



淡水是珍貴資源。  
Fresh Water is  
a precious resource.

馬利德工程師  
Ir MA Lee Tak

水務署署長  
Director of Water Supplies

“我們採取循序漸進、策劃周詳的方針供水，確保香港享有充足用水，以滿足人口增長及長遠發展的需要。”

“Our steady and well-planned approach to water supplies ensures that Hong Kong will have sufficient water to meet its population growth and long term development.”

## 致力確保源源不絕的供應

鑑於珠江三角洲一帶對水資源的需求不斷增長，水務署正採取策略，確保香港日後的供水穩定及富有彈性。為了實現這個目標，我們正與珠三角鄰近地區緊密合作，並制訂計劃以確保更多用水來自本地水源。

我們於二零零八年公布全面水資源管理的策略，讓香港作好準備，應付氣候急劇變化及降雨量減少等未知情況。作為珠江三角洲其他城市的良好夥伴，香港亦會大力推廣可持續用水，滿足急速增長的用水需求。策略下的主要措施，包括用水需求管理及供水管理。在實施策略的最初數年，我們一直積極推行用水需求管理措施，而目前則著手推行供水管理措施，其中一項的工作重點，是海水化淡。

本港過去約有八成食水由廣東東江輸入，其餘的供水主要來自本地集水區。為增加本地水源供水量，我們計劃興建海水化淡廠。待海水化淡廠逐步投入服務後，將可供應約10%的食水需求。

## 最新的東江供水協議

於二零一一年十二月，我們就未來三年東江水輸港協議，與廣東省當局展開的磋商順利完成。這項協議保證香港於二零一二年至二零一四年間，每年可獲得最高供水量8.2億立方米，並維持最終每年供水量11億立方米；而實際所需供水量，將每月參照降雨量及水塘存水量決定。

廣東當局繼續重點保護東江的環境及生態，確保輸港用水的水質，並採取措施監測東江水水質及集水區鄰近地方排放污水的情況。

## AIMING FOR RESILIENCE

With the growing demand for water resources across the Pearl River Delta, the Water Supplies Department is adopting a strategy that will ensure future supplies for Hong Kong are both stable and resilient. To achieve this, we are working closely with our Pearl River Delta neighbours and developing plans to secure a greater volume of water from domestic sources.

We promulgated the Total Water Management Strategy in 2008 to better prepare Hong Kong for uncertainties such as acute climate change and low rainfall and to enhance our role as a good partner to other municipalities in the Pearl River Delta by promoting the sustainable use of water to meet the rapid growth in water demand. The key initiatives under the strategy cover water demand management and water supply management. With good effort spent on water demand management initiatives in the first few years, we are now proceeding with water supply management initiatives. Desalination is a highlight.

Hong Kong used to obtain around 80 per cent of its fresh water resources from the Dongjiang River in Guangdong Province. The balance of our supplies comes from our own water catchments. To this home-grown supply, a proposed desalination plant, once progressively rolled out, will meet about 10 per cent of our fresh water requirements.

## LATEST DONGJIANG AGREEMENT

In December 2011, we completed negotiations with the Guangdong authorities on a further three year agreement. This agreement guarantees Hong Kong a supply of up to 0.82 billion cubic metres a year from 2012 through to 2014 with the ultimate annual supply output kept at 1.1 billion cubic metres. The actual amount to be drawn will be decided on a month-by-month basis, taking into account rainfall and storage in our reservoirs.

The Guangdong authorities continue to place great emphasis on the environmental and ecological protection of the Dongjiang River ensuring the quality of water delivered to Hong Kong. Controls are in place covering Dongjiang water quality and the effluent discharged from adjoining catchments.



## 替代水源

基於地理及人口因素影響，香港無法完全依賴本地的水資源來滿足人口增長及城市發展的需要。儘管如此，我們仍然努力尋找實際可行的替代水源方案。長遠而言，這些方案將成為本港珍貴的水源。

我們已在將軍澳預留一幅10公頃的土地興建海水化淡廠，而立法會亦於二零一二年六月批准撥款進行相關的可行性研究。香港對上一次建議興建海水化淡廠，可追溯至二十世紀七十年代。時移世易，現今的海水化淡技術及其相關成本與當年相距甚遠。當時採用熱蒸餾技術將海水化淡，燃料成本高昂，財政上難以負荷。研究中的將軍澳海水化淡廠將採用逆滲透原理運作，有關技術早已在澳洲、美國、新加坡及國內有成功先例。

我們致力於二零一四年底前完成擬建海水化淡廠的可行性研究及環境影響評估，然後向立法會申請其他分批撥款，以便展開詳細設計及往後的興建工程。

社會大眾日漸認識到氣候變化對本地及全球食水供應所造成的影響。國際水利專家贊同我們的海水化淡項目，本人亦深信在詳細研究結果支持下，香港市民亦會認同專家的意見。待完成法定及財務程序後，我們預計海水化淡廠將於二零二零年投入服務，初步每年產量可達5 000萬立方米，相當於全港日常生活用水的百分之五。產能經過擴充之後，海水化淡廠將可供應約一成日常生活用水。

## ALTERNATIVE WATER RESOURCES

Hong Kong, given its geography and population, cannot acquire all of its water resources locally to support growth and development. Notwithstanding, we are moving forward with viable water source alternatives that will, long term, become valuable sources of water.

In June 2012, the Legislative Council approved the funding of a feasibility study into the establishment of a desalination plant at a 10 hectare site we have earmarked in Tseung Kwan O. The technologies of desalination and the associated costs of producing desalinated water have changed considerably since Hong Kong's previous attempt at desalination in the 1970s. The technology used at the time, thermal distillation with its associated high fuel costs, made the process economically unviable. The Tseung Kwan O Plant under study is based on a technology operating successfully in Australia, the United States, Singapore and Mainland China, using the principle of reverse osmosis.

We aim to complete the feasibility study and an environmental impact assessment for the proposed desalination plant by end 2014. We will then apply to the Legislative Council for further tranches of funding which will enable us to begin detailed design and subsequently construction.

The impact of climate change on supplies of fresh water is increasingly understood by the community, from both a local and a global perspective. International water experts support our desalination project and I am confident that Hong Kong's population, with the findings of our detailed studies, will echo this support. The planned commissioning date for the plant is 2020, subject to completion of statutory and financial procedures. Its initial production capacity will be 50 million cubic metres of water per annum – equivalent to 5 per cent of Hong Kong's requirements. Upon expansion, the desalination plant will produce about 10 per cent of our requirements.

<p><b>1 馬利德工程師太平紳士</b> <b>Ir MA Lee Tak, JP</b> 水務署署長 Director of Water Supplies</p>	<p><b>2 陳光為工程師太平紳士</b> <b>Ir CHAN Kwong Wei, JP</b> 水務署副署長 Deputy Director of Water Supplies</p>	<p><b>3 錢柱森工程師太平紳士</b> <b>Ir CHIN Chu Sum, JP</b> 助理署長／客戶服務 Assistant Director/Customer Services</p>
<p><b>4 李尹璇先生</b> <b>Mr LI Wan Suen, Clement</b> 部門秘書 Departmental Secretary</p>	<p><b>5 吳孟冬工程師太平紳士</b> <b>Ir NG Mang Tung, Bobby, JP</b> 助理署長／發展 Assistant Director/Development</p>	<p><b>6 李光明先生</b> <b>Mr LEE Kwong Ming</b> 助理署長／財務及資訊科技 Assistant Director/Finance &amp; Information Technology</p>
<p><b>7 鄒志偉工程師太平紳士</b> <b>Ir CHAU Chi Wai, David, JP</b> 助理署長／機械及電機 Assistant Director/Mechanical &amp; Electrical</p>	<p><b>8 黃國雄工程師</b> <b>Ir WONG Kwok Hung</b> 助理署長／運作 Assistant Director/Operations</p>	<p><b>9 梁永廉工程師</b> <b>Ir LEUNG Wing Lim</b> 助理署長／設計及建設 Assistant Director/New Works</p>

我們亦正計劃生產再造水作沖廁及其他非飲用用途。我們將為新界東北地區的新發展區興建再造水設施，於二零二零年後逐步投入服務。

## 時刻注重節約用水

節約用水是全面水資源管理策略的重要一環。我們致力透過公眾教育活動、推廣節約用水裝置，及各種減少水管爆裂滲漏的積極措施，繼續實現節約用水的目標。我們為社會各界人士舉辦不同類型的活動，包括巡迴展覽、設計比賽及保護水資源大使選拔賽等，成功宣揚節約用水的訊息。

與此同時，推廣節約用水裝置，並提高消費者對家居用水器具用水效益的意識，亦是舉足輕重的環節。用水效益標籤計劃自二零零九年逐步推行以來，一直獲得社會各界認同。目前，用水效益標籤計劃已涵蓋花灑頭、水龍頭、洗衣機及小便器。

我們去年進行家居用水調查，藉此加深對家居用水情況的了解。我們將根據調查結果，推出新制訂的節約用水措施及指引，協助消費者與我們攜手實現節約用水的目標。

We are also targeting the production of reclaimed water for toilet flushing and other non-potable uses. Reclamation facilities will be built to supply the new development areas of the North East New Territories progressively after 2020.

## CONTINUING FOCUS ON CONSERVATION

Conservation is a key initiative of the Total Water Management Strategy. We aim to continue achieving reductions in water consumption through public education campaigns, promotion of water saving devices and active measures to reduce water main bursts and leaks. Campaigns targeting different sectors of the community, including road shows, design competitions and a water conservation ambassador selection programme, are successfully spreading conservation messages.

In a similar way, the promotion of water saving devices and consumer awareness of the water efficiency of common household appliances is also important. The Water Efficiency Labelling Scheme, rolled out progressively since 2009, continues to gain credit. The scheme now covers shower heads, taps, washing machines and urinals.

A survey of domestic water consumption last year helped us gain a better understanding of household water use. As a result, new conservation measures and guidelines will be introduced to assist consumers to help us meet conservation goals.



主禮節約用水比賽啟動儀式。  
The launch ceremony for a water conservation competition.



遊覽九龍水塘群，慶祝香港供水160年。  
Tour of Kowloon Group of Reservoirs to celebrate 160 Years of Water Supply in Hong Kong.

至於水務資產方面，我們需要進行修補工程的水管全長3 000公里，當中超過六成水管已經更換或修復，水管爆裂事故因此由每年數千宗，銳減至二零一一至二零一二年度的數百宗。整體水管漏水比率由二零零一年的百分之二十五，減至二零一一年的百分之十九。待維修及修復計劃於二零一五年完工後，整體水管漏水比率可望進一步下降至僅百分之十五。

我們採取積極主動的方針管理水管網絡的用水流失情況，其中包括推行水壓管理系統，將水管壓力調節至最理想水平。我們最近更與專門承造商訂立以成效為本的合約，合約酬金將按照檢測所節省水費的百分比計算，藉此鼓勵承建商採用新技術及設備，檢測用水流失情況及維修水管。

### 廣納社區英才

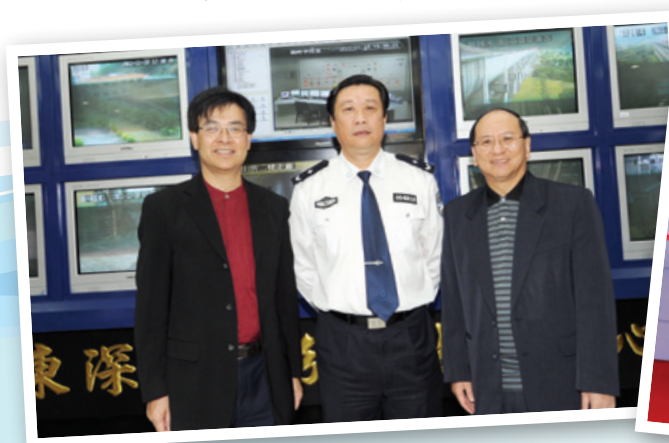
我們亦已增加水質事務諮詢委員會的成員人數及擴大其工作範疇。過往，委員會成員主要專注於東江輸水設施的運作及監測水質。透過增加成員人數，我們邀請了具豐富經驗及創意的英才加入。在新架構之下，委員會將同時兼顧海水化淡、污水循環再用、雨水收集及其他水資源方案（例如提取深層地下水資源）可行性等範疇。委員會現已易名為水資源及供水水質事務諮詢委員會。借助外界英才的專業知識，我們可以穩步推行水資源政策方面的各項討論及方案。

In terms of our own assets, we have replaced or rehabilitated more than 60 per cent of the 3 000 kilometres of mains that require remedial work. This has resulted in a significant reduction in the incidence of water main bursts – from thousands to just a few hundred in 2011-2012. The leakage rate across all mains has been reduced from 25 per cent in 2001 to 19 per cent in 2011. Once the repair and rehabilitation programme is completed in 2015, I expect this rate to drop to just 15 per cent.

We have adopted a proactive approach to managing water loss across the mains network. This includes pressure management systems to optimise water mains pressure and, more recently, we have adopted performance-based contracts with our specialist contractors. Remuneration is based on a percentage of the cost of the water saved due to detection. This encourages contractors to apply new technology and equipment to the detection of water loss and the repair of mains.

### ACCESSING COMMUNITY EXPERTISE

We have also enhanced the membership and scope of the Advisory Committee on the Quality of Water Supplies (ACQWS). In the past this committee with its community members, has focused primarily on the operational aspects of the Dongjiang water transfer facilities and water quality monitoring. By enlarging its membership, we broaden our access to people with rich experience and new ideas. Under its new remit, the committee will now also look at desalination, water recycling, rainwater harvesting and the viability of other water resource options such as the extraction of deep-seated underground water resources. The committee has been renamed as the Advisory Committee on Water Resources and Quality of Water Supplies (ACRQWS). By leveraging the knowledge of experts outside the Department, we can steadily progress water policy discussions and options.



與水質事務諮詢委員會主席參觀東江供水工程安全監控中心。  
Visit to the Dongjiang Water Supply Scheme Safety Monitoring and Control Centre with the Chairman of ACQWS.



九肚高地食水配水庫開幕典禮。  
Kau To High Level Fresh Water Service Reservoir Opening Ceremony.

## 鼓勵員工發揮創意

本署員工無懼挑戰，銳意發掘能夠安全、有效及可持續供水的嶄新方式，可謂任重道遠。本人欣然匯報，本署推行的多項計劃獲得本地及全球一致好評。本署與香港理工大學攜手研發的內聯閉式水力發電系統，不但節省成本，而且操作簡便，可用作偏遠地區供水網絡的儀器的電源。是項發明榮獲二零一二年日內瓦發明展銀獎。我們繼續盡可能使用太陽能，並開發海傍抽水站的水力發電自動清潔裝置。我們亦正研究利用斑馬魚作為生物監測工具，在原水受到污染時發出預警。我們更經常與本港以至全球各地的高等學府攜手合作，開展研究項目。

本署致力培育積極進取的人才，讓他們在工作環境中獨立自主，創造理想。各級員工亦不斷發掘各個範疇力求貢獻更多，踴躍參與培訓計劃，培養自己在特定領域的專長。本人衷心感謝全體員工、諮詢小組的成員和工商界的合作夥伴，在過往一年作出的貢獻，並提出寶貴意見。



水務署春節嘉年華會內由同事設計的攤位遊戲。  
Stall game designed by colleagues at WSD Chinese New Year Carnival.

## ENCOURAGING STAFF INNOVATION

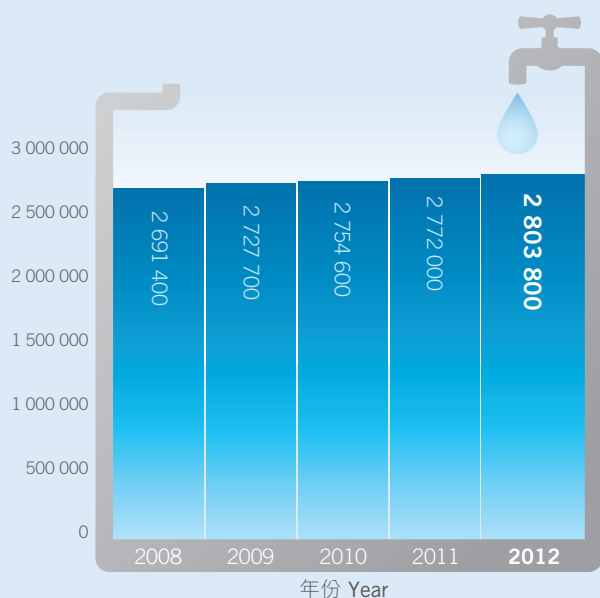
Staff members of the Department have clearly taken up my earlier challenge to seek innovative ways that enable us to deliver water safely, efficiently and in a sustainable manner. We are charged with a great responsibility and I am pleased to report that the Department has received both local and global recognition for a number of initiatives. An in-line hydroelectric generator, developed by the Department in collaboration with the Hong Kong Polytechnic University, has proven to be a cost effective and convenient power source to operate in-line instruments across the distribution network in remote areas. The generator was awarded a silver medal at the Geneva Invention Expo 2012. We are continuing to use solar energy where possible and to develop wave energy driven self-cleaning devices at seafront pumping stations. We are also investigating the use of zebrafish as bio monitors to give early warning of raw water contamination. Our research projects are often conducted in partnership with Hong Kong and international universities.

We are a department that is producing motivated and talented people who, in turn, are creating a vision and taking ownership of their work. Staff members at all levels are identifying areas where they can enhance their contribution, participating in training programmes and specialising in areas of particular interest. I sincerely thank all staff, along with the community members of our advisory groups and our business and industry partners, for the work undertaken and the advice given over the past 12 months.

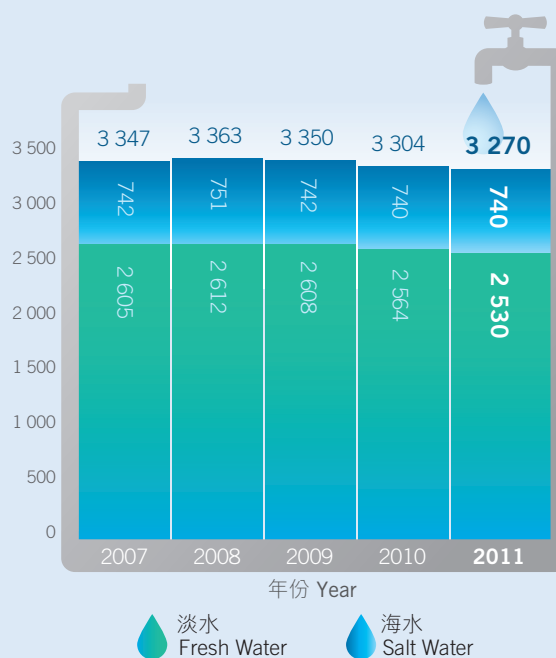


於「2011年公務員優質服務獎勵計劃」頒獎禮上代表部門領獎的同事。  
WSD representatives at the prize presentation ceremony of the Civil Service Outstanding Service Award Scheme 2011.

客戶數目 (截至二零一二年三月三十一日)  
Number of Accounts (as at 31 March 2012)



二零一一年總平均日耗水量  
2011 Total Average Daily Water Consumption  
百萬公升／日 million litres per day



我們採取循序漸進、策劃周詳的方針，供應彌足珍貴的水資源，確保香港市民享有充足用水，滿足人口增長及長遠發展的需要。我們深信，本署正以因時制宜及可持續發展的方式實現這個目標，讓未來一代見證美好成果。

Our steady and well-planned approach to the delivery of what is a critical resource ensures that Hong Kong will have sufficient water to meet its population growth and long term development. We are confident that we are achieving this goal in a manner that will be judged by future generations as both resilient and sustainable.



馬利德工程師  
水務署署長  
二零一二年八月三十一日

Ir MA Lee Tak  
Director of Water Supplies  
31 August 2012