CHAPTER 6

THE GOVERNMENT OF THE HONG KONG SPECIAL ADMINISTRATIVE REGION

GENERAL REVENUE ACCOUNT

GOVERNMENT DEPARTMENT

Transport Department

Management of on-street parking spaces and parking facilities

Audit Commission
Hong Kong
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MANAGEMENT OF ON-STREET PARKING SPACES AND PARKING FACILITIES

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Summary and key findings

A. **Introduction.** Over the years, the Government has continued to implement the policy of encouraging the private sector to develop and operate public car parks in order to ease the shortage of parking spaces. As at 1 April 1999, there were 560,600 parking spaces available in the territory. The Government provided 34,400 parking spaces in the form of on-street car parks and multi-storey car parks. The majority of these parking spaces, totalling 26,660 (or 78%), were on-street parking spaces. Audit recently conducted a review on the management of on-street parking spaces and parking facilities. The audit findings are summarised in paragraphs B to J below.

B. **On-street parking.** In 1981, the Administration stated in an Executive Council Memorandum that parking meters would be extended to areas where parking was then available free of charge. The eventual aim was to extend metering to all parts of the urban areas and the New Towns where on-street parking could be permitted and to charge the appropriate rate in each area according to demand. The White Paper on Transport Policy (1990) also states that the Government intends to continue the policy of revising parking charges regularly to maintain a 15% availability rate so as to ensure the efficient use of parking spaces. In April and May 1999, Audit conducted a utilisation survey of non-metered parking spaces located in built-up areas. The survey showed that spaces for both private cars and goods vehicles were in great demand, as evidenced by their 90% and 87% utilisation respectively. Audit estimates that metering the parking spaces in built-up areas will generate a recurrent revenue of $23 million a year (paras. 2.1 to 2.12).

C. In 1972, the Administration stated in an Executive Council Memorandum that the rule of not charging for metered parking spaces on Sundays and public holidays had become anomalous when the demand for parking was often as high as that in the daytime on weekdays. However, as at 1 April 1999, only 2,360 (or 15%) of the total 15,520 metered spaces operated on Sundays and public holidays. Based on the utilisation surveys conducted on three Sundays in March 1999, Audit found that the utilisation rate was very high (at 97%). Audit estimates that extending metering to Sundays and public holidays for parking spaces with a high utilisation rate will generate a recurrent revenue of $49 million a year (paras. 2.13 to 2.20).

D. As at 1 April 1999, there were 4,300 on-street parking spaces for motor cycles provided by the Government free of charge. In April and May 1999, Audit conducted a utilisation survey and found that the overall utilisation rate of the parking spaces far exceeded the 85% benchmark (i.e. 15% availability rate) set in the 1990 White Paper. Audit estimates that metering the motor cycle parking spaces with a high utilisation rate will generate a recurrent revenue of $34 million a year (paras. 2.25 to 2.30).

E. **Contract for the management of parking meters.** Since March 1994, the Transport Department has contracted out the management of all on-street parking meters in the territory to the private sector. The contractor's remuneration is in the form of sharing the parking meter revenue with the Government. In March 1999, the Financial Secretary increased the meter charge by 100%. The Government expected the increase to produce a net additional revenue of $190 million in 1999-2000. However, the fee was reverted back to its original level following the rejection of the increase by the Legislative Council in July 1999. If the increase had not been rejected, the contractor would have reaped a windfall of $63.4 million in 1999-2000 (paras. 3.1 to 3.11).

F. The current contract is for a period of four years ending in September 2001. The tendering exercise was conducted in mid-1997. Of the three pre-qualified tenderers invited to tender, only one submitted a bid. Because of the lack of competition, it is questionable whether the bid submitted was reasonably priced (paras. 3.15 to 3.19).

G. **Electronic parking devices.** There are two types of electronic meters in use in the territory: electronic parking meter (EPM) and pay-and-display machine (PDM). As at 1 April 1999, 79 PDMs were installed at 24 locations. Audit estimates that $4.1 million of the capital cost of $5.8 million could have been saved if EPMs had been installed instead (paras. 4.1 to 4.7).

H. E-Park cards were introduced for use from April 1998. The cards have stored values of $100, $200 and $300. Each e-Park card costs $6.50 to the Government, irrespective of its stored value. Therefore, it is more economical to sell the high value cards to motorists. However, so far the $100 card has been the most popular among motorists, representing 78% of the cards sold in 1998-99. Furthermore, it seems that an improved card system should be explored (paras. 4.11 to 4.18).

I. **Parking facilities.** In December 1997, a park-and-ride trial scheme was introduced. The car park for the scheme was at the site adjacent to the Sheung Shui Railway Station. Audit observed that the usage by park-and-riders had decreased from its peak of a daily average of 155 users in March 1998 to about 100 in early 1999. Moreover, according to a survey carried out by a consultant of the Kowloon-Canton Railway Corporation in January 1999, nearly half of the park-and-riders would not have driven their cars to busy urban areas if park-and-ride facilities had not been provided. Audit has reservations as to whether the objective of reducing traffic congestion and parking demand in busy urban areas has been achieved (paras. 5.1 to 5.15).

J. In October 1996, the Hong Kong Planning Standards and Guidelines (HKPSG) were revised to require new developments to provide parking spaces for motor cycles at a rate of 5% to 10% of the total provisions for private cars, and five visitor car parking spaces for each residential block. An audit examination found that in granting the land lease for new residential developments, the non-compliance rate for the provision of motor cycle parking spaces was 81% and that for visitor car parking spaces was 75% (paras. 5.19 to 5.25).

K. **Audit recommendations.** Audit has made the following main recommendations that the Commissioner for Transport should:

(a) consider installing meters for parking spaces which have a high utilisation rate (second inset of para. 2.21);

(b) consider extending meter operations to Sundays and public holidays for parking spaces which have a high utilisation rate (fourth inset of para. 2.21);

(c) consider charging a fee for the use of on-street motor cycle parking spaces with a high utilisation rate (para. 2.31);

(d) critically examine the two-tiered revenue sharing formula so as to allow the contractor to recover no more than his marginal cost of implementing the Government's decision to increase revenue from parking meter charges (para. 3.12);

(e) take measures to increase competition in future tender exercises for the management of parking meters (para. 3.20);

(f) install PDMs only at locations where the installation of EPMs is not suitable. In the meantime, the spending of the funds earmarked for purchasing additional PDMs should be put on hold (para. 4.8);

(g) encourage the use of high value e-Park cards and expedite the feasibility study on the use of an open smart card system (para. 4.19); and

(h) review the park-and-ride trial scheme to ascertain whether, and to what extent, the traffic management objective of reducing traffic congestion in urban areas has been achieved (first inset of para. 5.16).

L. **Response from the Administration.** The Commissioner for Transport is in general agreement with the audit recommendations.

PART 1: INTRODUCTION

1.1 The general policy of the Government on motor vehicle parking facilities is contained in the White Paper on Transport Policy (1990), which states that:

> ***"It is necessary to strike a balance in the provision of parking facilities. Over-provision in busy areas will aggravate congestion by encouraging the use of private cars. On the other hand, suppressing the provision may cause congestion with motorists circulating on the road to find parking spaces, divert parking and congestion to uncontrolled areas, and increase illegal parking and enforcement problems."***

1.2 Over the years, the Government has continued to implement the policy of encouraging the private sector, through the lands sales programme, to develop and operate public car parks in areas of demand and where the surrounding roads are capable of handling the additional traffic generated. To ease the shortage of parking spaces, the Hong Kong Planning Standards and Guidelines (HKPSG) have also been revised to increase the provision of parking spaces in new developments.

1.3 As at 1 April 1999, there were 499,300 licensed vehicles and 560,600 parking spaces in the territory, as shown in Table 1 below.

Table 1

Number of licensed vehicles and parking spaces in Hong Kong

Types of vehicles		Number of licensed vehicles	Number of parking spaces
Private cars (including taxis)		335,600	
Light vans		40,200	
	Sub-total	375,800	502,300
Goods vehicles		73,900	
Coaches and other vehicles		26,100	
	Sub-total	100,000	45,600
Motor cycles		23,500	12,700
Total		**499,300**	**560,600**

Source: TD's records

1.4 Although there is an overall surplus of private car parking spaces, some districts still experience a shortfall. For goods vehicles and coaches, the Government continues to pursue measures to increase the supply of parking spaces (e.g. provision of parking spaces in multi-storey and short-term tenancy vehicle parks, and in new developments). For motor cycles, the provision of parking spaces in new developments was also increased when the HKPSG were revised in October 1996.

On-street parking spaces

1.5 The vast majority of 560,600 parking spaces available in the territory as at 1 April 1999 were provided by the private sector. Only 34,400 were provided by the Government in the form of on-street car parks or multi-storey car parks. Of these 34,400 government-owned car parks, 26,660 (or 78%) were on-street parking spaces. On-street parking spaces not only serve the purpose of traffic management, but also provide a source of revenue for the Government. Parking fees are reviewed from time to time to regulate usage. The net revenue from metered on-street parking spaces is estimated at $206 million in 1999-2000. A breakdown of these 26,660 on-street parking spaces is shown below.

Breakdown of on-street parking spaces

Types of vehicles	Number of on-street parking spaces	
Private cars (and light vans)	18,600	
Goods vehicles	3,200	(Note 1)
Coaches (and others vehicles)	560	(Note 2)
Motor cycles	4,300	
Total	**26,660**	

Source: TD's records

Note 1: 1,200 temporary night time parking spaces are excluded.

Note 2: 250 parking spaces designated for refuse collection, post office deliveries and rehabus services, etc. are excluded.

Audit review

1.6 Audit has recently conducted a review on the management of on-street parking spaces and parking facilities. The objectives of the audit are:

— to evaluate whether on-street parking spaces have been administered efficiently and effectively (PART 2);

— to examine the administration of the contract for the management of parking meters (PART 3);

— to review the procurement of electronic meters and the use of e-Park cards (PART 4); and

— to review the park-and-ride facilities at the Sheung Shui Railway Station, and the provision of motor cycle and visitor parking facilities in new developments (PART 5).

1.7 Audit observes that there is room for improvement in the management of parking spaces and parking facilities. Audit has also identified opportunities for increasing the revenue from parking meters.

PART 2: ON-STREET PARKING

2.1 This PART examines the administration of on-street parking spaces and evaluates whether these government-owned parking spaces have been managed properly to improve traffic and produce a satisfactory level of revenue.

Background

2.2 Where the traffic situation permits, on-street parking spaces are provided to meet the demand for parking. When demand for short-term parking is high and there is a traffic management need to ration the use of parking spaces, the use of on-street parking spaces is regulated through a charging system.

2.3 In accordance with the Road Traffic (Parking) Regulations (Cap. 374), the Commissioner for Transport may designate any place on a road as a parking place, with or without parking meters, by means of traffic signs and road markings. The Transport Department (TD) is responsible for the management and operation of on-street parking spaces. The Hong Kong Police Force (Police) is responsible for law enforcement. Fixed Penalty Tickets are issued to vehicles parked at non-designated car parking spaces or at parking spaces with expired meters.

Principle of on-street parking

2.4 The principle of on-street parking, which was accepted by the Executive Council (ExCo), may be found in a submission by the Transport Advisory Committee (TAC) (Note 1) in 1967. The TAC's submission stated that:

— where and when free on-street parking was insufficient to meet demand, the space should be metered and prices set to ensure that about 15% of the spaces were maintained empty;

— this basic principle should apply to all areas and all types of vehicles; and

— the times of the day and days of the week that charges should be made should be those times and days when demand for free parking was in excess of supply.

Note 1: *The function of the TAC is to advise the Chief Executive on broad issues of transport policy with a view to improving the movement of both people and freight. The TAC has 14 members, including three government officials. The Secretary for Transport is the Vice-Chairman; the Commissioner for Transport and the Commissioner of Police (or his representative) are members.*

2.5 This principle is reaffirmed in the White Paper on Transport Policy (1990) which states that:

> ***"To ensure efficient use of parking spaces in Government car parks and on-street metered parking spaces, Government intends to continue the present policy of revising parking charges regularly to maintain a 15% availability rate."***

In practice, meter parking charges only operate between 8:00 a.m. and midnight. This is because the Administration considers that the traffic after midnight is light and the demand for short-term parking is not great. It is not considered necessary from the transport management point of view to regulate the use of on-street parking meters through charging after midnight.

Metering of on-street parking spaces

2.6 In 1981, the Administration stated in an ExCo Memorandum that as there was only limited space in the urban areas to provide on-street parking facilities, the use of available kerbside space must be rationed effectively. Parking meters would be extended to areas where parking was then available free of charge. **The eventual aim was to extend metering to all parts of the urban areas and the New Towns where on-street parking could be permitted, and to charge the appropriate rate in each area according to demand.**

2.7 As at 1 April 1999, there were 22,360 on-street parking spaces for private cars, goods vehicles and coaches. 15,520 (or 69%) were metered and 6,840 (or 31%) were not metered, as shown in Appendix A.

2.8 The TD has a parking meter expansion programme to install parking meters for on-street parking spaces. In the five-year parking meter expansion programme from 1999-2000 to 2003-2004, the TD plans to install 2,500 parking meters for existing non-metered parking spaces. However, by 2004, there will still be 4,340 (6,840 less 2,500) non-metered parking spaces.

Audit survey of non-metered parking spaces

2.9 An audit analysis shows that of the 4,340 non-metered parking spaces which have not been included in the TD's parking meter expansion programme, 1,620 are located in built-up areas (including urban areas and New Towns). The remaining 2,720 are located near country parks, beaches or in less developed areas.

2.10 To ascertain the utilisation of non-metered on-street parking spaces in built-up areas, Audit selected, on a random basis, parking areas covering 913 parking spaces for conducting a survey in the daytime (between 10:00 a.m. and 5:30 p.m.) in April and May 1999. The results of the survey are summarised in Table 2 below.

Table 2

Audit survey in April and May 1999
of utilisation of non-metered parking spaces

	Parking spaces surveyed	Parking spaces occupied	Utilisation rate
	(a)	**(b)**	**(c) = (b)/(a) × 100%**
(A) For private cars (and light vans)			
District			
Tsuen Wan	230	230	100%
Tseung Kwan O	152	149	98%
Sha Tin	47	46	98%
Tuen Mun	113	97	86%
Yuen Long	202	151	75%
Total	**744**	**673**	**90%**
(B) For goods vehicles			
District			
Western	24	24	100%
Tuen Mun	8	8	100%
Yuen Long	111	94	85%
Tseung Kwan O	11	9	82%
Kwun Tong	15	12	80%
Total	**169**	**147**	**87%**

Source: Audit's survey

Audit observations on metering

2.11 **The utilisation rate of the 913 (744 + 169) non-metered parking spaces covered by the audit survey in April and May 1999 was very high. The rate ranged from 75% to 100% for private cars and 80% to 100% for goods vehicles. The survey shows that there is a great demand for non-metered parking spaces in built-up areas** (see Photograph 1 on the centre pages). Because the demand might be affected when the meter charge was reverted back from $4 to $2 for every 15 minutes in July 1999 (see paragraph 3.6 below), Audit conducted a second survey of 352 (39%) of the 913 non-metered parking spaces in August 1999. The second survey indicated that there was no significant change in the utilisation rate (see Appendix B for details). Because the demand for these parking spaces remains high, metering will ration the use of such spaces more effectively. **Audit estimates that metering the 1,620 on-street parking spaces in built-up areas will generate a recurrent revenue of $23 million a year (see Appendix C). The cost of installing a meter is expected to be paid back in about three months.**

2.12 The TD has informed Audit that the installation of parking meters is for traffic management, more than for raising revenue. It is neither the policy nor the practice to meter all designated on-street parking spaces. However, Audit considers that the present practice is at variance with what was stated in the 1981 ExCo Memorandum (see paragraph 2.6) that the eventual aim was to extend metering to all parts of the urban areas and the New Towns where on-street parking could be permitted.

Utilisation of metered parking spaces on Sundays and public holidays

2.13 In 1972, the Administration stated in an ExCo Memorandum that the rule of not charging for metered parking spaces on Sundays and public holidays (and after 7:00 p.m. in the evenings from Monday to Saturday) had become anomalous when the demand for parking was often just as high as that in the daytime on weekdays. The Administration proposed that the period of charging for metered spaces should be extended to include Sundays and public holidays (and to midnight from Monday to Saturday). As a result, ExCo accepted a proposal to amend the Road Traffic (Parking) Regulations (Cap. 374) allowing parking meters to be chargeable on Sundays and public holidays, and to midnight from Monday to Saturday.

2.14 In the 1981 ExCo Memorandum referred to in paragraph 2.6, it was also stated that there would be a programme for the extension of meter operations to Sundays and public holidays in 1983-84. ExCo asked the Commissioner for Transport to examine the feasibility of extending meter operations to Sundays and public holidays earlier than the target date quoted in the Memorandum. The Commissioner stated that he intended to accelerate the extension of meter operations to Sundays and public holidays, so far as this remained consistent with the emerging problems and staff requirements. Meter operations on Sundays and public holidays were progressively introduced with effect from January 1982.

2.15 In 1982, the charging of a fee at on-street parking spaces on Sundays and public holidays was first introduced in 13 streets in Causeway Bay and Wan Chai to ration the great demand and to prevent long-term parking. The scheme was later introduced in Tsim Sha Tsui in 1983 and gradually extended to other areas.

2.16 Despite the fact that the scheme started in 1982, as at 1 April 1999, only 2,360 (or 15%) of the total 15,520 on-street metered parking spaces operated on Sundays and public holidays. A geographical distribution of the parking spaces is shown in Appendix D.

Audit observations on utilisation of on-street parking spaces on Sundays

2.17 Between October 1998 and March 1999, the TD's contractor responsible for the management of meters conducted surveys of on-street metered parking spaces to ascertain the utilisation after the installation of electronic meters. Surveys were conducted on three Sundays in March 1999 in respect of 10,500 metered parking spaces (or 68% of the total) not operating on Sundays and public holidays. Based on the survey results, Audit analysed the utilisation rate of these 10,500 parking spaces on Sundays. The results of the analysis are shown in Table 3 below.

Table 3

Utilisation rate of 10,500 on-street parking spaces not requiring fee on Sundays

Region	Number of parking spaces	Utilisation (%)
Hong Kong	1,500	95
Kowloon	6,300	99
New Territories	2,700	95
Overall	**10,500**	**97**

Source: Audit's analysis based on TD's records

2.18 **The results of the analysis show that for most of the parking spaces with meters not operating on Sundays, the utilisation on Sundays was very high (at 97%) (see Photograph 2 on the centre pages). Audit noted that many vehicles stayed in the parking space for considerable length of time (see Photographs 3A and 3B on the centre pages). In some cases, vehicles stayed in the parking spaces for the whole day. Apparently the use of the parking spaces was not rationed effectively and this had resulted in day-long parking. This is at variance with the objective of providing on-street parking spaces to cater for the needs of short-term parking, so as to provide a convenient facility for motorists requiring access to adjacent premises for limited periods of time (paragraph 4.2 of the Report of the Working Group on Parking Policy, which was accepted by the TAC in 1981). Metering of these on-street parking spaces on**

Sundays and public holidays is in line with the traffic management objective of deterring long-term parking and will also generate revenue to the public purse.

2.19 As at 1 April 1999, there was a total of 13,160 metered parking spaces not operating on Sundays and public holidays. **Audit estimates that extending metering to Sundays and public holidays for parking spaces with a high utilisation rate will generate a recurrent revenue of $49 million a year. Computations are at Appendix E.**

2.20 In response to Audit's enquiries, the TD has said that metering on Sundays and public holidays, when mechanical parking meters were in use, demanded a large amount of staff resources for coin collection. This problem is now relieved with the use of electronic meters. The TD now already has a plan to charge fees on Sundays and public holidays for about 3,000 metered spaces, taking traffic management and local factors into account.

Audit recommendations on metering

2.21 **To make more efficient and effective use of on-street parking spaces so as to achieve the traffic management objectives and increase revenue for the public purse, Audit has *recommended* that the Commissioner for Transport should:**

- **fulfil the aim of extending metering to all parts of the urban areas and the New Towns where on-street parking could be permitted, as stated in the 1981 ExCo Memorandum;**

- **consider installing meters for parking spaces which have a high utilisation rate;**

- **conduct periodical utilisation surveys of non-metered parking spaces, particularly those in the urban areas and the New Towns, to ascertain the need for metering; and**

- **consider extending meter operations to Sundays and public holidays for parking spaces which have a high utilisation rate.**

Response from the Administration

2.22 The **Secretary for Transport** has said that he has no difficulty with the recommendations on metering. He trusts that the Commissioner for Transport will seriously consider the recommendations having regard to public views, resources implication, operational and enforcement consideration. However, he would stress that from the transport policy point of view, the metering

of on-street parking spaces is not for revenue raising, but rationing the use of such parking spaces in a more effective way so as to meet the need for short-term parking.

2.23 The **Commissioner for Transport** has said that he agrees with the audit recommendations. He has also said that:

— the installation of parking meters at on-street parking spaces is for traffic management reasons, i.e. to ration the heavy demand for parking and to reduce traffic problems arising from vehicles circulating for available parking spaces. Maximisation of meter revenue is not the primary objective in the provision of parking meters;

— the TD has consistently followed the broad target of expanding parking meters as endorsed by ExCo in 1981, taking account of parking demand, traffic management needs, local views and enforcement requirements. The TD will continue to install 2,500 parking meters based on the rolling Five Year Meter Expansion Programme;

— utilisation rate forms part of the principles of on-street metering. Other factors, such as those mentioned in the second inset above, will also have to be taken into consideration. Due to manpower resources implication, priority for utilisation surveys will be given to urban and commercial areas where parking demand is likely to be high; and

— the TD will continue to extend parking meters to operate on Sundays and public holidays for about 3,000 meters at suitable locations. Implementation will be subject to the normal assessment criteria.

2.24 The **Secretary for the Treasury** has said that, from a revenue angle, she supports the audit recommendations that consideration should be given to extending metering and meter operations to Sundays and public holidays for parking spaces.

On-street parking for motor cycles

2.25 As at 1 April 1999, there were 23,500 licensed motor cycles and 12,700 parking spaces for motor cycles in the territory. Of the 12,700 parking spaces for motor cycles, 4,300 (or 34%) were on-street parking spaces, and the remaining 8,400 (or 66%) were off-street parking spaces. A geographical distribution of the 4,300 on-street parking spaces is at Appendix F. The size of an on-street parking space for motor cycle is about one metre by two metres. All the 4,300 on-street parking spaces provided by the Government for parking of motor cycles are free of charge.

Audit survey of utilisation of on-street parking for motor cycles

2.26 In recent years, the TD has not conducted any survey of the utilisation of on-street parking spaces for motor cycles. In April and May 1999, Audit conducted a survey of the utilisation of 620 (or 14% of the 4,300) on-street parking spaces for motor cycles in the daytime. These 620 parking spaces are located in built-up areas (including the urban areas and the New Towns). The results of the survey are shown in Table 4 below (see Photograph 4 on the centre pages).

Table 4

Audit survey in April and May 1999
of utilisation of on-street parking spaces for motor cycles

District	Number of parking spaces surveyed (a)	Number of motor cycles parked (b)	Utilisation rate (c) = (b)/(a) ´ 100%
Central	76	100	132%
Wan Chai (and Causeway Bay)	265	346	131%
Yau Tsim Mong	124	182	147%
Wong Tai Sin	31	38	123%
Sham Shui Po	86	76	88%
Tsuen Wan	18	27	150%
Yuen Long	20	18	90%
Overall	**620**	**787**	**127%**

Source: Audit's survey

2.27 It can be seen from Table 4 that in a large number of areas, the utilisation rate was over 100%. This situation arose because the number of motor cycles parked in the area exceeded the number of designated parking spaces (see Photograph 5 on the centre pages). The overall utilisation rate of these on-street parking spaces in built-up areas was 127%.

Audit observations on on-street parking for motor cycles

2.28 **Motor-cyclists are not required to pay a fee for using on-street parking spaces, although there is no stated policy to exclude this class of road users from paying for the use of parking spaces. Audit is unable to find any documented reasons for this free usage. The White Paper on Transport Policy (1990) is also silent on whether the guiding principle on on-street parking spaces is applicable to motor cycles (see paragraph 2.5 above). The audit survey in built-up areas indicates that the overall utilisation rate was very high (at 127%), which far exceeds the 85% utilisation benchmark (i.e. 15% availability rate) set in the White Paper on Transport Policy.**

2.29 Audit notes that the Police has raised concern about the theft of motor cycles in recent years, which represented 20% of all vehicle theft. The Police has proposed to the TD, as a preventive measure against motor cycle theft, to install railings at on-street motor cycle parking spaces so that the vehicle can be secured to the railings to make motor cycle theft more difficult. The TD agrees in principle to the Police's proposal. As a trial, railings will be erected at three locations. Installation and maintenance costs for the railings will be considerable if the proposal is extended to all motor cycle parking spaces.

2.30 **Audit considers that motor cyclists who use public land space for parking should pay a fee. In this connection, Audit notes that motor cyclists are required to pay a fee for parking their motor cycles in government-owned public car parks. On the assumption that the on-street motor cycle parking spaces are charged $1 for every 15 minutes and there is a 70% utilisation rate of a 14-hour charging period daily, Audit estimates that parking spaces with a high utilisation rate will generate a recurrent revenue of $34 million a year.** Details of calculations are at Appendix G. The installation cost of a parking meter is expected to be paid back in about four months.

Audit recommendation on on-street parking for motor cycles

2.31 **To make efficient use of on-street parking spaces, Audit has *recommended* that the Administration should consider charging a fee for the use of on-street motor cycle parking spaces with a high utilisation rate.**

Response from the Administration

2.32 The **Secretary for Transport** has said that he has no difficulty with the audit recommendation. He trusts that the Commissioner for Transport will seriously consider the recommendation having regard to public views, resources implications, operational and enforcement considerations.

2.33 The **Commissioner for Transport** has said that:

— the TD supports in principle that motor cycles should also be charged for the use of on-street parking spaces, subject to the results of the trial installation of railings in early 2000 and satisfactory solution to other operational problems;

— no legal amendment is required for installation of parking meters at motor cycle parking spaces. Existing practice of not charging a fee for the use of on-street motor cycle parking spaces is due to operational reasons; and

— installation of meters and railings for motor cycles at on-street parking spaces might create unnecessary additional street furniture obstructing pedestrian movement. The TD would monitor the trial on the use of railings at motor cycle parking spaces.

2.34 The **Commissioner of Police** has said that he supports the audit recommendation to charge motor cycle fees for on-street parking spaces on the condition that security railings are provided to all metered spaces as a preventive measure against theft of motor cycles parking at on-street spaces.

2.35 The **Secretary for the Treasury** has said that, from a revenue angle, she supports the audit recommendation that consideration should be given to charging a fee for the use of on-street parking spaces for motor cycles.

PART 3: CONTRACT FOR THE MANAGEMENT OF PARKING METERS

3.1 This PART examines the contract administration for the management of on-street parking meters in the territory.

3.2 Since March 1994, the TD has contracted out the management, operation and maintenance of all on-street parking meters in the territory to the private sector. The contractor is also responsible for the associated traffic signs, road markings and the implementation of the meter expansion programme. Upon the expiry of the first contract in September 1997, the TD awarded the current contract to a contractor for a period of four years ending in September 2001. Similar to the first contract, the contractor's remuneration is in the form of sharing the parking meter revenue with the Government. The reasons for preferring revenue sharing to a fixed sum or cost-plus contract are:

— greater incentive for the contractor to perform well (e.g. keeping meters well maintained to minimise revenue lost due to breakdowns);

— avoiding practical problems with the fixed cost model (e.g. definition of operating unit, verification of usage, complications in case of temporary suspension of meters); and

— consistency with the Government's multi-storey car park contracts.

Two-tiered structure for revenue sharing

3.3 To prevent the contractor from reaping windfall profits from increases of on-street parking charges, there is a two-tiered sliding scale for sharing the revenue from parking meters. In the two-tiered formula structure, a **specified sum** is determined by the TD in the contract as a dividing line between the first and second tier. This specified sum is the estimated total gross monthly parking revenue at current fees. Ideally, the specified sum should not be exceeded unless there is an increase in parking meter charges. In the first tier, when the gross revenue does not exceed the specified sum, the contractor receives an agreed percentage of the revenue. In the second tier, when the gross revenue exceeds the specified sum, the contractor receives a lower percentage in sharing any revenue which exceeds the specified sum. **This lower percentage in the second tier is a key element to prevent the contractor from reaping windfall profits from the Government's decision to increase meter parking charges.**

3.4 When tendering, the contractor is required to specify a percentage share of revenue for each of the two tiers (the percentage share in the second tier must be lower than that of the first

tier). The contractor is required to make a minimum payment to the Government should the Government's share of revenue fall below the minimum amount.

3.5 The terms for the sharing of parking meter revenue of the current contract for the management of the 15,520 parking meters are as follows:

Two-tiered structure	Government's share	Contractor's share
First tier (for revenue which does not exceed the specified sum, which is set at $21 million a month)	70%	30%
Second tier (for any revenue which exceeds the specified sum of $21 million a month)	75%	25%
Minimum payment to the Government per month	$17 million	N.A.

All percentages remain fixed throughout the contract period September 1997 to September 2001. Only one tenderer submitted a bid, offering 30% in the first tier and 25% in the second tier as his share of revenue.

Effectiveness of the two-tiered structure

3.6 In March 1999, the Financial Secretary announced in his Budget Speech that on-street parking meter charges would be raised with immediate effect from $2 to $4 for every 15 minutes. This measure was expected to raise additional revenue of $190 million in 1999-2000 for the Government. On this basis, Audit estimates that the contractor's share of parking revenue would be increased by $63.4 million (from $85.5 million to $148.9 million) in 1999-2000 (computation at Appendix H). However, the contractor only received a small part of this windfall because the increase of parking meter charge was rejected by the Legislative Council in July 1999 and the meter charge was reverted back to its original level.

3.7 Audit is concerned that the two-tiered formula structure may not be effective in preventing the contractor from reaping a windfall profit arising from the Government's decision to increase

meter parking charges. This is because an increase in meter charge will result in considerable additional revenue, but the contractor's additional cost of managing parking spaces will be much less.

3.8 Audit understands from the TD that when the gross parking meter revenue is increased by $1 million, the contractor would incur additional cost of $120,000. However, under the existing contract terms, he would receive additional revenue of $250,000 (i.e. 25% of $1 million, see paragraph 3.5 above).

3.9 The TD has informed Audit that the remuneration method was considered optimum in providing an incentive for the contractor to do better and at the same time offered sufficient protection for government revenue (i.e. two-tiered remuneration structure and the minimum payment to the Government). In the light of experience that parking meter charges could be raised in excess of the TD's projection, the TD did liaise with the contractor for a revision of the remuneration basis. In fact, the TD was at the stage of reaching an agreement with the contractor if the Legislative Council accepted the meter charge increase in July 1999.

Audit observations on prevention of windfall profit

3.10 Audit notes that in the first contract for the management of parking meters between March 1994 and September 1997, the contractor's share of revenue in the second tier was only 2.1%. The current 25% share is more than ten times that of the previous contract. The contractor would have reaped a large windfall if the increase in meter charge had been accepted by the Legislative Council.

3.11 **It is questionable whether the two-tiered formula of sharing revenue is effective in preventing a windfall gain by the contractor, particularly when the revenue is increased significantly by a raise in the meter charge. It is unsatisfactory to rely on negotiations with the contractor to reduce the contractor's remuneration because the contractor is not obliged contractually to concede to the Government's request.**

Audit recommendation on prevention of windfall profit

3.12 **Audit has *recommended* that the Commissioner for Transport should critically examine the two-tiered revenue sharing formula so as to allow the contractor to recover no more than his marginal cost of implementing the Government's decision to increase revenue from parking meter charges, such as specifying a maximum percentage for revenue sharing in the second tier.**

Response from the Administration

3.13 The **Commissioner for Transport** has said that, as a standard practice, the TD will review the two-tiered revenue sharing structure to protect the Government and to avoid any windfall gains by the contractor. The Commissioner has also said that:

— the effectiveness of the recommended measure has to be examined against the tenderers offsetting such a cap by bidding a higher percentage share in the first tier to adequately cover their cost, risk and profit; and

— due to very different cost structures, a direct comparison of the financial terms of the current contract with the previous contract is not meaningful. The TD needs to take into account the cost side of the contractor as well as the level of the minimum payment to the Government of the two contracts.

3.14 The **Secretary for the Treasury** has said that she will review with the TD the two-tiered revenue sharing formula to protect Government revenue and to avoid any windfall gains by the contractor.

Tender for management of parking meters

3.15 The tendering exercise for the current contract for the management of the 15,520 on-street parking meters was conducted in mid-1997. Three pre-qualified tenderers were invited to tender in May 1997. However, two of them declined to submit a tender on the closing date in June 1997. Only one pre-qualified tenderer submitted a tender. The tender satisfied all the five minimum requirements set out in the tender document (namely, readiness of the contractor for the contract; manning level for mechanical meter operation; manning level for electronic parking meter operation; experience and qualifications of the key staff; and manning level for Telephone Complaint Units). The tender was also assessed as being able to generate revenue of $819 million to the Government over the four-year contract period September 1997 to September 2001. In September 1997, the Government awarded the current contract.

Audit observations on tender for management of parking meters

3.16 As there was only one bid for the contract, it was questionable whether the bid submitted was reasonably priced. Audit noted that the contractor received a total revenue of $100.3 million in the first 18 months of the contract. This was 57% higher than the TD's estimate of $63.8 million (Note 2), despite the fact that the gross revenue increased only by 8% for the corresponding period (i.e. from $381 million to $410 million). Audit considers that one of the main reasons for the contractor's higher revenue was the lack of competition for the contract.

Note 2: *The contract period is four years. The revenue for the contractor was estimated at about $170 million by the TD. On this basis, the revenue for the contractor for the first 18 months would be $63.8 million (i.e. $170 million × 18/48).*

3.17 **The present arrangement of having a single contractor for the management of all on-street parking meters is not in the best interest of the Government. A single contractor could dominate the market or limit the market accessibility of other contractors because other contractors do not have the operational experience of managing the parking meters. Increasing the competition for the tender can avoid perpetuating a monopolistic situation. The management of parking meters can be contracted out to more than one contractor in order to increase competition.**

3.18 **Audit notes that two pre-qualified tenderers, who had passed the technical capability assessment, declined to submit a tender in the tendering exercise of the current contract in mid-1997. In comparison, there were four bids for the contract in the previous tender exercise in 1993.**

3.19 **In order to increase competition in future tender exercises, it is necessary to identify the constraints or uncertainties in the contract so as to remove any entry barriers. Reducing the constraints and uncertainties would attract more tenderers and benefit the Government. In this connection, it is useful to carry out a post-tender evaluation on why there was only one single tenderer and a thorough review of the terms of the contract.**

Audit recommendations on tender for management of parking meters

3.20 **Audit has *recommended* that the Commissioner for Transport should take measures to increase competition in future tender exercises for the management of parking meters. In order to attract more tenderers for providing the services, the Commissioner should:**

- **take action (e.g. a post-tender evaluation, examining the terms of contract) to identify any constraints or uncertainties in the contract so as to remove entry barriers; and**

- **consider splitting the contract into two or three contracts or parts so as to increase the number of contractors.**

Response from the Administration

3.21 The **Commissioner for Transport** has said that:

- in the next tendering exercise, the TD will continue to identify and remove as many constraints and uncertainties as possible;

— the TD has all along been working towards this objective. In the last tender exercise, actions were taken to reduce risk and uncertainty to the tenderers, viz:

(i) extending the previous contract by six months to tie in with the award of the Electronic Parking Device supply contract. More technical details were made available to the tenderers and a concrete conversion programme had been drawn up; and

(ii) due to uncertainties of the unit cost of a card and the consumption rate, the cost of e-Park card was borne by the Government;

— the opening up of the e-Park card system to other smart cards will likely impose some constraints and uncertainties for potential tenderers, unless the Government is prepared to take on such uncertainties and risk itself; and

— in 1996, the TD and the Transport Bureau had examined the advantages and disadvantages of contracting out the parking meter contract to more than one contractor. The result of the study showed that the cost of introducing competition would far outweigh the benefit. Due to diseconomy of scale and higher overheads, the additional cost to the Government (in the form of higher financial bids from contractors) would be about $10 million a year. More resources would be needed on the part of the TD to monitor and coordinate contractors in the daily collection of parking meter revenue data. The TD would also need to ensure compatibility of the systems of various contractors as transfer of data on electronic money is involved. However, the TD will further review the advantages and disadvantages of splitting the meter management contract into two or three to promote competition, taking account of the latest development of the meter operation and technology at the time.

3.22 The **Secretary for the Treasury** has said that she fully supports the recommendation of increasing competition in tender exercises as well as removing unnecessary entry barriers.

PART 4: ELECTRONIC PARKING DEVICES

4.1 This PART deals with the electronic meters and the use of e-Park cards.

Electronic meters

4.2 Most of the existing 15,520 on-street parking meters are electronic meters. The electronic meters do not require on-street cash collection, provide a better protection against meter tampering, can easily be adjusted to revise parking fees and provide better management information. There are two types of electronic meters in use in the territory, namely:

— ***Electronic parking meter (EPM).*** This is mounted on a pole and each meter covers one parking space. Similar to the coin-operated meter, each EPM has a small display window to show the time purchased; and

— ***Pay-and-display machine (PDM).*** This is a ticketing machine from which motorists purchase a printed parking ticket. Motorists are required to display the parking ticket behind the windscreen of the vehicle to show the time purchased. Each PDM can cover 10 to 15 parking spaces (see Photograph 6 on the centre pages).

4.3 According to a Finance Committee paper of December 1995 on the procurement of electronic parking devices, the majority of the coin-operated mechanical meters would be replaced by EPMs because of better field testing results. However, the TD would install PDMs at cul-de-sacs and at locations where the meter posts at road side were susceptible to frequent damage by vans and lorries. The use of PDM was to obviate the need for frequent repairs and replacement of damaged meter posts.

Installation of PDMs

4.4 As at 1 April 1999, 79 PDMs were installed covering a total of 823 on-street parking spaces at 24 locations. The total capital cost of installing 79 PDMs for these parking spaces was $5.8 million. Audit estimates that $4.1 million could have been saved if EPMs had been installed instead. The cost comparison is shown in Appendix I.

4.5 In order to ascertain whether the installation of PDMs was cost-justified, Audit examined the records of reported cases of damaged meter posts in these 24 locations in 1997 and 1998 (i.e. two years immediately before the conversion of mechanical meters to PDMs). Audit noted that at these 24 locations, there were 24 cases of reported damage of meter posts requiring major repair or replacement; eleven cases occurred in 1997 and 13 in 1998. The total cost for replacing the 24 damaged meters and posts was $133,176 (Note 3). Based on the total cost of their replacement, it is questionable whether the additional expenditure of $4.1 million on installing 79 PDMs was justified.

Note 3: *The replacement cost for each meter was $3,611 for casing and mechanism plus $1,938 for meter post and installation. The total cost for 24 cases was $133,176 [i.e. ($3,611 + $1,938) × 24].*

4.6 Audit also noted that PDMs had been installed at locations which were not cul-de-sacs, and which had no record of frequent damage of meter posts. Examples are shown below.

Location	Number of PDMs installed	Number of parking spaces covered
Stafford Road, Kowloon Tong	3	27
Hoi Ping Road, Causeway Bay	2	15
Sun Wui Road, Causeway Bay	2	11

Audit observations and recommendation on electronic meters

4.7 As can be seen in the cost comparison in paragraph 4.4 above, the cost of installing PDMs is higher than that of installing EPMs. PDMs have also a relatively higher operating cost. Furthermore, the TD has informed Audit that PDMs are less preferred by motorists and by the Police for law enforcement on meter charges. The number of PDMs in operation has been reduced from 79 in April 1999 to 62 in July 1999.

4.8 Audit notes that the TD has secured funding to purchase 56 additional PDMs costing about $4 million for its parking meter expansion programme. **In view of the fact that EPMs have a cost advantage over PDMs, Audit has *recommended* that the Commissioner for Transport should in future install PDMs only at locations where the installation of EPMs is not suitable. In the meantime, the spending of the funds earmarked for purchasing additional PDMs should be put on hold.**

Response from the Administration

4.9 The **Commissioner for Transport** has said that:

— based on feedback from the Police and the users so far, EPMs are generally preferred to PDMs from the enforcement and operation point of view. Some users have also told the TD that PDMs are less user-friendly since they have to queue up to buy parking tickets from the vending machines;

— in the future, the TD will consider installing PDMs only at suitable locations, whilst cul-de-sac and roadside parking lots remain important site selection criteria. The TD will also take into consideration local views and the implications on enforcement; and

— as a result of the above considerations, the number of EPMs and PDMs eventually acquired for the parking meter expansion programme might be different from what was originally planned.

4.10 The **Secretary for the Treasury** has said that she will re-examine the TD's justifications for more PDMs despite the previous approval of funds. In fact, she has already asked the TD to put on hold any installation plans for which firm commitment has not been entered into.

E-Park cards

4.11 E-Park cards were introduced for use in the territory from April 1998. The TD issues e-Park cards to motorists who purchase parking time for parking vehicles at on-street parking spaces. The card is a third generation smart card which can be accepted by the electronic meters (EPM and PDM). The cards are on sale at convenience stores, petrol stations and multi-storey car parks with stored values of $100, $200 and $300. The obvious advantage is that motorists do not need coins for the meters.

4.12 The TD procures e-Park cards through an open tender from a contractor (who happens to be the same contractor managing all parking meters). Each e-Park card costs $6.50 to the TD, irrespective of its stored value ($100, $200 or $300). Once the value stored in the card is used up, its value cannot be increased and the e-Park card becomes useless. In the 12-month period since e-Park cards were introduced in April 1998, the TD procured a total of 2.1 million e-Park cards from the contractor at a cost of $14 million.

4.13 Having procured the e-Park cards, the TD passes the cards to the contractor responsible for the management of on-street parking meters. At this juncture, the contractor will pay the TD an amount equal to the face value of the cards. Under the contract, the contractor is responsible for selling the cards through the distribution network. In the first 12 months since the introduction of e-Park cards, 1.46 million cards were sold, as shown in Table 5 below.

Table 5

E-Park cards sold in 1998-99

Face value	Quantity		Card cost ($ million)	Total face value ($ million)
$100	1,133,000	(78%)	7.4	113.3
$200	247,000	(17%)	1.6	49.4
$300	79,200	(5%)	0.5	23.8
Total	**1,459,200**	**(100%)**	**9.5**	**186.5**
	(say 1.46 million)			

Source: TD's records

Shortcomings of e-Park cards

4.14 The e-Park card system is a closed card system (i.e. the card is used only for on-street parking and for payment of parking fees at TD's multi-storey carparks). Each card costs the TD $6.50, representing 6.5%, 3.3% and 2.2% respectively for face value of $100, $200 and $300. Therefore, it is more economical to sell the high value cards to motorists. However, so far the $100 card has been the most popular amongst motorists, representing 78% of the cards sold in 1998-99. The total card cost of $9.5 million for 1998-99 could have been reduced if more high value cards had been sold.

4.15 In comparison, an open smart card system (i.e. electronic cards used widely for small amount financial transactions) is less costly. The charges to vendors (e.g. supermarkets and retail stores) joining the system is around 0.7% of the value of a transaction. Using the first 12 months of implementing e-Park cards as illustration, the cost difference between using e-Park cards and open smart cards is shown below.

	($ million)
Cost of using e-Park cards ($6.5 × 1.46 million e-Park cards)	9.5
Less: Cost of using an open smart card system (0.7% × $186.5 million being the total face value of the 1.46 million e-Park cards)	(1.3)
Cost difference	**8.2**

4.16 The issuer of an open smart card system is also responsible for the cost of the card and the distribution network. The value stored in the card can be increased. It is therefore more environmental-friendly than the e-Park card. The open smart card system is becoming increasingly popular and ownership of open smart cards is common in Hong Kong.

4.17 The TD is aware of the advantages of an open smart card system. Back in January 1996, the TD discussed the feasibility of adopting an open card system with the Electrical and Mechanical Services Department, which provides technical advice and services for the electronic parking devices. In April 1996, the TD decided to adopt a closed card system for the time being, while the technical feasibility of an open card system was further explored. In April 1998, the e-Park card system was introduced. Meanwhile, a six-month trial run commencing in October 1999 has been arranged with two issuers of the open smart card system for testing the technical compatibility, acceptability to the public and security of revenue of using the system. A technical and cost evaluation will be conducted by the TD after the trial run.

Audit observations on e-Park cards

4.18 **The total e-Park card cost can be reduced if more high value cards are sold. Furthermore, there is a significant cost difference between using a closed smart card system and an open smart card system for electronic parking devices of on-street parking spaces. In addition to the relatively high cost, about 1.5 million e-Park cards are disposed of in a year because their values cannot be increased.**

Audit recommendations on e-Park cards

4.19 **Audit has *recommended* that the Commissioner for Transport should:**

- **encourage the use of high value e-Park cards (e.g. by offering a small discount) so as to reduce the total card cost; and**

- **in view of the relatively high cost of e-Park cards, expedite the feasibility study on the use of an open smart card system with a view to adopting such a system at an early date.**

Response from the Administration

4.20 The **Commissioner for Transport** has said that:

- it is worthwhile to encourage the use of high value e-Park cards on financial grounds. However, the TD has to strike a balance between customer service and cost-effectiveness, since there is strong demand for lower value ($100) e-Park cards; and

- opening up the e-Park card system to other smart cards is already being pursued vigorously. The TD already has a plan to open up the system to other smart cards. Trial with two issuers of the open smart card system will be undertaken in late 1999. The TD is also examining the feasibility of using another type of smart card currently in use by some major transport operators.

4.21 The **Director of Electrical and Mechanical Services** has said that the choice of the current format of e-Park card was based on meritorious factors of proven, mature technology, inherent fraud resistant features, and the minimum development cost when the project was started in 1996. Recognising the growing importance of open-system and reloadable cards, the e-Park card contract has required the contractor to provide trial schemes of adopting two other types of smart cards of an open-system in the contract.

4.22 The **Secretary for the Treasury** has said that she fully supports more cost-effective alternatives to e-Park cards and, for this purpose, has earmarked funds for the TD to undertake a trial as soon as possible.

Photograph 1

Fully utilised non-metered parking spaces on a weekday in Tsuen Wan
(paragraph 2.11 refers)

Source: Photograph taken by Audit1

Photograph 2

Utilisation of metered parking spaces (not operating on holidays) on a Sunday in Kowloon City
(paragraph 2.18 refers)

Source: Photograph taken by Audit

Photograph 3A

Utilisation of metered parking spaces (not operating on holidays) at *7:36 hours* on a public holiday in Sham Shui Po (see also photograph 3B below)

Source: Photograph taken by Audit

Photograph 3B

Utilisation of the metered parking spaces at *15:12 hours* of the same day as above –some vehicles stayed in the parking space for considerable length of time (paragraph 2.18 refers)

Source: Photograph taken by Audit

Photograph 4

High utilisation of on-street parking spaces for motor cycles
(paragraph 2.26 refers)

Source: Photograph taken by Audit

Photograph 5

Number of motor cycles parked exceeds number of parking spaces
(paragraph 2.27 refers)

Source: Photograph taken by Audit

Photograph 6

A PDM machine
(paragraph 4.2 refers)

Source: Photograph taken by Audit

Photograph 7

The park-and-ride site in Sheung Shui
(paragraph 5.5 refers)

Source: Photograph taken by Audit

PART 5: PARKING FACILITIES

5.1 This PART reviews the park-and-ride facilities and the provision of motor cycle and visitor parking facilities in new developments.

Park-and-ride facilities

5.2 The purpose of a park-and-ride scheme is to encourage motorists, who would otherwise drive their private cars to busy urban areas, to limit their on-street journey by parking their vehicles at a designated car park near a major public transport terminus and completing their journey by using public transport (e.g. Mass Transit Railway (MTR) or Kowloon-Canton Railway (KCR)). **The aim is to reduce traffic congestion and parking demand in busy urban areas.**

5.3 The park-and-ride concept is not new. Back in 1981, a Working Group on Parking Policy recommended that park-and-ride facilities should be provided at or near MTR and KCR stations and major bus termini, and that the public should be encouraged to use both the parking facilities and the public transport services by means of low parking charges. In 1982, ExCo decided that:

> ***"park-and-ride facilities should be developed and managed by the private sector, and that the Government should only consider the acceptance of this responsibility if it was clearly established that there was no commercial interest in such projects and only then if their provision would make a significant difference to MTR passenger figures and road congestion."***

5.4 Park-and-ride facilities had once been provided at Hung Hom and Tai Po railway stations after the trains of the KCR became electrified in 1982, but with only limited success. The park-and-ride facility at the Tai Po Railway Station was later suspended to make way for housing development. The multi-storey car park at Hung Hom Railway Station, which is operated by a private company, offers a special daily rate to motorists of the KCR commuters. However, there is no requirement for the motorists to show proof that they have used KCR trains. The special rate is in effect available to all motorists.

Park-and-ride trial scheme in Sheung Shui

5.5 In 1995, the TD completed the Parking Demand Study. The Study recommended the provision of the park-and-ride facilities as one of the traffic management measures to help alleviate traffic congestion along major traffic corridors and parking demand in the urban areas. In the 1996 Policy Address, the Administration pledged to implement a trial scheme in 1997. A short-term tenancy car park site with 5,300 square metres located at Choi Yuen Road adjacent to the Sheung

Shui Railway Station was identified for the trial scheme (see Photograph 7 on the centre pages). The Government spent $2 million to carry out improvement works. The management and operation of the car park with 200 parking spaces has been entrusted to the Kowloon-Canton Railway Corporation (KCRC). The KCRC subsequently engaged a private company to operate the car park. The park-and-ride trial scheme commenced operation from 19 December 1997.

5.6 The park-and-ride car park facilities operate from 5:00 a.m. till 2:00 a.m. daily (including Sundays and public holidays from September 1998), so as to allow motorists to travel on the first and the last KCR trains. The park-and-ride motorists are charged at a special parking fee of $3 per hour, as against the regular hourly rate of $12. However, in order to prove that they have used KCR trains, the motorists have to stamp their tickets at stamping machines at one of the KCR urban stations (i.e. Kowloon Tong, Mong Kok or Hung Hom) within 90 minutes after parking their cars. In their return journey, motorists have to stamp their parking tickets again and arrive back at the car park within 90 minutes.

5.7 Failure to meet the 90-minute stamping requirement will result in the parking fee being charged at the regular hourly rate for those times outside the 90-minute period. Other private car users who do not ride on the KCR are also allowed to use the car park at the regular rate. 30 of the 200 parking spaces are reserved for monthly parking at a fee of $1,200 per month.

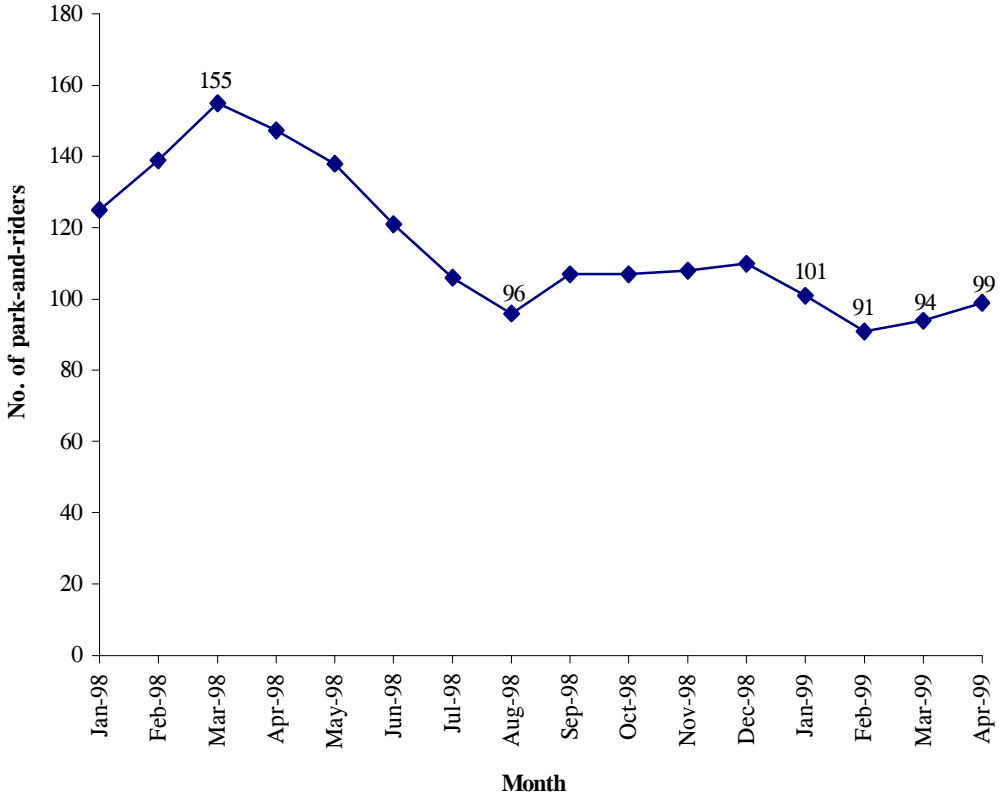
5.8 The purpose of the trial scheme was to introduce the concept of park-and-ride, test its acceptability by private car commuters and test the efficiency of the interface between the car park and the connecting public transport service. The revenue generated from parking charges was forecasted to produce a profit of $3 million a year, which would roughly be equal to the amount of land premium foregone in a short-term tenancy. In assessing the financial viability of the park-and-ride trial scheme, it was expected that 65% of the users would be park-and-riders, and 35% would be non-park-and-riders.

Number of park-and-riders since April 1998

5.9 Audit noted that the usage by park-and-riders peaked in March 1998 with a daily average of 155 users. The daily average of park-and-riders decreased since then from 155 to only 96 in August 1998. In the nine-month period August 1998 to April 1999, the daily average of park-and-riders stabilised at about 100 (see Figure 1 below).

Figure 1

Daily average of park-and-riders
(excluding Sundays and public holidays)



Source: *TD's records*

Note: *There was no capacity limit placed on park-and-riders. As there was spare capacity in the morning, it was unlikely that park-and-riders had been turned away.*

5.10 On the other hand, the number of non-park-and-riders using the car park increased. The percentage of the two types of users is shown in Appendix J.

5.11 In the 1998 Policy Objective, it was stated as an aim of the Transport Bureau to include park-and-ride facilities at suitable rail stations in the design of rail projects. The Administration has included the provision of park-and-ride facilities as one of the planning parameters in new railway projects that are going to be built over the next five years. Six stations have been earmarked along the West Rail, the Ma On Shan Extension, and the Tseung Kwan O Extension of the MTR (Note 4). The planned numbers of park-and-ride parking spaces, which are still under discussions with the parties concerned, are shown in Table 6 below.

Table 6

Park-and-ride facilities in new railway projects

Railway line	Station	Availability date	Number of planned park-and-ride parking spaces
West Rail	Tuen Mun Centre	2004 (Note 1)	220
	Tin Shui Wai	2004 (Note 1)	220
	Kam Tin	2004	465
	Tsuen Wan West	2004	320
Ma On Shan Extension	Lee On	2004 (Note 1)	200
Tseung Kwan O Extension	Hang Hau	— (Note 2)	500
Total			**1,925**

Source: TD's records

Note 1: This is only a provisional date.

Note 2: This site is for private development. The availability date is not yet known.

Note 4: *Since October 1998, the Mass Transit Railway Corporation has been offering park-and-riders, who continue their journey with the MTR, with a concessionary rate of $5 per hour at Airport Railway Kowloon and Tsing Yi stations.*

Audit observations on park-and-ride facilities

5.12 The expected usage of the trial scheme in Sheung Shui, in terms of number of users, was 65% park-and-riders and 35% non-park-and-riders. The expectation was barely achieved in the first few months when the scheme was launched. However, the number of park-and-riders had decreased since April 1998. Since January 1999, in terms of number of users, the park-and-riders had accounted for less than 35%. The latest figures show that only about 100 park-and-riders use the park-and-ride facilities daily.

5.13 In response to Audit's enquiries on the causes of the decrease of park-and-riders, the TD informed Audit that the TD believed the persistent economic downturn had reduced the number of transport trips over the entire territory. The opening of the Route 3 since May 1998 might also contribute to less usage of the park-and-ride facilities in Sheung Shui.

5.14 **Audit observes that there has been a significant decrease in the number of park-and-riders (from 155 to 100) using the trial scheme. According to a survey carried out by a consultant of the KCRC in January 1999, nearly half of the park-and-riders using the trial scheme would not have driven their private cars to busy urban areas if park-and-ride facilities had not been provided. In other words, they drove their cars between home and the train station only because they were attracted by such facilities. Audit further observes that 47% of the park-and-riders used the park-and-ride facilities after peak hours (i.e. after 10:00 a.m.).**

5.15 **Audit notes that the objective of providing park-and-ride facilities is to reduce traffic congestion and parking demand in busy urban areas. However, Audit has reservations as to whether this traffic management objective has been achieved. It is important to assess the extent of the reduction in traffic congestion and the relevant economic cost for using land space for park-and-ride facilities. In this connection, the Commissioner for Transport has commented that the total number of planned parking spaces is Gross Floor Area accountable (i.e. the gross floor area would be reduced to take account of the park-and-ride facilities).**

Audit recommendations on park-and-ride facilities

5.16 **Audit has *recommended* that the Administration should:**

- **review the park-and-ride trial scheme to ascertain whether, and to what extent, the traffic management objective of reducing traffic congestion in urban areas has been achieved;**

- **conduct a cost-benefit analysis for park-and-ride facilities taking into account the economic cost of the land space used; and**

— **based on the results of the above review/analysis, reassess the future provision of park-and-ride facilities at the Sheung Shui Railway Station and other rail stations.**

Response from the Administration

5.17 The **Secretary for Transport** has said that:

(a) a review of the trial scheme in Sheung Shui has been conducted. With the limited catchment of the existing trial scheme, one should appreciate that it is difficult to quantify its effectiveness in reducing congestion in the urban areas. However, the findings indicate that the park-and-ride concept is well-received. For instance, he received strong request from users and the general public in late 1997 for extending the scheme to include Sundays and public holidays;

(b) given the planning intention to accommodate further population growth in the New Territories and that the coverage of rail network in the New Territories will be much wider after the completion of West Rail Phase 1, the acceptance and attractiveness of park-and-ride may be enhanced. Apart from relieving traffic congestion and parking demand in busy areas, park-and-ride also helps achieve the environmental objective by encouraging motorists to make less use of their vehicles;

(c) the park-and-ride concept has also been examined under the Third Comprehensive Transport Study. Its contribution towards encouraging rail patronage in lieu of private car as well as reducing urban area traffic and parking demand has been reaffirmed;

(d) he is aware that it will take time for the park-and-ride habit to build up. Against this background, he has examined carefully each station along the new railways before identifying the six locations suitable for accommodating park-and-ride facilities and their required level of provision. He will keep in view the level of provision regularly vis-a-vis new population forecasts and other planning parameters;

(e) from the utilisation of land resources angle, park-and-ride may help relieve the parking demand in urban areas, hence freeing valuable land which would otherwise have to be used for the provision of parking spaces. By encouraging fewer vehicular trips travelling to the urban area, park-and-ride schemes can help reduce the need for more new road projects. Therefore, when considering the provision of park-and-ride facilities, he needs to assess the economic cost in a wider perspective, taking into account the alternative cost of providing parking spaces in the urban area and new road infrastructure to cater for the additional traffic if there were no park-and-ride schemes; and

(f) under a park-and-ride scheme, there are no designated parking spaces for exclusive use by park-and-ride users. Users meeting the specified requirement, i.e. immediate interchange with the rail mode, will enjoy a concession in parking charges, as a public purpose under the policy. Such users however cannot be distinguished from other non-park-and-ride users at the time they enter the carpark. This arrangement applies

equally to both existing and new park-and-ride facilities. In short, park-and-ride does not operate in isolation on a designated piece of land (Note 5).

5.18 The **Commissioner for Transport** has said that:

— the park-and-ride facilities are reviewed on an on-going basis. The provision of these facilities at the six rail stations will also be reviewed in planning for such provision;

— the average daily park-and-ride utilisation of the trial scheme remains at or above 50% of the carpark capacity (i.e. in terms of the utilisation of spaces, 200 spaces × 50% = 100 spaces). Given the limited size of the present trial site in Sheung Shui, he does not envisage there could be substantial reduction in congestion level in urban areas. However, the scheme does prove its positive contribution towards this end; and

— the trial scheme in Sheung Shui and other planned park-and-ride facilities are all operated under a self-financing principle and are/will be operated by private operators. There is no subsidy or concession from the Government. All park-and-ride carparks can also be used for normal carparking. Their viability and effectiveness will be determined by the market.

Provision of parking facilities in new developments

5.19 In December 1995, the Parking Demand Study consultant, commissioned by the TD for defining parking problems and recommending remedial measures, issued the final report. One of the consultant's recommendations was that the HKPSG should be revised to increase the provision of parking spaces for motor vehicles in residential, industrial and commercial developments. This recommendation was aimed at easing the shortage of parking spaces in the territory. As a result, the HKPSG were revised in October 1996 to increase the provision of parking spaces in new developments. The overall intention of the parking standards in the HKPSG is to ensure that, except in special cases, future residential developments should have sufficient parking provision to match the car ownership of residents. Minimum rather than maximum standards are set.

5.20 The revised HKPSG also require the provision of parking spaces for motor cycles. The standard provision is at a rate of 5% to 10% of the total provision for private cars, and no fewer than five motor cycle parking spaces should be provided at any one location in all types of developments (residential, industrial and commercial).

Note 5: *The total number of planned park-and-ride parking spaces for the six new rail stations amounts to 1,925 (see Table 6 in paragraph 5.11), which will require considerable land space (or floor area). Audit is concerned about the use of land space for such facilities without adequate consideration of their alternative uses. If valuable land space is used for such facilities, it is important to ensure that the objective of reducing traffic congestion can be achieved.*

5.21 For private residential developments, the revised HKPSG require that, in addition to providing parking spaces for residents, visitor parking spaces should also be provided. The requirement is that private residential developments should include five visitor parking spaces for each residential block.

Audit examination of parking facilities in new developments

5.22 In April 1999, Audit visited five of the 14 District Lands Offices for the purpose of ascertaining whether the revised parking standards in the HKPSG regarding motor cycle and visitor parking spaces had been complied with. Audit examined all new private residential leases granted after 1 January 1997 (i.e. three months after the revision of the HKPSG in October 1996). There were 16 cases of new private residential developments granted between January 1997 and March 1999. A summary of the compliance with the HKPSG is in Table 7 below.

Table 7

Compliance with the HKPSG

Types of parking spaces	Number of residential developments with lease conditions		Total number of residential developments granted
	not complying with the HKPSG	complying with the HKPSG	
For motor cycles	13 (81%)	3 (19%)	16 (100%)
For private cars (for visitors)	12 (75%)	4 (25%)	16 (100%)

Source: Records of the District Lands Offices

5.23 In response to Audit's enquiries, the Director of Lands has informed Audit that it is the TD's responsibility to ensure that the correct parking provision is embodied in the lease conditions by responding to the circulation of the land grant proposals and at the District Lands Conference.

5.24 The TD has informed Audit that the application of the HKPSG needs to allow for flexibility for special cases taking account of the nature of the development, nearby road network conditions and the merit of individual cases. There are two cases for which the reasons for non-compliance cannot be traced. The reasons for non-compliance in respect of the other cases can be summarised as follows:

— the TD had already made comments on the provision of parking spaces before the HKPSG were revised;

— for low density developments, the total number of residents' parking spaces is small. It is considered unnecessary to specify such parking spaces in the lease;

— there are on-street parking spaces or public carparks provided within or in the vicinity of the developments. Visitors and motor cycle parking spaces would not be specified in such cases; and

— the standard for parking spaces specified in the lease conditions exceeds the standard for the Zone of the sites. It is considered unnecessary to provide more parking spaces for visitors, and some of the spaces provided can readily be converted for motor cycle parking.

Audit observations on parking facilities in new developments

5.25 **It can be seen from Table 7 in paragraph 5.22 above that for the provision of visitor parking spaces, 75% of the new residential developments did not follow the parking standards set in the HKPSG. For the provision of motor cycle parking spaces, the non-compliance rate was even higher (at 81%). Despite the revision of the HKPSG in 1996 to increase parking spaces in new developments, the majority of the new developments selected for examination did not follow the HKPSG in providing parking spaces for motor cycles and private cars (for visitors) for various reasons. In two cases, the reasons for the non-compliance were not properly documented.**

Audit recommendations on parking facilities in new developments

5.26 **Audit has *recommended* that the Commissioner for Transport should:**

— **ensure that the reasons for all cases of non-compliance with the standards in the HKPSG are properly documented in future; and**

— **consider the need for revising the HKPSG in the light of the high incidence of non-compliance cases.**

Response from the Administration

5.27 The **Commissioner for Transport** has said that:

— non-compliance cases are fully examined and justified before approval is given. The TD has to apply the HKPSG with flexibility for special cases taking account of relevant factors such as site constraints, nearby road network conditions, etc.; and

— the HKPSG are revised from time to time on a need basis.

Appendix A
(paragraph 2.7 refers)

On-street parking spaces
for private cars, goods vehicles and coaches as at 1 April 1999

	Parking spaces available	**Metered parking spaces**		**Non-metered parking spaces**	
Private cars (and light vans)	18,600	13,100	(70%)	5,500	(30%)
Goods vehicles	3,200	2,100	(66%)	1,100	(34%)
Coaches (and other vehicles)	560	320	(57%)	240	(43%)
Total	**22,360**	**15,520**	**(69%)**	**6,840**	**(31%)**

Source: TD's records

Appendix B
(paragraph 2.11 refers)

Audit survey in August 1999
of utilisation of non-metered parking spaces

		Parking spaces surveyed	Parking spaces occupied	Utilisation rate
		(a)	**(b)**	**(c) = (b)/(a) ´ 100%**
(A)	**For private cars (and light vans)**			
	District			
	Tsuen Wan	56	56	100%
	Tseung Kwan O	45	41	91%
	Tuen Mun	86	76	88%
	Yuen Long	100	78	78%
	Total	**287**	**251**	**87%**
(B)	**For goods vehicles**			
	District			
	Yuen Long	65	55	85%
	Total	**65**	**55**	**85%**

Source: Audit's survey

Appendix C
(paragraph 2.11 refers)

Estimate of annual revenue generated by metering the 1,620 on-street parking spaces in built-up areas

(A) Revenue generated:

$8 per hour × 14 operating hours a day × 296 days × 58% utilisation (Note 1) × 1,620 parking spaces

= $31,149,619

(B) Share taken by the TD's contractor (for the management of meters):

25% of the revenue generated from the meter charges (Note 2)

= 25% × $31,149,619

= $7,787,405

(C) Government's share of revenue [(A) – (B)]:

= $31,149,619 – $7,787,405

= **$23,362,214 (say $23 million)**

Source: Audit's calculation

Note 1: The average utilisation rate of all existing metered parking spaces was 58% in 1998-99.

Note 2: The 25% share is in accordance with the current contract with the TD's contractor.

Appendix D
(paragraph 2.16 refers)

Geographical distribution of on-street parking spaces as at 1 April 1999

Region	District	Meters operating everyday (a)		Meters not operating on Sundays and public holidays (b)		Total (c) = (a) + (b)
Hong Kong	Aberdeen and Southern	334	(64%)	187	(36%)	521
	Happy Valley, Wan Chai (and Causeway Bay)	443	(43%)	578	(57%)	1,021
	Eastern	223	(35%)	408	(65%)	631
	Western and Central	87	(19%)	372	(81%)	459
Kowloon	Homantin and Kowloon Tong	399	(36%)	704	(64%)	1,103
	Yau Tsim Mong	353	(18%)	1,561	(82%)	1,914
	Wong Tai Sin and Kwun Tong	285	(17%)	1,400	(83%)	1,685
	Hung Hom and To Kwa Wan	28	(2%)	1,341	(98%)	1,369
	Tai Kok Tsui and Sham Shui Po	0	(0%)	1,694	(100%)	1,694
New Territories	Tsuen Wan, Tuen Mun and Yuen Long	207	(11%)	1,688	(89%)	1,895
	Kwai Chung and Tsing Yi	4	(1%)	583	(99%)	587
	Other areas (Shatin, Tai Po, Fanling, Sheung Shui, Tseung Kwan O and Sai Kung)	0	(0%)	2,639	(100%)	2,639
Total		**2,363 (say 2,360)**	**(15%)**	**13,155 (say 13,160)**	**(85%)**	**15,518 (say 15,520)**

Source: TD's records

Appendix E
(paragraph 2.19 refers)

Estimate of annual revenue generated by extending meter parking charges to Sundays and public holidays

(A) Revenue generated:

$8 per hour × 14 operating hours a day × 72% utilisation rate (Note 1) × (52 Sundays + 17 public holidays) × 13,160 parking spaces × 90% (Note 2)

= $65,901,911

(B) Share taken by the TD's contractor (for the management of meters and collection of charges):

25% of the revenue generated from the meter charges (Note 3)

= 25% × $65,901,911

= $16,475,478

(C) Government's share of revenue [(A) – (B)]:

= $65,901,911 – $16,475,478

= **$49,426,433 (say $49 million)**

Source: Audit's calculation

Note 1: The average utilisation rate of all existing metered parking spaces operating on Sundays and public holidays was 72% in 1998-99.

Note 2: Audit estimates that 90% of the 13,160 parking spaces has a high utilisation rate (i.e. over 85%) on Sundays and public holidays.

Note 3: The 25% share is in accordance with the current contract with the TD's contractor.

Appendix F
(paragraph 2.25 refers)

Geographical distribution of the on-street parking spaces for motor cycles as at 1 April 1999

Region	District	Number of parking spaces
Hong Kong	Wan Chai	471
	Central and Western	386
	Southern	205
	Eastern	175
Kowloon	Yau Tsim Mong	798
	Kowloon City	540
	Sham Shui Po	407
	Kwun Tong	191
	Wong Tai Sin	187
New Territories East	Shatin	155
	Tai Po and North	119
	Sai Kung	100
New Territories West	Tsing Yi and Kwai Chung	178
	Yuen Long	156
	Tsuen Wan	105
	Tuen Mun	102
Total		**4,275 (say 4,300)**

Source: TD's records

Appendix G
(paragraph 2.30 refers)

Estimate of annual revenue
generated by metering motor cycle parking spaces

(A) Revenue generated:

$4 per hour × 14 operating hours a day × 70% utilisation (Note 1)
× 296 days × 4,300 parking spaces × 90% (Note 2)

= $44,904,384

(B) Share taken by the TD's contractor (for the management of meters):

25% of the revenue generated from the meter charges (Note 3)

= 25% × $44,904,384

= $11,226,096

(C) Government's share of revenue [(A) – (B)]:

= $44,904,384 – $11,226,096

= $33,678,288 (say $34 million)

Source: Audit's calculation

Note 1: The average utilisation rate of motor cycle parking spaces was over 100% according to the results of the audit survey. The utilisation rate of these motor cycle parking spaces is conservatively estimated at 70% if they are metered.

Note 2: Audit estimates that 90% of the 4,300 parking spaces has a high utilisation rate (i.e. over 85%).

Note 3: The 25% share is in accordance with the current contract with the TD's contractor.

Appendix H
(paragraph 3.6 refers)

Estimated additional revenue to the contractor in 1999-2000 if the increase of parking meter charge had materialised

		Government's share of revenue	Contractor's share of revenue	Gross revenue
		(a)	**(b)**	**(c) = (a) + (b)**
		($ million)	**($ million)**	**($ million)**
(1)	Original estimated revenue	206.2	85.5 (Note 1)	291.7
(2)	Estimated additional revenue arising from increase of parking charge	190.0	**63.4** (Note 2)	253.4
Estimated total revenue: (1) + (2)		**396.2**	**148.9 (Note 3)**	**545.1**

Source: Audit's calculation

Note 1: Original estimated revenue to the Contractor:

= First tier sharing of revenue + second tier sharing of revenue

= ($21 million × 30% × 12 months)
+ [($206.2 million – $21 million × 70% × 12 months) ÷ 75% × 25%]

= $75.6 million + $9.9 million

= $85.5 million

Note 2: This is the balance figure between the estimated total revenue ($148.9 million) and the original estimated revenue ($85.5 million) to the contractor.

Note 3: Estimated total revenue to the Contractor:

= First tier sharing of revenue + second tier sharing of revenue

= ($21 million × 30% × 12 months)
+ [($396.2 million – $21 million × 70% × 12 months) ÷ 75% × 25%]

= $75.6 million + $73.3 million

= $148.9 million

Appendix I
(paragraph 4.4 refers)

Cost comparison between PDMs and EPMs for 823 parking spaces at 24 locations

	PDMs	**EPMs**	**Difference**
	(a)	**(b)**	**(c) = (a) – (b)**
Meter cost	\$72,930 × 79 PDMs = \$5,761,470 (say \$5.8 million)	\$2,051 × 823 EPMs (Note 1) = \$1,687,973 (say \$1.7 million)	**\$4.1 million** (Note 2)

Source: Audit's calculation

Note 1: The 823 parking spaces already had meter casing and the post. The costs of casing and the post were sunk costs. Therefore, the only additional capital cost involved was the meter mechanism at \$2,051 each.

Note 2: Under the management contract for on-street meters, the installation labour cost and maintenance cost of the PDMs and EPMs were, and still are, borne by the contractor. The operating cost of PDM for each parking space is higher than that of EPM basing on the TD's records.

Appendix J
(paragraph 5.10 refers)

Daily average number of users of the Sheung Shui park-and-ride trial scheme (excluding Sundays and public holidays)

Month	Park-and-riders (a)	Non-park-and-riders (b)	Total number of users (c) = (a) + (b)
1998			
January	125 (62%)	77 (38%)	202
February	139 (65%)	75 (35%)	214
March	155 (61%)	99 (39%)	254
April	147 (54%)	125 (46%)	272
May	138 (49%)	144 (51%)	282
June	121 (52%)	112 (48%)	233
July	106 (45%)	130 (55%)	236
August	96 (44%)	122 (56%)	218
September	107 (40%)	162 (60%)	269
October	107 (38%)	176 (62%)	283
November	108 (34%)	209 (66%)	317
December	110 (35%)	208 (65%)	318
1999			
January	101 (32%)	212 (68%)	313
February	91 (30%)	211 (70%)	302
March	94 (29%)	228 (71%)	322
April	99 (30%)	229 (70%)	328

Source: TD's records

Appendix K

Acronyms and abbreviations

EPM	Electronic Parking Meter
ExCo	Executive Council
HKPSG	Hong Kong Planning Standards and Guidelines
KCR	Kowloon-Canton Railway
KCRC	Kowloon-Canton Railway Corporation
MTR	Mass Transit Railway
PDM	Pay-and-Display Machine
TAC	Transport Advisory Committee
TD	Transport Department