施，並了解保障東江水水質的最新發展及所採取的措施。

Members of the Advisory Committee on Water Supplies visited Guangdong on 21<sup>st</sup> to 22<sup>nd</sup> November 2017, to inspect the Dongjiang water supply facilities and learn about the latest developments and measures adopted in safeguarding the quality of Dongjiang water.



## 大事紀要 Events in Brief

二〇一七年十一月 • November 2017

**合約編號3/WSD/17 – 香港與離島及新界西風險為本水管改善工程定期合約簽署儀式**

***Signing Ceremony of Contract No. 3/WSD/17  
– Term Contract for Risk-Based Improvement  
of Water Mains – Hong Kong & Islands and  
New Territories West***



本署批出一份價值四億零六百八十萬元的工程定期合約予明興水務渠務工程有限公司，在香港與離島及新界西進行風險為本水管改善工程。合約簽署儀式於二〇一七年十一月二十三日舉行。

A contract worth \$406.8 million was awarded to Ming Hing Waterworks Engineering Company Limited for the Term Contract for risk-based improvement of water mains on Hong Kong & Islands and New Territories West. The contract signing ceremony was held on 23<sup>rd</sup> November 2017.

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二〇一八年一月 • January 2018

**著綠狂奔2018**

***Green Run 2018***

水務署於二〇一八年一月十四日參與由環保促進會主辦的「著綠狂奔」。活動於白石角海濱長廊舉行，超過七百名參加者穿著綠色衣物參與長跑比賽，向公眾傳達保護環境的訊息，並且宣揚香港成為綠色永續城市。

On 14<sup>th</sup> January 2018, WSD joined the "Green Run" organised by the Green Council. Over 700 runners dressed in green participated in the run at Pak Shek Kok Promenade. The event aimed to raise public awareness of environmental conservation, and promote transformation of Hong Kong into a greener and more sustainable city.

水務署署長黃仲良先生除出席主持起步禮，亦與其他嘉賓一同參與「一公里綠色領袖賽」。財政司司長陳茂波先生及環保促進會前主席梁美芬博士擔任賽事頒獎禮的主禮嘉賓。

Apart from attendance at the kick-off ceremony, Mr. WONG Chung-leung, Director of Water Supplies, and other guests also joined the "1 Kilometre Green Leaders Race". Mr. Paul CHAN Mo-po, the Financial Secretary and Dr. Hon Priscilla LEUNG Mei-fun, former Chairperson of Green Council officiated at the award presentation ceremony.





二〇一八年二月 • February 2018

水務署全力支持由環保促進會主辦的「環保嘉年華」，向市民推廣低碳及綠色生活。活動於二〇一八年二月四日在九龍公園廣場舉行。署理水務署副署長周世威先生在開幕禮擔任主禮嘉賓並致辭。水務署作為活動的支持機構之一，於會場擺設遊戲攤位，推廣節約用水。

WSD fully supported the "Green Carnival" organised by the Green Council to promote green and low-carbon lifestyle. The event was held on 4<sup>th</sup> February 2018 at Piazza of Kowloon Park. Mr. CHAU Sai-wai, the Acting Deputy Director of Water Supplies officiated at the opening ceremony and delivered a speech. As a supporting organisation, WSD set up a game booth in the event to promote water conservation.

### 環保嘉年華2018 Green Carnival 2018

### 合約編號4/WSD/17 – 東涌食水供應系統提升工程 – 東涌二號食水配水庫建造工程合約簽署儀式 ***Signing Ceremony of Contract No. 4/WSD/17 – Uprating of Tung Chung Fresh Water Supply System – Construction of Tung Chung No. 2 Fresh Water Service Reservoir***

本署批出一份價值一億三千九百九十萬元的工程合約予駿業－中興聯營，就東涌食水供應系統進行提升工程，以建造東涌二號食水配水庫。合約簽署儀式於二〇一八年二月十二日舉行。

A contract worth \$139.9 million was awarded to Chun Yip – Chung Hing Joint Venture for construction of Tung Chung No. 2 Fresh Water Service Reservoir for uprating of Tung Chung Fresh Water Supply System. The contract signing ceremony was held on 12<sup>th</sup> February 2018.



## 大事紀要 Events in Brief

二〇一八年二月 • February 2018

**合約編號2/WSD/17 – 九龍及新界東風險  
為本水管改善工程定期合約簽署儀式**  
***Signing Ceremony of Contract No. 2/  
WSD/17 – Term Contract for Risk-  
Based Improvement of Water Mains –  
Kowloon and New Territories East***

本署批出一份價值四億二千三百三十萬元的工程定期合約予和興興昌聯營，在九龍及新界東進行風險為本管改善工程。合約簽署儀式於二〇一八年二月十三日舉行。

A contract worth \$423.3 million was awarded to Wo Hing – Hing Cheong Joint Venture for the Term Contract for risk-based improvement of water mains – Kowloon and New Territories East. The contract signing ceremony was held on 13<sup>th</sup> February 2018.



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二〇一八年三月 • March 2018

**揹水一戰2018**  
***Race for Water 2018***

水務署在三月十八日參與由點滴是生命舉辦的「揹水一戰」，為中國內地的乾旱地區、尼泊爾和柬埔寨偏遠山區建設供水設施籌款。活動假山頂舉行，參加者揹負4.5公升的水樽，身體力行體驗為水而長途跋涉的生活，從而體會「水」的珍貴。

On 18<sup>th</sup> March 2018, WSD joined the "Race for Water" organised by A Drop of Life to raise fund for building water supply facilities in remote mountainous regions of Mainland China, Nepal and Cambodia. Participants carried 4.5 litres of bottled water at the Peak to experience the hardship of travelling long distance to fetch water, in order to appreciate the preciousness of "water".



署理水務署副署長周世威先生在活動中致辭，鼓勵參加者在日常生活中節約用水，保護珍貴的水資源。

Mr. CHAU Sai-wai, Acting Deputy Director of Water Supplies, delivered a speech to encourage the participants to save water in their daily lives, in order to protect the precious water resources.

合約編號5/WSD/17, 6/WSD/17及7/WSD/17 – 為十個濾水廠  
進行現場氯氣生產設施供應及裝置工程合約簽署儀式

***Signing Ceremony of Contract Nos. 5/WSD/17, 6/WSD/17  
and 7/WSD/17 Provision of On-Site Chlorine Generation  
Plants at 10 Water Treatment Works***

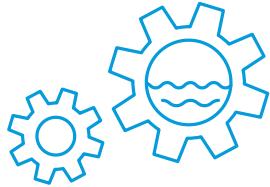
本署分別批出兩份價值合共五億七千九百萬元及一份價值二億四千七百萬元的工程合約予盈電－其士聯營及西島泵(香港)有限公司，為合共十個濾水廠進行現場氯氣生產設施供應及裝置工程。合約簽署儀式於二〇一八年三月十九日舉行。



Two contracts worth a total of \$579 million and a contract worth \$247 million were awarded to REC-CEL JV and Torishima (Hong Kong) Limited respectively for provision of on-site chlorine generation plants at 10 water treatment works. The contract signing ceremony was held on 19<sup>th</sup> March 2018.

# 署長的話

## Director's Statement



水務署同事緊守崗位，每日默默耕耘，為令香港供水服務更上一層樓。我們的工作涉及處理與可靠供水、安全食水及穩定水資源相關的各項事務。就此，我們定期和不同行業及供水專家合作以匯聚各方的力量，並與各個行業組織及學者建立夥伴關係，攜手尋求完善服務及運作的創新方法。我們亦加強宣傳及爭取持份者支持，在多方面致力提供超越顧客要求的表現，以達至提供世界級供水服務的終極目標。

Each day at Water Supplies Department, we work diligently to meet our obligations to improve the quality of Hong Kong's water supplies. This includes all issues that relate to reliability of water supplies, water safety and water security. To this end, we regularly join forces with various industry professionals and water supply experts whilst forming cooperative ties with a host of industry associations and academics to find new ways of improving our services and operation. We have also stepped up our publicity and stakeholder engagement efforts in order to initiate a multi-faceted mission to exceed customers' expectations to reach our ultimate aim to provide water supply services of world-class quality.



黃仲良工程師, 太平紳士  
**Ir WONG Chung-leung, JP**

水務署署長  
Director of Water Supplies

## 全面水質資源管理策略

我們不斷追求加強香港整體供水安全的方法，所以早於二〇一八年我們已推行了全面水資源管理策略（「策略」），以更好地在各方面管理及監察水資源，確保我們的水資源可持續運用。有賴這項策略，我們可以更加作好準備，應對氣候變化可能為香港帶來的負面影響。「策略」焦點是藉積極推廣節約用水以制約用水需求增長，同時採用最新技術開拓新的水源。自實施以來，「策略」一直為香港的供水安全作出貢獻。基於現時的成果，我們展開了全面策略檢討，讓香港做好充足準備應對難料的情況及因而引起的負面影響，檢討將於二〇一九年完成。我們一直多管齊下，積極於住宅及非住宅界別推廣節約用水，並同時推出新穎而有效的硬件及軟件策略。

## Total Water Management Strategy

As far back as 2008, our solemn quest has been to continually find better ways to enhance Hong Kong's overall water security. That is why we implemented our Total Water Management (TWM) Strategy in order to better manage and monitor all aspects of our water resources for their sustainable use. Through this strategy, we can better prepare the Territory for any future negative consequences that may result from climate change. TWM's focus mainly deals with limiting the growth of water demand by actively promoting efforts to conserve water, whilst at the same time apply the latest technologies to find and secure new water resources. Since its implementation, TWM has been contributing to water security for Hong Kong. Building on our achievements to date, we embarked on a comprehensive review that would be completed in 2019 in order to ensure water resilience whilst keeping us fully prepared to counter any uncertainties and negative consequences that may arise. Our department has been actively implementing a multi-faceted approach to promote water conservation in both the domestic and non-domestic sectors whilst at the same time unveiling new, effective hardware and software strategies.



## 署長的話 Director's Statement

### 節約用水的推廣及教育

在推動市民節約珍貴的水資源方面，教育及推廣計劃是本署的主要措施。因此，水務署自二〇一五／一六學年起為小學生舉辦「惜水學堂」節約用水教育計劃，提高學生對水資源的認識，並加深他們對節約用水及水資源持續性各項議題的了解，從而促請大家同心協力應對氣候變化帶來的嚴峻影響。承接著「惜水學堂」的成果，我們於二〇一七／一八學年推行先導計劃，將「惜水學堂」進一步擴展至幼稚園學生。

### 開拓新水源

「策略」及其多個措施將帶領香港逐步邁向多元供水布局，包括本地集水、東江水、沖廁用海水、海水淡化、中水重用及雨水回收和再造水。這些水源是確保香港供水穩定的基石。我很高興向大家報告，我們今年在開拓新水源方面有顯著進展，尤其是海水淡化方面。經過廣泛的可行性研究，我們確定在香港以逆滲透化淡海水是可行技術，提供的食水符合香港食水標準。因此該技術對香港而言是一個謹慎可行的選項，令我們可邁向海水淡化的发展。在完成將軍澳第137區海水淡化廠的策劃及勘查研究後，我們已於二〇一五年十一月委聘顧問為海水淡化廠展開設計工作。我們於二〇一八年年中就海水淡化廠

### Promotion and Education Efforts in Water Conservation

Educational and promotional schemes are a major measure in helping us convince residents to conserve our precious water resources. For this reason, WSD has been organising the "Cherish Water Campus" integrated education programme for primary schools since the 2015/16 school year in order to enhance students' understanding about water resources whilst raising overall awareness of a host of water conservation and water sustainability issues, with a view to calling for a concerted effort to address the serious consequences we all face with climate change. Leveraging on the success we have achieved in the "Cherish Water Campus" campaign, we further launched a pilot programme to extend the campaign for kindergarten students during the 2017/18 school year.

### Securing New Water Resources

The TWM strategy and its various supporting initiatives are gradually driving Hong Kong towards a water supply matrix that comprises several independent sources, including local yield, Dongjiang water, sea water for flushing, desalinated water, treated grey water and harvested rainwater as well as reclaimed water. These supply sources are the cornerstones that will ensure Hong Kong's water security and resilience. I am happy to report this year that we have been making solid progress in fully establishing new sources of water. This is especially true with desalination. Upon extensive feasibility studies, we can now conclude that sea water desalination by reverse osmosis is a viable technology for generating potable water in Hong Kong that meets the Hong Kong Drinking Water Standards. It is a prudent choice for Hong Kong to move forward with sea water desalination. After the planning and

建造工程的「設計－建造－運作」合約進行招標。擬建的海水淡化廠會採用逆滲透技術，每日食水產量為13萬5千立方米，日後並可擴展至每日27萬立方米，為本港供應約百分之五至十的食水用量。我們已開始敷設連接化淡廠至將軍澳配水庫的十公里輸水管。

investigation study carried out on the Tseung Kwan O Area 137 desalination plant was completed, we hired consultants in November 2015 to begin the design work on the actual plant itself. We will issue tenders in mid 2018 for a "Design-Build-Operate" contract for the plant. The proposed desalination plant will, adopt reverse osmosis technology, and will have a water production capacity of 135,000 m<sup>3</sup> per day expandable to 270,000 m<sup>3</sup> per day to meet about 5% to 10% of the fresh water demand of Hong Kong. The construction of the associated 10 km water mains already from the future plant to the service reservoir in Tseung Kwan O has begun.



## 署長的話 Director's Statement

### 循環再用珍貴的水資源

經污水處理廠處理後的排放水可再加工成為再造水，它可以作為香港的非飲用水資源。使用再造水有助節省食水，尤其是在內陸地區，因在內陸地區使用海水沖廁不符合成本效益，這些地區現時使用食水沖廁。使用再造水亦有助減少排放經處理的污水。再造水是節省資源和環保的供水。水務署會繼續努力，把經石湖墟淨水設施三級處理的排放水轉變成再造水，供應至新界東北部作沖廁及其他非飲用用途，並於二〇二二年起在上水和粉嶺開始供應再造水。

從浴室、洗手盆、廚房洗滌盆和洗衣機收集得來經使用的水稱為中水。中水和回收雨水經處理後可以重用，作沖廁等非飲用用途。我們已就中水重用及應用雨水回收系統制訂了指引，該指引已被納入發展局及環境局有關環保政府樓宇的聯合技術通告中，以說明如何有效地推行這些系統，讓新建政府項目安裝所需設施，利用中水重用和雨水回收系統，減少在非飲用用途上的食水需求。水務署亦將興建一套中央中水重用系統，處理由安達臣道石礦場用地發展內收集的中水，供應區內作沖廁及其他非飲用用途。該系統包括中水處理廠、抽水系統、配水庫、收集中水的水管和運送經處理中水的供應管網。建造工程預計於二〇一九年開始動工，二〇二二年完成。

### Recycling Valuable Water Resources

Water reclamation is a water resource generated by further processing treated effluent in sewage treatment works. It is a water resource that can be used for non-potable uses in Hong Kong. It helps save fresh water especially in inland areas where salt water supply for flushing is not cost effective and fresh water is being used for flushing, whilst use of reclaimed water helps reduction of the amount of treated effluent discharge. Water reclamation is a resource-saving and environmentally friendly water supply. We at WSD will continue to work hard to provide reclaimed water, converted from tertiary treated sewage effluent at the Shek Wu Hui Effluent Polishing Plant, to the north-eastern part of the New Territories for flushing and other non-potable uses, starting with Sheung Shui and Fanling from 2022 onwards.

Grey water is used water collected from baths, showers, wash basins, kitchen sinks and laundry machines. Grey water and harvested rainwater can be treated and reused for non-potable purposes such as toilet flushing. We have formulated guidelines on the implementation of grey water recycling and rainwater harvesting systems, which have been incorporated in the joint Development Bureau and Environment Bureau Technical Circular on Green Government Buildings on how to implement these systems effectively. This was done so that new government projects could reduce their fresh water demand for non-potable applications through grey water recycling or rainwater harvesting by installing the necessary facilities. WSD will also construct a centralised grey water recycling system to treat grey water collected from the Anderson Road Quarry Site Development for flushing and other non-potable uses in the development. The system comprises a grey water treatment plant along with a pumping system, a service reservoir, pipes to collect grey water and a supply network to deliver the treated grey water to customers. Construction is anticipated to commence in 2019 for completion in 2022.



## 提升食水安全

現時我們嚴格按照香港食水標準，監察食水水質，而該標準現時採用世衛公布的《飲用水水質標準》。水務署一直實施一連串有效措施，確保香港食水安全。根據發展局成立的食水安全國際專家小組的意見，以及多個國家的經驗及知識，發展局及水務署已開展了「提升香港食水安全行動計劃」。

## Enhancing Water Safety

At present, we monitor drinking water quality in strict adherence to the Hong Kong Drinking Water Standards which currently follow the Guidelines for Drinking-water Quality published by the WHO. WSD has been implementing a wide range of effective measures for ensuring the safety of drinking water in Hong Kong. On the advice of the International Expert Panel on Drinking Water Safety established by the Development Bureau (DEVB), and drawing upon a wealth of overseas experience and knowledge, DEVB and WSD have already initiated an Action Plan on Enhancing the Drinking Water Safety in Hong Kong.

## 署長的話 Director's Statement

這計劃涵蓋五個重點範圍，包括食水標準及水質監測優化計劃、水喉物料監管及新建水喉裝置驗收規定、水安全計劃、食水安全規管理制度，以及宣傳及公眾教育。此外，我們水務署正全面檢討現時的《水務設施條例》及其規例，探討如何改善法例以加強對水喉物料及建造水喉工程的監管。水務署已優先處理部分修訂，特別是有關持牌水喉匠及水喉工人的責任，以及最新水喉物料標準的修訂。立法會已通過這些修訂的法案。

展望來年，我們會繼續對眾多的挑戰保持警覺。惠於水務署紮實的根基、全面而積極的策略，我們有信心不管是現在還是未來，水務署的服務質素都會不斷提升。

This plan covers five areas of intense focus, including: drinking water standards and enhanced water quality monitoring programme, plumbing materials control and commissioning requirements for new plumbing installations, water safety plans, water safety regulatory regime, as well as publicity and public education. Moreover, we at WSD have embarked on a holistic review of the current Waterworks Ordinance and its regulations to see how we can improve legislation to enhance control of plumbing materials and construction of plumbing works. WSD has also prioritised a host of amendments, especially those that outline the responsibilities of licensed plumbers and plumbing workers, and those that relate to the updated standards for plumbing materials. The Legislative Council has passed the bills for these amendments.

As we look to the year ahead, we will remain ever vigilant against the wide ranging challenges. By leveraging on our solid foundations and the comprehensive and proactive strategies, we at WSD are confident of being able to ensure an improved level of service quality now and well into the future.



黃仲良工程師太平紳士  
水務署署長

Ir WONG Chung-leung JP  
Director of Water Supplies

# 主要工作表現指標

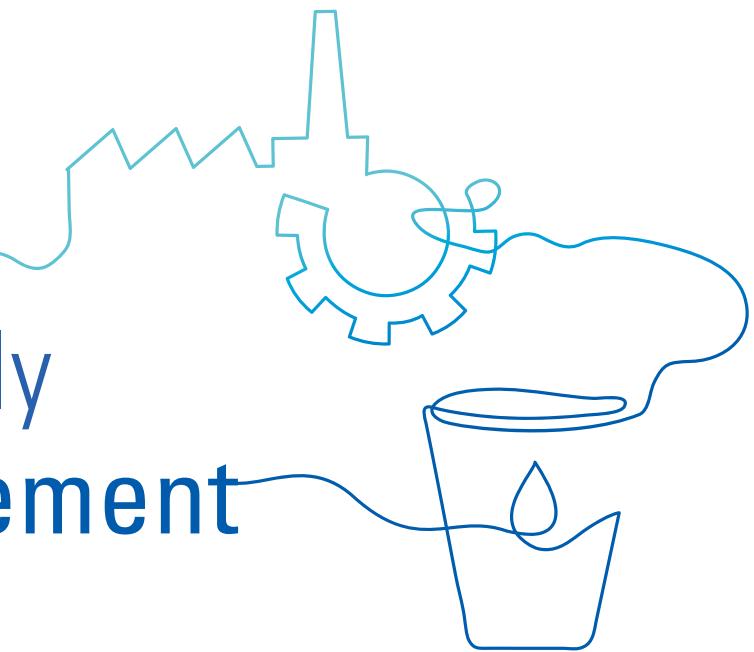
## Key Performance Indicators

指標 Indicators	財政年度(百分比) Financial Year (Percentage)		
	15/16	16/17	17/18
食水水質(供水接駁位置) 100%符合世界衛生組織在2011年制定的《飲用水水質準則》或2017年9月起採用的香港食水標準 Fresh Water Quality (at connection points) 100% compliant with WHO's "Guidelines for Drinking-water Quality"(2011) or Hong Kong Drinking Water Standards since September 2017	達到指標 Target achieved	達到指標 Target achieved	達到指標 <b>Target achieved</b>
海水水質(供水接駁位置) 96%符合水務署所定的水質指標 Salt Water Quality (at connection points) 96% compliant with WSD Water Quality Objectives	達到指標 Target achieved	達到指標 Target achieved	達到指標 <b>Target achieved</b>
食水供水水壓(15至30米) <sup>λ</sup> Fresh Water Supply Pressure (15 – 30 metres) <sup>λ</sup>	100%	100%	<b>100%</b>
海水供水水壓(15米) <sup>λ</sup> Salt Water Supply Pressure (15 metres) <sup>λ</sup>	100%	100%	<b>100%</b>
因預先計劃進行的工程而暫停供水的時間長度(98%於八小時內) Duration of Suspension of Water Supply for Planned Works (98% within 8 hours)	達到指標 Target achieved	達到指標 Target achieved	達到指標 <b>Target achieved</b>
水錶準確程度(偏差程度不超過±3%) Accuracy of Water Meters (inaccuracy not exceeding ± 3%)	97.0%	97.3%	<b>97.7%</b>

λ 除了在系統的盡頭，配水系統內最低的剩餘水壓。  
*Minimum residual pressure in the distribution systems except at their extremities.*

供水管理

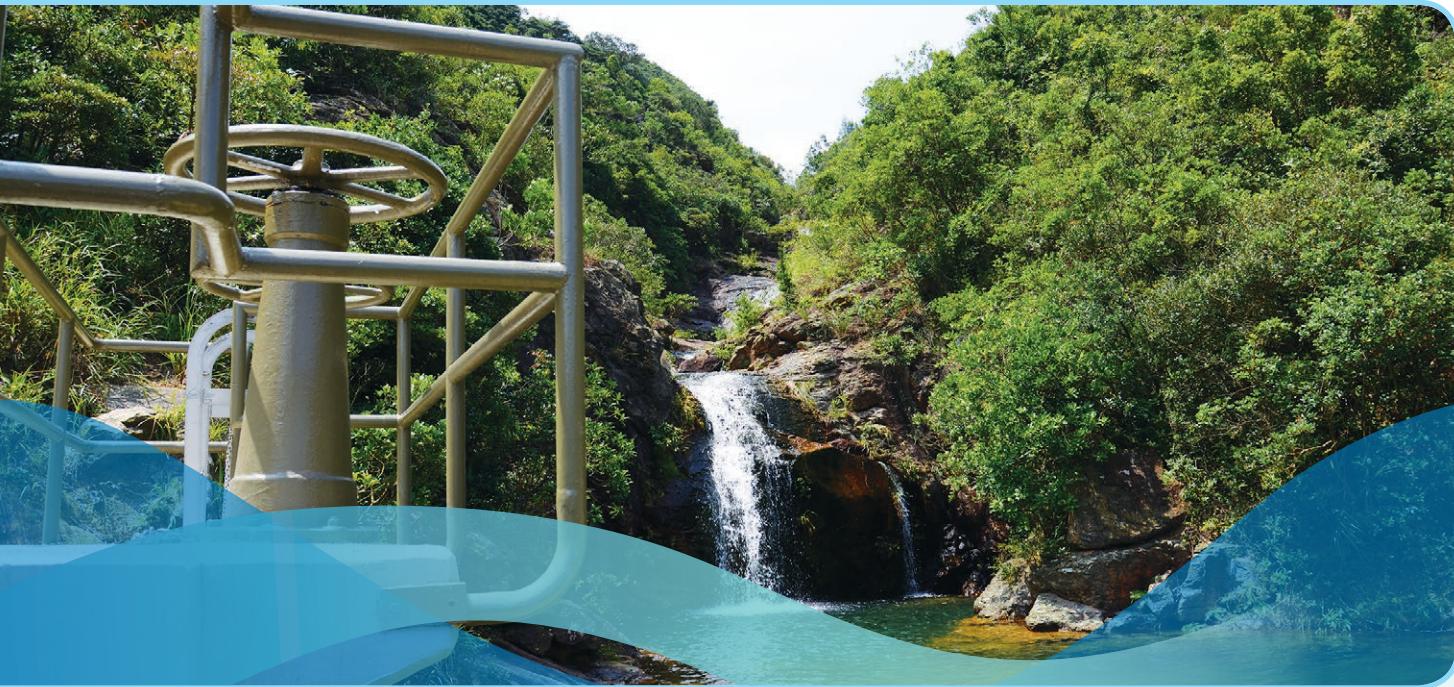
Water Supply  
Management





# 供水管理

## Water Supply Management



深知氣候變化對本港水資源所造成的挑戰，本署積極推動各項水資源管理措施，加強我們的應變能力和作好準備。

**WSD fully recognises the challenges to our local water resources due to climate change. We have been taking various water management initiatives to strengthen our resilience and preparedness.**

### 全面水資源管理

於二〇〇八年發佈的「全面水資源管理策略」(「策略」)為我們持續使用珍貴的水資源定下堅實基礎。「策略」強調制約用水需求增長，並開拓新水源，令香港能應付未來的供水挑戰。用水需求管理方面，我們一直多管齊下，採取「軟硬兼備」的策略，包括在軟件方面宣傳節約用水以及在硬件方面推廣使用節水裝置。此外，透過完成長達三千公里的老化水管更換及修復計劃，政府水管滲漏情況已大幅改善。我們現正逐步建立「智管網」持續監測食水管網中的

### Total Water Management

The Total Water Management (TWM) Strategy promulgated in 2008 laid a firm foundation to move towards sustainable use of our precious water resources. This strategy places emphasis on containing the growth of water demand and exploiting new water resources to better prepare Hong Kong for future challenges in water supplies. For containing water demand growth, we have been adopting a multi-pronged approach with a "Soft and Hard" strategy, including promotion of water conservation on the software side and use of water-saving devices on the hardware side. Moreover, upon the completion of the replacement and rehabilitation for 3,000 kilometres of aged water mains, the government water main leakage has been significantly reduced. We are progressively establishing

每個監測區域的失水狀況，從而推行有效的用水流失管理措施。我們亦會推出針對私人水管滲漏的措施。

the Water Intelligent Network (WIN) to continuously monitor the water loss in individual District Metering Areas (DMA) of the fresh water supply networks for implementing effective water loss management actions. We will also take specific measures to deal with the leakage problem at private water mains.

## 策略檢討

「策略」已推行數年，為更好地應對氣候變化、人口和經濟增長，以及廣東省多個城市對東江水的殷切需求所帶來的挑戰，本署現正就「策略」進行檢討。是次檢討旨在評估現有水資源管理措施的成效，預測至二〇四〇年的用水需求及供應情況，如有需要，並會制定新的水資源管理措施。

## Strategy Review

TWM has been implemented for several years to better prepare ourselves for the challenges arising from climate change, population and economic growth, as well as the keen demand for Dongjiang water from cities in Guangdong Province. The Department is conducting a comprehensive study to review TWM. The review aims to evaluate the effectiveness of existing water management measures, to forecast water demand and supply situation up to 2040, to seek feasible new water management initiatives if needed.

## 完善供水結構

目前，香港供水系統包括本地集水區收集的雨水、從廣東省輸入的東江水及沖廁用的海水。二〇一七年的總耗水量(包括沖廁用水)為12.58億立方米，其中26%為雨水、52%為東江水及22%為沖廁海水。憑藉這三個水源，香港多年來一直享有可靠的供水。

## Enhanced Water Supply Structure

Currently, Hong Kong's water supply system, comprises rainwater from local catchments, imported water from Dongjiang in the Guangdong Province, and sea water for flushing. The total water consumption in 2017 (including flushing water) was 1,258 million cubic metres, comprising 26% from rainwater, 52% from Dongjiang water, and 22% from sea water for flushing. These water sources have provided Hong Kong with a reliable water supply over the years.

除繼續善用上述水資源外，本署亦同時致力探索不受氣候影響的其他水源，以建設更完善的供水結構，包括現有水資源(即本地集水、輸入的東江水及沖廁用海水)，以及新增水源(即海水淡化、再造水和重用中水及回收雨水)。這些水資源將成為提升香港供水安全及應變能力的重要支柱。

Besides continuing to use the aforementioned water resources, the Department has been exploiting alternative water sources which are not susceptible to climate change to establish an enhanced water supply structure, comprising the existing water sources, viz. local yield, imported Dongjiang water and sea water for flushing, as supplemented by the new sources, viz. desalinated water, reclaimed water, and treated grey water and harvested rainwater. These water supply sources will become the pillars supporting Hong Kong with enhanced water security and resilience.

## 供水管理 Water Supply Management

## 東江水

東江水佔目前本港食水供應量約七成至八成，可彌補本地集水量的不足以應付食水需求。因此，可靠和穩定的東江水供應對本港至為重要。

自二〇〇六年起的粵港供水協議均採用「統包總額」方式，因應香港該年的本地集水量，提供可靠和具彈性的東江水供應以切合香港的實際需要，並確保供水的可靠程度達至99%，即使在百年一遇的旱情，仍能維持全日供水。採用這個方式，我們一方面可按需要輸入東江水達至供水協議所訂明每年的供水量上限；另一方面亦可在本地集水足夠時，避免浪費東江水資源以及節省輸水成本。我們已在二〇一七年十二月十四日與廣東省當局簽訂二〇一八年至二〇二〇年為期三年的新一份供水協議。根據新的供水協議，東江水價格的增幅是按照粵港兩地相關消費物價指數和人民幣兌港幣匯率的變動，每年上調0.3%。二〇一八年、二〇一九年及二〇二〇年的東江水價格分別為47.93億元、48.07億元和48.21億元。

## Dongjiang Water

Dongjiang water, which now accounts for about 70% to 80% of our fresh water supply, is able to fill the gap due to insufficient local yield in meeting water demand. A reliable and stable supply of Dongjiang water is thus important to Hong Kong.

Since 2006, the “package deal lump sum” approach has been adopted in the water supply agreements between Guangdong and Hong Kong to ensure a reliable and flexible supply of Dongjiang water to meet the actual needs of Hong Kong according to the local yield collected in a particular year with 99% reliability, i.e. water supply can be maintained around the clock even under extreme drought conditions with a return period of once in 100 years. This approach enables us to import Dongjiang water as needed each year up to an annual supply ceiling stipulated in the supply agreement thereby avoiding wastage of the Dongjiang water resources and saving our pumping costs when more local yield is available in a particular year. The new water supply agreement for the three-year period between 2018 and 2020 was signed with the Guangdong authorities on 14<sup>th</sup> December 2017. Under the new three-year agreement, the increase in prices of Dongjiang water generally is based on the changes of the relevant price indices of Guangdong and Hong Kong and the exchange rate between the Renminbi and the Hong Kong dollar. The Dongjiang water prices will be increased by 0.3 percent annually to \$4,793 million, \$4,807 million and \$4,821 million for 2018, 2019 and 2020 respectively.



## 本地集水

香港集水區佔土地面積近三成並有17個水塘。一般而言，從集水區收集的雨水水質受到保護。然而，為確保食水安全，本署採取適當措施以進行定期巡查及檢查水質。本地集水佔總食水用量約二至三成。

## Local Yield

Nearly 30% of the Territory are catchment areas and there are 17 impounding reservoirs across Hong Kong. In general, rainwater collected in catchment areas is protected from contamination. Notwithstanding this, in order to ensure water safety, the Department takes appropriate measures to conduct regular inspections and check water quality. Local yield generally accounts for about 20% to 30% of our total fresh water consumption.

## 沖廁用海水

海水沖廁已被廣泛採用以節省食水資源。現時沖廁用海水的供水管網覆蓋約八成半的人口。海水供水管網已擴展至薄扶林及新界西北(包括屯門東、元朗及天水圍)，而為該些地區的樓宇轉換海水沖廁的工作正分階段進行。在薄扶林及新界西北的第一期轉換工作已大致完成，包括鋼線灣、華富、天水圍和元朗工業邨等。餘下的轉換工作亦將繼續。

## Sea Water for Flushing

Sea water for flushing has been widely adopted to save fresh water resources. At present, the network coverage of sea water for flushing is approximately 85% of the population. The sea water supply network has been extended to Pok Fu Lam and North West New Territories (including Tuen Mun East, Yuen Long and Tin Shui Wai), conversion of flushing supply to sea water in their buildings is being carried out in stages. Phase one conversion work in Pok Fu Lam and North West New Territories which include Telegraph Bay, Wah Fu, Tin Shui Wai and Yuen Long Industrial Estate etc has been substantially completed. Remaining phases of conversion work will follow.

## 供水管理 Water Supply Management



### 海水化淡

為使香港供水穩定以應付氣候變化帶來的影響，我們一直都在開拓不受氣候變化影響的新水源。我們將在將軍澳興建海水化淡廠，並採用先進的逆滲透技術。我們正準備於二〇一八年中為海水化淡廠的第一階段「設計－建造－運作」合約進行招標，我們會要求投標者在使用可再生能源、建築特色、減低環境影響，消耗較少能源的水處理過程，令海水化淡廠能與未來周邊發展協調，以及對環境的影響減至最低等方面建議合適的創新設計。

將軍澳海水化淡廠第一階段工程預計在二〇二二年底落成，其每日食水產量為十三萬五千立方米，足以應付本港約百分之五的食水用量。我們會預留空間以便日後在有需要時擴建，把食水產量增加至最終每日二十七萬立方米。

### 再造水

為上水、粉嶺及鄰近發展地區處理污水的石湖墟污水處理廠將提升為淨水設施，將淨化級別由二級提升至三級水平，並增加處理量。我們計劃利用經石湖墟淨水設施三級處理的排放水生產再造水，供應新界東北部地區包括上水及粉嶺，作沖廁及其他非飲用用途。除了節省供應至該區的食

### Sea Water Desalination

To enhance the resilience of our water sources to cope with the impact of climate change, we have been developing a new water source that is immune to climate change. We will embark on the construction of a desalination plant in Tseung Kwan O, using advanced reverse osmosis technology. We are preparing to invite tenders in mid 2018 for the Design-Build-Operate contract for the plant and will require the tenderers to propose suitable innovative designs in terms of renewable energy usage, architectural features, minimization of environmental impacts, and water treatment processes that require less energy consumption, for blending the plant with future surrounding development coherently as well as having least impact on the environment.

The first stage of Tseung Kwan O desalination plant is anticipated for commissioning by end of 2022. It will have a water production capacity of 135,000 m<sup>3</sup> per day to meet about 5 percent of fresh water demand in Hong Kong. We will make provision for future expansion when necessary to attain ultimate water production capacity of 270,000 m<sup>3</sup> per day.

### Water Reclamation

The Shek Wu Hui (SWH) Sewage Treatment Works will be evolved into an Effluent Polishing Plant (EPP) by upgrading the treatment level from secondary to tertiary treatment with an increase in the treatment capacity for treating sewage from Sheung Shui, Fanling and adjacent development areas. In this regard, we plan to further process the tertiary treated effluent from the SWHEPP for production of reclaimed water as the

水，同時亦減少經處理污水的排放量。根據我們初步估算，計劃全面落實後可提供再造水給上述地區(包括上水、粉嶺及鄰近發展地區)約五十萬人作沖廁用途，每年最終可以節省二千一百萬立方米的食水，約佔全港每年食水總用水量的百分之二。我們已於二〇一七年四月動工建造配水庫及輸水幹管為供應再造水作準備，而相關的石湖墟淨水設施提升淨化級別工程亦正在進行中，我們會適時展開餘下工程，包括生產再造水設施、抽水系統及分配水管，預計於二〇二二年開始逐步向上水和粉嶺供應再造水作沖廁用途。

supply for flushing and other non-potable uses in the north-eastern part of the New Territories including Sheung Shui and Fanling. The use of reclaimed water for flushing does not only save fresh water for flushing being supplied in these areas, but also reduces the amount of treated effluent discharge. According to our initial estimate, around 500,000 people will have access to the full-fledged reclaimed water supply for flushing in the above areas (including Sheung Shui, Fanling and adjacent development areas), and the use of reclaimed water for flushing will ultimately save up to 21 million cubic metres of fresh water each year. This will be equivalent to about 2% of the total annual fresh water consumption in Hong Kong. Whilst the project for upgrading SWHEPP is being implemented, the construction of a service reservoir and laying of trunk water mains to prepare for the supply of reclaimed water commenced in April 2017. We will also start the construction of the remaining works in a timely manner, including facilities for production of reclaimed water, a pumping system and the local distribution mains. The supply of reclaimed water for flushing in Sheung Shui and Fanling will be effected in phases starting from 2022 onwards.



## 中水重用及雨水回收

水務署將在安達臣道石礦場用地發展項目中興建一套中央中水重用系統。該系統由政府負責運作，處理在該發展區內收集到的中水，用作沖廁及其他非飲用用途。該系統將包括中水處理廠、抽水系統、貯存經處理中水的配水庫，以及收集中水和供應經處理中水的管道。獲委聘的顧問公司正為中水處理廠進行詳細設計，該廠的處理量將為每日三千三百立方米，而建造工程預計於二〇一九年年底展開，並於二〇二二年完成。

## Grey Water Recycling and Rainwater Harvesting

WSD will construct a centralised grey water recycling system at the Anderson Road Quarry Site Development, which is a government-operated system treating grey water collected from within the development for flushing and other non-potable uses. This system comprises a grey water treatment plant, a pumping system, a service reservoir for storage of treated grey water, and pipes for grey water collection and supply of the treated grey water to the customers. The consultant engaged for the proposed grey water treatment plant is conducting detailed design of the plant for a treatment capacity of 3,300 m<sup>3</sup> per day. Construction works are planned to commence by end of 2019 for completion in 2022.

## 供水管理 Water Supply Management

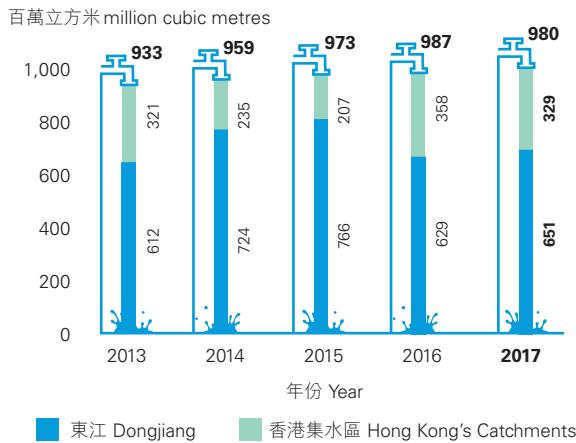
本署一直推動在合適的新政府項目中更廣泛地應用中水重用及雨水回收系統。發展局和環境局在關於環保政府樓宇的聯合技術通告已羅列詳細指引，讓新建政府項目盡可能安裝有關處理和循環再用設施，以減少非飲用用途的食水用量。本署新界西新分區辦事處配備的中水重用及雨水回收系統便是其中的一個例子。

就私人樓宇而言，除了在二〇一六年三月推出的「綠建環評既有建築2.0版」的評審標準中，提高樓宇使用中水重用及雨水回收系統的得分外，我們正為香港綠色建築議會對「綠建環評新建建築」的檢討提供意見，以鼓勵發展商提供有關設施減少使用食水作非飲用用途。

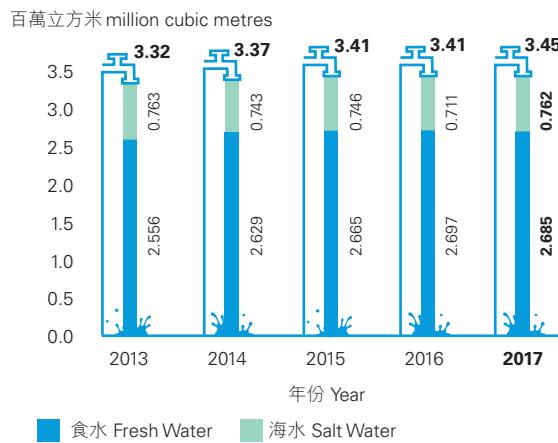
We have been promoting the wider use of grey water recycling and rainwater harvesting systems in suitable new government projects. Detailed guidelines are laid down in the Joint Development Bureau and Environment Bureau Technical Circular on Green Government Buildings so that new government projects will install the on-site treatment and recycling facilities as far as possible to reduce their fresh water demand for non-potable applications. Our New Territories West new Regional Office is one of the examples of a government building equipped with the grey water recycling and rainwater harvesting systems.

As far as private buildings are concerned, apart from increasing bonus credits awarded to buildings with grey water reuse and rainwater harvesting systems under the Building Environmental Assessment Method (BEAM) Plus for Existing Buildings Version 2.0 launched in March 2016, we are providing support to Hong Kong Green Building Council in their review of BEAM Plus for New Buildings to encourage developers to provide these facilities in reducing the use of fresh water for non-potable uses.

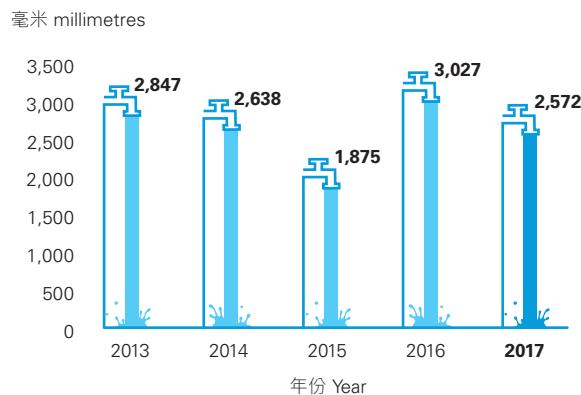
二〇一三年至二〇一七年全年食水供水量  
Annual Quantity of Fresh Water Supply 2013 – 2017



二〇一三年至二〇一七年總平均日耗水量(食水及海水)  
Total Average Daily Consumption (Fresh Water and Salt Water) 2013 – 2017



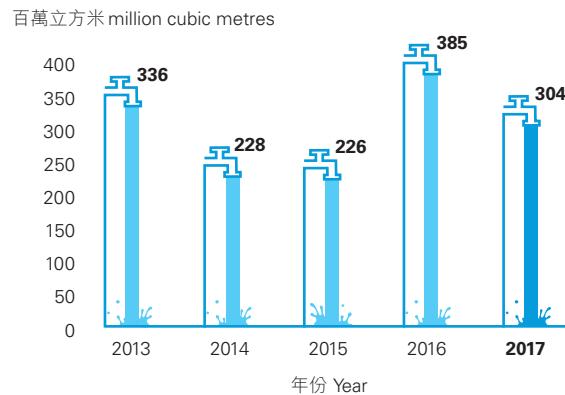
二〇一三年至二〇一七年全年降雨量  
Annual Rainfall 2013 – 2017



註：長期平均降雨量為2,399毫米

Note : Long Term Mean Rainfall is 2,399 millimetres

二〇一三年至二〇一七年全年集水量  
Annual Yield 2013 – 2017



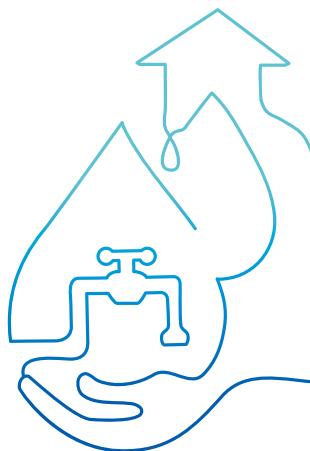
註：長期平均集水量為295百萬立方米

Note : Long Term Mean Yield is 295 million cubic metres

二〇一七年按用水類別劃分的食水用量(百萬立方米)及佔總量百分比  
Annual Fresh Water Consumption (by Sector) 2017 in Million Cubic Metres and Percentage of Total

用水類別 Sector	食水用量 Fresh Water Consumption
住宅用水 Domestic	539 (55.0%)
工業用水 Industrial	60 (6.1%)
服務業及商業用水 Service Trades	250 (25.5%)
政府用水 Government Establishments	44 (4.5%)
建築及船舶用水 Construction & Shipping	21 (2.2%)
臨時淡水沖廁 Flushing	66 (6.7%)
食水總用量 Total Fresh Water Consumption	980 (100.0%)





培養節約用水文化

Fostering a Water

Conservation Culture



# 培養節約用水文化

## Fostering a Water Conservation Culture



本署一直多管齊下，以「軟硬兼備」的措施，向住宅及非住宅界別推廣節約用水。

**WSD has been adopting a multi-pronged approach to promote water conservation in both domestic and non-domestic sectors, applying measures in both softwares and hard wares.**

### 提倡節約用水

#### 用水效益標籤計劃

本署於二〇〇九年起實施自願參與「用水效益標籤計劃」，鼓勵客戶使用節水裝置。截至二〇一八年三月，計劃現已涵蓋沐浴花灑、水龍頭、洗衣機、小便器用具和節流器。

本署已制訂策略，分階段實施強制用水效益標籤計劃。我們首先於二〇一八年二月一日起已全面強制在新建樓宇和現有樓宇的水管工程中住宅處所的廚房和所有處所的浴室及洗手間均須採用符合所規定用水效益級別的節水裝置。我們相信以上的強制措施，將有助已註冊用水效益標籤計劃的產品得到更廣泛地使用。我們將會研究透過制訂法例，要求在零售市場售賣的指定用水裝置須具有用水效益標籤，方便消費者選擇購買節水裝置，進一步達至節約用水的目的。

### Making Water Conservation Count

#### Water Efficiency Labelling Scheme (WELS)

In 2009, WSD launched the voluntary "Water Efficiency Labelling Scheme" (WELS) to encourage customers to use water saving devices. Up to March 2018, the scheme covers showers for bathing, water taps, washing machines, urinal equipment and flow controllers.

WSD has formulated strategies to implement the Mandatory WELS in stages. We have fully mandated the use of prescribed WELS products of designated water efficiency grade for kitchens of domestic premises as well as for bathrooms and toilets in all premises in the plumbing works for new and existing buildings since 1 February 2018. We believe that the above mandatory measures will promote more extensive use of WELS products. Next, we are exploring, through legislation to require designated types of water using devices on sale in the retail market to bear water efficiency label registered under WELS so as to facilitate the consumers to choose to buy water-efficient products to further achieve water conservation purposes.



已安裝節水裝置  
Installed Water-saving  
Devices with  
**127,000**  
住戶  
households

## 在政府場所、學校及公共屋邨安裝節水裝置

水務署繼續為公共屋邨、政府場所和學校安裝節水裝置，以減少耗水量。截至二〇一八年三月底，89個公共屋邨約十二萬七千個住戶已安裝花灑和水龍頭節流器。此外，在政府場所和學校加裝節水裝置的第三階段工程已大致完成，為約3,150所政府場所和學校安裝超過53,000個節水裝置。

## Retro-fitting Government Venues, Schools and Public Housing Estates with Water Efficient Devices

WSD has been continuing with water efficient devices installation work in public rental housing estates, government venues and schools for reducing water consumption. By the end of March 2018, nearly 127,000 households at 89 public rental housing estates have flow controllers installed in their taps and showers. Moreover, the third phase of retrofitting plumbing fixtures with water efficient devices in government venues and schools has been substantially completed, with over 53,000 devices installed in about 3,150 government venues and schools.

## 「齊來慳水十公升」運動

水務署鼓勵市民透過此運動承諾節約用水。截至二〇一八年三月，已有超過260個來自不同行業和界別的機構參與運動。另外，超過14萬個住戶參與運動及獲贈節流器。

## “Let's Save 10 Litres Water” Campaign

WSD encourages the public to save water through declarations in the “Let's Save 10 Litres Water” Campaign. By the end of March 2018, over 260 organisations from various trades and sectors have participated in the Campaign. Furthermore, over 140,000 households have participated in the Campaign and they have been provided with complimentary flow controllers.



## 培養節約用水文化 Fostering a Water Conservation Culture

### 提高公眾節水意識

#### 節水教育與宣傳

自二〇一五／一六學年起，水務署向小學推出理論與實踐相結合的「惜水學堂」綜合教育計劃。「惜水學堂」旨在拓寬學生的水資源知識，並提高他們對節約用水及水資源可持續性的認識。截至二〇一八年三月底，參與綜合教育計劃的小學超過250間。

有見計劃非常成功，本署在二〇一七／一八學年推出先導計劃，將「惜水學堂」綜合教育計劃擴展至幼稚園，逾八十間幼稚園參與先導計劃，本署並將於二〇一八／一九學年將有關綜合教育計劃推展至全港所有幼稚園。

### Raising Public Awareness of Water Conservation

#### Water Conservation Education and Promotion

Since the 2015/16 school year, WSD has launched the "Cherish Water Campus" Integrated Education Programme (IEP) in primary schools. The programme aimed at broadening students' knowledge about water resources, raising their awareness of water conservation and water sustainability through integrating theory with practice. As at the end of March 2018, over 250 primary schools have joined the IEP.

Riding on this success, a pilot programme for extending the "Cherish Water Campus" IEP to kindergartens has been launched in more than 80 kindergartens in the 2017/18 school year. WSD will launch the IEP to all kindergartens in Hong Kong in the 2018/19 school year.

- 校園用水考察  
School Water Audit



- 「惜水學堂」頒獎典禮(二〇一六／一七學年)  
"Cherish Water Campus" Award Ceremony (School Year 2016/17)

二〇一二年，水務署在旺角辦事處設立臨時水資源教育中心，旨在提高青少年對水資源和節約用水的認識。截至二〇一八年三月，臨時水資源教育中心已接待超過六萬六千名主要來自小學及非牟利機構的訪客。由於旺角辦事處將於二〇一八年中搬遷至天水圍，水務署將會在天水圍新辦事處設立永久性的水資源教育中心，該中心預計將於二〇一九年下半年啟用，屆時展覽面積將會增加，以便向學生及不同年齡和各階層的社會人士展示更多和深入的節約用水及水資源資訊。

In 2012, WSD set up a temporary Water Resources Education Centre (WREC) at our Mong Kok Office with the aim of enhancing knowledge about water resources and water conservation among the younger generation. As at March 2018, the temporary WREC has received more than 66,000 visitors since its opening, mainly from primary schools and non-profit organisations. With the Mong Kok Office to be relocated to Tin Shui Wai in mid-2018, WSD will establish a permanent WREC at the new Tin Shui Wai office. The centre expected to be commissioned in second half of 2019, will have an expanded exhibition area to display more and in-depth information covering various aspects of water conservation and water resources to cater for students and a wider spectrum of the members of the general public of different ages.

## 「點滴香港•探古惜今創未來」巡迴展覽

水務署於二〇一七年八月至二〇一八年三月期間在全港十八區舉行了「點滴香港•探古惜今創未來」巡迴展覽，讓市民認識香港的水務歷史及水資源管理，並了解節約珍貴水資源的重要。水務署吉祥物「滴惜仔」亦到部分展覽地點與眾同樂，參與以惜水為題的互動問答遊戲和刮畫工作坊等，讓大小朋友寓學習於娛樂。展覽得到各學校、團體及公眾蒞臨參觀，反應非常熱烈。

## “Water Conservation – Past • Present • Future” Roving Exhibition

WSD held “Water Conservation – Past • Present • Future” Roving Exhibition in 18 districts in Hong Kong during the period of August 2017 to March 2018. The public has gained a thorough understanding of Hong Kong’s water supply history and water resources management and understood the importance of conserving precious water resources. WSD’s Mascot “Water Save Dave” was present in some exhibition venues for interactive Question and Answer session and scratch-printing workshop etc. under the theme of water conservation so that the public could learn with fun. The exhibition has been well received and with enthusiastic participation by various schools, organisations and the general public.



• 「點滴香港•探古惜今創未來」巡迴展覽  
“Water Conservation – Past • Present • Future” Roving Exhibition

## 培養節約用水文化 Fostering a Water Conservation Culture

### 公開講座和展覽

聯合國把每年的三月二十二日定為「世界善用食水日」。為響應這個極具意義的日子，香港地球之友舉辦「水論壇2018」並獲水務署支持作為是次論壇的策略伙伴。論壇以「海綿城市及海岸防洪措施－應對極端氣候變化」為題，邀請了多位水務和環境保育的專家就水資源管理策略和應對氣候變化及極端天氣的長遠行動計劃發表演說。本署總工程師／發展(2)鍾兆榮先生也於論壇以「氣候變化－香港的穩健供水發展」為題演講，並於會場以展版介紹本港水資源的發展。論壇更設有討論及答問環節，以促進講者與現場觀眾交流意見和分享經驗。

### Public Lectures and Exhibitions

The United Nations has designated the 22<sup>nd</sup> of March each year as the "World Water Day". To mark the significance of this day, Friends of the Earth (Hong Kong) organised the Water Forum 2018, with WSD being the strategic partner, under the theme "Sponge City and Coastal Defence against Extreme Weather Events". Experts in the fields of water supply and environmental protection were invited to give talks on the strategies for water resources management and long-term action plans for combating climate change and extreme weather. Chief Engineer/Development (2) of WSD, Mr CHUNG Siu-wing, Joseph, also shared on the topic of "Climate Change – Water Resilience Development of Hong Kong", and introduced water resources development in Hong Kong at the exhibition panels in the venue. Panel discussions as well as Question and Answer sessions were held to exchange views and encourage sharing of experiences between speakers and the audience.

### 用水效益檢討

在完成對泳池、公園、街市、廁所、垃圾收集站和懲教院所等由政府管理的設施的用水效益檢討，以及隨後發出相關的用水效益最佳實務指引後，本署一直與設施管理者合作，根據用水效益最佳實務指引落實措施，以提升有關設施的用水效益。本署亦已為酒店及餐飲業編寫及透過相關協會推出用水效益最佳實務指引，向業界推廣節約用水。有關工作的主要目的是讓我們的客戶為節約用水出一分力。用水效益最佳實務指引是以實際運作為基礎，以制訂平衡的節約用水措施，在無損整體服務水平的情況下，可實踐於日常運作之中。

### Water Efficiency Review

Following the completion of the water efficiency reviews and subsequent issuing of Best Practice Guidelines (BPGs) for government-managed swimming pools, parks, markets, toilets, refuse collection points and correctional institutions, we have been working with facility operators on implementing measures according to the BPGs to enhance water use efficiency at their facilities. We have also compiled and promulgated through related associations the BPGs for hotel and catering sectors for promotion of water conservation in the trades. Our primary objective is for our customers to play their part in contributing to water conservation. The BPGs are prepared by fact-based method to formulate balanced water-saving measures for implementation in day-to-day operations without compromising the overall level of services.

## 防止非法取水

本署負責執行《水務設施條例》(第102章)及《水務設施規例》(第102A章)，並對違法人士採取法律行動。根據《水務設施條例》，除非水務監督批准，否則未經水錶量度取水即屬違法行為。在二〇一七／一八年，本署檢控組平均每月處理懷疑違反《水務設施條例》或《水務設施規例》的個案約為110宗，當中超過八成涉及非法取水。在宣傳方面，我們推出多個關於防止非法取水的教育和宣傳計劃，對象除本署內外的政府職員之外，亦包括市民大眾。有關教育和宣傳活動包括濾水廠開放日、研討會及學校巡迴探訪。教育和宣傳亦會透過水費單上的告示，以及在政府及私人物業、客戶諮詢中心及水資源教育中心張貼的海報及宣傳牌。

## Preventing Illegal Water Use

The Department is responsible for enforcing the Waterworks Ordinance (WWO) (Cap.102) and Waterworks Regulation (WWR) (Cap.102A) including taking legal action against offenders of the legislation. It is an offence under the WWO to draw unmetered water except with the permission of the Water Authority. The average number of suspected cases of contravention of WWO/WWR handled by the Department's Prosecution Unit per month in 2017/18 is about 110. Among these cases, over 80% are related to unlawful taking of water. On the publicity front, we conducted education and publicity programmes on preventing illegal taking of water not only to government officers within and outside the Department, but also to the public during events such as Water Treatment Works Open Day, seminars and school tours, and through notices on water bills as well as posters and promotion boards displayed at government and private properties, customer enquiry centres and the WREC.

## 改善供水管網

水務署一直致力維持政府供水管網的健康。本署自二〇〇〇年起展開「更換及修復水管計劃」，分階段更換及修復全港長約三千公里的老化水管。隨著計劃於二〇一五年大致完成，政府供水管網的健康狀況已大為改善。水管爆裂個案由二〇〇〇至〇一年度約2,500宗大幅減少至二〇一七至一八年份約100宗。

## Improving the Supply Network

WSD is committed to maintaining the health of the government water supply networks. WSD launched the Replacement and Rehabilitation Programme of Water Mains in 2000 to replace and rehabilitate about 3,000 kilometres of aged water mains in stages. Following the substantial completion of the Programme in 2015, the condition of the government water supply networks has improved significantly. The number of water main burst incidents reduced significantly from about 2,500 in Year 2000/01 to around 100 in Year 2017/18.

## 培養節約用水文化 Fostering a Water Conservation Culture

在大幅改善供水管網的健康狀況後，本署推行風險為本的地下水管資產管理，以有效維持供水管網的健康狀況，同時平衡因進行水管改善工程對交通、社區、市民等造成的影響。本署會根據對客戶及交通的影響、水管物料、狀況、故障記錄、水管使用年期等，評估水管的風險，並為該些評為高風險的水管進行改善工程。

Given much improved condition of the water supply networks, WSD is implementing risk-based underground asset management of water mains to sustain the healthiness of the water supply network effectively, and at the same time striking a balance in view of the effect to the traffic, community and the member of the public due to the water mains improvements works. WSD will base on the effect to the customers and traffic in the event of failure, pipe material, condition records of failure, ages of the water main etc, to assess their risk. Life improvement works will be carried out to those water mains assessed with high risk.

## 用水流失管理措施

我們定期為本署的水管進行音聽視察、噪聲記錄和最低晚間流量測試，從而檢測水管的滲漏，並進行維修。我們亦正逐步建立智管網，在智管網下，食水分配管網將會分成超過2,000個監測區域，每個區域內的管網均安裝監測和感應設備。智管網基本上是把全港龐大的食水分配管網分成大小易於管理的監測區域，作持續監測它們的狀況，以決定處理它們的優先次序及有效的管網管理措施，包括(i)主動探測和控制滲漏；(ii)實施水壓管理，減低監測區域內水管的壓力；(iii)就滲漏和爆裂水管進行優質和快速的維修工作；以及(iv)重置不符維修成本效益的老化水管。此外，我們擬議設立一套智能管網管理電腦系統，用以分析從監測區域的監測和感應設備所收集

## Water Loss Management Initiatives

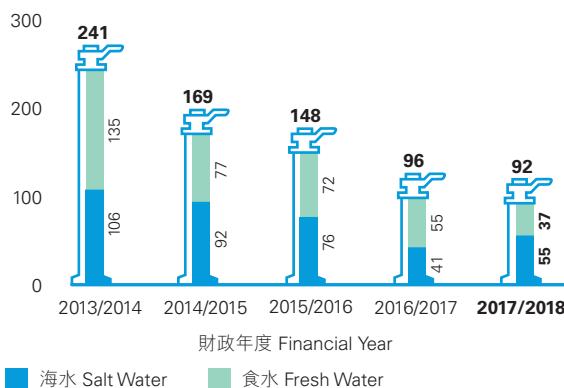
We conducted regular leak detection on all our WSD water mains through sounding inspections, noise logging and minimum night flow tests in order to identify any leakage for repair. We are also progressively establishing WIN. Under WIN, the fresh water distribution network will be divided into more than 2,000 District Metering Areas (DMAs) within which monitoring and sensing equipment will be installed. The essence of WIN is to divide the vast fresh water distribution network in the territory into DMAs of manageable size for continuous monitoring of their conditions so as to prioritise them for taking effective network management actions including (i) active leakage detection and control; (ii) pressure management to reduce the pressure in the water mains of the DMAs; (iii) quality and speedy repairs of water main leaks and bursts; and (iv) reprovisioning of aged water mains which are beyond economic repair. Moreover, the vast amount of data

到的龐大數據。我們還正在探索應用各種先進水管滲漏檢測技術的可行性，以及已將部分測漏工作外判予專門承辦商，以加強檢測水管滲漏檢測的工作。

collected from the monitoring and sensing equipment in the DMAs will be analysed with the proposed Intelligent Network Management System (INMS). Besides, in order to enhance the leak detection works of our water mains, we are exploring the feasibility of applying various advanced technologies in leak detection of water mains and have outsourced some leak detection works to specialist contractors.



**水管爆裂個案統計數字**  
Statistics on Mains Bursts



- 水務署致力盡早發現可疑漏水情況，以便即時採取措施避免進一步流失。  
WSD is striving to detect suspected leaks as early as possible in order to allow immediate action to prevent further losses.



水質  
Water Quality





# 水質 Water Quality



水務署建立食水水質管理系統，當中包括已提升的水安全計劃，提供全面的框架以保障香港的食水水質和公眾健康。

**WSD has established the Drinking Water Quality Management System with enhanced Water Safety Plan which provides a comprehensive framework to safeguard the quality of the drinking water supply in Hong Kong to protect public health.**

## 水質標準及監測

### 東江水

廣東省當局已採取有效措施，確保輸港的東江水水質符合於供水協議訂明的國家《地表水環境質量標準GB3838-2002》第II類的標準，有關標準是適用於集中式生活飲用水地表水源地的最高標準。令達至有關結果的措施和項目包括興建新污水處理廠、遷走具污染性的工廠和農場、鋪設專用輸水管道、建立東江流域水量水質監控系統，以及在深圳水庫設立生物硝化站等。此外，沙灣河流域水環境綜合整治工程已開展，以減低在暴雨期間沙灣河洪水流入

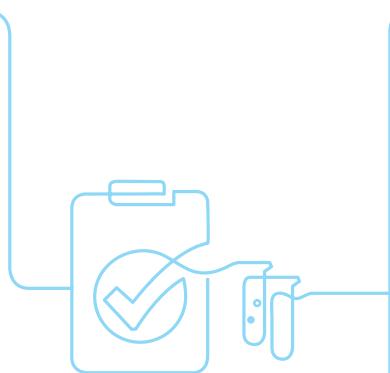
## Water Quality and Monitoring

### Dongjiang Water

The Guangdong Authorities have taken effective steps to ensure that the quality of Dongjiang water that is delivered to Hong Kong meets the national standard for Type II waters in the "Environmental Quality Standards for Surface Water GB3838-2002" stipulated in the supply agreement, which is the highest standard applicable for the abstraction for human consumption. This has been achieved through a combination of measures and projects, including construction of new sewage treatment plants, removal of polluting factories and farms, commissioning of dedicated aqueducts, implementing the Dongjiang Basin Water Quantity and Quality Monitoring and Control System,

深圳水庫(東江水從此水庫輸送往香港)對水庫水質的影響。我們亦在接收東江水的木湖抽水站設有在線水質監測系統，全天候二十四小時密切監測輸港東江水的水質。

and the on-going operations of the bio-nitrification plant at the Shenzhen Reservoir. Besides, the Comprehensive Remediation Project for the Water Environment of Shawan River Basin has begun in order to mitigate the impact on water quality due to flood water from Shawan River flowing into the Shenzhen Reservoir from which the Dongjiang water is delivered to Hong Kong, during heavy rainfalls. As regards the water quality monitoring, we maintain an on-line Water Quality Monitoring System at the Muk Wu Pumping Station, where we receive Dongjiang Water in order to closely gauge the quality of imported Dongjiang water around the clock.



## 食用水

我們已實施一套食水水質管理系統，當中包括已提升的水安全計劃，以提供一個全面的框架，保障香港的食水水質和公眾健康。多年來，我們按照世衛制訂的《飲用水平質準則》(世衛準則)來監測香港的食水水質。就制定香港食水標準方面，我們亦已聘任英國專家顧問，研究了兩個國際組織(即世衛和歐盟)及七個海外國家(即英國、美國、加拿大、澳洲、新加坡、紐西蘭和日本)在訂立食水標準方面的策略、理據和做法。參考了專家顧問的研究結果，並諮詢了由發展局於二〇一六年六月成立的食水安全國際專家小組的意見後，政府決定暫時採用世衛準則中的相關準則值或

## Treated Water

We have established the Drinking Water Quality Management System which incorporates our enhanced Water Safety Plan to provide a comprehensive framework to safeguard the quality of the drinking water supply in Hong Kong and public health. Over the years, we are monitoring the drinking water quality in Hong Kong in accordance with the Guidelines for Drinking-water Quality published by WHO. For formulating drinking water standards for Hong Kong, we have engaged an expert consultant from the United Kingdom to review the approaches, rationales and practices of two international organisations (i.e. the WHO and the European Union) and seven overseas countries (i.e. the United Kingdom, the United States of America, Canada, Australia, Singapore, New Zealand and Japan) in establishing their drinking water standards. Having taken

## 水質 Water Quality

暫定準則值，作為香港食水標準。我們會繼續着手制訂香港食水標準，以評核是否適宜為一些參數訂立超越世衛準則的標準（「WHO+」）。

我們分別從濾水廠、配水庫、食水分配系統以至公眾可達的水龍頭處抽取水樣本進行物理、化學、細菌學、生物學和輻射學方面的化驗，從而監測整個食水處理過程、供應及分配系統的水質。每年抽取及檢測超過8萬個樣本。

為進一步保障本港的食水水質，我們自二〇一七年十二月起強化現行的水質監測計劃，並展開水質監測優化計劃（「優化監測計劃」）。我們根據全港18個區議會的人口分佈，以隨機方式抽出客戶，從他們的水龍頭收集食水樣本檢測可能在內部供水系統出現的六種金屬（即鉛、鎳、鉻、鎘、銅和錫），以監測客戶水龍頭的有關食水水質。

### 檢討水務法例保障食水安全

我們已開展對《水務設施條例》（第102章）和《水務設施規例》（第102A章）的全面檢討，透過加強規管水喉物料和水喉工程的建造，提升香港的食水安全。我們繼續就(i)負責內部供水系統的設計及建造的人士（包括發展商、專業人士、承建商、持牌水喉匠和水喉工人）的角色和職責，及(ii)監管水喉物料供應商以及管制於零售市場出售該等物料等範疇，諮詢相關持份者。

into account the expert consultant's findings and consulted the International Expert Panel on Drinking Water Safety established by the Development Bureau in June 2016, the government decided to adopt the WHO's guideline values/provisional guideline values as the Hong Kong Drinking Water Standards (HKDWS) in the interim. We will work further to establish the HKDWS with a view to assessing the appropriateness for some parameters to adopt a standard beyond WHO Guidelines (WHO+).

Water quality throughout the entire treatment, supply and distribution system is monitored by means of physical, chemical, bacteriological, biological and radiological examinations of water samples taken at water treatment works, service reservoirs, distribution systems and publicly accessible taps. More than 80,000 samples are taken and tested each year.

To further safeguarding the drinking water quality of Hong Kong, we have enhanced our current water quality monitoring programme and commenced the Enhanced Water Quality Monitoring Programme (Enhanced Programme) since December 2017. Based on the population distribution of the 18 District Councils, water samples are collected from consumers' taps of randomly selected premises for testing six metals (viz. lead, nickel, chromium, cadmium, copper and antimony) which could be present in the internal plumbing system with a view to monitoring the relevant drinking water quality at consumers' taps.

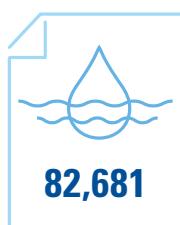
### Legislative Review for Enhancing Water Safety

We have commenced a holistic review on the Waterworks Ordinance (Cap.102) and Waterworks Regulations (Cap.102A) for strengthening regulatory control of the plumbing materials and construction of plumbing installations to enhance drinking water safety in Hong Kong. We are continuing the consultation with relevant stakeholders (i) on the roles and responsibilities of the persons responsible for the design and construction of plumbing installations (including developers, professionals, contractors, licensed plumbers and plumbing workers); and (ii) regulation of plumbing materials suppliers and the control on the sale of these plumbing materials in retail market.

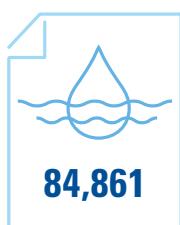


### 水樣本總數

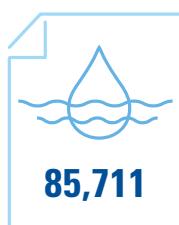
No. of Water Samples Taken



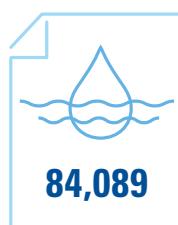
2013/14



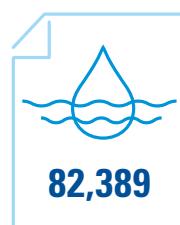
2014/15



2015/16



2016/17



2017/18

財政年度 Financial Year

註：

以上的水樣本是從濾水廠、配水庫、供水接駁點及公眾可達的客戶水龍頭抽取。

Note:

The above water samples were taken at water treatment works, service reservoirs, connection points and publicly accessible consumer taps.

### 東江水的平均氨氮及錳水平

Average Ammoniacal Nitrogen and Manganese Levels in Dongjiang Water

財政年度 Financial Year	2015/16	2016/17	2017/18
錳(毫克／公升) Manganese (mg/L)	0.03	0.03	<b>0.03</b>
氨氮(毫克／公升) Ammoniacal Nitrogen (mg/L)	0.04	0.03	<b>0.04</b>

# 水務基建設施

## Waterworks Infrastructure



提升水務基建設施及它們的運作效率，讓香港享有更可靠的供水系統。

**Hong Kong enjoys a water supply of greater reliability as a result of improved waterworks infrastructure and operational efficiencies.**

### 智管網

本署現正在逐步建立智管網，食水分配管網安裝感應和監測設備以設立監測區域。在智管網下，全港將設立超過2,000個監測區域，同時本署亦將設立一套智能管網管理電腦系統，用以分析從監測區域的監測感應和設備所收集到的數據，持續監測每個監測區域的狀況，以決定處理它們的優先次序及有效的管網管理措施。

### Water Intelligent Network

The Department is progressively building up WIN system by installing monitoring and sensing equipment in the fresh water distribution networks to establish DMAs. There will be more than 2,000 DMAs in the territory under WIN. An Intelligent Network Management System will also be put in place to enable analysis of the data collected from the monitoring and sensing equipment in the DMAs for continuous monitoring of the conditions of the individual DMA for prioritising them for taking effective network management actions.

截至二〇一八年三月，我們已設立1,100多個監測區域。雖然智管網尚未完全成立，透過已設立的監測區域，我們得以持續監測它們的狀況，並採取有效措施，以維持監測區域內管網的健康狀況。

As of March 2018, we have established some 1,100 DMAs. Although WIN has not yet been fully established, through established DMAs, we are able to continuously monitor their conditions and determine effective actions to maintain the healthiness of the networks inside the DMAs.

## 提升供水能力

為應對因正在進行的餘下東涌發展項目而增加的用水需求，本署正於東涌興建一座新食水配水庫，這個東涌二號食水配水庫建造工程已於二〇一八年二月動工。

此外，為應付大埔新房屋發展的食水需求，一個包括在大埔南高地建設一座新食水配水庫，提升現有食水抽水站及敷設配套食水管的工程項目，現正進行設計。

## Expanding Water Supply Capacity

To meet increasing water demand arising from the remaining development projects now under way in Tung Chung, a new fresh water service reservoir in Tung Chung is being constructed. The construction of this Tung Chung No. 2 fresh water service reservoir commenced in February 2018.

Moreover, to cater for the water demand arising from new housing developments in Tai Po, the project comprising a new fresh water service reservoir in Tai Po South high level areas, uprating of the existing fresh water pumping station and laying of associated fresh water mains is now being designed.



• 位於大埔高地的新建食水配水庫構想圖  
Illustrative concept of new fresh water service reservoir in Tai Po South high level areas

## 水務基建設施 Waterworks Infrastructure



## 濾水廠設施升級

沙田濾水廠南廠原地重置工程的前期工程現正處於施工階段，而主項工程詳細的設計正在進行。該前期工程於二〇一五年年底展開，主項工程則預計於二〇一九年動工，而重置的南廠預計於二〇二五年全面投入運作。另外，大埔濾水廠的擴建工程正全速進行，以期在二〇一八年年底，將濾水廠的濾水量由每日四十萬立方米增加至八十萬立方米。上述工程竣工後將提升本港整體濾水設施的運作可靠性及濾水量，確保為公眾供應足夠和優質食水。

## Upgrading Water Treatment Facilities

The advance works of the in-situ re-provisioning of Sha Tin Water Treatment Works (South Works) is currently at the construction stage, whilst the detailed design of the main works of the project is under way. The advance works began in late 2015, with the main works targeted for commencement in 2019 and the reprovisioned South Works slated for full commissioning in 2025. In addition, construction for the expansion of Tai Po Water Treatment Works is now in full swing to increase its treatment capacity from 400,000 m<sup>3</sup> per day to 800,000 m<sup>3</sup> per day by end of 2018. After completing the above works, they can enhance the overall operational reliability of treatment facilities and treatment capacity in Hong Kong, so as to ensure adequate potable water supply of highest quality for the public.

我們正安裝現場氯氣生產設施，以提升十間主要濾水廠的消毒設施。工程竣工後，將會消除因在運輸和儲存液態氯過程中洩漏氯氣的風險，並提高氯氣供應的可靠性。此項工程預計於二〇二一年第一季完成。

We are upgrading the disinfection facilities in ten major water treatment works by installing on-site chlorine generation plants. After the upgrading works, the risk of chlorine gas leakage associated with the transportation and storage of liquid chlorine can be eliminated. It will also enhance the supply reliability of chlorine. It is expected that the project will be completed in the first quarter of 2021.

## 提升水務運作效率

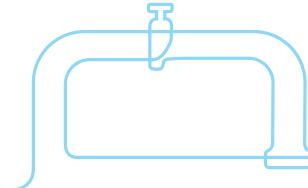
我們已開始更換各海水、食水及原水抽水站內的老化水管，並定此為恆常工程項目，以提升抽水站的運作可靠性及效率。

我們為荃灣濾水廠、馬鞍山濾水廠、屯門濾水廠、北港濾水廠和小蠔灣濾水廠內的水閥安裝電動驅動器，使濾水廠可以透過分佈式控制系統遙距控制相關設備的操作，以提高濾水廠的運作效率。荃灣濾水廠、馬鞍山濾水廠、北港濾水廠及小蠔灣濾水廠的工程已完成，而屯門濾水廠的工程將於二〇一八年十一月完成。

## Improving Waterworks Operational Reliability and Efficiencies

We have begun the replacement of aged water pipework at various salt water, fresh water and raw stations as an ongoing programme to enhance the operational reliability and efficiency of the pumping stations.

We install electric actuators for the valves at Tsuen Wan Water Treatment Works (TWWTW), Ma On Shan Water Treatment Works (MOSWTW), Tuen Mun Water Treatment Works (TMWWTW), Pak Kong Water Treatment Works (PKWTW) and Siu Ho Wan Water Treatment Works (SHWWTW) which will enable them to be remotely controlled via the Distributed Control Systems (DCS) to improve the operational efficiency of the water treatment works. Works at TWWTW, MOSWTW, PKWTW and SHWWTW have been completed, while works at TMWWTW would be completed in November 2018.



## 水務基建設施 Waterworks Infrastructure

七個主要濾水廠包括牛潭尾濾水廠、馬鞍山濾水廠、北港濾水廠、上水濾水廠、荃灣濾水廠、油柑頭濾水廠和屯門濾水廠的分佈式控制系統的現代化改造工程已經全部完成。至於凹頭濾水廠的分佈式控制系統現化改造工程，將於二〇一九年十二月完成。

The modernisation works for the DCS for the seven major water treatment works including Ngau Tam Mei Water Treatment Works, MOS WTW, PKWTW, Sheung Shui Water Treatment Works, TWWTW, Yau Kom Tau Water Treatment Works and TMWTW are all completed. The DCS modernisation works at Au Tau Water Treatment Works will be completed in December 2019.



- 區域監控及資料收集系統用以遙距監測供水網絡設施  
SCADA Systems that are used to remotely oversee and control the water supply facilities



用以遙距監察及控制供水設施(如抽水站和配水庫)的現有四個區域監控及資料收集系統的分階段升級工程已完成，並投入運作。已提升的區域監控及資料收集系統，將提供充足的監控能力，以應對未來十年供水系統的增長。

The existing four Regional Supervisory Control and Data Acquisition (SCADA) Systems that are used to remotely oversee and control the water supply facilities such as pumping stations and service reservoirs were upgraded in stages. Upgrading the SCADA systems have been completed and in operation. The upgraded SCADA systems will provide sufficient control and monitoring capacity to cope with the growth of the water supply systems over the next decade.

為提升屯門地區沖廁水供應的可靠程度，在屯門海水抽水站更換高壓電掣板及增設一套現代化控制系統以改善其供電系統的安全性和可靠性的工程項目已完成。荃灣海水抽水站亦會進行類似的工程，預計於二〇二〇年完成。

上水濾水廠脫水設備的改善工程已於二〇一八年竣工，濾水廠的運作可靠程度及效率亦相應提高。

除氯系統是一套防護裝置，防止氯氣在罕有的氯氣系統故障期間釋放至室外的大氣空間，確保濾水廠時刻運作安全。由於沙田濾水廠現有的除氯系統狀況變差，需要進行徹底的檢修。為此，沙田濾水廠須安裝一套可移動式除氯系統，以暫代舊有系統。當完成工程項目後，這套可移動式除氯系統會轉移至其他有需要的濾水廠。移動式除氯系統已完成安裝並預計於二〇一九年年中完成測試。

Replacement of the high voltage switchboard and addition of a set of modernised control systems to improve the security and reliability of the power supply system at Tuen Mun Salt Water Pumping Station for enhancing its reliability for providing flushing water to Tuen Mun area has been completed. Another similar project will be carried out at Tsuen Wan Salt Water Pumping Station, which is targeted for completion in 2020.

Improvement works on the existing dewatering plants at Sheung Shui Water Treatment Works were completed in 2018 and the operational reliability and efficiency of the water treatment works has been enhanced correspondingly.

Chlorine scrubbers, which prevent chlorine gas from leaking into the atmosphere in the unlikely event of failure of chlorine system, are protective devices to keep water treatment works operating safe at all times. The condition of the existing chlorine scrubber at Sha Tin Water Treatment Works (WTW) is deteriorating and complete overhaul of the scrubber is required. To facilitate the overhaul work, a transportable scrubber is installed at the WTW to replace temporarily the existing unit. This transportable scrubber will be released to other WTWs as necessary after completion of the project. The installation works of the transportable chlorine scrubber at Sha Tin WTW were completed and the testing is scheduled for completion in mid- 2019.

## 優化供水設施

水務署其中一個主要的目標就是在它們的整個生命周期妥善管理所有水務設施，務求在可接受的風險範圍內，以最符合經濟效益的方式達致最高的服務水平。

本署員工每年定期視察由本署負責維修保養的約6,500幅斜坡，本署於去年對66幅斜坡展開預防性保養或提升工程，當中大多數斜坡毗鄰水務署重要設施。有關工程包括打泥釘、斜坡表面加固、在斜坡護面的牆腳栽種植物、改善排水系統、提供安全通道走廊、一般栽種植被等。各項措施均有助大大減低本署斜坡的山泥傾瀉風險，以及減少山泥傾瀉對本署設施、生命和財產的威脅。

我們亦定期進行視察，檢討配水庫和水塘的安全和穩定性，確保它們穩固。在過去一年，本署員工和外聘顧問為配水庫和水塘分別進行了110次詳細視察和31次獨立視察。

## 以可靠性為主的維修

對於已完成「以可靠性為主的維修」研究的水務設施，本署會繼續為這些設施落實「以可靠性為主的維修」改善措施，例如利用電子表格作狀態監控及修訂機電設施的維修計劃。其餘的改善措施，例如在數據採集與監控系統增加監控電動機軸承溫度數據，會按照研究結果繼續跟進。本署已展開對「以可靠性為主的維修」計劃落實情況的全面檢討，包括研究收集所得的數據以進一步完善機械和電力設施的長遠維修策略。

## Optimising Waterworks Assets

At WSD, one of our primary goals is to properly manage the life cycles of all waterworks assets in their whole life cycles in order to achieve the optimal level of service in the most cost-effective manner all within an acceptable risk framework.

Our staff regularly inspect about 6,500 slopes that fall under our maintenance responsibility each year. Last year we carried out preventive maintenance or upgrading works for 66 slope features, most of them are near important WSD installations. These works included soil-nailing, slope surface stabilisation, construction of toe planter walls, improvement to drainage systems, providing safe access corridors, general planting, etc. All these efforts lead to a dramatic decrease in the risk of failure of our slopes as well as the danger they pose to our installations, life and property.

We also regularly conduct inspections to review the safety and stability of service reservoirs and impounding reservoirs, to ensure their integrity. During the past year, we conducted 110 detailed inspections as well as 31 independent inspections by our staff and external advisors respectively for the service reservoirs and impounding reservoirs.

## Reliability Centred Maintenance (RCM)

Following the completion of RCM studies at selected waterworks installations, the implementation of RCM improvement measures for these installations such as enhancing the on-condition monitoring tasks via e-form and adjusting the equipment maintenance intervals are in progress. Other follow up actions on remaining improvement measures such as addition of motor bearing temperature readings in SCADA system will continue according to the study findings. An overall review has been initiated on the outcome of RCM implementation with reference to the data collected in order to refine our long-term maintenance strategies for mechanical and electrical assets.

## 主要濾水廠及抽水站的機械和電力設施狀況評估

我們每年為6個濾水廠和24個抽水站進行狀況評估，以制訂全面舊設備更換計劃。

## Condition Assessments of Mechanical and Electrical Assets for Major Water Treatment Works and Pumping Stations

We conduct condition assessments for 6 water treatment works and 24 pumping stations each year to formulate a comprehensive replacement programme for old plant equipment.

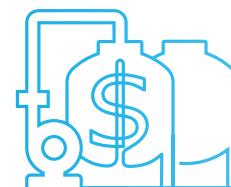
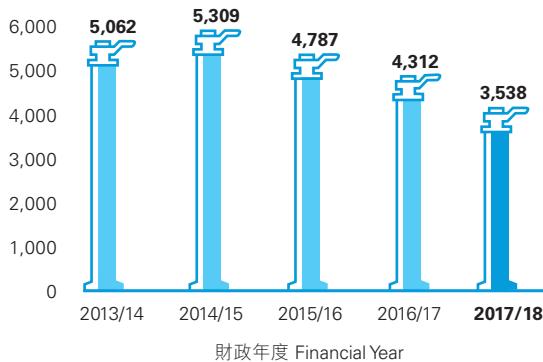
## 優化的地下水管資產管理

我們參考最新國際最佳做法，推行優化的地下水管資產管理，冀訂立一套平衡成本（包括社會成本例如水管改善工程對交通、社區、市民等造成的影响），水管爆裂風險及服務水平的策略。在地下資產管理策略下，會採用風險為本的方針。我們會考慮水管的使用年期、物料、狀況、故障記錄，以及水管出現故障的後果等不同因素，以評估水管的風險，並為該些被評估為高風險的水管進行改善工程。

## Enhanced Underground Asset Management

Having drawn on the latest international best practices, we will implement an enhanced strategy for underground asset management for water mains through an optimal balance of cost (including social cost such as effect on traffic, community and the members of the public due to water mains improvement works), risk and service levels. Under the underground asset management strategy, we adopt a risk-based approach. We will assess the risk of the water mains taking into account various factors including ages, materials, conditions, records of failure, consequences of failure, etc. and will carry out improvement works to those water mains assessed with high risk.

**資本投資(百萬元)**  
Capital Investment (\$million)



# 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<sup>1</sup>一九九六年六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。

### 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：

### 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 June 1996).

### Scale of Charges

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

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

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

## 財務及水費 Finance and Water Charges

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。在其後的水費檢討，由於對所有級別實施統一加費幅度，以收回整體水務經營成本，因此第二級的建議收費並不等同於當時每單位的淨生產成本。於二〇一七至一八年份，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）。在其後的水費檢討，由於對所有級別實施統一加費幅度，以收回整體水務經營成本，因此第三級的建議收費並不等同於當時每單位的總生產成本。於二〇一七至一八年份，每單位的總生產成本為\$16.6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。

海水沖廁費用全免。

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 the subsequent tariff reviews, the proposed charging rate for the second tier was not equal to the prevailing net unit production cost because a uniform rate of increase for all tiers was adopted taking the waterworks operating costs as a whole. In 2017-18, 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 the subsequent tariff reviews, the proposed charging rate for the third tier was not equal to the prevailing full unit production cost because a uniform rate of increase for all tiers was adopted taking the waterworks operating costs as a whole. In 2017-18, the full unit production cost is \$16.6, 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 at about 40 per cent higher than the third tier to discourage extravagant and wasteful use of water.

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

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

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

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

Sea water for flushing is supplied free of charge.

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。二〇一七至一八年份錄得虧損17.344億元，成本回收率為83.7%。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。

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。於二〇一七至一八年份，25項法定收費項目維持不變。

## 水費收入總覽

於二〇一七至一八年份，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。於二〇一七至一八年份，270萬住宅用戶(包括無須繳付水費之用戶)每月平均水費為48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%。

Waterworks operations have seen deficits since 1998-99 which means that it is subsidised by general government revenues. In 2017-18, the deficit was \$1,734.4M and the cost recovery rate was 83.7%. 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.

Other than water charges, there are 25 statutory fee items stipulated in the Waterworks Regulations (Cap. 102A). We have been periodically reviewing 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 2017-18, 25 statutory fee items remain unchanged.

## Profiles of the Revenue from Water Charges

During the year 2017-18, about 14% of domestic customers were not required to pay water charges, 42% were paying up to the tier 2 rate of \$4.16 per unit, 20% were paying up to the tier 3 rate of \$6.45 per unit and 24% were paying up to the tier 4 rate of \$9.05 per unit. For the 2.7 million domestic customers, the average water charge in 2017-18, including those not required to pay any charge, was \$48 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.

## 財務及水費 Finance and Water Charges

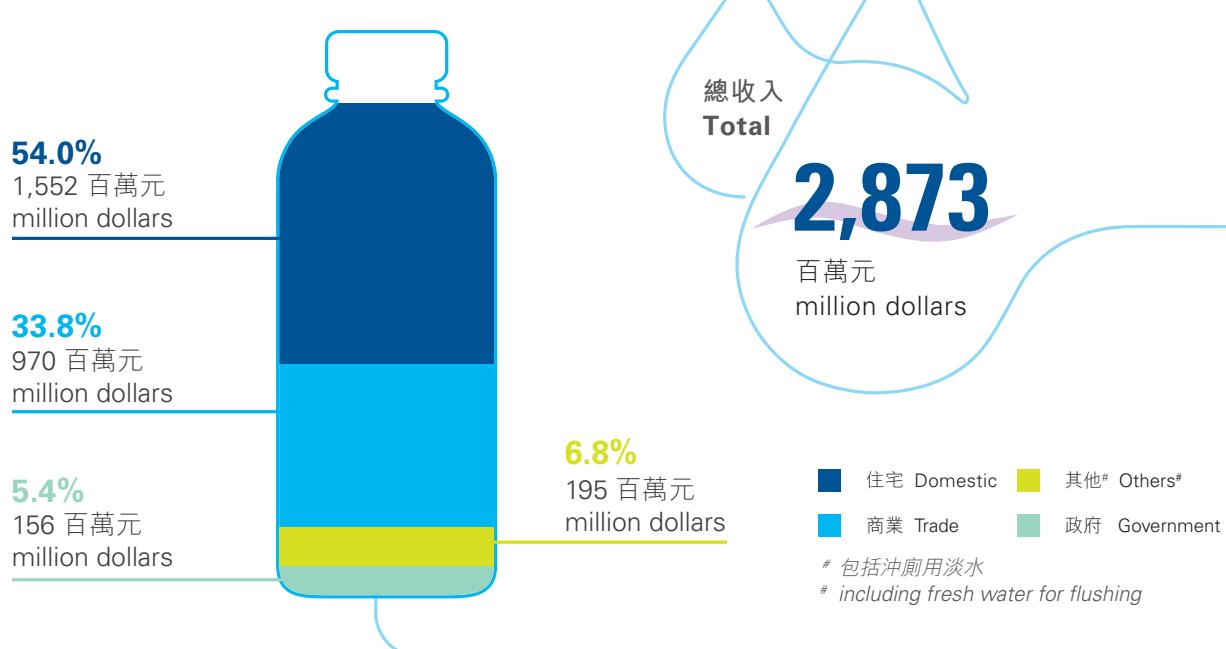
過去五年按用戶類別劃分的水費收入分析  
如下：

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

用戶類別 Sector	財政年度(百萬元) Financial Year (\$million)					%(17/18)
	13/14	14/15	15/16	16/17	17/18	
商業 Trade	903	933	940	946	<b>970</b>	<b>33.8</b>
住宅 Domestic	1,452	1,474	1,503	1,518	<b>1,552</b>	<b>54.0</b>
政府 Government	159	155	159	156	<b>156</b>	<b>5.4</b>
其他# Others#	201	215	212	211	<b>195</b>	<b>6.8</b>
<b>總收入 Total</b>	<b>2,715</b>	<b>2,777</b>	<b>2,814</b>	<b>2,831</b>	<b>2,873</b>	<b>100.0</b>

# 包括沖廁用淡水

# including fresh water for flushing

二〇一七／一八年度水費收入(按用戶類別劃分，以百分比顯示)  
Water Charge (% by Sector) 2017/18

## 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

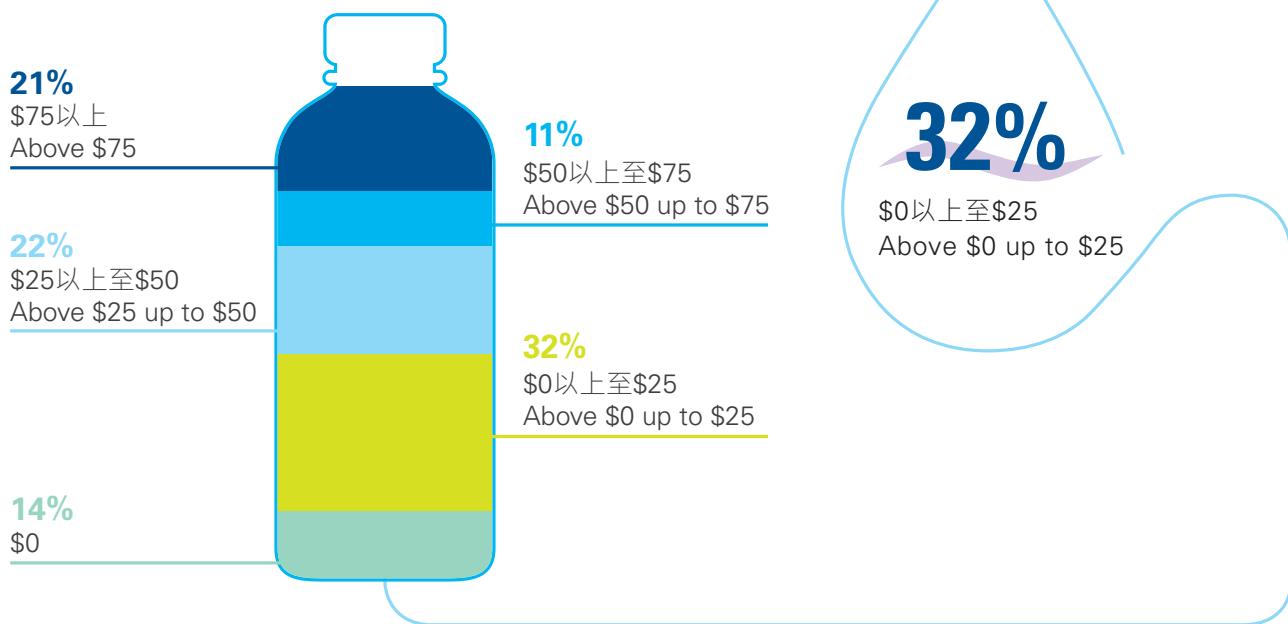
The revenue collections include chargeable water supplies, fees, licences, and reimbursable work. In preparing the Waterworks Operating Accounts which present the financial results and positions on an accrual accounts basis, the revenues include non-cash items, mainly contribution from rates, contribution on free allowance, and water supplies to government establishments. The total operating costs include mainly staff costs, purchase costs of Dongjiang water, 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 Financial Year	13/14	14/15	15/16	16/17	17/18
一般水費 Chargeable Supplies	2,555.8	2,622.0	2,654.9	2,674.9	<b>2,716.9</b>
差餉補貼 Contribution from Rates	3,970.6	4,263.4	4,574.4	4,763.2	<b>4,942.0</b>
免費用水補貼 Contribution on Free Allowance	918.7	961.3	1,009.2	1,067.4	<b>1,048.6</b>
政府用水 Supplies to Government Establishments	159.0	155.1	158.9	156.4	<b>156.0</b>
各項收費及其他 Fees, charges and others	26.5	28.9	37.1	44.5	<b>42.6</b>
<b>總額 Total</b>	<b>7,630.6</b>	<b>8,030.7</b>	<b>8,434.5</b>	<b>8,706.4</b>	<b>8,906.1</b>

## 財務及水費 Finance and Water Charges

二〇一七／一八年度住宅用戶每月水費分佈圖  
Distribution of Household Average Monthly Bill 2017/18



開支(百萬元)  
Expenditure (\$million)

財政年度 Financial Year	13/14	14/15	15/16	16/17	17/18
員工開支 Staff costs	1,528.7	1,586.6	1,659.2	1,729.6	<b>1,917.1</b>
運作及行政開支 Operating and administration expenses	1,747.9	1,841.0	1,918.7	1,948.7	<b>2,024.1</b>
購買東江水的成本 Purchase cost of Dongjiang water	3,802.2	4,031.2	4,296.1	4,569.7	<b>4,782.2</b>
折舊 Depreciation	1,482.7	1,583.5	1,699.1	1,815.7	<b>1,917.1</b>
<b>總額 Total</b>	<b>8,561.5</b>	<b>9,042.3</b>	<b>9,573.1</b>	<b>10,063.7</b>	<b>10,640.5</b>

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。

The Department is committed to providing services as cost effectively as possible. We have made substantial investments in fixed assets, equipment, information technology and human resources to improve operational efficiency and staff productivity to meet the public demands for a higher quality of services. Our customers and the public at large can rest assured that we will exercise strict financial discipline and be very cost conscientious in delivering our quality services to meet the demand of our customers. This is our underlying approach in achieving our vision and missions.

# 可持續運作

## Sustainable Operations



我們在提供優質供水服務的同時，致力推行可持續運作。

We are committed to sustainable operations while providing high quality water supplies.

### 本署致力：

- 嚴格遵守環保規例
- 善用能源和燃料
- 限制氣體排放
- 盡量減少消耗辦公室用品
- 盡量減少在處理食水過程中使用化學品
- 盡量減少供水系統的用水流失量
- 盡量減少建築工程對環境造成的影響
- 減少化驗室、工場和濾水廠的固體、液體及化學廢物
- 減少抽水站發出的噪音
- 提倡安裝綠化屋頂
- 提倡使用再造紙
- 發展可再生能源

### WSD is committed to:

- Working in strict compliance with environmental regulations
- Optimising the use of energy and fuel consumption
- Limiting gaseous emissions
- Minimising the consumption of glossary items in offices
- Minimising the use of chemicals in the water treatment process
- Minimising water loss across the water supply system
- Minimising environmental impacts that can arise from construction work
- Reducing the quantities of solid, liquid and chemical wastes generated by our laboratories, workshops and treatment works
- Reducing noise generated from pumping stations
- Encouraging the establishment of green roofs
- Encouraging the use of recycled paper
- Developing renewable energy

## 使用及節約能源

作為全港其中一個最大的耗電用戶，本署在研究可行的再生能源計劃的同時，仍不斷實行各項能源管理計劃以減少消耗能源。

## ISO 50001能源管理系統

在二〇一四年十二月，本署成為首個獲得ISO 50001:2011能源管理系統認證的香港政府部門，認證涵蓋整個供水鏈包括集水、儲水、運水、濾水，以及供應和分配水源及食水和海水。新版的能源管理系統預計將於二〇一八年年底正式出版，本署會著手過渡至新版的ISO 50001認證。

## 政府建築物的碳管理

今年本署首次在長沙灣辦事處、龍翔道工場、九龍灣辦事處、旺角辦事處和港島及離島分署等五個每年用電量超過50萬千瓦時的水務署大樓進行碳審計。隨著收集更多數據，我們將確定相應的碳減排措施，以盡可能減少溫室氣體排放。

## Energy Use and Savings

As one of the largest consumers of electricity in Hong Kong, WSD is implementing a host of on-going energy management programmes to reduce energy consumption whilst exploring viable renewable energy initiatives.

## ISO 50001 Energy Management System

In December 2014, WSD became the first government department in Hong Kong to receive the award of the ISO 50001:2011 Energy Management System certification covering the whole water supply chain including collection, storage, transfer and treatment of raw water, and supply and distribution of fresh water and sea water. As the new version of this international Energy Management System standard will be published towards the end of 2018, we will embark on the transition to the new ISO 50001.

## Carbon Management in Government Buildings

The Department has conducted its first carbon audit in five WSD buildings, namely Cheung Sha Wan Office, Lung Cheung Road Workshop, Kowloon Bay Office, Mong Kok Office, and Hong Kong and Islands Regional Office, each with annual electricity consumption over 500,000 kWh. With more data collected, we would identify the corresponding carbon reduction measures with a view to reducing green house gas (GHG) emissions as far as practicable.

## 可持續運作 Sustainable Operations

### 水力發電站

除了屯門水力發電站利用進入屯門濾水廠的原水位能轉化為電能供濾水廠使用外，沙田濾水廠原地重置工程(南廠)的前期工程項目亦興建水力發電站，預計於二〇一九年完成。此外，我們亦展開了研究，探討在馬鞍山濾水廠的入水口安裝水力發電設施以利用原水剩餘位能的可行性。



• 屯門濾水廠水力發電  
Tuen Mun Hydropower Plant

### Hydropower Generation Plant

Apart from Tuen Mun Hydropower Plant through which the potential energy of inflowing raw water to the Tuen Mun Water Treatment Works is converted into electrical power for use by the water treatment works, another hydropower plant is being built under the In-situ Reprovisioning of Sha Tin Water Treatment Works (South Works) – Advance Works project, which is due for completion in 2019. Besides, a planning study has been initiated to investigate the feasibility of installing hydropower facilities at the inlet of Ma On Shan Water Treatment Works for harvesting the residual potential energy from the raw water inflow.

- 內聯閉式水力發電系統的模型  
The model of inline hydroelectric generating system in confined condition



### 內聯閉式水力發電裝置

兩個適用於直徑200毫米水管的內聯閉式水力發電裝置原型，已通過嚴格的操作測試。這些發電裝置將為九龍東區智管網內監測區域的裝置提供足夠電力，以實時監測區域的狀況。

### In-line Hydropower Harnessing Devices

Two sets of DN200 inline hydropower harnessing device (IHHD) prototypes have passed vigorous endurance tests. These units will be deployed to provide adequate power for the instruments in the DMAs of WIN in Kowloon East for real-time monitoring of the conditions of the DMA.



- 位於龍鼓上灘食水泵房的變速抽水泵  
Variable Speed Pump at Lung Kwu Sheung Tan Fresh Water Pump House

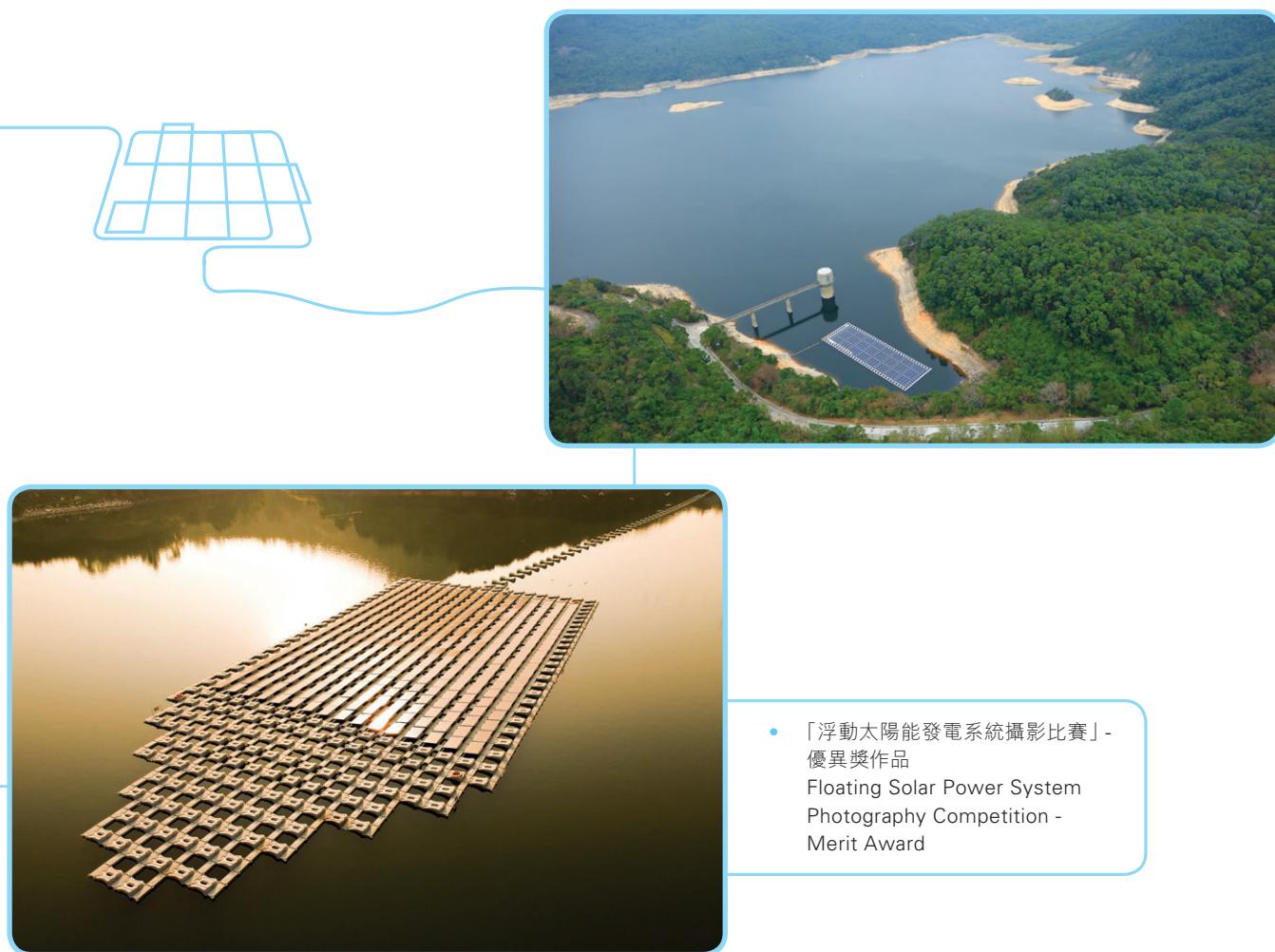
## 實行變速抽水

實行變速抽水可改善抽水效率。除了在華富海水抽水站進行的試驗計劃之外，本署在龍鼓上灘食水泵房的提升工程和小西灣海水抽水站的新增抽水設備也採用變速抽水泵。龍鼓上灘的工程已於二〇一八年二月完成，而小西灣的工程將於二〇二〇年三月完成。

## Implementation of Variable Speed Pumping

Variable speed pump operation can improve the pumping efficiency. In addition to the pilot scheme at Wah Fu Salt Water Pumping Station, variable speed pumps have been adopted for uprating of Lung Kwu Sheung Tan Fresh Water Pump House which was completed in February 2018 and in the new pumping facilities in Siu Sai Wan Salt Water Pumping Station scheduled for completion in March 2020.

## 可持續運作 Sustainable Operations



### 在水塘鋪設浮動太陽能板發電系統

位於石壁水塘及船灣淡水湖，發電量各為100千瓦的試驗浮動太陽能板發電系統已分別於二〇一七年二月及十月投入運作。此外，我們亦正考慮在香港水塘安裝大型浮動太陽能發電場，並制定項目的發展策略。

### Floating Solar Power Systems at Impounding Reservoirs

The pilot floating photovoltaic systems each of 100kW capacity at Shek Pik Reservoir and Plover Cove Reservoir have been put into operation since February 2017 and October 2017 respectively. Apart from that, we are considering the implementation of large-scale Floating Solar Farms in Hong Kong's impounding reservoirs and are formulating the project implementation strategies.

### 嶄新技術和設備

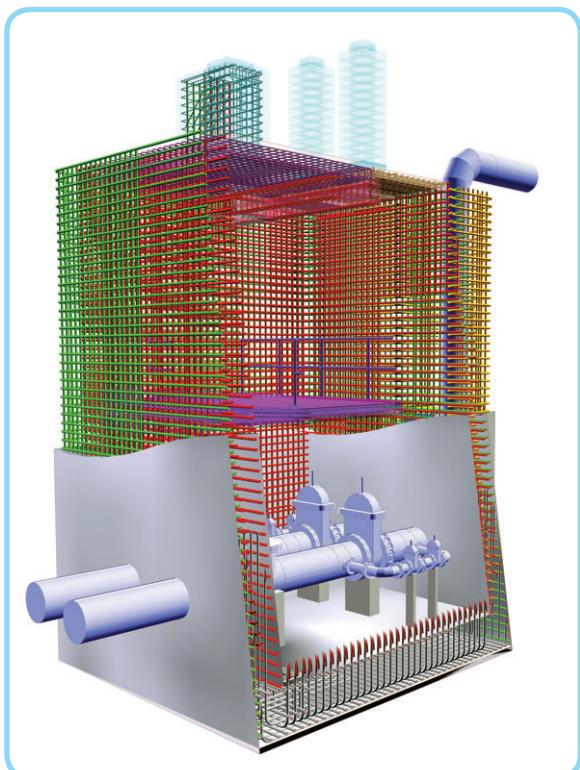
#### 建築信息模擬技術

建築信息模擬技術以數碼模式建立及管理在工程項目發展周期內各階段的數據和信息，為項目中不同專業的人員提供一個溝通平台以加強彼此協作，從而作出更佳的決定。

#### New Technology and Equipment

#### Building Information Modelling

Building Information Modelling (BIM) is a process of generating and managing digital representation of information throughout a project lifecycle. The informative model offers a communication platform which enhances collaboration across disciplines for better decision making.



- 建築信息模擬技術以三維展示鋼筋混凝土構築物  
Building Information Modelling (BIM) for 3D illustration of reinforced concrete structure

為配合政府積極推動建造業廣泛應用建築信息模擬技術，我們制定了建築信息模擬技術應用路線圖，旨在加強於主要工程項目中應用建築信息模擬技術，並提供訓練以增加員工對建築信息模擬技術的認知及提升他們對相關技術的知識。

截至二〇一八年三月，我們已在本署超過20個在設計及建造階段的工程項目應用了建築信息模擬技術。與此同時，我們亦計劃把建築信息模擬技術的應用擴展至資產管理。

### 推行智能讀錶，提高節水意識

自動讀錶系統將有助香港發展成為智慧城市。我們會把應用自動讀錶系統的各項要求加入於私人新發展項目的土地文件的條款中，以及公營和政府新發展項目的規劃及設計範圍內。我們亦歡迎發展商以協議形式在其發展項目推行自動讀錶系統。在推行自動讀錶系統的發展內，我們會向客戶傳遞適時的用水數據和有用的資訊，以提升他們節約用水的意識。二〇一八至一九年度至二〇二七至二八年度的十年間，預計約460,000個單位將會裝有自動讀錶系統。

To align with the Government's policy to promote wider use of BIM, we have developed a BIM Adoption Roadmap, putting emphasis on applying BIM in our major projects and providing training to raise the awareness and enhance BIM knowledge of our staff in the technology.

As at March 2018, more than 20 projects of WSD at the design and construction stages have been utilising BIM. At the same time, we are planning to extend the use of BIM as a tool for asset management.

### Smart Metering for Enhancing Awareness of Water Conservation

Automatic Meter Reading (AMR) helps develop Hong Kong into a smart city. The necessary requirements for implementation of AMR will be incorporated in the lease conditions of all appropriate new private developments and in the planning and design scopes of all appropriate new public and government developments. We also welcome developers' proposal for implementing AMR in their developments. For developments with AMR, we plan to disseminate timely water consumption data and useful information to the customers with a view to raising their awareness of water conservation. It is estimated that the number of housing units that will be installed with AMR in the ten-year period from 2018-19 to 2027-28 is about 460,000.

## 可持續運作 Sustainable Operations

### 可持續發展

#### 騰出分區辦事處用地，善用土地資源

我們將於二〇一八年八月把位於旺角洗衣街的新界西分區辦事處遷往天水圍。有關辦事處搬遷後，將可改善新界西分區的運作效率及水務設施的維修保養工作。騰出的洗衣街土地將用作其他發展。

### Sustainable Development

#### Releasing a Regional Office to Optimise Land Use

New Territories West Regional Office at Sai Yee Street, Mong Kok would be relocated to Tin Shui Wai in August 2018. The relocation will enhance operational efficiency and maintenance of waterworks facilities in the New Territories West Region. The vacated site at Sai Yee Street would be released for other developments.



• 水務署天水圍大樓  
WSD Tin Shui Wai Building

## 將水務設施遷往岩洞

為配合政府增加土地供應的政策，發展岩洞是滿足社會發展需要的可行方法。政府已提出方案搬遷現有設施至岩洞，從而騰出土地作房屋或其他用途，以滿足本港長遠的社會及經濟需要。水務署負責推展搬遷配水庫往岩洞的工程。我們已確定搬遷鑽石山食水及海水配水庫往岩洞在技術上可行，並正籌備開展搬遷的勘查研究、設計及相關的工地勘測工程。另外，水務署已在二〇一七年底分別就搬遷油塘食水及海水配水庫群及荃灣二號食水配水庫往岩洞開展可行性研究。

除上述搬遷建議外，水務署亦正聯同有關部門，物色在技術可行性和成本效益的考慮下具有潛力遷往岩洞的其他配水庫。

## 延伸海水供應系統，節約寶貴食水

薄扶林區將沖廁水轉為海水的工作仍在進行中。新界西北部(包括屯門東、元朗及天水圍)的新海水供應核心系統已於二〇一五年竣工。將天水圍及元朗工業邨轉為海水沖廁的工作已分別於二〇一六至一七年度及二〇一七至一八年度完成。而元朗的轉換工作目前正在進行中，屯門東的轉換工作將會隨後展開。

此外，東涌的新海水供應系統項目現處於設計階段。

## Relocation of Waterworks Installations to Caverns

In line with the Government's policy of increasing land supply, rock cavern development is a practical approach for meeting the developmental needs of our society. The Government has initiated proposals to relocate existing facilities to caverns so that the released sites can be used for housing or other uses to meet Hong Kong's long-term social and economic needs. WSD is responsible for the relocation of some service reservoirs to caverns. We have confirmed the technical feasibility of relocating Diamond Hill Fresh Water and Salt Water Service Reservoirs to caverns, and are preparing for the investigation study, design and the associated site investigation works for the relocation. Besides, WSD commenced in late 2017 the feasibility studies for the relocation of Yau Tong Group Fresh Water and Salt Water Service Reservoirs, and Tsuen Wan No. 2 Fresh Water Service Reservoir to caverns.

In addition to the above-mentioned relocation proposals, WSD is also working with relevant departments to identify other potential service reservoirs that may be technically feasible and economically viable for relocation to caverns.

## Extending the Salt Water Supply System to Save Precious Fresh Water

The conversion to salt water for flushing in Pok Fu Lam continues. The salt water supply system for the North West New Territories, serving Tuen Mun East, Yuen Long and Tin Shui Wai has been completed in 2015. The conversion to salt water flushing for Tin Shui Wai and Yuen Long Industrial Estate has been completed in 2016-17 and 2017-18 respectively. Conversion for Yuen Long are currently in progress and that for Tuen Mun East Estate will follow afterwards.

Moreover, a new salt water supply system for Tung Chung is currently in the design stage.

## 可持續運作 Sustainable Operations

### 樹木管理及樹木風險評估

我們一直努力令我們的城市變得更綠意盎然，以及保持水務設施及斜坡內的園林景觀生機處處，以維持環境的原生態。為此，我們會繼續實施全面的樹木風險評估和管理計劃，定期監測和檢查樹木，確保一些存在結構或健康問題的樹木能得以識別，以及時採取減低相關風險的措施。

### Tree Management and Tree Risk Assessment 2018

We have long contributed towards making our city greener as well as maintaining healthy landscape within WSD's installations and slopes, to maintain a pristine environment. To this end, we have continued to implement a comprehensive tree risk assessment and management scheme for regular monitoring and inspection of trees to ensure that trees with structural or health problems are identified for timely risk mitigation measures.



- 推動全面綠化方針，包括優質園境設計及妥善植物護養工作，並以保障公眾安全為首要考慮因素。  
Holistic greening approach embracing quality landscape design and proper vegetation maintenance, with public safety as a priority consideration.

我們在二〇一七至一八年度的樹木風險評估和管理工作涵蓋了超過7,300棵樹木。在雨季前，斜坡安全組的園林單位亦確保已及時採取適當的預防措施，例如清除懸掛的樹枝及不穩定的樹木，加固樹木或圍封有待處理的樹木，以減低樹木倒塌風險。

There are over 7,300 number of trees covered in our annual Tree Risk Assessment and Management exercise (TRAM) in 2018. Landscape Service Unit of the Slope Safety Section, has been ensuring appropriate precautionary measures, such as removing hanging branches, and unstable trees, guying or cordoning off trees pending remedial works are carried out to minimise tree failure risks before the rainy season.

倘若當前並無有效措施將樹木風險降至可接受水平，我們只能移除樹木，並會另外種植樹木，彌補景觀損失。我們會選擇及種植合適樹木品種，例如低保養要求、耗水量低、具生態價值的本土樹木，以提升生物多樣性。

In cases where no effective measures are available to reduce tree risks to an acceptable level, tree removal is the last resort, with replacement planting to compensate for the landscape loss. Suitable vegetation species, such as low maintenance, low water consumption, native species with ecological value, are chosen in order to enhance the biodiversity.

## 關注環境

本署的抱負是致力滿足客戶對優質供水服務的需求，務求取得卓越表現。作為以上承諾的一部分，我們願意承擔對維持環境應負的責任。為此，本署的設計及建設科肩負重任，力求確保在水務規劃、設計及建設方面，把建築工程對環境造成的影响降至最低。我們預計設計及建設科於二〇一八年六月，可獲頒ISO 14001: 2015環境管理體系標準認證，此認證將適用於供水工程項目。其後本署會制訂多項環境管理計劃，並每年進行檢討，以實現我們的環境目標。

## Environmental Focus

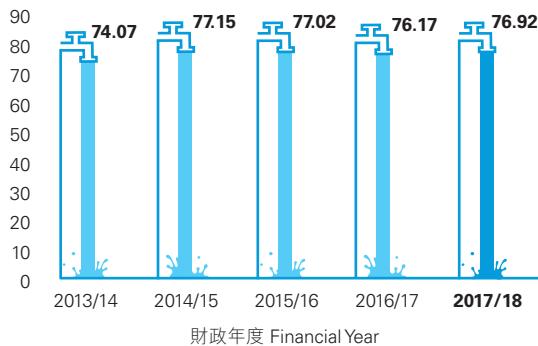
The vision of the Department is to excel in satisfying the need to provide quality water supply services to our customers. As part of that commitment, we fully appreciate the responsibilities we have in maintaining the environment. For this reason, the New Works Branch of the Department is tasked to ensure that all impacts to the environment that can arise from construction works are minimised in planning, designing and building waterworks. In June of 2018, the New Works Branch is expected to obtain ISO 14001: 2015 Environmental Management System Standards certification applicable to the delivery of engineering projects for the provision of water supplies. A host of environmental management programmes will subsequently be developed and reviewed annually to assist in achieving our environmental objectives and targets.

## 可持續運作 Sustainable Operations

## 人均耗電量(食水及原水)

Per Capita Electricity Consumption (Fresh Water and Raw Water)

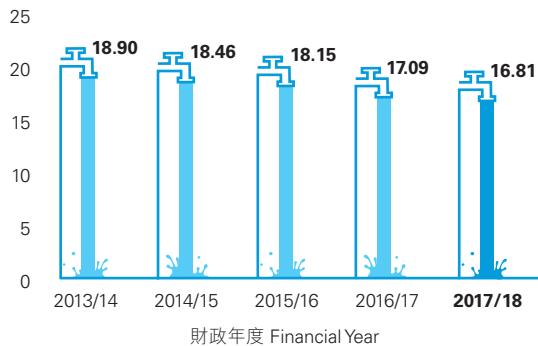
千瓦時／每人／每年 kWh/head/year



## 人均耗電量(海水)

Per Capita Electricity Consumption (Sea Water)

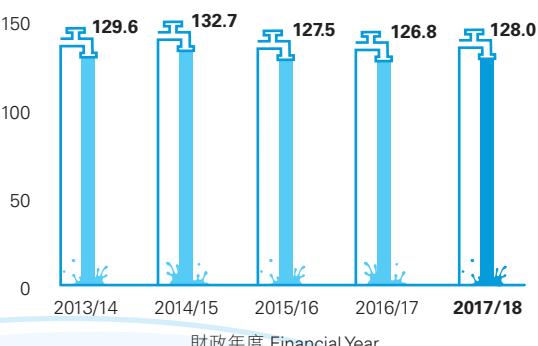
千瓦時／每人／每年 kWh/head/year



## 辦公室每單位樓面面積的耗電量

Office Electricity Consumption Per Unit Floor Space

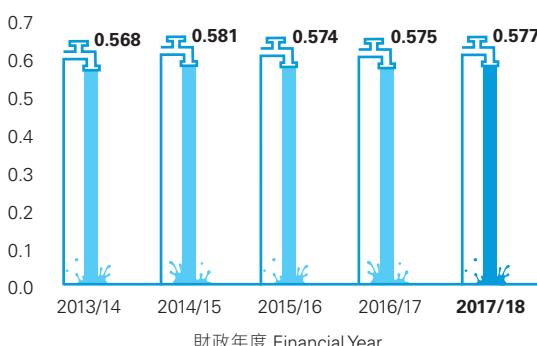
千瓦時／立方米 kWh/m³



## 每單位耗電量(食水及原水)

Unit Electricity Consumption (Fresh Water and Raw Water)

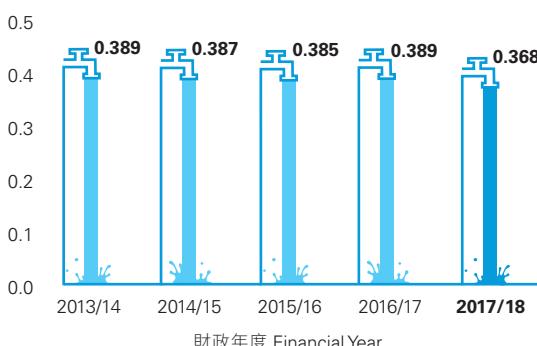
千瓦時／立方米 kWh/m³



## 每單位耗電量(海水)

Unit Electricity Consumption (Sea Water)

千瓦時／立方米 kWh/m³



## 人均住宅食水用量

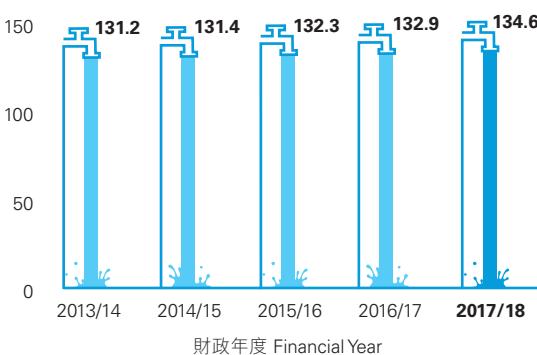
Per Capita Domestic Fresh Water Consumption

公升／日 Litres/day

## 人均住宅食水用量

Per Capita Domestic Fresh Water Consumption

公升／日 Litres/day



人均沖廁水用量(食水及海水)  
Per Capita Flushing Water Consumption (Fresh Water & Sea Water)

公升／日 Litres/day



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 & Sea Water) is based on the total flushing water consumption in Hong Kong.

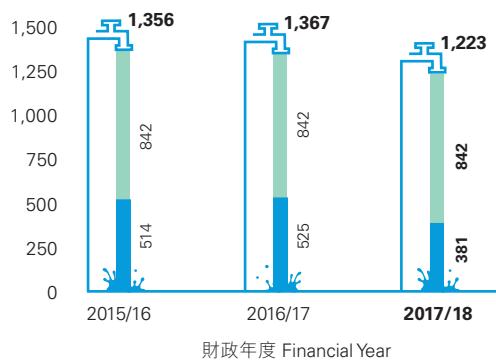
耗紙量  
Paper Consumption

令 Reams



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

公斤 kg



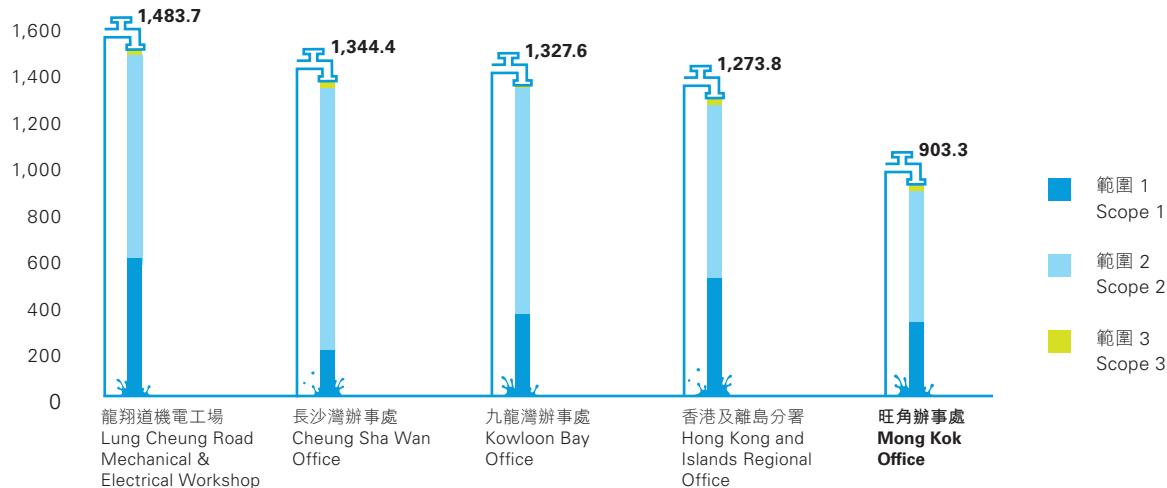
水務署因使用電力處理食水而出現的溫室氣體排放  
GHG Emissions due to Electricity Used for Fresh Water Processing by WSD

千克二氧化碳／立方米 kg CO<sub>2</sub>/m<sup>3</sup>

## 可持續運作 Sustainable Operations

碳審計報告  
Carbon Audit Report

		公噸二氧化碳當量 Tonnes of CO <sub>2</sub> – equivalent			
		範圍1 Scope 1	範圍2 Scope 2	範圍3 Scope 3	總計 Total
龍翔道機電工場 Lung Cheung Road Mechanical & Electrical Workshop		589.5	883.8	10.4	<b>1,483.7</b>
長沙灣辦事處 Cheung Sha Wan Office		192.3	1,138.0	14.1	<b>1,344.4</b>
九龍灣辦事處 Kowloon Bay Office		350.6	975.4	1.6	<b>1,327.6</b>
香港及離島分署 Hong Kong and Islands Regional Office		506.0	750.4	17.4	<b>1,273.8</b>
旺角辦事處 Mong Kok Office		315.6	569.1	18.3	<b>903.3</b>



註：

- 範圍1—直接溫室氣體總排放量
- 範圍2—使用能源間接引致的溫室氣體總排放量
- 範圍3—其他間接溫室氣體總排放量

Note:

- Scope 1 – Direct GHG Emission
- 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

財政年度 Financial Year	公務用車數量 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)		
	15/16	16/17	17/18	15/16	16/17	17/18	15/16	16/17	17/18
柴油 Diesel	19	28	58	23,386	34,554	67,818	117,327	163,522	357,842
汽油 Petroleum	181	163	158	497,598	511,092	479,787	2,287,717	2,424,315	2,216,830
混合(汽油／電力) Hybrid (Petrol/Electric)	18	16	3	12,435	11,678	12,077	204,159	189,569	174,524
液化石油氣 LPG	13	11	11	57,218	55,940	51,379	165,590	160,744	139,457
電力 Electricity	15	20	16	-	-	-	97,188	101,237	98,845

廢氣排放  
Emissions

(以公噸計) (Figures in Tonnes)	二氧化碳 CO <sub>2</sub>			二氧化硫 SO <sub>2</sub>			氮氧化物 NO <sub>x</sub>			可吸入懸浮粒子 RSP		
	財政年度 Financial Year	15/16	16/17	17/18	15/16	16/17	17/18	15/16	16/17	17/18	15/16	16/17
<b>直接廢氣排放 Direct Emissions</b>												
公務用車(柴油) Vehicle fleet (Diesel)	55	82	154	-	-	-	1	1	2	-	-	-
公務用車(汽油) Vehicle fleet (Petrol)	1,114	1,129	1,075	-	-	-	1	1	1	-	-	-
公務用車(液化石油氣) Vehicle fleet (LPG)	85	93	97	-	-	-	-	-	-	-	-	-
<b>間接廢氣排放 Indirect Emissions</b>												
耗用電(九龍及新界) Electricity Consumed (Kowloon and New Territories)	332,732	320,938	315,317	78	91	86	313	293	261	7	6	8
耗用電(港島) Electricity Consumed (Hong Kong Island)	50,737	50,886	52,184	18	16	14	52	52	51	1	1	1
<b>總量 Total</b>	384,723	373,128	368,826	96	107	100	366	346	314	8	8	10

# 專注客戶服務

## Focusing on Customer Service



作為一個以客為本的政府機構，我們盡量向公眾提供不同的溝通渠道，確保客戶能迅速與我們聯絡，從而清楚得知他們區內有關供水的事務。

**As a customer-focused organisation, we at WSD make ourselves as accessible as possible to the public to ensure that our customers can reach us quickly and, in turn, are clearly informed of any water-related issues in their districts.**

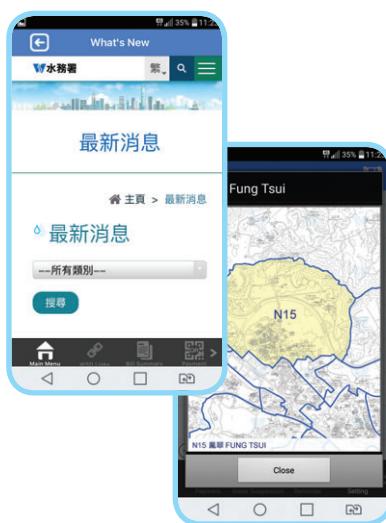
### 保持溝通

#### 智能手機流動應用程式

「水務署流動應用程式」可供客戶查閱水務署的重要資訊，以及憑二維碼在便利店繳交水費而無需出示水費賬單，為協助客戶接收相關分區的停水資訊，應用程式中的關注地區已由以往18區進一步劃分為431個分區。客戶也可以透過應用程式獲取具水務署一般認可的喉管及裝置的產品資訊。

### Staying in Touch

#### Mobile App for Smartphones



The "WSD Mobile App" service enables customers to view important information from WSD, and to make payments at convenience stores by using the QR code provided without the need to present their paper water bills. To help customers to receive water suspension notices of the relevant sub-district, the districts in the mobile app have been subdivided from the previous 18 districts into 431 subdistricts. Customers can also obtain product information of water supply pipes and fittings with general acceptance of WSD from the mobile app.

## 電子帳單服務

我們已精簡並提升電子帳單服務，使服務更方便易用，包括在付款到期日前向電子帳單客戶發出提醒。客戶亦可在網上查閱最近兩年的用水量及付款記錄。截至二〇一八年三月三十一日，77,100名客戶已選擇以電子方式接收水費帳單，比去年同期增加10,700名或16%。

## 方便客戶繳費

本署乃提供「電子帳單及繳費服務」的參與機構之一，該服務於二〇一五年九月一日起生效。「電子帳單及繳費服務」是由香港金融管理局推出的一站式平台，客戶可透過網上銀行戶口接收電子帳單、管理及安排繳付水費。我們亦於二〇一七年六月起接受以電子支票的方式繳交水費單。

## 水錶及讀數

本署一直推行更換水錶計劃，以維持水錶的準確度。於二〇一七至一八年，我們調整了更換水錶策略，以較為集中更換那些已超過設計用量的水錶，期間我們分別更換了約39,000個小型和5,600個大型用量過高的水錶。

## e-bill Service

Our e-bill service has been streamlined and enhanced to improve user friendliness and convenience, including sending a reminder to e-bill customers before the payment due date and allowing users to view their water consumption and payment records over the last two years online. As of 31<sup>st</sup> March 2018, 77,100 customers have opted to receive their water bills electronically, representing an increase of 10,700 or 16%, compared with the same period last year.

## Facilitating Bill Payments

We are one of the participating merchants that provide Electronic Bill Presentment and Payment (EBPP) service effective from 1<sup>st</sup> September 2015. EBPP is a one-stop platform launched by the Hong Kong Monetary Authority for users to receive, manage and schedule payments for electronic bills through internet banking accounts. We also accept e-cheques for payment of water bills since June 2017.

## Meters and Readings

The Department has been implementing a water meter replacement programme in order to maintain the meter accuracy. During 2017/18, we adjusted our water meter replacement strategy and focused more on those meters that have reached the designed throughput. In the period, we replaced about 39,000 small and 5,600 large meters with excessive throughput respectively.



## 讓客戶取得最新資訊

### 客戶聯絡小組

為收集不同層面客戶的建議，促進交流溝通，客戶聯絡小組於二〇一七年初進行改組。經改組後，住宅客戶委員來自全港十八區的居民組織；非住宅客戶委員則為各行業代表。改組後的小組於二〇一七年五月舉行首次會議，並每四個月舉行一次會議。委員任期則劃一為兩年。過去一年，小組成員曾參觀馬鞍山濾水廠及龍翔道機電工場的水錶測試實驗所，並聽取了關於「水務署簡介」、「東江水輸港概況」、「客戶帳務及水費」、「性質輕微的水管工程」、「香港的食水處理及水質監測」及「水務署流動應用程式」的講解。委員就供水服務提出各種意見及建議，成為水務署與客戶之間有效的溝通渠道。

## Keeping Customers Informed

### The Customer Liaison Group

To facilitate exchange of ideas and solicit suggestions from customers of different spectrum, the Customer Liaison Group (CLG) has been revamped in early 2017. After the revamp, residential members are invited from the residents' organizations in 18 districts. Non-residential members are representatives from different industries. The first meeting of the revamped CLG was held in May 2017 and meetings of the CLG are held once every four months. Members are appointed for a fixed term of two years. During the past year, the members visited Ma On Shan Water Treatment Works and Meter Testing Laboratory at Lung Cheung Road Mechanical & Electrical Workshop. Presentations were also given to the members on "Overview of Water Supplies Department", "Dongjiang Water Supply", "Customer Account and Water Charges", "Plumbing Works of Minor Nature", "Water Treatment and Water Quality Monitoring in Hong Kong" and "WSD Mobile App". Various views and suggestions concerning water supply services have been put forward by the members and the CLG has served as an effective communication channel between the Department and our customers.

## 大廈水質

### 大廈優質供水認可計劃－食水(管理系統)

水務署邀請專家顧問協助按照世界衛生組織的建議制定建築物水安全計劃的指引和範本，透過辨認內部供水系統潛在污染風險及制定相應的控制措施，保障建築物的食水水質。為向業主和物業管理人推廣採用建築物水安全計劃，水務署已把建築物水安全計劃與「大廈優質供水認可計劃－食水(2.0版)」結合成一項新計劃，名為「大廈優質供水認可計劃－食水(管理系統)」，

## Water Quality in Buildings

### Quality Water Supply Scheme for Buildings – Fresh Water (Management System)

WSD has invited expert consultants to assist in developing a set of guidelines and templates for the Water Safety Plan for Buildings (WSPB) in accordance with the recommendations of WHO. The guidelines and templates encompass the identification of potential contamination risks in internal plumbing systems and the formulation of corresponding control measures to safeguard the quality of drinking water in the buildings. To promote building owners' and property management agents' adoption of WSPB for their buildings, WSD has combined WSPB with "Quality Water Supply Scheme for Buildings – Fresh Water (Plus)" to form a new scheme, entitled "Quality Water Supply Scheme for Buildings – Fresh Water (Management System)" (QMS), which has been



並於二〇一七年十一月六日推出。截至二〇一八年三月三十一日，本署就該計劃已向業主及／或樓宇管理公司頒發81張證書，以表揚他們在保養內部食水供水系統所作的努力，以保障建築物的食水水質。

### 大廈優質供水認可計劃－沖廁水

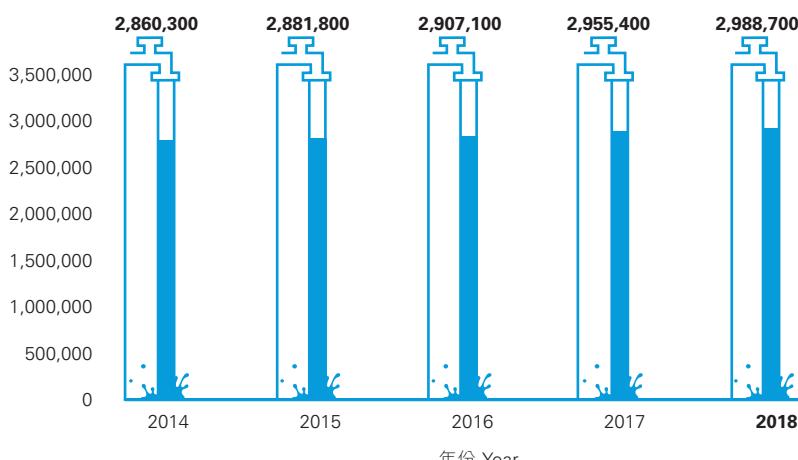
計劃於二〇一三年推出，鼓勵業主及樓宇管理公司妥善保養其大廈的內部沖廁水供水系統。截至二〇一八年三月三十一日，本署就該計劃已向業主及／或物業管理人頒發1,591張金、銀和藍證書，以表揚他們在保養內部沖廁水供水系統所作的努力。

launched on 6 November 2017. As on 31 March 2018, WSD has awarded 81 certificates under this new scheme to building owners and/or property management agents in recognition of their efforts to maintain the internal fresh water plumbing systems to safeguard the quality of drinking water in their buildings.

### Quality Water Supply Scheme for Buildings – Flushing Water

The scheme has been launched since 2013 to encourage building owners and property management agents to maintain the internal flushing water plumbing systems of their buildings properly. As on 31 March 2018, WSD has awarded 1,591 Gold, Silver and Blue certificates to building owners and/or property management agents in recognition of their efforts to maintain the internal flushing water plumbing systems.

### 客戶數目(截至二〇一八年三月三十一日) Number of Accounts (as at 31<sup>st</sup> March 2018)



# 精益求精 Enhancing Our Competencies



本署致力培育一支出色的管理及運作團隊，同時推行計劃，藉以提升在所有提供優質供水服務環節的能力。

**The Department is dedicated to the development of an outstanding management and operation team whilst at the same time initiating programmes to improve competencies that involve all phases of providing high quality water supply service.**

## 培訓

水務署已培育一支富有才幹和竭誠服務的工作隊伍，他們在本署各崗位任職。我們為員工安排深入培訓計劃，確保我們能持續滿足客戶需要和期望。本年度，我們繼續參與名為「工程師講座」的跨部門(包括土木工程拓展署、路政署、渠務署、運輸署及水務署)知識分享計劃。該計劃每星期向各部門的工程師提供講座。講者包括具備專業知識、經驗或在特定領域工作的專業人員、作為個別領域專家的退休公務員。這項計劃能促進知識分享、建立知識社群及培養工程師互相學習的文化。

## Training

WSD has nurtured a talented and highly dedicated workforce that extends across the entire range of the Department's operations. We schedule in-depth training schemes for our staff members to make sure that we continue to meet the needs and expectations of our customers. This year, we continue to participate in the inter-departmental (viz. Civil Engineering and Development Department (CEDD), Highways Department, Drainage Services Department, Transport Department and WSD) knowledge-sharing programme entitled – “ENGINEER Talks”. These meetings are delivered to engineers on a weekly basis. The speakers included professionals with valuable knowledge and experience or working in specialised areas, retired officers of experts of a subject domain. This programme promotes knowledge sharing, building up of a knowledge community and cultivation of a mutual-learning culture among engineers.

我們亦會繼續提供培訓，以加強或提升員工的技術知識和管理能力，尤其是與濾水、水安全及資訊科技相關的知識和技能。

於二〇一七／一八年份，我們已為員工提供共8,290個培訓日，成本達230萬元。在減低工作地點意外方面，根據統計數字，水務工程合約意外率一直處於低水平。事實上，我們的意外率遠低於政府就工務工程合約所定的上限。

### 培育一支盡心盡力的工作隊伍

我們亦已在本署管理層與員工之間建立強而有效的溝通渠道。為此，部門協商委員會及轄下小組委員會提供多個有效平台，就全體員工共同關切的事項坦承溝通。除定期會議外，本署亦就員工關切的事項主動安排與工會舉行特別協商會議及簡報會，而高級管理層人員亦定期到訪各辦事處及工作場地，解答員工關切的主要問題，及提升士氣。為表揚有卓越及模範工作表現的同事，本署推舉他們接受公職獎項如公務員事務局局長嘉許狀、申訴專員嘉許公職人員獎及十大優秀司機獎等。

### 向合作伙伴學習

我們與多間學術機構一同研究及發展多個項目，從而加強了雙方在技術發展的合作。本署積極及致力在整個部門內培養創新文化。本署亦推出多項激勵計劃，鼓勵員工出謀獻策改善服務及提升工作效率。

We also continue to provide training programmes to enhance or upgrade the technical knowledge and managerial skills of our staff members, particularly in the areas of water treatment, water safety and information technology.

In 2017/18, we have provided a total of 8,290 days of training at a cost of \$2.3 million for our staff. With respect to reducing workplace accidents, we are maintaining a consistently low accident rate in our waterworks contracts according to statistics. In fact, we are well below the limit designated by the Government for public works contracts.

### Fostering a Committed Workforce

We have also established strong and effective communications channels between managers and staff within the Department. In this regard, the Departmental Consultative Committee and its sub committees have provided useful forums to create an open communication on issues of common concern for all staff members. Apart from regular meetings, the Department also proactively holds ad-hoc consultative meetings and briefings with staff unions on issues of concern to staff members. Senior management personnel also make regular visits to individual offices and work sites to help boost staff morale whilst addressing major staff concerns. The Department recognised the contribution of staff with commendable and exemplary performance and has recommended them to receive service-wide awards, such as The Secretary for the Civil Service's Commendation Award, The Ombudsman's Awards for Officers of Public Organisations and Ten Outstanding Drivers Award, etc.

### Learning from Partners

We have formed many partnerships with academic institutions on research and development projects. This has led to strengthened collaborative relationships on technological developments. The Department actively cultivates and works hard to achieve a culture of innovation throughout the organisation. The Department has introduced a number of motivation schemes to encourage staff to contribute their ideas and opinions on how to improve service delivery and foster

## 精益求精 Enhancing Our Competencies

由員工不時提出的創新建議經試行、試驗及實施後，明顯提升了我們的服務質素和運作效率。

### 濾水廠技術轉移工作坊和培訓小組

於二〇一〇年，本署設立技術轉移工作坊及培訓小組，以提高員工對食水處理最新發展的認識。我們舉辦研討會及技術考察，涉及設計及興建濾水廠、濾水工藝和濾水廠的運作。年度內，超過359名員工參加了五場培訓小組知識分享會。本署會繼續邀請水務專家與員工分享先進的技術知識。

### 兩個工程師職系系別合併

原本分屬土木工程拓展署署長及水務署署長管理的工程師系別已於二〇一七年九月一日合併；此舉有利土木工程師職系的發展，為所有職系成員提供更多機會涉獵更多工程範疇。這安排不但對工程師同儕的職業發展別具意義，而且對他們的技能提升亦十分重要，可幫助他們應付在建造的基礎建設項目日益嚴峻的挑戰，並更好服務社會。

greater operating efficiency. The result is that new innovative ideas come up from time to time from staff which are tried, tested and implemented, significantly helping us achieve impressive service and operational improvements.

### Update on the Technology Transfer Workshop and Training Group on Water Treatment Works

In 2010, the Department formed a technology transfer workshop and training group to help increase knowledge of staff about the latest developments in water treatment. We have held seminars and technical visits on design and construction of water treatment work, treatment processes and treatment works operations. During the year, more than 359 staff have participated in knowledge-sharing at five seminars of the training group. We will continue inviting water experts to share their advanced technical knowledge with our staff.

### Merging of the Two streams of the Engineer Grade Officers

The two streams of Civil Engineer grade under the respective central authorities of the Director of Civil Engineering and Development and the Director of Water Supplies have been merged with effect from 1 September 2017. The merger brought about better development of the Civil Engineer grade and increased opportunities and exposure for all members of the grade. This does not only have a critical importance on the career of fellow civil engineers but also on the enhancement of the capacity and ability of the civil engineers to face the increasingly demanding challenges in delivering the infrastructure of Hong Kong and to better serve the community.



## 建立團隊精神

本署定期為員工舉辦各式各樣的康體活動，旨在鼓勵員工建立健康的生活模式，在工作與生活之間保持平衡之餘，促進員工間的交流及培養團結精神。同時，本署鼓勵員工參與由外界團體舉辦的活動或比賽，例如龍舟比賽、建造業議會籃球邀請賽、發展局水運會、跨部門羽毛球比賽、渣打香港馬拉松、樂施毅行者及其他各種活動，以加強與其他政府部門及合作夥伴之間的聯繫。過去一年，參與以上各項康體活動的本署員工共計超過400位。



## Team Building

The Department has held a wide variety of sports and recreational events on a regular basis to foster a healthy and balanced lifestyle, as well as to enhance the relationships and solidarity among all staff members. The Department has also encouraged staff members to take part in events and competitions organised by external parties, including, inter alia, dragon boat races, Construction Industry Council Basketball Tournament, Development Bureau Swimming Gala, Inter-departmental Badminton Tournament, Standard Chartered Hong Kong Marathon and Oxfam Trailwalker. These events have greatly contributed to strengthening the bonds with government counterparts and, industry partners. In the past year, over 400 staff members of WSD participated in the above sports and recreational events.



## 義務工作

本署人員一如既往積極參與義務工作，履行對社會的責任及展現對社會的關懷。於年度內，我們的義工參加了超過80項慈善活動，當中包括籌款活動、探訪老人院及協助殘疾人士。員工的社區服務時數合計達4,902小時。有20名員工獲得由社會福利署「義工運動督導委員會」頒發的個人金、銀、銅嘉許狀，嘉許他們服務社區的貢獻獲得嘉許。

## Voluntary Work

Staff volunteers show their on-going commitment and concern for the community by taking part in more than 80 charity events during the year. These include fund raising, visiting the homes of the elderly and assisting the disabled. A total of 4,902 community service hours have been spent and 20 staff have received individual Gold, Silver and Bronze awards from Steering Committee on Promotion of Volunteer Service of the Social Welfare Department in recognition of their dedication to voluntary work for the community.

## 精益求精 Enhancing Our Competencies

### 獎項和嘉許

本署在本港及國際均獲得多項殊榮。我們在服務、創新及人力發展方面的工作皆獲得肯定。

本署於二〇一七／一八年度獲得的獎項包括：

### Awards and Recognition

The Department has received a number of awards, both locally and globally, that recognise our work in the areas of service, innovation and manpower development.

The awards received by the Department in 2017/18 include:



#### 二〇一七年公務員優質服務獎勵計劃

#### Civil Service Outstanding Service Award Scheme 2017

- 隊伍獎(內部支援服務)－銅獎：浮動太陽能發電系統  
Team Award (Internal Service) – Bronze Prize: Floating Solar Power System
- 隊伍獎(內部支援服務)－優異獎：次氯酸鈉投放系統  
Team Award (Internal Service) – Meritorious Award: Sodium Hypochlorite Dosing System
- 隊伍獎(內部支援服務)－特別嘉許(創新意念)：浮動太陽能發電系統  
Team Award (Internal Service) – Special Citation (Innovation): Floating Solar Power System

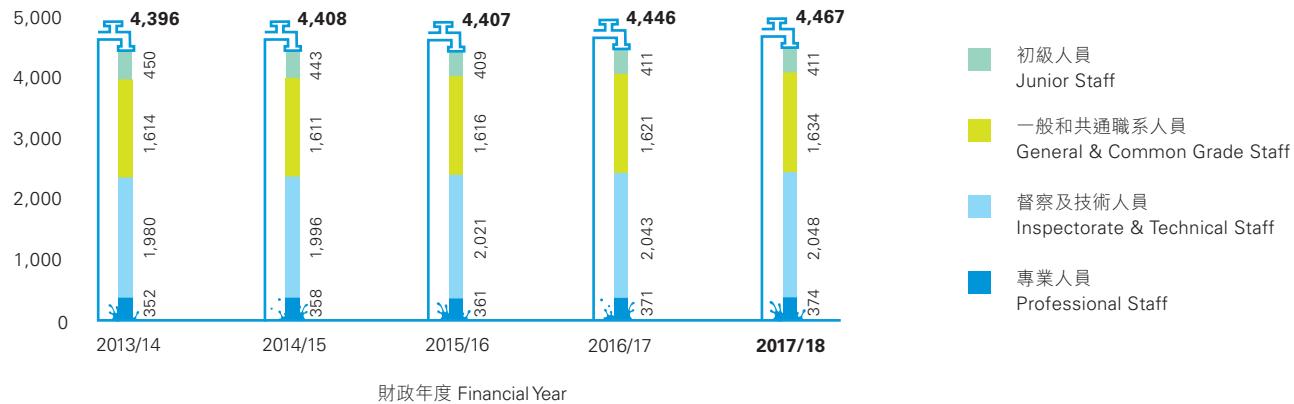


#### 綠建環評新建建築(1.2版)暫定鉑金級－大埔濾水廠及附屬原水和食水輸送設施擴展工程－設計及建造新設二號水道

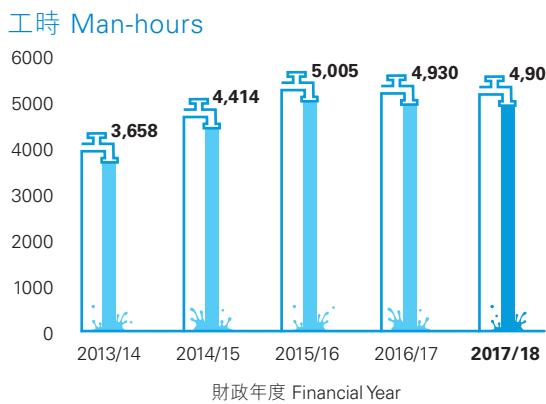
#### BEAM Plus Scheme (Provisional Platinum rating) – Expansion of Tai Po Water Treatment Works and Ancillary Raw Water and Fresh Water Transfer Facilities Design and Build of New Stream II



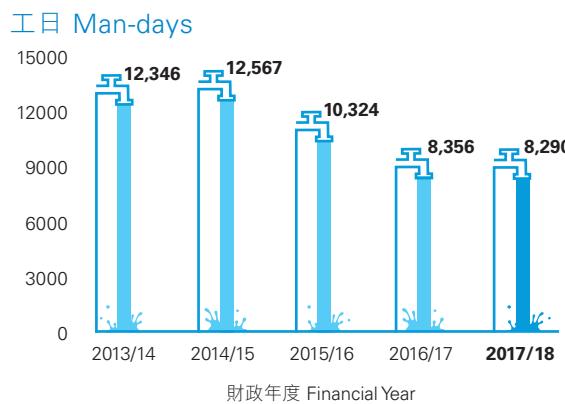
## 員工編制 Staff Establishment



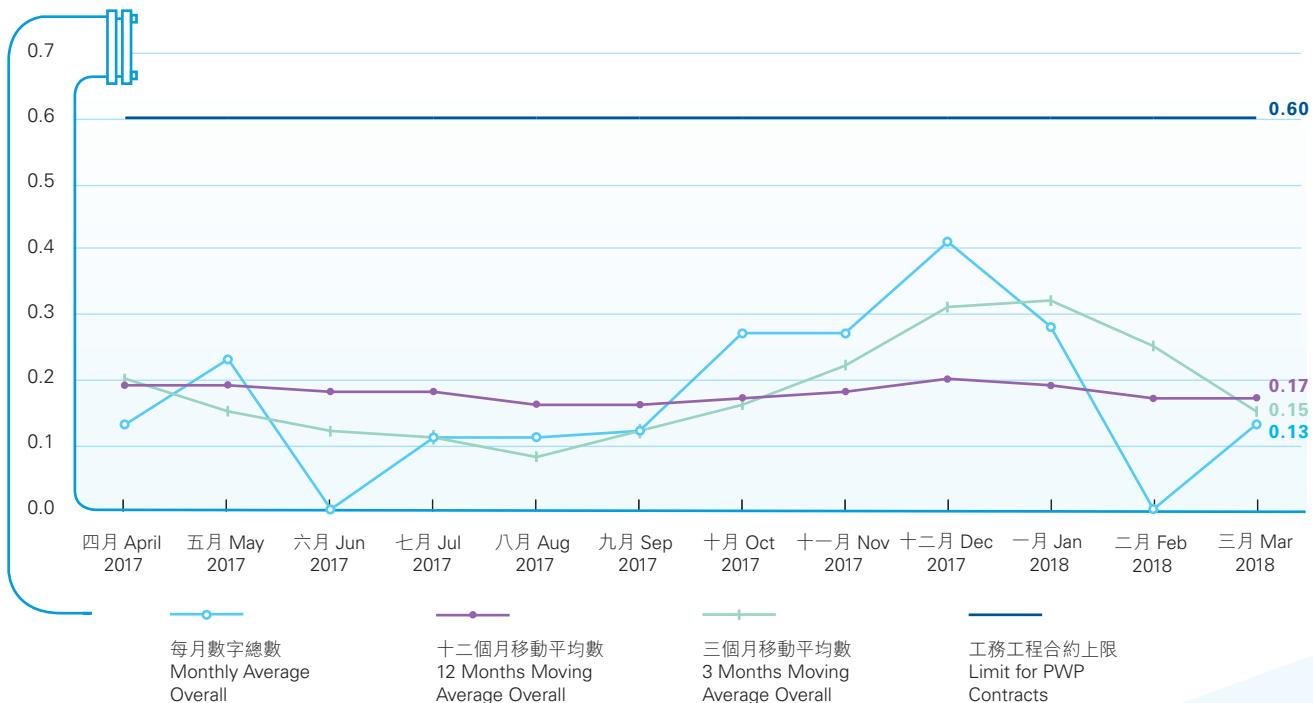
## 水務署義工工時數目 No. of Man-hours of WSD Volunteers



## 培訓工日 Training Man-days



## 二〇一七／一八年度水務工程合約意外率 Accident Rate for Waterworks Contracts 2017/18



# 附錄 Appendices

## 附錄一 Appendix I

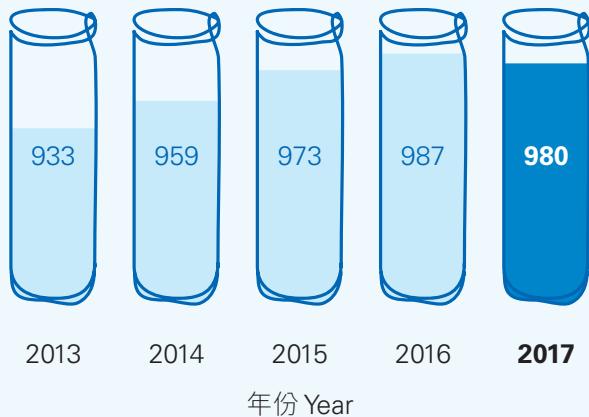
### 全年食水用量及人均用水量\*

Annual Fresh Water Consumption and Per Capita Consumption\*

#### 全年食水用量

**Annual fresh water consumption**

(百萬立方米 million cubic metres)



#### 人均用水量

**Per Capita Consumption**

(立方米／每年 cubic metres per year)



### 全港人口及獲食水供應人口

Population in Hong Kong and Population Served with Fresh Water

#### 全港人口\*

**Population in Hong Kong\***

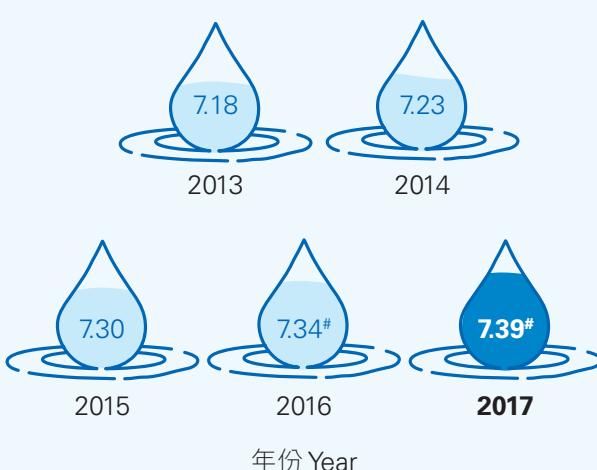
(百萬 million)



#### 獲食水供應人口

**Population served with fresh water**

(百萬 million)



\* 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.

<sup>#</sup> 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.

### 附錄三 Appendix III

#### 全年海水用量及獲海水供應人口

#### Annual Sea Water Consumption and Population Served with Sea Water

##### 全年海水用量

##### Annual Sea Water Consumption

(百萬立方米 million cubic metres)



##### 獲海水供應人口

##### Population Served with Sea Water

(百萬 million)



### 附錄四 Appendix IV

#### 客戶查詢及申請服務的統計數字

#### Statistics on Customer Enquires and Requests for Services

個案數目 Number of Enquiries and Requests	年份 Year				
	2013	2014	2015	2016	2017
書面 Letter	212,566	205,630	215,428	225,097	<b>247,665</b>
電話 Telephone	897,424	850,050	833,284	842,414	<b>847,330</b>
親身 Counter	329,767	317,851	253,698	290,368	<b>335,271</b>
<b>總數 Total</b>	<b>1,439,757</b>	<b>1,373,531</b>	<b>1,302,410</b>	<b>1,357,879</b>	<b>1,430,266</b>

## 附錄 Appendices

## 附錄五 Appendix V

## 客戶投訴的統計數字

## Statistics on Customer Complaints

投訴數目 Number of Complaints	年份 Year				
	2013	2014	2015	2016	2017
與帳戶有關的投訴# Account-Related#	136	149	140	142	145
與帳戶無關的投訴 Non-Account-Related	6,537	7,390	7,787	7,767	7,498
<b>總數 Total</b>	<b>6,673</b>	<b>7,539</b>	<b>7,927</b>	<b>7,909</b>	<b>7,643</b>

# 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, LegCo and The Ombudsman.

## 附錄六 Appendix VI

## 二〇一七／一八年度繳費方式的統計數字

## Statistics on Mode of Payment 2017/18

繳費方式	Mode of Payment	交易數目	百分比
		No. of Cases	Percentage (%)
親身繳費	In person	3,820,700	50.3
郵寄	By post	74,600	1.0
自動轉帳	Autopay	880,900	11.6
繳費靈	Payment by Phone Service (PPS)	720,900	9.5
自動櫃員機	ATM	360,700	4.8
網上繳費	Internet	1,730,800	22.8
<b>總數</b>	<b>Total</b>	<b>7,588,600</b>	<b>100</b>

# 附件 Annexes

## 附件一 ANNEX 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  
沙田上禾輦路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

註:

\* 旺角客戶諮詢中心將於2018年4月3日(星期二)  
搬遷至大角咀鐵樹街41號地下。

### 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

Note:

\* The Mong Kok Customer Enquiry Centre will be relocated to G/F, No. 41 Tit Shu Street, Tai Kok Tsui with effect from 3 April 2018 (Tuesday).

## 附件 Annexes

## 附件二 ANNEX II

二〇一七年四月至二〇一八年三月的食水水質  
Drinking Water Quality for the Period of April 2017 – March 2018

注意事項：

Points to Note:

- 水務署已採用世界衛生組織(世衛)在2011年制定之《飲用水水質準則》(第4版)中的相關準則值／暫定準則值，作為香港食水標準。
- 所有監測水質的食水樣本是從濾水廠、配水庫、供水接駁點和公眾可達的客戶水龍頭抽取。
- 這時段內抽取的食水樣本的測試結果完全符合香港食水標準。
- WSD has adopted the corresponding guideline values/provisional guideline values in the fourth edition of the World Health Organization's Guidelines for Drinking-water Quality published in 2011 as the Hong Kong Drinking Water Standards (HKDWS).
- All drinking water samples were taken at water treatment works, 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. 微生物參數

### Part A. Microbiological parameters

參數 Parameter	單位 Unit	監測結果 Monitoring Data (04/2017 - 03/2018)			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 <b>E. coli</b>	菌落數／100毫升 cfu* per 100 mL	0	0	0	0	√
總大腸桿菌群 (註釋一) <b>Total Coliforms</b> (Note 1)	菌落數／100毫升 cfu* per 100 mL	0	0	0	-	-
隱孢子蟲 (註釋二) <b>Cryptosporidium</b> (Note 2)	卵囊數量／公升 no. of oocyst per L	0.00	0.00	0.00	-	-
賈第蟲 (註釋二) <b>Giardia</b> (Note 2)	孢囊數量／公升 no. of cyst per L	0.00	0.00	0.00	-	-

\* Colony forming unit (cfu)

#### 註釋 :

- (1) 雖然香港食水標準沒有總大腸桿菌群的標準值，水務署亦有監測食水中的總大腸桿菌群含量。
- (2) 雖然香港食水標準沒有隱孢子蟲或賈第蟲的標準值，水務署亦有監測食水中的隱孢子蟲及賈第蟲含量。每公升0.00的監測結果代表在不少於100公升的食水樣本中，檢測不到卵囊或孢囊。

#### Note:

- (1) Although the HKDWS does not have a standard value for Total Coliforms, WSD also monitors Total Coliforms in drinking water.
- (2) Although the HKDWS does not have a standard value for Cryptosporidium or Giardia, WSD also monitors Cryptosporidium and Giardia in drinking water. The monitoring data of 0.00 per litre represents no oocyst or cyst detected in a volume of not less than 100 litres of drinking water sample.

## 附件 Annexes

**乙部. 化學參數**  
**Part B. Chemical parameters**

參數 Parameter	單位 Unit	監測結果 Monitoring Data (04/2017 - 03/2018)			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 <b>Acrylamide</b>	微克／公升 µg/L	< 0.4	< 0.4	< 0.4	≤ 0.5	√
草不綠 <b>Alachlor</b>	微克／公升 µg/L	< 5.0	< 5.0	< 5.0	≤ 20	√
涕滅威 <b>Aldicarb</b>	微克／公升 µg/L	< 2.5	< 2.5	< 2.5	≤ 10	√
艾氏劑和異艾氏劑 <b>Aldrin and Dieldrin</b>	微克／公升 µg/L	< 0.008	< 0.008	< 0.008	≤ 0.03	√
銻 <b>Antimony</b>	毫克／公升 mg/L	< 0.001	< 0.001	< 0.001	≤ 0.02	√
砷 <b>Arsenic</b>	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 <b>Atrazine and its chloro-s-triazine metabolites</b>	微克／公升 µg/L	< 25	< 25	< 25	≤ 100	√
鋇 <b>Barium</b>	毫克／公升 mg/L	0.003	0.020	0.013	≤ 0.7	√
苯 <b>Benzene</b>	微克／公升 µg/L	< 2.5	< 2.5	< 2.5	≤ 10	√
苯并(a)芘 <b>Benzo(a)pyrene</b>	微克／公升 µg/L	< 0.0020	< 0.0020	< 0.0020	≤ 0.7	√
硼 <b>Boron</b>	毫克／公升 mg/L	< 0.02	0.05	0.02	≤ 2.4	√
溴酸鹽 <b>Bromate</b>	微克／公升 µg/L	< 2.5	< 2.5	< 2.5	≤ 10	√
一溴二氯甲烷 <b>Bromodichloromethane</b>	微克／公升 µg/L	< 15	15	< 15	≤ 60	√
溴仿 <b>Bromoform</b>	微克／公升 µg/L	< 25	< 25	< 25	≤ 100	√
鎘 <b>Cadmium</b>	毫克／公升 mg/L	< 0.001	< 0.001	< 0.001	≤ 0.003	√

參數 Parameter	單位 Unit	監測結果 Monitoring Data (04/2017 - 03/2018)			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 <b>Carbofuran</b>	微克／公升 µg/L	< 1.2	< 1.2	< 1.2	≤ 7	√
四氯化碳 <b>Carbon tetrachloride</b>	微克／公升 µg/L	< 0.50	< 0.50	< 0.50	≤ 4	√
氯酸鹽 <b>Chlorate</b>	微克／公升 µg/L	< 175	< 175	< 175	≤ 700	√
氯丹 <b>Chlordane</b>	微克／公升 µg/L	< 0.050	< 0.050	< 0.050	≤ 0.2	√
氯 <b>Chlorine</b>	毫克／公升 mg/L	< 0.1	1.5	0.7	≤ 5	√
亞氯酸鹽 <b>Chlorite</b>	微克／公升 µg/L	< 50	< 50	< 50	≤ 700	√
氯仿 <b>Chloroform</b>	微克／公升 µg/L	< 50	< 50	< 50	≤ 300	√
綠麥隆 <b>Chlorotoluron</b>	微克／公升 µg/L	< 7.5	< 7.5	< 7.5	≤ 30	√
毒死蜱 <b>Chlorpyrifos</b>	微克／公升 µg/L	< 7.5	< 7.5	< 7.5	≤ 30	√
鉻 <b>Chromium</b>	毫克／公升 mg/L	< 0.001	0.002	< 0.001	≤ 0.05	√
銅 <b>Copper</b>	毫克／公升 mg/L	< 0.003	0.019	< 0.003	≤ 2	√
青乙酰肼 <b>Cyanazine</b>	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 <b>DDT and metabolites</b>	微克／公升 µg/L	< 0.50	< 0.50	< 0.50	≤ 1	√

## 附件 Annexes

參數 Parameter	單位 Unit	監測結果 Monitoring Data (04/2017 - 03/2018)			香港食水標準 HKDWS	達標 Compliance
		最低值 Minimum	最高值 Maximum	平均值 Average		
二(2-乙基己基)鄰苯二甲酸鹽 <b>Di (2-ethylhexyl)phthalate</b>	微克/公升 µg/L	< 2	< 2	< 2	≤ 8	√
二溴乙腈 <b>Dibromoacetonitrile</b>	微克/公升 µg/L	< 25	< 25	< 25	≤ 70	√
二溴一氯甲烷 <b>Dibromochloromethane</b>	微克/公升 µg/L	< 25	< 25	< 25	≤ 100	√
1,2-二溴-3-氯丙烷 <b>1,2-Dibromo-3-chloropropane</b>	微克/公升 µg/L	< 0.25	< 0.25	< 0.25	≤ 1	√
1,2-二溴乙烷 <b>1,2-Dibromoethane</b>	微克/公升 µg/L	< 0.10	< 0.10	< 0.10	≤ 0.4	√
二氯乙酸鹽 <b>Dichloroacetate</b>	微克/公升 µg/L	< 12	13	< 12	≤ 50	√
二氯乙腈 <b>Dichloroacetonitrile</b>	微克/公升 µg/L	< 5.0	< 5.0	< 5.0	≤ 20	√
1,2-二氯苯 <b>1,2-Dichlorobenzene</b>	微克/公升 µg/L	< 250	< 250	< 250	≤ 1,000	√
1,4-二氯苯 <b>1,4-Dichlorobenzene</b>	微克/公升 µg/L	< 75	< 75	< 75	≤ 300	√
1,2-二氯乙烷 <b>1,2-Dichloroethane</b>	微克/公升 µg/L	< 7.5	< 7.5	< 7.5	≤ 30	√
1,2-二氯乙烯 <b>1,2-Dichloroethene</b>	微克/公升 µg/L	< 12	< 12	< 12	≤ 50	√
二氯甲烷 <b>Dichloromethane</b>	微克/公升 µg/L	< 5.0	< 5.0	< 5.0	≤ 20	√
1,2-二氯丙烷 <b>1,2-Dichloropropane</b>	微克/公升 µg/L	< 5.0	< 5.0	< 5.0	≤ 40	√
1,3-二氯丙烯 <b>1,3-Dichloropropene</b>	微克/公升 µg/L	< 5.0	< 5.0	< 5.0	≤ 20	√
2,4-滴丙酸 <b>Dichlorprop (or 2,4-DP)</b>	微克/公升 µg/L	< 25	< 25	< 25	≤ 100	√
樂果 <b>Dimethoate</b>	微克/公升 µg/L	< 1.5	< 1.5	< 1.5	≤ 6	√
1,4-二噁烷 <b>1,4-Dioxane</b>	微克/公升 µg/L	< 12.5	< 12.5	< 12.5	≤ 50	√

參數 Parameter	單位 Unit	監測結果 Monitoring Data (04/2017 - 03/2018)			香港食水標準 HKDWS	達標 Compliance
		最低值 Minimum	最高值 Maximum	平均值 Average		
乙二胺四乙酸 <b>Eddtic acid (EDTA)</b>	微克／公升 µg/L	< 50	< 50	< 50	≤ 600	√
異狄氏劑 <b>Endrin</b>	微克／公升 µg/L	< 0.15	< 0.15	< 0.15	≤ 0.6	√
表氯醇 <b>Epichlorohydrin</b>	微克／公升 µg/L	< 0.4	< 0.4	< 0.4	≤ 0.4	√
乙苯 <b>Ethylbenzene</b>	微克／公升 µg/L	< 75	< 75	< 75	≤ 300	√
2,4,5-涕丙酸 <b>Fenoprop (or 2,4,5-TP)</b>	微克／公升 µg/L	< 2.2	< 2.2	< 2.2	≤ 9	√
氟化物 <b>Fluoride</b>	毫克／公升 mg/L	0.17	0.64	0.48	≤ 1.5	√
六氯丁二烯 <b>Hexachlorobutadiene</b>	微克／公升 µg/L	< 0.15	< 0.15	< 0.15	≤ 0.6	√
羥基化莠去津 <b>Hydroxyatrazine</b>	微克／公升 µg/L	< 50	< 50	< 50	≤ 200	√
異丙隆 <b>Isoproturon</b>	微克／公升 µg/L	< 2.2	< 2.2	< 2.2	≤ 9	√
鉛 <b>Lead</b>	毫克／公升 mg/L	< 0.001	0.002	< 0.001	≤ 0.01	√
林丹 <b>Lindane</b>	微克／公升 µg/L	< 0.50	< 0.50	< 0.50	≤ 2	√
2-甲基-4-氯苯氧基乙酸 <b>MCPA (or (2-methyl-4-chlorophenoxy) acetic acid)</b>	微克／公升 µg/L	< 2.0	< 2.0	< 2.0	≤ 2	√
2-甲基-4-氯丙酸 <b>Mecoprop (or MCPP)</b>	微克／公升 µg/L	< 2.5	< 2.5	< 2.5	≤ 10	√
汞 <b>Mercury</b>	毫克／公升 mg/L	< 0.00005	< 0.00005	< 0.00005	≤ 0.006	√
甲氧滴涕 <b>Methoxychlor</b>	微克／公升 µg/L	< 5.0	< 5.0	< 5.0	≤ 20	√
甲毒草安 <b>Metolachlor</b>	微克／公升 µg/L	< 2.5	< 2.5	< 2.5	≤ 10	√

## 附件 Annexes

參數 Parameter	單位 Unit	監測結果 Monitoring Data (04/2017 - 03/2018)			香港食水標準 HKDWS	達標 Compliance
		最低值 Minimum	最高值 Maximum	平均值 Average		
微囊藻毒素-LR (總) <b>Microcystin-LR (total)</b>	微克／公升 µg/L	< 0.5	< 0.5	< 0.5	≤ 1	√
禾草特 <b>Molinate</b>	微克／公升 µg/L	< 1.5	< 1.5	< 1.5	≤ 6	√
一氯胺 <b>Monochloramine</b>	毫克／公升 mg/L	< 1.0	< 1.0	< 1.0	≤ 3	√
一氯醋酸鹽 <b>Monochloroacetate</b>	微克／公升 µg/L	< 10	< 10	< 10	≤ 20	√
鎳 <b>Nickel</b>	毫克／公升 mg/L	< 0.001	0.008	0.002	≤ 0.07	√
硝酸鹽 (以NO <sub>3</sub> -計) <b>Nitrate (as NO<sub>3</sub>-)</b>	毫克／公升 mg/L	< 2.5	15	5.1	≤ 50	√
次氨基三乙酸 <b>Nitrilotriacetic acid</b>	微克／公升 µg/L	< 50	< 50	< 50	≤ 200	√
亞硝酸鹽 (以NO <sub>2</sub> -計) <b>Nitrite (as NO<sub>2</sub>-)</b>	毫克／公升 mg/L	< 0.004	0.015	< 0.004	≤ 3	√
N-亞硝基二甲胺 <b>N-Nitrosodimethylamine</b>	微克／公升 µg/L	< 0.025	< 0.025	< 0.025	≤ 0.1	√
二甲戊樂靈 <b>Pendimethalin</b>	微克／公升 µg/L	< 5.0	< 5.0	< 5.0	≤ 20	√
五氯酚 <b>Pentachlorophenol</b>	微克／公升 µg/L	< 2.2	< 2.2	< 2.2	≤ 9	√
硒 <b>Selenium</b>	毫克／公升 mg/L	< 0.003	< 0.003	< 0.003	≤ 0.04	√
西瑪三嗪 <b>Simazine</b>	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) <b>Sodium dichloroisocyanurate (as cyanuric acid)</b>	毫克／公升 mg/L	< 10	< 10	< 10	≤ 40	√
苯乙烯 <b>Styrene</b>	微克／公升 µg/L	< 5.0	< 5.0	< 5.0	≤ 20	√

參數 Parameter	單位 Unit	監測結果 Monitoring Data (04/2017 - 03/2018)			香港食水標準 HKDWS	達標 Compliance
		最低值 Minimum	最高值 Maximum	平均值 Average		
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 Terbutylazine	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	√
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	< 25	< 25	< 25	≤ 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	√
鉈 Uranium	毫克／公升 mg/L	< 0.0002	0.0005	< 0.0002	≤ 0.03	√
氯乙烯 Vinyl chloride	微克／公升 µg/L	< 0.2	< 0.2	< 0.2	≤ 0.3	√
二甲苯 Xylenes	微克／公升 µg/L	< 125	< 125	< 125	≤ 500	√

註釋 :

Note:

- (1) 以上的統計數字並不包括水務署於二〇一七年十二月展開的水質監測優化計劃(優化計劃)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有關食水水質。優化計劃的相關監測數據的統計數字每周於水務署網頁([www.wsd.gov.hk/tc/dwsewqmp](http://www.wsd.gov.hk/tc/dwsewqmp))內公佈。

- (1) 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 collects drinking water samples from the customers' taps of randomly selected premises over the territory for testing six metals, viz. antimony, cadmium, chromium, copper, lead and nickel, which could be present in the internal plumbing system, to monitor the relevant quality of drinking water at the consumers' taps. The statistics of the concerned monitoring data of the Enhanced Programme are published on WSD's website ([www.wsd.gov.hk/en/dwsewqmp](http://www.wsd.gov.hk/en/dwsewqmp)) on a weekly basis.

## 附件 Annexes

## 丙部. 輻射參數 Part C Radiological parameters

參數 Parameter	單位 Unit	監測結果 Monitoring Data (04/2017 - 03/2018)			香港 食水標準 篩查水平 (註釋一) 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 $\alpha$ 活度 <b>Gross alpha activity</b>	貝可／公升 Bq/L	< 0.1	< 0.1	< 0.1	< 0.5	✓
總 $\beta$ 活度 <b>Gross beta activity</b>	貝可／公升 Bq/L	< 0.2	< 0.2	< 0.2	< 1.0	✓

註釋 :

- (1) 食水中的總  $\alpha$  及總  $\beta$  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。

Note:

- (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. 其他參數 Part D Other parameters

參數 Parameter	單位 Unit	監測結果 Monitoring Data (04/2017 - 03/2018)		
		最低值 Minimum	最高值 Maximum	平均值 Average
pH值 (水溫25°C時) <b>pH at 25 °C</b>	pH	7.1	9.3	8.5
色度 <b>Colour</b>	Hazen unit	< 5	< 5	< 5
混濁度 <b>Turbidity</b>	NTU	< 0.1	2.9	0.3
導電率 (水溫25°C時) <b>Conductivity at 25 °C</b>	$\mu\text{S}/\text{cm}$	58	223	128
溫度 <b>Temperature</b>	°C	12.1	33.0	24.0
總鹼度 (以 $\text{CaCO}_3$ 計) <b>Total alkalinity (as <math>\text{CaCO}_3</math>)</b>	毫克／公升 mg/L	7	84	25
總硬度 (以 $\text{CaCO}_3$ 計) <b>Total hardness (as <math>\text{CaCO}_3</math>)</b>	毫克／公升 mg/L	< 5	59	35
鈣 <b>Calcium</b>	毫克／公升 mg/L	0.9	19	12

參數 Parameter	單位 Unit	監測結果 Monitoring Data (04/2017 - 03/2018)		
		最低值 Minimum	最高值 Maximum	平均值 Average
鎂 <b>Magnesium</b>	毫克／公升 mg/L	0.37	2.8	1.5
氯化物 <b>Chloride</b>	毫克／公升 mg/L	< 5	16	9
硫酸鹽 <b>Sulphate</b>	毫克／公升 mg/L	5	23	13
正磷酸鹽 (以PO <sub>4</sub> 計) <b>Ortho-phosphates (as PO<sub>4</sub>)</b>	毫克／公升 mg/L	< 0.01	0.02	< 0.01
鐵 <b>Iron</b>	毫克／公升 mg/L	< 0.01	0.02	< 0.01
鋁 <b>Aluminium</b>	毫克／公升 mg/L	< 0.01	0.10	0.03
二氧化矽 (以SiO <sub>2</sub> 計) <b>Silica (as SiO<sub>2</sub>)</b>	毫克／公升 mg/L	1.1	21	10
錳 <b>Manganese</b>	毫克／公升 mg/L	< 0.01	0.03	< 0.01

註釋 :

Note:

以上項目量度食水的一般物理和化學特性。香港食水標準沒有以上項目的標準值。

The above parameters relate to the general physical and chemical properties of drinking water and the HKDWS does not have standard values for these parameters.

各數值是根據水務署水質科學部現行的品質保證指引所訂的要求而編製。

All values are compiled in accordance with requirements stipulated in the current quality assurance protocol of the Water Science Division of WSD.

附件 Annexes

## 附件三 Annex III

## 水務一經營帳目

## Waterworks – Operating Accounts

## 二〇一七／一八年度回顧 Review of the Year 2017-18

截至二〇一八年三月三十一日止的財政年度 For the year ended 31 March 2018

工作方面	Activities
按照水錶記錄的淡水用水量上升0.7%至6.65億立方米	Metered fresh water consumption increased by 0.7% to 665 million cubic metres
工作方面財務表現	Activities Financial Performance
收入上升2.3%	Revenue increased by 2.3%
開支上升5.7%	Expenditure increased by 5.7%
稅後虧損由二〇一六／一七年度的13.573億元增至二〇一七／一八年度的17.344億元	Deficit after taxation increased from \$1,357.3 million in 2016-17 to \$1,734.4 million in 2017-18
按固定資產平均淨值計算的回報率由二〇一六／一七年度的-2.3%降至二〇一七／一八年度的-2.8%	Return on Average Net Fixed Assets declined from -2.3% in 2016-17 to -2.8% in 2017-18

## 經營帳目 Operating Account

截至二〇一八年三月三十一日止的財政年度 For the year ended 31 March 2018

		註 Note	2018 (百萬元) \$M	2017 (百萬元) \$M
收入	Revenue	2	8,906.1	8,706.4
開支	Expenditure	3	10,640.5	10,063.7
稅前虧損	<b>Deficit before taxation</b>		(1,734.4)	(1,357.3)
稅項	Taxation	1(e), 1(f), 4	–	–
稅後虧損	<b>Deficit after taxation</b>	1(j)	(1,734.4)	(1,357.3)

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

截至二〇一八年三月三十一日止的財政年度 For the year ended 31 March 2018

		註 Note	2018 (百萬元) \$M	2017 (百萬元) \$M
固定資產平均淨值	Average net fixed assets (ANFA)	1(i), 5	<b>61,689.4</b>	56,694.5
實際回報額	Actual return		<b>(1,734.4)</b>	(1,357.3)
目標回報額	Target return		<b>1,603.9</b>	2,029.6
按固定資產平均淨值計算的	Actual return as % of ANFA			
實際回報率		1(h)	<b>(2.8%)</b>	(2.3%)
按固定資產平均淨值計算的	Target return as % of ANFA			
目標回報率			<b>2.6%</b>	3.4%

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

截至二〇一八年三月三十一日止的財政年度 For the year ended 31 March 2018

		註 Note	2018 (百萬元) \$M	2017 (百萬元) \$M
<b>可動用淨資產</b>	<b>Net assets employed</b>			
固定資產	<b>Fixed assets</b>	1(b), 1(c), 5	<b>62,466.7</b>	60,912.1
流動資產	Current assets	1(d), 6	<b>2,789.1</b>	2,719.2
流動負債	Current liabilities	7	<b>(2,608.6)</b>	(2,536.5)
流動資產淨值	Net current assets		<b>180.5</b>	182.7
			<b>62,647.2</b>	61,094.8
<b>財政來源</b>	<b>Financed by</b>			
<b>公共資本帳目</b>	<b>Public capital account</b>	1(j), 8	<b>62,647.2</b>	61,094.8

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

## 附件 Annexes

## 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%
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車輛	10%-20%
----	---------

(ii) 建造中的資產並沒有折舊撥備。

## 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) 現有存貨**

現有存貨是以加權平均法，按成本值計值。

**(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，及過往年齡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。

**(f) 遲延稅項**

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。

**(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)會被認為對僱員當年度所提供之相關服務而列作應計開支。

**(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。

**(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。

**(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。

**(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) 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) 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 of 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) 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) Actual Return on ANFA**

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

**(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) 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.

## 附件 Annexes

## 2. 收入

## 2. Revenue

		2018 (百萬元) \$M	2017 (百萬元) \$M
收費供水	Chargeable supplies	<b>2,716.9</b>	2,674.9
差餉補貼	Contribution from rates	<b>3,330.1</b>	3,187.1
政府對寬免計劃的津貼	Contribution from Government on concessions	<b>1,611.9</b>	1,576.1
政府為用戶提供免費用水的津貼	Contribution from Government on free allowance to consumers	<b>1,048.6</b>	1,067.4
政府樓宇用水	Supplies to Government establishments	<b>156.0</b>	156.4
收費、牌照及可收回支出的工程	Fees, licences and reimbursable works	<b>29.2</b>	37.1
存款利息	Interest from deposits	<b>13.4</b>	7.4
		<b>8,906.1</b>	8,706.4

政府對寬免計劃的津貼是為彌補於該年度因實行差餉寬免措施而引致的差額。

The contribution from Government on concessions is to cover the shortfall in contribution from rates resulting from the concession of rates granted during the years.

政府為用戶提供免費用水津貼的計算方法，是把二〇一六／一七年度及二〇一七／一八年度分別為12.0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，在相關年度分別為每單位3.0元和2.4元)，乘以按照水錶記錄淡水耗用量內的免費用水津貼用量。

The calculation of contribution from Government on free allowance to consumers is based on the fresh water net unit production cost of \$12.0 and \$11.7 for the year 2016-17 and 2017-18 respectively, which has included a target return on ANFA of \$3.0 and \$2.4 per unit for the respective years, multiplied by the quantity of metered fresh water consumption within the free allowance quantity.

**3. 開支****3. Expenditure**

		2018 (百萬元) \$M	2017 (百萬元) \$M
員工開支	Staff costs	<b>1,917.1</b>	1,729.6
運作及行政開支	Operating and administration expenses	<b>2,024.1</b>	1,948.7
購買東江水的成本	Purchase cost of Dongjiang water	<b>4,782.2</b>	4,569.7
折舊	Depreciation	<b>1,917.1</b>	1,815.7
		<b>10,640.5</b>	10,063.7

**4. 稅項****4. Taxation**

		2018 (百萬元) \$M	2017 (百萬元) \$M
名義利得稅	Notional profits tax charge for the year	<b>0.0</b>	0.0
以下項目的遞延稅項資產／(負債)未被確認： 未使用的稅項虧損	Deferred tax assets/(liabilities) not recognized in respect of: Unused tax loss	<b>37,367.5</b>	34,557.5
由折舊免稅額所產生的重大暫時差異	Material temporary difference arising from depreciation allowances	<b>(23,751.0)</b>	(22,626.7)

## 附件 Annexes

## 5. 固定資產

## 5. Fixed Assets

		樓宇、過濾器、喉管等 Buildings, Filters, etc..	機器及設備 Plant and Machinery	電腦硬件、軟件及系統 Computer Software & System	海水沖廁 Salt Water Flushing	船灣淡水湖 Plover Cove	萬宜水庫 High Island	水錶 Meters	車輛 Motor Vehicles	建造中的資產 Assets Under Construction	總額 Total
成本 Cost		(百萬元) \$M	(百萬元) \$M	(百萬元) \$M	(百萬元) \$M	(百萬元) \$M	(百萬元) \$M	(百萬元) \$M	(百萬元) \$M	(百萬元) \$M	
二〇一七年四月一日	At 1 April 2017	59,087.9	372.0	396.8	12,482.2	702.0	1,661.2	544.8	93.9	8,929.1	84,269.9
添置	Additions	-	0.9	8.6	-	-	-	-	23.6	3,505.2	3,538.3
轉發	Transfers	1,579.9	12.8	5.2	1,605.0	-	-	-	-	(3,202.9)	-
處置／註銷	Disposals/Write off	(11.4)	(18.2)	(0.4)	(4.3)	-	-	(22.6)	(13.5)	(62.6)	(133.0)
二〇一八年三月三十一日	At 31 March 2018	60,656.4	367.5	410.2	14,082.9	702.0	1,661.2	522.2	104.0	9,168.8	87,675.2
累積折舊	Accumulated Depreciation										
二〇一七年四月一日	At 1 April 2017	16,202.4	245.9	324.6	4,681.3	448.6	1,159.0	243.4	52.6	-	23,357.8
該年折舊	Charge for the year	1,234.8	46.0	13.9	531.3	9.3	29.2	43.9	8.7	-	1,917.1
處置／註銷後轉回	Written back on Disposals/Write off	(8.2)	(17.8)	(0.4)	(4.2)	-	-	(22.6)	(13.2)	-	(66.4)
二〇一八年三月三十一日	At 31 March 2018	17,429.0	274.1	338.1	5,208.4	457.9	1,188.2	264.7	48.1	-	25,208.5
帳面淨值	Net Book Value										
二〇一八年三月三十一日	At 31 March 2018	43,227.4	93.4	72.1	8,874.5	244.1	473.0	257.5	55.9	9,168.8	62,466.7
二〇一七年三月三十一日	At 31 March 2017	42,885.5	126.1	72.2	7,800.9	253.4	502.2	301.4	41.3	8,929.1	60,912.1

帳目不包括搬遷食水及海水配水庫往岩洞的可行性研究所涉及的資本開支。

The capital expenditure relating to the feasibility studies for relocation of Fresh Water and Salt Water Service Reservoirs into caverns has been excluded.

**6. 流動資產****6. Current Assets**

		2018 (百萬元) \$M	2017 (百萬元) \$M
現有存貨	Stocks in Hand	<b>133.4</b>	104.2
應收帳項	Debtors	<b>492.4</b>	486.8
與庫務署的往來帳	Current Account with Treasury	<b>2,163.3</b>	2,128.2
		<b>2,789.1</b>	2,719.2

**7. 流動負債****7. Current Liabilities**

		2018 (百萬元) \$M	2017 (百萬元) \$M
用戶和承建商的按金	Consumers' and contractors' deposits	<b>2,153.2</b>	2,089.6
應付帳項	Creditors	<b>455.4</b>	446.9
		<b>2,608.6</b>	2,536.5

**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 Government's investment in this utility.

		2018 (百萬元) \$M	2017 (百萬元) \$M
四月一日結餘	Balance as at 1 April	<b>61,094.8</b>	58,661.7
本年度的虧損	Deficit for the year	<b>(1,734.4)</b>	(1,357.3)
政府的額外現金投資	Additional cash investment by the Government	<b>3,286.8</b>	3,790.4
三月三十一日結餘	Balance as at 31 March	<b>62,647.2</b>	61,094.8

## 附件 Annexes

**9. 承擔**

於二〇一八年三月三十一日及二〇一七年三月三十一日，未於經營帳目作出撥備的未償還承擔如下：

**9. Commitments**

Outstanding commitments as at 31 March 2018 and 31 March 2017 not provided for in the operating accounts were as follows:

		2018 (百萬元) \$M	2017 (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	<b>10,910.5</b>	10,839.8
(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 at 31 March	<b>10,910.5</b>	10,839.8

財政年度：由每年四月一日起至翌年三月三十一日止  
年份：由每年一月一日起至十二月三十一日止

#### **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。

Financial Year: April 1 to March 31

Year (Calendar Year): January 1 to December 31

#### **Exchange Rates**

When dollars are quoted in this report, they are, unless otherwise stated, in Hong Kong dollars. Since October 17, 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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