Public Account Committee
Public Hearing on 1 December 2011

Opening Remarks of the Director of Water Supplies

Water Supplies Department (WSD) accepts the recommendations of the Director of Audit's Report No. 57 Chapter 12 (the Report), some of which well support the new initiatives being pursued by the WSD progressively in light of the development of international best practices and work priorities.

2. The Committee may wish to note that the volume of unauthorised water consumption is only a notional estimate as specifically highlighted in the Report. The reason is that such consumption by nature cannot be measured until discovery of the unauthorised use, which should however be curbed as soon as it is identified. The adoption of a notional estimate with regard to local conditions is in fact the international best practice. Literature review revealed that figures of 0.5% to 4.3% have been used in the Region. The WSD adopts 2%, a figure close to the average of the range, for estimation purpose, in view of the state of the development of Hong Kong.

3. Unauthorised uses could be transient in nature, without permanent plumbing fixtures, undertaken within private areas or even concealed with concrete covers and the like. The detection of unauthorised uses is therefore no easy task, relying very much on inspections by the Prosecution Unit of the WSD and reports by the WSD front-line colleagues, such as meter readers and customer service inspectors, of irregularities spotted during their daily work of meter reading and inspection of plumbing of private parties following complaints, for example about water seepage. Referral by members of the public is another important source of information for revealing unauthorised uses. The WSD agrees that more extensive promotion and education activities and collaboration with different sectors of the Community would help in tapping the supporting resources of the Community, in particular the respective management authorities/agencies or work parties, to widen the detection webs for unauthorised uses. These could help to facilitate follow up actions by the WSD and the handling of the issue in a more cost effective manner.

4. In 2011, the WSD has started to adopt a risk-based approach for detecting possible unauthorised water consumptions through comparison of the flow data registered by flow meters of individual district meter areas

with the aggregated meter consumption figures of individual consumers in the corresponding areas. Discrepancies between these two sets of figures indicate abnormalities in consumption. The WSD will then take follow up investigation, site inspection and prosecution action, if unauthorised use is identified. The WSD will also explore the possibility of using data mining techniques to evaluate changes of individual consumers' water usage and, if possible, compare them with those of similar types of consumers as an aid towards identifying suspected unauthorised uses.

5. On the promotion of collaboration, the WSD has already liaised with the Government works departments and Food and Environmental Hygiene Department for control of unauthorised water consumption within their works sites and premises. The Department has also issued circulation letters to all estate management companies to solicit their support against unauthorised uses. The WSD is having discussions with the plumbing associations and institutions, and contractors association for collaboration on reporting unauthorised uses. Publicity and education against unauthorised uses will also be stepped up, riding on the extensive promotion activities of the Department on water conservation.

6. With regard to the concern on the accuracy of meters and the replacement programme of old meters, the WSD would like to advise the Committee that the mechanical meters being used by the WSD are the most cost-effective type of meters for measuring consumption, though upon aging they tend to under-register. The WSD aims to continue with the replacement of the 15 mm diameter meters, which are mainly used for domestic consumers, at 12-year intervals and the medium and large size meters, which are mainly used for non-domestic consumers, at intervals of 7 and 4 years respectively. The replacement intervals are set on the basis of cost-effectiveness consideration which, in essence, is to replace an old meter when the possible revenue forgone due to under-registration exceeds the cost of replacement. With the meter procurement contracts specifying an accuracy limit of ±2% and the Waterworks Regulations specifying an accuracy limit of ±3%, the 2% under-registration of the whole meter fleet as mentioned in the Report should be regarded as performance within the allowable limits and the corresponding under-registration, an allowable operational tolerance rather than an under-recovery of revenue.

7. The WSD has just completed a new round of study on the accuracy of the 15 mm diameter meters and is embarking on a similar study on the accuracy of the medium and large size meters. The percentage of under-registration of the whole meter fleet is now down to -1.6%, and for the

15 mm diameter meters, in particular, to -0.8%.

8. The effort of the WSD in rejuvenating the meter fleet is demonstrated by the progressive increase in the percentage of meters with service year within the optimum values. The percentage has increased from about 72% in 2007 to about 95% in 2011 for 15 mm diameter meters; about 15% in 2007 to about 71% in 2011 for medium size meters and about 5% in 2007 to about 75% in 2011 for large size meters. At present, about 230 000 meters are being replaced each year at a cost of some $50 million.

9. Focus on water meter replacement in the past years has been placed on the rejuvenation of the largest number of water meters for increasing the percentage of the meter fleet within the optimum service life. With the efforts in recent years, the WSD considers that more attention can now be paid to replacing meters with high service years or high recorded consumption left over in the previous rounds due to different complications.

10. For the large size meters, the WSD is in parallel exploring the cost-effectiveness of using more durable electro-magnetic (EM) meters. For reference, the purchase cost of an EM meter of 300 mm diameter has come down to about $40 000. Although the EM meter is still about seven times more costly than a mechanical meter, the purchase cost of which is about $5 000, it is gaining popularity due to its durability and lower susceptibility to accuracy deterioration.

11. Replacement of aged meters has occasionally been held up by the need to sort out various issues such as blockage of access, agreement of a suitable time slot for stoppage of water supply for meter replacement, awaiting the consumer to repair the dilapidated plumbing within his premises, and on occasions pending the undertaking of building renovation works. To facilitate meter replacement under such circumstances, the WSD is considering the viability of applying for warrant from the magistracy as needed for entry into the premises to effect sufficient works including the clearance of obstruction to access, repair to plumbing and building fabrics for meter replacement with all costs so incurred recovered from the parties concerned.