CHAPTER 6

THE GOVERNMENT OF THE HONG KONG SPECIAL ADMINISTRATIVE REGION

GENERAL REVENUE ACCOUNT

GOVERNMENT SECRETARIAT

Environment and Food Bureau

GOVERNMENT DEPARTMENT

Food and Environmental Hygiene Department

Mechanised street cleansing services

Audit Commission
Hong Kong
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MECHANISED STREET CLEANSING SERVICES

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MECHANISED STREET CLEANSING SERVICES

Summary and key findings

Introduction

A. Mechanised street cleansing services require the use of special-purpose vehicles. As at 31 March 2001, the Food and Environmental Hygiene Department (FEHD) employed 453 staff at an annual staff cost of $88.1 million and 125 special-purpose vehicles to provide mechanised street cleansing services in Hong Kong, which mainly consist of mechanised street sweeping service, mechanised gully cleansing service and street washing service (para. 1.1).

Audit review

B. Audit has conducted a review to: (a) examine whether the FEHD has used its resources economically and efficiently in providing the mechanised street cleansing services and (b) ascertain whether there is room for improvement in the provision of the mechanised street cleansing services (para. 1.3). Audit's findings are summarised in paragraphs C to H below.

Planned frequencies of mechanised sweeping routes do not reflect the actual cleansing requirements

C. Audit has found that the FEHD's assessment of the amount of sand and grit deposits on a mechanised sweeping route (MSR), which is used mainly to determine the planned sweeping frequency of the route, does not reflect the actual cleansing requirements. Audit has also found that, after an MSR has been swept, the sand and grit collected are offloaded at the designated disposal site operated by the Environmental Protection Department (EPD). The EPD's records at the disposal sites can be used to objectively measure the weight of sand and grit collected and to better assess the sweeping frequencies of MSRs. Audit considers that the FEHD needs to make use of objective data for determining the sweeping frequencies of MSRs (paras. 2.6 and 2.8).

Outdated time standards and work values

D. Audit has found that outdated time standards and work values are being used for planning the mechanised street cleansing operations. Most of the time standards and work values were established in the mid-1980s. Regarding time standards, on average, the actual daily time spent in gully emptying work in the New Territories (NT) Area was only 65% of the daily time planned for the task. The FEHD agreed that the time standards being used for planning the mechanised gully cleansing operation in the NT Area could not reflect the actual situation. Regarding work values, the work values for pavement and surface channel washing in the NT Area (which were established in 1984) exceed those in the Urban Area (which were updated in 1999) by more than 90%. The FEHD agreed that there would be a need to look into the variances. Audit considers that the time standards and work values being used for planning the mechanised street cleansing operations are

outdated and require revision. The FEHD has accepted that, with the passage of time and the changing circumstances, these time standards and work values might no longer be applicable to present-day circumstances (paras. 1.4(a), 1.5(a), 3.8(b), 3.9(b), 4.4, 4.5 and 4.6).

Staff complement of mechanised gully cleansing teams

E. Audit has found that, in the midnight shift, a mechanised gully cleansing team (MGCT) in the Urban Area has two more staff members than an MGCT in the NT Area. The FEHD has explained that the two additional staff members are provided for enhancing the safety of the MGCTs in the Urban Area at night. Audit considers that there is a need for the FEHD to review the manning scale of all MGCTs in the midnight shift (paras. 3.14, 3.16 and 3.17(b)).

Idle time

F. ***Idle time due to suspension of services.*** Audit has found that significant portions of the mechanised street sweeping service and the mechanised gully cleansing service in the day shift were suspended in 2000. Audit also noted that when a suspension of service occurred, there were instances where there were idle drivers and vehicles elsewhere. While Special Drivers and/or special-purpose vehicles were not available in one district, Special Drivers and/or special-purpose vehicles were left idle in other districts. Audit attempted to show that, by matching and redeploying idle Special Drivers and special-purpose vehicles of different districts and vehicle depots, the level of suspension of mechanised street cleansing services could be reduced (paras. 5.2 and 5.5).

G. ***Scheduled idle time.*** Audit has found that the cleansing staff engaged in mechanised gully cleansing operation and those engaged in street washing operation have substantial amounts of scheduled idle time in their daily work. The cleansing staff have scheduled idle time because: (a) some tasks in the mechanised gully cleansing operation and the street washing operation are performed by the Special Driver alone and (b) the cleansing staff and the Special Driver report for duty at different locations. Audit has estimated that the total annual staff costs of the scheduled idle time for the mechanised gully cleansing operation and the street washing operation amount to $1.6 million and $10.1 million respectively at 2000-01 prices (paras. 5.11, 5.12 and 5.15).

H. ***Need for reducing idle time.*** Audit considers that there is a need for the FEHD to reduce:

(a) the level of suspension of mechanised street cleansing services (para. 5.8); and

(b) the scheduled idle time for the mechanised gully cleansing operation and the street washing operation (para. 5.15).

Audit recommendations

I. Audit has made the following main recommendations that the Director of Food and Environmental Hygiene should:

(a) review the current planned sweeping frequencies of MSRs (para. 2.11(a));

(b) use the weight of sand and grit actually collected by mechanical sweepers as recorded by the EPD as one of the key and objective indicators for determining the sweeping frequencies of MSRs (para. 2.11(b));

(c) revise the time standards and work values being used for planning the mechanised street cleansing operations. In particular, the Director should:

(i) revise the time standards for mechanised gully cleansing operation in the NT Area so that the new time standards will reflect the current working conditions in the New Territories (para. 3.12); and

(ii) align the work values for street washing service in the NT Area with those in the Urban Area (para. 4.9);

(d) review the manning scale of the MGCTs in the midnight shift with a view to establishing an optimum manning scale for all MGCTs in the three Operations Divisions (para. 3.16); and

(e) in order to reduce suspension of services and idle time of cleansing staff:

(i) match and redeploy idle Special Drivers and special-purpose vehicles of different districts and vehicle depots so as to reduce the level of suspension of mechanised street cleansing services (para. 5.9(a));

(ii) after taking account of the results of both the review of the frequency of the mechanised street sweeping service and the review of the frequency of the mechanised gully cleansing service, promptly and critically review the provision of staff and special-purpose vehicles for these two services so as to ensure that suspension of services is kept to a minimum (para. 5.9(b)); and

(iii) promptly and critically review the mechanised gully cleansing operation and the street washing operation so that the scheduled idle time for these two operations would be reduced to a minimum (para. 5.16(a)).

Response from the Administration

J. The Administration has accepted all of Audit's recommendations.

PART 1: INTRODUCTION

Background

1.1 The Food and Environmental Hygiene Department (FEHD) is responsible for cleansing public roads (except expressways for which the Highways Department is responsible), pavements, lanes and public areas in Hong Kong (hereinafter referred to as "street cleansing services"). Street cleansing services which are provided by the use of special-purpose vehicles are referred to as mechanised street cleansing services. These services mainly consist of mechanised street sweeping service, mechanised gully cleansing service and street washing service. For reasons of safety or practicality, such services cannot be provided by manual means and special-purpose vehicles are required. As at 31 March 2001, the FEHD employed 453 staff at an annual staff cost of $88.1 million and 125 special-purpose vehicles to provide the mechanised street cleansing services (see Table 1 below).

Table 1

Resources employed for the provision of mechanised street cleansing services as at 31 March 2001

	Mechanised street sweeping	Mechanised gully cleansing	Street washing	Total
(a) Cleansing teams				
Number of teams	36	23	58	117
Number of staff	42	84	327	453
Annual staff cost ($ million)	10.5	17.3	60.3	88.1
(b) Special-purpose vehicles				
Number of vehicles	44	27	54	125
Replacement cost ($ million)	48.4	29.7	54	132.1

Source: FEHD's records

Environmental Hygiene Branch

1.2 The Environmental Hygiene Branch (EHB) of the FEHD manages street cleansing services. The EHB, headed by a Deputy Director, comprises the Headquarters Division and three Operations Divisions, each headed by an Assistant Director. The Headquarters Division is responsible for the formulation and review of departmental environmental hygiene policies, guidelines and procedures. The Operations Divisions are responsible for coordinating environmental hygiene matters within their own geographical areas, as follows:

(a) Operations Division 1 (Ops 1) covers the combined area of Hong Kong Island and the outlying islands, which is sub-divided into six districts;

(b) Operations Division 2 (Ops 2) covers the area of Kowloon, which is sub-divided into six districts; and

(c) Operations Division 3 (Ops 3) covers the area of the New Territories, which is sub-divided into eight districts.

An organisation chart of the EHB as at 31 March 2001 is at Appendix A.

Audit review

1.3 Audit has conducted a review on the mechanised street cleansing services provided by the FEHD. The audit objectives are:

(a) to examine whether the FEHD has used its resources economically and efficiently in providing the mechanised street cleansing services; and

(b) to ascertain whether there is room for improvement in the provision of the mechanised street cleansing services.

1.4 The audit has revealed that:

(a) most of the time standards and work values being used for planning the mechanised street cleansing operations were established in the mid-1980s. They are outdated and require revision (see PARTS 2, 3 and 4 below); and

(b) during their working hours, some staff members responsible for providing mechanised street cleansing services had idle time (see PART 5 below).

Audit has made a number of recommendations to address the related issues.

General response from the Administration

1.5 The **Director of Food and Environmental Hygiene** welcomes the audit report and regards it a useful reference for delivering more cost-effective services to the community. The Director has said that:

(a) the current mode of operation in respect of mechanised street cleansing services was derived from time standards and work values established in the mid-1980s. With the passage of time and the changing circumstances, these time standards and work values might no longer be applicable to present-day circumstances;

(b) since its establishment in January 2000, the FEHD has started reviewing the various areas of work, including working procedures of Hong Kong and Kowloon and working procedures of the New Territories (which are inherited from the two ex-municipal services departments), with a view to aligning the working practices of Hong Kong and Kowloon with those of the New Territories and providing a full range of more efficient, up-to-date and cost-effective street cleansing services;

(c) as part of the alignment exercise mentioned in inset (b) above, the FEHD will review the work requirements in Hong Kong and Kowloon and those in the New Territories so as to update the time standards and work values being used for planning the mechanised street cleansing operations;

(d) in July 2001, the FEHD embarked on a study to review the existing working practices of the street washing teams. The FEHD has also planned a comprehensive review on public cleansing services to be conducted by its Management Services Unit in mid-2002. The review will include a study of the frequency of mechanised street sweeping service and a study of the working procedures and staff provision of the mechanised gully cleansing teams; and

(e) in the studies mentioned in inset (d) above, the FEHD will consider the possibility of outsourcing mechanised street cleansing services if it is found to be more cost-effective for providing the services. It is expected that the studies should be useful in tackling the problem of idle time and in improving the overall efficiency and cost-effectiveness of the street cleansing services provided by the FEHD.

1.6 The **Secretary for the Environment and Food** agrees with the FEHD's proposed actions to address the issues raised by Audit. The Secretary has said that in principle, she favours the measures that would increase the efficiency and cost-effectiveness of street cleansing services.

PART 2: MECHANISED STREET SWEEPING SERVICE

Mechanical sweepers

2.1 Most public roads are swept manually. However, special-purpose vehicles, called mechanical sweepers, are used to sweep fast-speed roads and flyovers which are too dangerous to be swept manually.

Present arrangement

2.2 Mechanised sweeping teams (MSTs) of the FEHD use mechanical sweepers to pick up sand, grit and other deposits on surface channels and central dividers of fast-speed roads and flyovers. In each team, there is only one worker, i.e. the Special Driver to operate the mechanical sweeper. As at 31 March 2001, the FEHD employed 42 Special Drivers to operate 36 mechanised sweeping routes (MSRs). Table 2 below shows the distribution of the 36 MSRs by the three Operations Divisions as at 31 March 2001. Each MSR is assigned to an MST which sweeps the streets on a route from once to six times per week. MSTs operate in three shifts, namely day shift, evening shift and midnight shift. (The working hours of these shifts are shown in Appendix B.)

Table 2

Distribution of MSRs as at 31 March 2001

	Number of MSRs			
Shift	**Ops 1**	**Ops 2**	**Ops 3**	**Total**
Day	1	–	15	16
Evening	–	–	1	1
Midnight	5	12	2	19
Total	**6**	**12**	**18**	**36**

Source: FEHD's records

Sweeping frequencies of MSRs

2.3 The sweeping frequencies of MSRs in the areas of Hong Kong and Kowloon (hereinafter referred to as the "Urban Area") were determined with reference to the recommendations of the 1985 Review on Mechanised Cleansing Services completed by the then Urban Services Department (USD). The sweeping frequencies of MSRs in the New Territories (hereinafter referred to as the "NT Area") were determined with reference to the recommendations of the 1983 Review on Mechanised Cleansing Services completed by the then New Territories Services Department (NTSD).

2.4 Both the 1983 NTSD review and the 1985 USD review recommended that the sweeping frequency of individual MSRs should be determined on the basis of the amount of sand and grit deposits on the routes as assessed by the FEHD's staff. If the amount of sand and grit deposits on a route is large, that route will be swept more frequently.

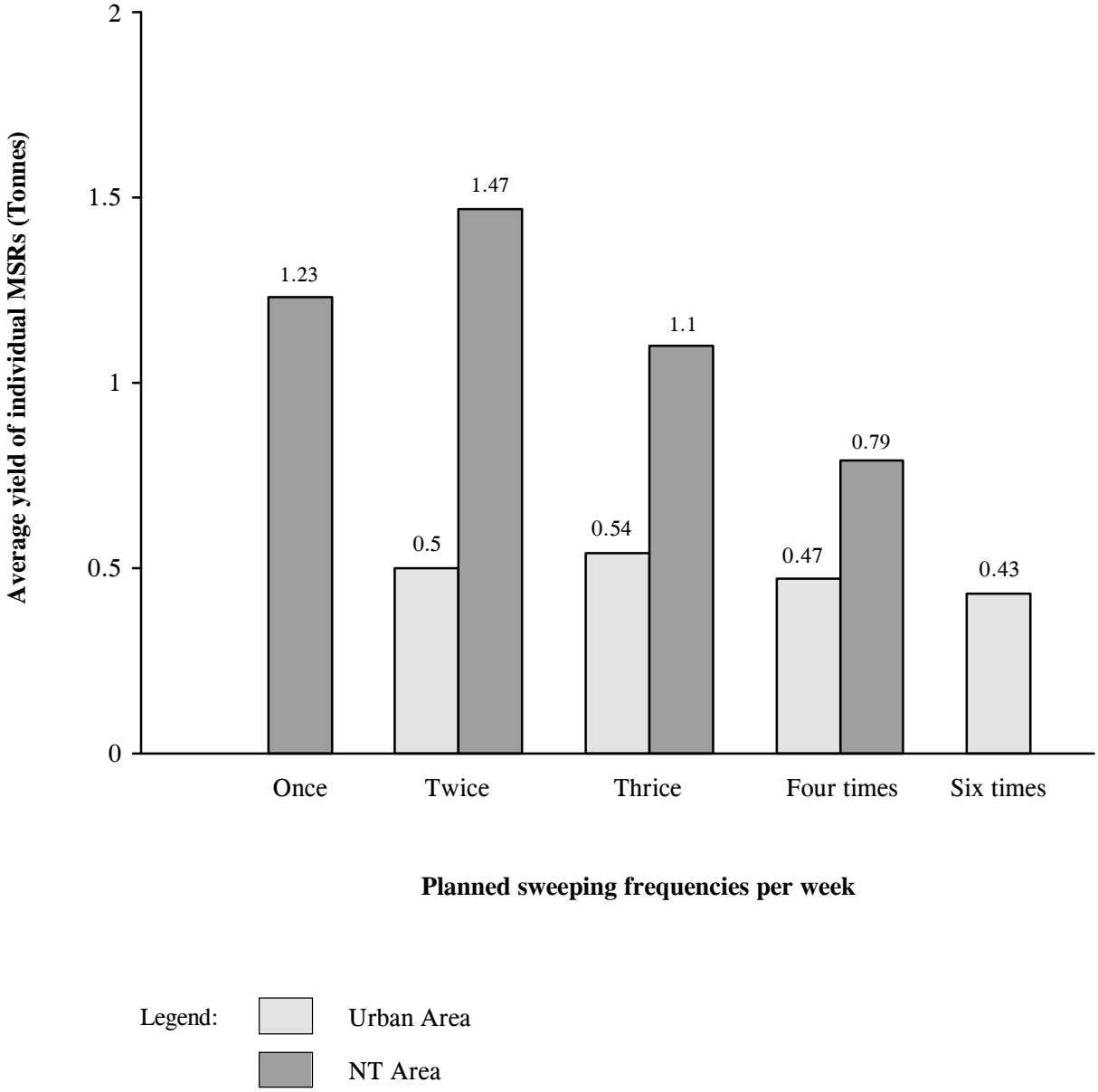
Assessment of the yield of individual MSRs

2.5 In order to ascertain whether the FEHD's planned sweeping frequencies of MSRs are appropriate, Audit assessed the weight of sand and grit collected (referred to as "the yield") on each MSR in different shifts.

2.6 ***Audit's method of assessing the yield.*** After sweeping an MSR, the Special Driver is required to offload the sand and grit collected at the designated disposal site operated by the Environmental Protection Department (EPD). The EPD keeps record of the weights of the mechanical sweeper before and after offloading. The difference between these two weights is the weight of sand and grit collected by the mechanical sweeper. Audit assessed the yield of individual MSRs in the Urban Area and the NT Area by analysing the EPD's transaction records for mechanical sweepers in four randomly selected weeks of February, May, August and November in 2000. The results of Audit's assessment are summarised in Figure 1 below.

Figure 1

Average yield of individual MSRs
in the Urban Area and the NT Area in four weeks in 2000



Source: Audit's analysis of FEHD's and EPD's records

Audit observations on sweeping frequencies of MSRs

2.7 **Audit's assessment of the average yield of individual MSRs reveals that:**

(a) **the average yield of individual MSRs with the same planned sweeping frequency in the Urban Area was lower than that in the NT Area (see Figure 1 above); and**

(b) **in the NT Area, the average yield of individual MSRs with a planned sweeping frequency of four times a week was lower than that of those MSRs with lower planned sweeping frequencies (see Figure 1 above).**

In view of these audit observations and the suspension of about 42% of the mechanised street sweeping service in 2000 (see para. 5.2(a) below), Audit has suggested that the FEHD should reduce the planned sweeping frequencies of all routes in the Urban Area and of those routes in the NT Area with a planned sweeping frequency of four times a week.

2.8 The audit observations mentioned in paragraph 2.7(a) and (b) above indicate that the FEHD's assessment of the amount of sand and grit deposits on an MSR (which is used mainly to determine the planned sweeping frequency of the route — see para. 2.4 above) does not reflect the actual cleansing requirements. **Audit considers that the FEHD needs to make use of objective data (such as the EPD's transaction records for mechanical sweepers — see para. 2.6 above) for determining the sweeping frequencies of MSRs.**

FEHD's comments on sweeping frequencies of MSRs

2.9 In response to Audit's enquiry about the results of Audit's assessment of the yield of individual MSRs, the FEHD informed Audit that a comprehensive review on public cleansing services to be conducted by its Management Services Unit (MSU) would also include a review of the sweeping frequencies of MSRs. The FEHD also said that:

(a) the higher yield in the NT Area might be attributed to its rapid urbanisation as well as the serious wear and tear of road surfaces caused by heavy vehicles;

(b) it had reservations on reducing the current sweeping frequency of individual MSRs because this would lead to a lowering of the cleanliness level. This might in turn give rise to public complaints; and

(c) the sweeping frequency should not simply be linked quantitatively to the weight of sand and grit collected. There were other factors, such as the relative importance of the road and local expectations, which also needed to be taken into account in determining the optimum sweeping frequency of a particular route.

2.10 **Audit recognises that various factors should be taken into account in determining the sweeping frequencies of MSRs. However, Audit considers that the weight of sand and grit actually collected by individual mechanical sweepers should be used as a key and objective indicator for determining the sweeping frequency of individual MSRs.**

Audit recommendations on sweeping frequencies of MSRs

2.11 **Audit has *recommended* that the Director of Food and Environmental Hygiene should:**

(a) **review the current planned sweeping frequencies of MSRs; and**

(b) **use the weight of sand and grit actually collected by mechanical sweepers as recorded by the EPD as one of the key and objective indicators for determining the sweeping frequencies of MSRs.**

Response from the Administration

2.12 The **Director of Food and Environmental Hygiene** has said that, in the comprehensive review to be conducted by the MSU of the FEHD in mid-2002, a study will be carried out on the current planned sweeping frequencies of MSRs using the weight of sand and grit actually collected by the mechanical sweepers on the MSRs as one of the indicators. Meanwhile, the FEHD has started adjusting the planned sweeping frequencies of certain MSRs on a trial basis. So far, the FEHD has reduced the planned sweeping frequencies of certain sections of some MSRs in the NT Area from four to three times a week.

PART 3: MECHANISED GULLY CLEANSING SERVICE

Mechanical gully emptiers

3.1 Dirt and refuse in gully traps on most public roads are cleared manually. However, special-purpose vehicles, called mechanical gully emptiers, are used to clear gully traps on fast-speed roads and flyovers where manual means of clearing are either too dangerous or impracticable.

Present arrangement

3.2 Mechanised gully cleansing teams (MGCTs) of the FEHD use mechanical gully emptiers to cleanse gullies regularly so as to prevent flooding and breeding of mosquitoes. As at 31 March 2001, the FEHD employed 5 Foremen, 24 Special Drivers, 5 Motor Drivers and 50 Workman Is to operate 23 mechanised gully cleansing routes (MGCRs). Table 3 below shows the distribution of the 23 MGCRs by the three Operations Divisions as at 31 March 2001. Each MGCR is assigned to an MGCT which cleanses gullies at frequencies ranging from once every 63 days to once every 24 days. MGCTs operate in two shifts, namely day shift and midnight shift. (The working hours of these shifts are shown in Appendix C.) For the day shift, an MGCT normally consists of one Special Driver and two Workman Is. For the midnight shift, the staff complement of an MGCT varies among the three Operations Divisions (see para. 3.14 below).

Table 3

Distribution of MGCRs as at 31 March 2001

	Number of MGCRs			
Shift	**Ops 1**	**Ops 2**	**Ops 3**	**Total**
Day	–	2	14	16
Midnight	2	3	2	7
Total	**2**	**5**	**16**	**23**

Source: FEHD's records

Follow-up on Audit's observations on gully cleansing frequency

3.3 In Chapter 2 of the Director of Audit's Report No. 35 of October 2000 on the Government's efforts to control flooding in urban areas, Audit reported that the frequencies of the mechanised gully cleansing service in the Urban Area could not match with the actual cleansing requirements. Audit recommended that the Director of Food and Environmental Hygiene should carry out a critical review of the frequencies of the mechanised gully cleansing service. In the Public Accounts Committee's Report No. 35 issued in February 2001, the Committee:

(a) noted that the FEHD was carrying out a critical review of the frequencies of the mechanised gully cleansing of highways at night in order to ascertain the actual requirement before finalising arrangements for contracting out the service; and

(b) said that it wished to be kept informed of the progress of the review.

3.4 In June 2001, the MSU of the FEHD issued a review report on the frequencies of the mechanised gully cleansing service. The report recommended, among other things, that the FEHD should:

(a) set a minimum annual frequency of cleansing individual gullies according to its "flooding possibility";

(b) carry out additional cleansing operations depending on the results of regular inspections of the gullies; and

(c) continue to obtain statistics of flooding complaints and details on flooding black spots from the Drainage Services Department and the Highways Department on a quarterly basis to facilitate the constant review of the cleansing frequency in future.

These recommendations, which have largely addressed the issues raised in the Director of Audit's Report, are being implemented by the FEHD.

Tasks and time standards

3.5 The planning sheet for an MGCR specifies the tasks required to be carried out on the route. For each task of the mechanised gully cleansing operation, the time allowed is estimated on the basis of the time standard established for the task. The planning sheet for an MGCR also specifies the time allowed for the following tasks of the mechanised gully cleansing operation:

(a) ***Travelling.*** This consists of the time required for a mechanical gully emptier to travel from the vehicle depot to the roll call point (Note 1), thence to the gully emptying site, thence to the disposal site, thence to the roll call point, and back to the vehicle depot;

(b) ***Water filling.*** This is the time required for filling up the water tank of a mechanical gully emptier;

(c) ***Gully emptying work.*** This is the time required to be spent at each gully emptying site, including:

(i) the time required for clearing and flushing a gully; and

(ii) the travelling time between gullies;

(d) ***Tipping.*** This is the time required for offloading the sludge collected at designated disposal sites; and

(e) ***Daily allowance.*** This is the time required for daily checking and refuelling of mechanical gully emptiers.

3.6 The time standards for most tasks of the mechanised gully cleansing operation were established in the mid-1980s. The time standards being used in the Urban Area were established by the USD in 1985 and those being used in the NT Area were established by the NTSD in 1984.

Gully emptying work

3.7 Gully emptying work (see para. 3.5(c) above) is the main task of the mechanised gully cleansing operation. In order to ascertain the efficiency of the task, Audit has compared the actual time spent in performing the task with the time planned for the task.

Audit observations on gully emptying work

3.8 Gully emptying work done is recorded in both the daily job sheets and the log books for mechanical gully emptiers. To ascertain the actual daily time spent in performing gully emptying work in the Urban Area and the NT Area, Audit analysed the daily job sheets and the log books of all the mechanical gully emptiers of December 2000. By comparing the actual daily time spent in gully emptying work with the daily time planned for the task, Audit found that in December 2000:

Note 1: *A roll call point is a place where the cleansing staff sign in and off during a working day.*

(a) in the Urban Area, the actual daily time spent in gully emptying work was close to the daily time planned for the task (see Appendix D); and

(b) **in the NT Area, on average, the actual daily time spent in gully emptying work was only 65% of the daily time planned for the task (see Appendix E).**

FEHD's comments on gully emptying work

3.9 In response to Audit's enquiry about the significant variance between the actual daily time spent in gully emptying work in the NT Area and the daily time planned for the task, the FEHD said that:

(a) the rapid development of the New Territories and its supporting infrastructure, conditions of public roads and changes relating to the design of the drainage system had directly affected the efficiency of the gully cleansing service; and

(b) **it agreed that the time standards being used for planning the mechanised gully cleansing operation in the NT Area could not reflect the actual situation.**

3.10 The FEHD also said that:

(a) the actual daily time spent in water filling was longer than the daily time planned for the task because of long queuing time at the water filling points; and

(b) the FEHD was actively trying to reduce the long queuing time at the water filling points by:

(i) increasing the number of water supply points at the vehicle depots;

(ii) decentralising the water filling activity by identifying more water filling points in the districts; and

(iii) staggering the water filling time for the special-purpose vehicles.

3.11 **The FEHD informed Audit that it had planned to incorporate the study of time standards for mechanised gully cleansing service in its forthcoming comprehensive review on public cleansing services to be conducted by its MSU.**

Audit recommendation on gully emptying work

3.12 **In the light of the FEHD's comments mentioned in paragraphs 3.9 to 3.11 above, Audit has *recommended* that the FEHD should revise the time standards for mechanised gully cleansing operation in the NT Area, especially those in respect of gully emptying work, so that the new time standards will reflect the current working conditions in the New Territories.**

Response from the Administration

3.13 The **Director of Food and Environmental Hygiene** has said that the comprehensive review to be conducted by the MSU of the FEHD in mid-2002 will include a study of the working procedures of the MGCTs with a view to aligning the time standards being adopted in the NT Area with those in the Urban Area. Pending the outcome of the study, the FEHD will reschedule the work programmes according to the revised frequencies derived from the review of the frequencies of the mechanised gully cleansing service conducted by its MSU (see para. 3.4 above), with a view to gainfully redeploying any surplus staff resources so identified.

Audit observations on the staff complement of MGCTs in the midnight shift

3.14 **Audit has observed a discrepancy in the staff complement of the MGCTs in the midnight shift. As at 31 March 2001, in the midnight shift, there were five MGCTs in Ops 1 and Ops 2 and two MGCTs in Ops 3. The MGCTs of all three Operations Divisions have the same working conditions and are equipped with the same type of equipment. However, an MGCT in Ops 1 and Ops 2 has two more staff members, namely one Foreman and one Motor Driver, than an MGCT in Ops 3 (Note 2).** Audit has noted that in Ops 1 and Ops 2:

(a) the Foreman is responsible for supervising the midnight mechanised gully cleansing operation and for ensuring the proper implementation of the safety measures; and

(b) for safety purpose, the Motor Driver is responsible for operating another vehicle to provide a precautionary crash barrier to the staff working on fast-speed roads and to convey traffic cones for protecting the workers during the overnight operation.

FEHD's comments on the staff complement of MGCTs in the midnight shift

3.15 In response to Audit's enquiry about the discrepancy in the staff complement of the MGCTs in the midnight shift, the FEHD said that:

Note 2: *An MGCT in Ops 1 and Ops 2 comprises one Foreman, one Special Driver, one Motor Driver and two Workman Is, while an MGCT in Ops 3 comprises one Special Driver and two Workman Is.*

(a) the two midnight MGCTs in Ops 3 were redeployed from the day shift around 1997-98. Owing to staff constraints, the FEHD had not been able to provide the MGCTs in Ops 3 with the same staff complement as that provided for the MGCTs in Ops 1 and Ops 2;

(b) Ops 3 had employed a Foreman Driver to operate a van for supervising the midnight mechanised gully cleansing operation and other midnight mechanised street cleansing operations; and

(c) **the discrepancy would be addressed in the comprehensive review on public cleansing services to be conducted by its MSU.**

Audit recommendation on the staff complement of MGCTs in the midnight shift

3.16 **In the light of the FEHD's comments mentioned in paragraph 3.15 above, Audit has *recommended* that the FEHD should review the manning scale of the MGCTs in the midnight shift with a view to establishing an optimum manning scale for all MGCTs in the three Operations Divisions.**

Response from the Administration

3.17 The **Director of Food and Environmental Hygiene** has said that:

(a) the study of the mechanised gully cleansing service (see para. 3.13 above) will also cover the staff provision of the MGCTs with a view to establishing an optimum manning scale for all MGCTs in the midnight shift in the three Operations Divisions; and

(b) the FEHD attaches utmost importance to ensuring the safety of its staff who carry out gully emptying work at night. The FEHD considers that it is necessary to operate another vehicle to provide a precautionary crash barrier for enhancing the safety of the MGCTs at night. This is because in November 1999, an FEHD staff member was killed in a traffic accident while performing gully emptying work.

PART 4: STREET WASHING SERVICE

Street washing vehicles

4.1 Pavements, lanes, public areas (such as hawker areas) and hygiene black spots are washed regularly to keep them clean. For some trunk roads where the traffic is heavy and on which street washing is not practicable, they are flushed instead. Special-purpose vehicles, called street washing vehicles, are used to provide street washing service (Note 3).

Present arrangement

4.2 Street washing teams (SWTs) of the FEHD use street washing vehicles to wash streets regularly. As at 31 March 2001, the FEHD employed 68 Gangers, 75 Special Drivers and 184 Workman IIs to operate 58 street washing routes (SWRs). Table 4 below shows the distribution of the 58 SWRs by the three Operations Divisions as at 31 March 2001. Each SWR is assigned to an SWT which comprises one Ganger, one Special Driver and three Workman IIs. Each SWT washes streets at frequencies ranging from once a fortnight to once a day. On an SWR, both street washing and street flushing are carried out. Streets are flushed by sprinkling pressurised water from the street washing vehicle (operated by a Special Driver alone) onto surface channels and central dividers. SWTs operate in three shifts, namely day shift, evening shift and midnight shift. (The working hours of these shifts are shown in Appendix F.)

Table 4

Distribution of SWRs as at 31 March 2001

	Number of SWRs			
Shift	**Ops 1**	**Ops 2**	**Ops 3**	**Total**
Day	10	11	15	36
Evening	7	13	1	21
Midnight	–	1	–	1
Total	**17**	**25**	**16**	**58**

Source: FEHD's records

Note 3: *The FEHD does not differentiate between manual street washing service and mechanised street washing service because street washing vehicles are used for both services.*

Work values for street washing

4.3 Work values are established to facilitate the planning of manpower requirement for various tasks of a street cleansing service. The time required for a qualified worker to carry out a specified task at a standard level of performance is known as the work value of the task. It is the rate of output which a qualified worker will naturally achieve without over-exertion over a working day, provided that he adheres to the correct working method and is motivated to apply himself to the work. Work values are expressed in terms of minutes per unit of work. A planning sheet for an SWR is prepared on the basis of these work values.

4.4 Two sets of work values for street washing service are used within the FEHD: one by Ops 1 and Ops 2 in the Urban Area and the other by Ops 3 in the NT Area (Note 4). These two sets of work values are shown in Table 5 below.

Note 4: *The work values used by Ops 1 and Ops 2 were based on the results of the Work Values Update Review completed by the MSU of the USD in August 1999. The work values used by Ops 3 were based on the "NTSD Work Manual on Mechanised Cleansing Services" prepared in July 1984.*

Table 5

Current work values for street washing service

Task	Work value used in the Urban Area	Work value used in the NT Area	Excess work value in the NT Area	
			Time	Percentage
	(a)	(b)	(c) = (b) − (a)	(d) = $\frac{(c)}{(a)} \times 100\%$
	(Minutes)	(Minutes)	(Minutes)	
Pavement and surface channel washing — up to 3 metres in width	9.0 per 100 metres	19.5 per 100 metres	10.5 per 100 metres	117%
Pavement and surface channel washing — 3 metres and above in width	12.9 per 100 metres	25.2 per 100 metres	12.3 per 100 metres	95%
Street flushing	9.1 per kilometre	11.4 per kilometre	2.3 per kilometre	25%
Open area washing	3.2 per 100 square metres	3.3 per 100 square metres	0.1 per 100 square metres	3%

Source: FEHD's records

Audit observations on high work values for pavement and surface channel washing in the NT Area

4.5 **Audit has found that the work values for pavement and surface channel washing in the NT Area exceed those in the Urban Area by more than 90% (see Table 5 above). Audit considers that such significant differences merit attention.**

FEHD's comments on high work values for pavement and surface channel washing in the NT Area

4.6 In response to Audit's enquiry about the significant variances between the two sets of work values for pavement and surface channel washing in the Urban Area and the NT Area, the FEHD agreed that there would be a need to look into such variances. **The FEHD informed Audit that this would be done in the forthcoming comprehensive review on public cleansing services to be conducted by its MSU.**

Audit's further observations on FEHD's comments

4.7 **Audit has found that if Ops 3 adopts the work values for pavement and surface channel washing in the Urban Area, at least three SWTs in the NT Area can be disbanded. Audit has estimated that:**

(a) **the annual saving in staff cost at 2000-01 prices would be $2.7 million (see Appendix G); and**

(b) **a saving of about $3 million in replacement cost of street washing vehicles would be achieved (see Appendix G).**

4.8 **In the light of the FEHD's comments (see para. 4.6 above) and the estimated potential savings which would result from Ops 3's adoption of the work values in the Urban Area (see para. 4.7 above), Audit considers that it is necessary for the FEHD to align the work values for street washing service in the NT Area with those in the Urban Area.**

Audit recommendation on high work values for pavement and surface channel washing in the NT Area

4.9 **Audit has *recommended* that the Director of Food and Environmental Hygiene should align the work values for street washing service in the NT Area with those in the Urban Area, particularly those for pavement and surface channel washing.**

Response from the Administration

4.10 The **Director of Food and Environmental Hygiene** has said that:

(a) in July 2001, the FEHD started a study of the existing working practices of the SWTs in both the Urban Area and the NT Area with a view to standardising the working procedures and adopting a common set of work values for both areas; and

(b) meanwhile, the FEHD has started revising the existing street washing programmes in the NT Area with reference to the work values in the Urban Area on a trial basis so as to enhance productivity.

Audit observations on street flushing operation

4.11 Street washing operation and street flushing operation require different manpower input. When a street is being washed, all five members of an SWT are required to perform specific duties. (Their main duties are shown in Appendix H). On the other hand, during the flushing of a street, while only the Special Driver of the SWT operating the street washing vehicle is working, other team members of the SWT are not. **Audit has found that the cleansing staff, comprising all members of the team except the driver, of an SWT are idle when a street is being flushed. Audit considers that, if the existing SWRs are further separated into street washing routes and street flushing routes, the cleansing staff of an SWT who are now idle when streets are being flushed can be released to perform other gainful tasks.**

FEHD's comments on street flushing operation

4.12 In response to Audit's enquiry as to whether it is feasible to plan SWRs in such a way that separate routes are designated for street washing operation and street flushing operation, the FEHD said that:

(a) it agreed that separating street flushing operation from the existing SWRs might provide a means to release the idle staff resources from the operation;

(b) it considered that it would need to examine carefully the feasibility of providing separate street flushing routes in the light of the number of flushing locations, the distance between these locations, the anticipated changes in these locations due to the contracting-out process and the cost-effectiveness of such arrangements; and

(c) in its forthcoming comprehensive review on public cleansing services, it would look into the feasibility of providing separate street flushing routes.

Audit recommendation on street flushing operation

4.13 **In the light of the FEHD's comments mentioned in paragraph 4.12 above, Audit has *recommended* that the Director of Food and Environmental Hygiene should study the feasibility of separating the existing SWRs into street washing routes and street flushing routes so that the cleansing staff of an SWT who are now idle when streets are being flushed can perform other gainful tasks.**

Response from the Administration

4.14 The **Director of Food and Environmental Hygiene** has said that the FEHD's study started in July 2001 (see para. 4.10 above) will also examine the feasibility of separating the street flushing operation from the existing street washing operation.

PART 5: IDLE TIME

Instances of idle time

5.1 In this review, Audit found that some staff members responsible for providing mechanised street cleansing services had:

(a) idle time when a cleansing service was suspended; and

(b) scheduled idle time.

Audit observations on suspension of services

5.2 Audit noted that the mechanised street cleansing services were sometimes suspended. Audit ascertained the extent of suspension of mechanised street cleansing services in 2000, by scrutinising the daily duty roster of Special Drivers in the day shift and identifying the days on which suspension of any one of the three mechanised street cleansing services had occurred. The records of the months of February, May, August and November in 2000 were selected for review. The results are summarised in Table 6 below. **Audit found that, in these four months in 2000, significant portions of the mechanised street sweeping service and the mechanised gully cleansing service in the day shift were suspended. On average:**

(a) **42% of the mechanised street sweeping service was suspended; and**

(b) **29% of the mechanised gully cleansing service was suspended.**

Table 6

Percentage of suspended mechanised street cleansing services in the day shift in four months in 2000

	Percentage of suspended services				
Service	**February 2000**	**May 2000**	**August 2000**	**November 2000**	**Average (Note)**
Mechanised street sweeping	36%	43%	49%	41%	42%
Mechanised gully cleansing	28%	25%	30%	33%	29%
Street washing	12%	11%	15%	10%	12%

Source: Audit's analysis of FEHD's records

Note: Average percentage of suspended service

$$= \frac{\textit{Total number of working days on which a suspension of service occurred}}{\textit{Total number of available working days}} \times 100\%$$

5.3 Based on the daily duty roster of Special Drivers in the day shift, Audit further ascertained the reasons for the suspension of individual mechanised street cleansing services in the day shift in May 2000. The results are summarised in Table 7 below.

Table 7

Reasons for suspension of mechanised street cleansing services in the day shift in May 2000

Reason	Mechanised street sweeping	Mechanised gully cleansing	Street washing
(a) Special-purpose vehicles were available but Special Drivers were not available	24%	37%	71%
(b) Special Drivers were available but special-purpose vehicles were not available	11%	19%	2%
(c) Both Special Drivers and special-purpose vehicles were not available	65%	34%	26%
(d) Both Special Drivers and special-purpose vehicles were available but the cleansing staff were not available	–	10%	1%

Source: Audit's analysis of FEHD's records

FEHD's comments on suspension of services

5.4 In response to Audit's enquiry about the frequent suspension of the mechanised street cleansing services in the day shift in 2000, the FEHD agreed that it was mainly due to the shortage of Special Drivers and the high downtime rates of its fleet of special-purpose vehicles. The FEHD said that:

(a) the shortage of Special Drivers was due to sudden exigencies and the deployment of Special Drivers to operate refuse collection routes. Sudden exigencies arose from sick leave and urgent vacation leave of staff. The overall level of sudden exigencies in May 2000 was normal. Special Drivers were deployed from the mechanised street cleansing services to operate new, additional refuse collection routes for providing refuse collection service in Yuen Long and Sai Kung, and to meet the FEHD's obligation to operate a daily refuse collection service. The situation would improve in November 2001 when a new contract for refuse collection came into effect. By then, those Special Drivers currently assigned to operate new refuse collection routes would be released to operate the special-purpose vehicles of MSRs or MGCRs; and

(b) its fleet of special-purpose vehicles had high downtime rates. 73% of the mechanical sweepers, 55% of the mechanical gully emptiers and 70% of the street washing vehicles were running beyond their typical lifespan of nine years. In the past three years, only a small number of replacement special-purpose vehicles were procured due to the streamlining of the existing services and the contracting-out programme. **After reviewing its vehicle requirements in 2000, the FEHD sought funds for the procurement of replacement special-purpose vehicles for delivery in 2002.** Upon the delivery of the replacement special-purpose vehicles and with the gradual contracting-out of the mechanised street cleansing services in 2001 and 2002, the availability of special-purpose vehicles would improve.

Audit's suggestion for reducing suspension of services

5.5 **Audit has suggested to the FEHD that idle Special Drivers and special-purpose vehicles in different districts and vehicle depots should be matched and redeployed to reduce the level of suspension of mechanised street cleansing services.** This is because Audit noted that there were instances where Special Drivers and/or special-purpose vehicles were not available in one district while Special Drivers and/or special-purpose vehicles were left idle in other districts. Audit has attempted to find a solution which may overcome this problem. In doing so, Audit divided the FEHD's districts into two regions, namely the Eastern Region and the Western Region (Note 5), according to their geographical locations. **Audit found that in May 2000, had all the idle Special Drivers and/or special-purpose vehicles been matched and redeployed on a daily basis among different districts (see Appendix I), about 14% of the mechanised street cleansing services in the Eastern Region and about 9% of the mechanised street cleansing services in the Western Region would not have been suspended.**

FEHD's comments on Audit's suggestion for reducing suspension of services

5.6 **The FEHD generally agrees with Audit's suggestion that idle Special Drivers and special-purpose vehicles in different districts and vehicle depots should be matched and redeployed to reduce the level of suspension of mechanised street cleansing services.** However, the FEHD has said that it has the following operational difficulties in matching and redeploying the Special Drivers and special-purpose vehicles across districts:

(a) when the districts concerned are far apart, the additional travelling time incurred would use up much of the productive time for work (Note 6); and

---

Note 5: *The Eastern Region comprises Ops 1 Headquarters, Eastern, Wan Chai, Kowloon City, Kwun Tong, Wong Tai Sin, North, Sai Kung, Shatin and Tai Po. The Western Region comprises Ops 2 Headquarters, Central, Southern, Western, Mong Kok, Sham Shui Po, Yau Tsim, Kwai Tsing, Tsuen Wan, Tuen Mun and Yuen Long.*

Note 6: *Audit considers that the travelling time can be reduced through better planning so that idle staff and special-purpose vehicles in those districts and vehicle depots close to each other will be matched first. It is always better to keep staff gainfully employed.*

(b) Special Drivers deployed to perform work in another district would encounter difficulties in locating the work sites (Note 7).

5.7 Notwithstanding the above, the FEHD has advised that it had taken the following interim measures to better utilise its manpower and special-purpose vehicles:

(a) the Senior Foremen and the Transport Services Officers concerned would maintain close liaison with their counterparts in other vehicle depots in order to identify opportunities for matching and redeploying manpower and special-purpose vehicles; and

(b) more spare special-purpose vehicles would be allocated to the remote vehicle depots, such as Tuen Mun and Yuen Long. Those vehicle depots relatively close to each other would be provided with fewer spare special-purpose vehicles. This would obviate the need for making long travel across districts and minimise the idle travelling time arising from the matching and redeployment of Special Drivers and special-purpose vehicles of different districts.

5.8 **In the light of the FEHD's comments mentioned in paragraphs 5.6 and 5.7 above, Audit considers that it is necessary for the FEHD to reduce the level of suspension of mechanised street cleansing services.**

Audit recommendations on suspension of services

5.9 **Audit has *recommended* that the Director of Food and Environmental Hygiene should:**

(a) **match and redeploy idle Special Drivers and special-purpose vehicles of different districts and vehicle depots so as to reduce the level of suspension of mechanised street cleansing services; and**

(b) **after taking account of the results of both the review of the frequency of the mechanised street sweeping service (see para. 2.9 above) and the review of the frequency of the mechanised gully cleansing service (see para. 3.4 above), promptly and critically review the provision of staff and special-purpose vehicles for these two services so as to ensure that suspension of services is kept to a minimum.**

Note 7: *Audit considers that the cleansing staff in the MGCTs or the SWTs should be able to guide the Special Drivers to the work sites.*

Response from the Administration

5.10 The **Director of Food and Environmental Hygiene** has said that:

(a) since 1 June 2001, the FEHD has started matching and redeploying idle Special Drivers and special-purpose vehicles among different Operations Divisions (Note 8). The FEHD will continue its efforts to match and redeploy Special Drivers and special-purpose vehicles of different districts and vehicle depots with a view to reducing the level of suspension of mechanised street cleansing services; and

(b) the FEHD will critically review the working procedures and work standards being adopted in mechanised street sweeping service and mechanised gully cleansing service with a view to ensuring that the suspension of these two services is kept to a minimum.

Audit observations on scheduled idle time

5.11 **Audit's examination of the planning sheets for MGCRs and SWRs reveals that the cleansing staff, comprising all members of the teams except the drivers, engaged in mechanised gully cleansing operation and those engaged in street washing operation have substantial amounts of scheduled idle time in their daily work, as indicated in Table 8 below.**

Table 8

Average idle time of cleansing staff of MGCTs and SWTs in a working day

Operations Division	Average idle time of	
	MGCTs	**SWTs**
	(Minutes per day)	**(Minutes per day)**
Ops 1	61	113
Ops 2	61	121
Ops 3	84	96

Source: Audit's analysis of FEHD's records

Note 8: *The fieldwork of this audit review started in September 2000 and ended in May 2001.*

Audit's analysis of idle time

5.12 Audit's analysis of the idle time of the staff of MGCTs and SWTs in a working day reveals that such idle time forms part of their daily schedule. **The cleansing staff have scheduled idle time because:**

(a) **some tasks in the mechanised gully cleansing operation and the street washing operation are performed by the Special Driver alone (see para. 5.13 below); and**

(b) **the cleansing staff and the Special Driver report for duty at different locations (see para. 5.14 below).**

5.13 ***Scheduled idle time of the cleansing staff due to some tasks being performed by the Special Driver alone.*** These tasks include:

(a) ***Water filling.*** At the beginning of a shift, the Special Driver fills up the water tank of the special-purpose vehicle before going to the first gully emptying site or the first street washing site;

(b) ***Daily checking and refuelling.*** At the beginning of a shift, the Special Driver carries out daily checking and refuelling of the special-purpose vehicle; and

(c) ***Duties performed after returning to the depot.*** At the end of a shift, after returning to the vehicle depot, the Special Driver completes the log book, checks the special-purpose vehicle for any damage and returns the key and log book to the duty room.

The total scheduled time of these three tasks in a working day for mechanised gully cleansing operation is 61 minutes and that for street washing operation is 70 minutes (see Table 9 below).

Table 9

Scheduled time of the tasks performed by the Special Driver alone in a working day

Task	Time scheduled for	
	Mechanised gully cleansing operation	**Street washing operation**
	(Minutes)	**(Minutes)**
(a) Water filling	16	23
(b) Daily checking and refuelling	15	17
(c) Duties performed after returning to the depot	30	30
Total	**61**	**70**

Source: FEHD's records

5.14 ***Scheduled idle time of the cleansing staff due to the cleansing staff and the Special Driver reporting for duty at different locations.*** On many cleansing routes, the Special Driver reports for duty at the vehicle depot while the cleansing staff report for duty at the roll call point. The cleansing staff are idle at the roll call point at the beginning of a shift when they are waiting for the special-purpose vehicle to pick them up for work. They are also idle after they have been dropped off at the roll call point until the end of a shift. Such idle time, which varies from route to route, is the time required by the special-purpose vehicle for travelling between the vehicle depot and the roll call point, and on the return trip (Note 9). **Audit found that as at 1 June 2001, 9 out of 23 MGCRs and 47 out of 53 SWRs had such idle time.**

5.15 **Audit has estimated that:**

(a) **the total annual staff cost of the scheduled idle time for the mechanised gully cleansing operation amounts to $1.6 million at 2000-01 prices (see Appendix J); and**

Note 9: *According to the information provided by the FEHD, the scheduled idle time ranges from 10 to 98 minutes per day.*

(b) **the total annual staff cost of the scheduled idle time for the street washing operation amounts to $10.1 million at 2000-01 prices (see Appendix K).**

Audit considers that there is a need for the FEHD to reduce the scheduled idle time for the mechanised gully cleansing operation and the street washing operation.

Audit recommendations on scheduled idle time

5.16 **In order to reduce the scheduled idle time for the mechanised gully cleansing operation and the street washing operation, Audit has *recommended* that the Director of Food and Environmental Hygiene should:**

(a) **promptly and critically review the mechanised gully cleansing operation and the street washing operation so that the scheduled idle time for these two operations would be reduced to a minimum; and**

(b) **revise the work schedules in the planning sheets for MGCRs and SWRs so that:**

(i) **water tanks of mechanical gully emptiers and street washing vehicles are filled before the beginning of a shift;**

(ii) **the official time of starting work of the cleansing staff of the MGCTs and SWTs will coincide with the arrival time of the special-purpose vehicles at the roll call points; and**

(iii) **work will be assigned to the cleansing staff from the time of their return to the roll call points to the end of the shift.**

Response from the Administration

5.17 The **Director of Food and Environmental Hygiene** has said that:

(a) the FEHD will critically review the working procedures and work standards being adopted in mechanised street sweeping operation and mechanised gully cleansing operation with a view to reducing the scheduled idle time for these two operations to a minimum; and

(b) the FEHD is looking into the feasibility of:

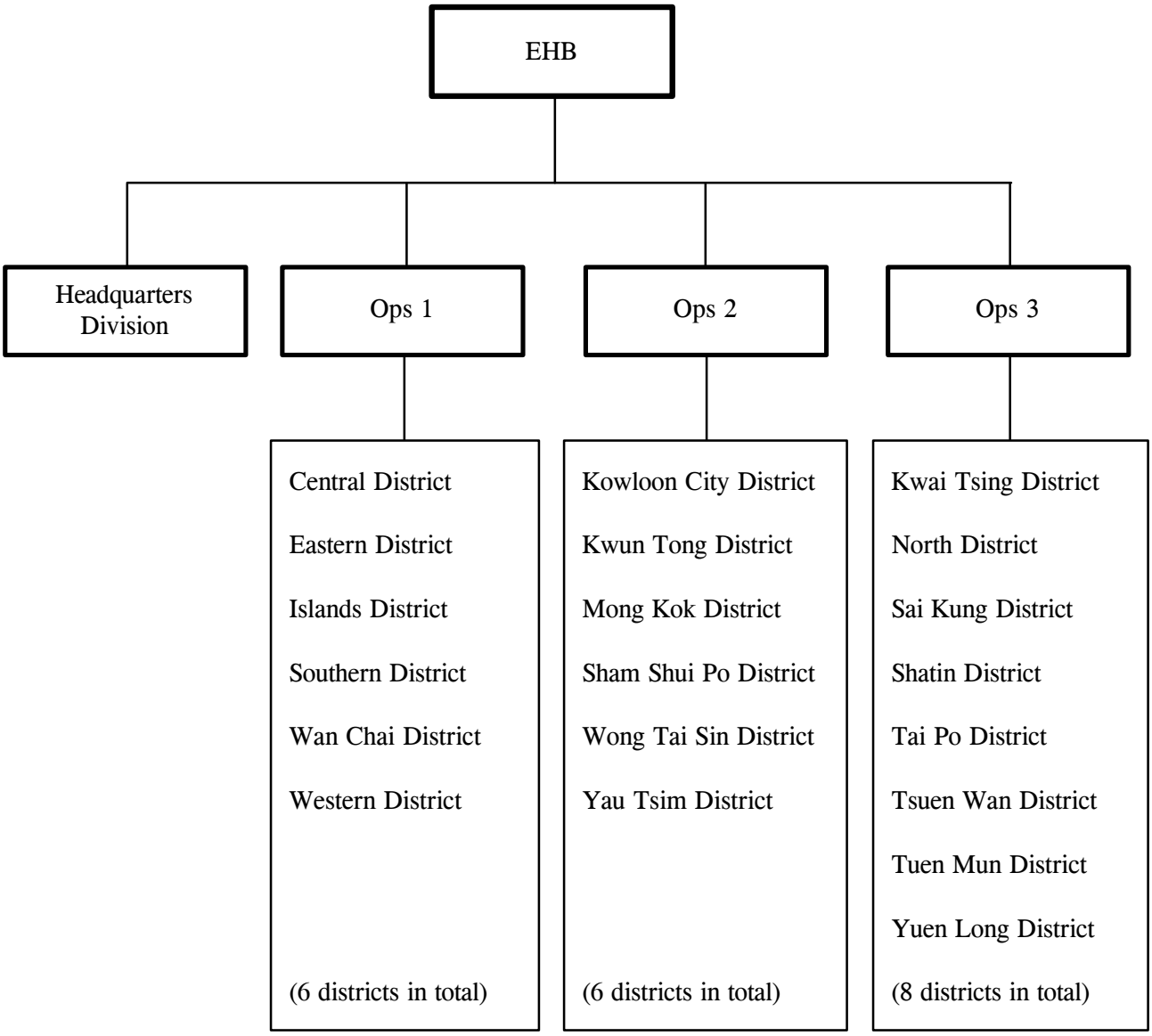
(i) finding additional water-filling points in order to minimise the idle time due to the special-purpose vehicles queuing for water at the beginning of a shift;

(ii) centralising the roll call points for the cleansing staff at the corresponding special-purpose vehicle depots. This will obviate the idle time of the cleansing staff due to their waiting for the special-purpose vehicles to pick them up for work at the beginning of a shift; and

(iii) assigning other duties to the cleansing staff from the time of their return to the roll call points to the end of their shifts.

Appendix A
(para. 1.2 refers)

Organisation chart of the EHB as at 31 March 2001



Source: FEHD's records

Appendix B
(para. 2.2 refers)

Working hours of MSTs

	Working hours		
Shift	**Ops 1**	**Ops 2**	**Ops 3**
Day	8:00 a.m. to 4:30 p.m.	N.A.	7:30 a.m. to 4:00 p.m. or 8:00 a.m. to 4:30 p.m.
Evening	N.A.	N.A.	3:00 p.m. to 11:30 p.m.
Midnight	11:00 p.m. to 6:30 a.m.	11:00 p.m. to 6:30 a.m.	10:30 p.m. to 6:00 a.m.

Source: FEHD's records

Appendix C
(para. 3.2 refers)

Working hours of MGCTs

	Working hours		
Shift	**Ops 1**	**Ops 2**	**Ops 3**
Day	N.A.	7:00 a.m. to 3:30 p.m.	8:00 a.m. to 4:30 p.m.
Midnight	11:00 p.m. to 6:30 a.m.	11:00 p.m. to 6:30 a.m.	10:30 p.m. to 6:00 a.m.

Source: FEHD's records

Appendix D
(para. 3.8(a) refers)

Comparison of the actual daily time spent in gully emptying work with the daily time planned in December 2000

Urban Area

Operations Division	Route number (Note 1)	Daily time planned	Actual daily time spent	Actual daily time spent as a percentage of daily time planned
		(a)	(b)	$(c) = \frac{(b)}{(a)} \times 100\%$
		(Minutes)	(Minutes)	(%)
Ops 1	Midnight 1	226	236	104%
	Midnight 2	224	(Note 2)	N.A.
Ops 2	Midnight 1	263	245	93%
	Midnight 2	260	255	98%
	Midnight 3	254	253	100%

Source: *Audit's analysis of FEHD's records*

Note 1: *The two day routes in Ops 2 are not shown because these routes were designated to supplement manual gully cleansing work by rotation, according to the actual cleansing requirements (which varied from time to time). No planning sheets were prepared for these routes.*

Note 2: *Data were incomplete.*

Remark: *In the Urban Area, the actual daily time spent in gully emptying work was close to the daily time planned for the task.*

Appendix E
(para. 3.8(b) refers)

Comparison of the actual daily time spent in gully emptying work with the daily time planned in December 2000

NT Area

District	Route number	Daily time planned (a) (Minutes)	Actual daily time spent (b) (Minutes)	Actual daily time spent as a percentage of daily time planned $(c)=\frac{(b)}{(a)}\times 100\%$ (%)
Kwai Tsing	Day 1	309	192	62%
	Midnight 1	342	268	78%
North	Day 1	200	(Note 1)	N.A.
	Day 2	208	(Note 1)	N.A.
Sai Kung	Day 1	290	147	51%
Shatin	Day 1	203	138	68%
	Day 2	234	100	43%
	Day 3	199	(Note 2)	N.A.
Tai Po	Day 1	218	(Note 1)	N.A.
Tsuen Wan	Day 1	311	170	55%
	Midnight 1	262	249	95%
Tuen Mun	Day 1	219	(Note 3)	N.A.
	Day 2	216	141	65%
Yuen Long	Day 1	216	144	67%
	Day 2	216	(Note 2)	N.A.
	Day 3	212	145	68%
			Average	**65%**

Source: *Audit's analysis of FEHD's records*

Note 1: *Service was suspended for the whole month pending the procurement of additional equipment to reinforce work safety on roads. The crew were redeployed to perform other cleansing duties during the suspension period.*

Note 2: *Data were incomplete.*

Note 3: *Service was suspended due to breakdown of the vehicle. The crew were redeployed to perform other cleansing duties during the suspension period.*

Remark: *In the NT Area, on average, the actual daily time spent in gully emptying work was only 65% of the daily time planned for the task.*

Appendix F
(para. 4.2 refers)

Working hours of SWTs

	Working hours		
Shift	**Ops 1**	**Ops 2**	**Ops 3**
Day	6:30 a.m. to 3:00 p.m. or 7:00 a.m. to 3:30 p.m.	7:00 a.m. to 3:30 p.m.	7:00 a.m. to 3:30 p.m. or 7:30 a.m. to 4:00 p.m. or 8:00 a.m. to 4:30 p.m.
Evening	3:00 p.m. to 11:30 p.m.	3:00 p.m. to 11:30 p.m.	3:00 p.m. to 11:30 p.m.
Midnight	N.A.	11:00 p.m. to 6:30 a.m.	N.A.

Source: FEHD's records

Appendix G
(para. 4.7 refers)

Estimated potential savings resulting from Ops 3's adoption of the work values for pavement and surface channel washing in the Urban Area

Estimated annual saving in staff cost

If Ops 3 adopts the work values for pavement and surface channel washing in the Urban Area, 7,552 working hours would be saved annually (Note).

According to Staff Cost Ready Reckoner No. 2000/1, the annual working hours are 2,183 for officers. Therefore, an equivalent of three SWTs would be saved (i.e. 7,552 working hours divided by 2,183 working hours).

An SWT comprises one Special Driver, one Ganger and three Workman IIs. Based on Staff Cost Ready Reckoner No. 2000/1, the annual staff cost of an SWT

= ($248,844 × 1) + ($179,448 × 1) + ($159,840 × 3) = $907,812 (say $0.9 million)

Therefore, the estimated annual saving in staff cost of three SWTs

= $0.9 million × 3 = $2.7 million

Estimated saving in replacement cost of street washing vehicles

The replacement cost of a street washing vehicle is about $1 million. Based on the provision of one street washing vehicle per SWT, the estimated saving in replacement cost of street washing vehicles

= $1 million × 3 = $3 million

Source: *Audit's analysis of FEHD's records*

Note: *The annual saving of 7,552 working hours represents the sum of annual savings of all the 16 SWRs in the NT Area which operate on a weekly cycle. The annual saving in working hours of an SWR*

= *(Time required per week for pavement and surface channel washing tasks using the work values in the NT Area − Time required per week for pavement and surface channel washing tasks using the work values in the Urban Area) × 52*

Remark: *If Ops 3 adopts the work values for pavement and surface channel washing in the Urban Area, Audit has estimated that the annual saving in staff cost at 2000-01 prices would be $2.7 million and the saving in replacement cost of street washing vehicles would be $3 million.*

Appendix H
(para. 4.11 refers)

Main duties of members of an SWT during a street washing operation

An SWT comprises one Ganger, one Special Driver and three Workman IIs. The main duties of individual members are as follows:

The **Ganger** is mainly responsible for:

(a) supervising the street washing operation;

(b) directing pedestrians away from the washing areas; and

(c) ensuring that the areas to be washed are free from obstructions.

The **Special Driver** is responsible for operating the street washing vehicle.

The **three Workman IIs** are responsible for performing the following duties:

(a) directing the nozzle and hose to the ground;

(b) holding and moving the hose to prevent damage; and

(c) scrubbing the area being washed and directing the waste water into the drainage system.

Source: FEHD's records

Appendix I
(para. 5.5 refers)

Matching and redeployment of idle Special Drivers and idle special-purpose vehicles in FEHD's districts in May 2000

		Eastern Region	Western Region
(a)	Number of working days in which work could have been carried out by:		
	(i) matching idle Special Drivers in one district with idle special-purpose vehicles in another district	27	13
	(ii) redeploying idle Special Drivers and special-purpose vehicles in one district to another district where none was available	4	6
		31	19
(b)	Total number of working days lost due to actual suspension of services	216	216
(c)	**Percentage of working days in which work could have been carried out [(a) ¸ (b) ´ 100%]**	**14%**	**9%**

Source: *Audit's analysis of FEHD's records*

Remark: *In May 2000, had the Special Drivers and/or special-purpose vehicles been matched and redeployed among different districts, about 14% of the mechanised street cleansing services in the Eastern Region and about 9% of the mechanised street cleansing services in the Western Region would not have been suspended.*

Appendix J
(para. 5.15(a) refers)

Annual staff cost of scheduled idle time for the mechanised gully cleansing operation at 2000-01 prices

Operations Division/Route	Average scheduled idle time per team		Number of MGCTs	Hourly rate of an MGCT	Annual staff cost of scheduled idle time
	(a)	(b)	(c)	(d)	(e) = (b) ´ (c) ´ (d)
	(Hours per day)	(Hours per annum)		($)	($'000)
Ops 1					
6-day routes	1.02	301.92 (Note 1)	2	289.6 (Note 3)	175
Ops 2					
7-day routes	1.02	371.28 (Note 2)	2	161.8 (Note 4)	120
6-day routes	1.02	301.92 (Note 1)	3	289.6 (Note 3)	262
Ops 3					
6-day routes	1.40	414.40 (Note 1)	16	161.8 (Note 4)	1,073
Total			**23**		**1,630**

(say $1.6 million)

Source: *Audit's analysis of FEHD's records*

Note 1: *MGCTs work six days a week throughout the year except general holidays. Therefore, these MGCTs work 296 days in a year.*

Note 2: *MGCTs work seven days a week throughout the year except the Lunar New Year's Day. Therefore, these MGCTs work 364 days in a year.*

Note 3: *Each MGCT comprises a Foreman and two Workman Is. Therefore, the hourly rate of an MGCT*

= (Hourly rate of a Foreman × 1) + (Hourly rate of a Workman I × 2)
= ($127.8 × 1) + ($80.9 × 2) = $289.6

Note 4: *Each MGCT comprises two Workman Is. Therefore, the hourly rate of an MGCT*

= Hourly rate of a Workman I × 2
= $80.9 × 2 = $161.8

Remark: *Audit estimates that the total annual staff cost of the scheduled idle time for the mechanised gully cleansing operation amounts to $1.6 million at 2000-01 prices.*

Appendix K
(para. 5.15(b) refers)

Annual staff cost of scheduled idle time for the street washing operation at 2000-01 prices

Operations Division/Route	Average scheduled idle time per team		Number of SWTs	Hourly rate of an SWT (Note 4)	Annual staff cost of scheduled idle time
	(a)	(b)	(c)	(d)	(e) = (b) ´ (c) ´ (d)
	(Hours per day)	(Hours per annum)		($)	($'000)
Ops 1					
7-day routes	1.82	662.48 (Note 1)	13	301.8	2,599
6-day routes	2.80	828.80 (Note 2)	1	301.8	250
Ops 2					
7-day routes	2.03	738.92 (Note 1)	19	301.8	4,237
6-day routes	1.96	580.16 (Note 2)	4	301.8	700
Ops 3					
6-day routes	1.60	473.60 (Note 2)	16	301.8	2,287
Total			**53 (Note 3)**		**10,073**
					(say $10.1 million)

Source: *Audit's analysis of FEHD's records*

Note 1: *SWTs work seven days a week throughout the year except the Lunar New Year's Day. Therefore, these SWTs work 364 days in a year.*

Note 2: *SWTs work six days a week throughout the year except general holidays. Therefore, these SWTs work 296 days in a year.*

Note 3: *As at 31 March 2001, there were 58 street washing routes. Since then, five routes had been contracted out.*

Note 4: *Each SWT comprises a Ganger and three Workman IIs. Therefore, the hourly rate of an SWT*

= (Hourly rate of a Ganger × 1) + (Hourly rate of a Workman II × 3)
= ($82.2 × 1) + ($73.2 × 3) = $301.8

Remark: *Audit estimates that the total annual staff cost of the scheduled idle time for the street washing operation amounts to $10.1 million at 2000-01 prices.*

Appendix L

Acronyms and abbreviations

EHB	Environmental Hygiene Branch
EPD	Environmental Protection Department
FEHD	Food and Environmental Hygiene Department
MGCRs	Mechanised gully cleansing routes
MGCTs	Mechanised gully cleansing teams
MSRs	Mechanised sweeping routes
MSTs	Mechanised sweeping teams
MSU	Management Services Unit
NT Area	New Territories Area
NTSD	New Territories Services Department
Ops 1	Operations Division 1
Ops 2	Operations Division 2
Ops 3	Operations Division 3
SWRs	Street washing routes
SWTs	Street washing teams
USD	Urban Services Department