

**Letter head of Friends of the Earth**

**Green Group Survey on  
Strategic Sewage Disposal Scheme**

**Executive Summary  
December 1999**

1. A questionnaire survey was conducted in November 1999 to collect views on Hong Kong Strategic Sewage Disposal Scheme (SSDS) and expectations of the terms of the forthcoming review from concerned individuals.
2. Twenty questionnaires have been returned within two week after questionnaire distribution.
3. Individuals from a wide range of professions, such as sewage treatment, environment science, and socio-economics have responded. They include representatives from local universities, private companies, environmental groups and interested individuals.
4. In general, respondents find SSDS unsatisfactory. Most of them are not satisfied with its effectiveness in handling Hong Kong's sewage problem, cost estimation, and the project's transparency. Particularly, all respondents find project management unsatisfactory
5. Most respondents suggests reviewing all Stages I to IV.
6. Almost all respondents consider that the forthcoming review should address the sustainability of the SSDS. The design concept, environmental impact, financial viability and the engineering feasibility of the Scheme should also be considered in the forthcoming review.
7. A number of alternatives have been suggested. They include:
  - Use of ozone or ultra-violet light for disinfection
  - Biological secondary treatment
  - Recycling waste for energy generation
  - Localised treatment by a number regional treatment plants
  - Waste water treatment technologies that enable recycling of waters, such as grey water systems.
8. Most respondents consider that the causes of delay and the adequacy of feasibility studies in Stage I should be reviewed.

9. In general respondents consider that the forthcoming IRP should have a wide representation of expertise. Suggested area of expertise include sewage treatment, tunnelling/geotechnical, economics, environmental management and policy, environmental groups, marine ecology, and hydraulic and water quality monitoring.
10. Opinion on whether members of the 1994/95 International Review Panel (IRP) should be appointed in the forthcoming one is divided.
11. The reasons for not including the previous IRP members are to avoid bias and to enable new ideas to be introduced. Some highlight that previous members from the overseas may not fully understand local situation.
12. Reasons for including member(s) of the previous IRP in the forthcoming one are to maintain continuity and to provide background information. Generally including one previous member is considered adequate.
13. Most respondents think that professionals, members of the Legislative Council Panel for Environment Affairs, and academics should be consulted in upon appointment of the forthcoming IRP.
14. There are more respondents who consider that the public should nominate panel expert for the forthcoming IRP than those with opposite opinion.
15. It is agreed that the public should be kept informed about the progress and the result of the review

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## **Survey on Strategic Sewage Disposal Scheme**

### **Summary Report December 1999**

#### **1 Introduction**

The Chief Executive announced in his latest Policy Address that Government will set up an International Review Panel (IRP) to review Strategic Sewage Disposal Strategy (SSDS) Stage II, III, and IV. Friends of the Earth (Hong Kong) thinks it is important for voices from the community to be heard when the terms of the forthcoming review is being finalised, so that this review will help develop a sustainable sewage strategy for Hong Kong.

The objective of this survey is, therefore, to collect from opinion on SSDS and their expectations in the forthcoming review from individuals who are concerned with Hong Kong's sewage strategy, and to present these views to Government and the members of the Legislative Council as additional information.

#### **2 Methodology**

Since it was not possible to identify all potential respondents, the questionnaire (Appendix A) was first sent by electronic mail and fax, from 16 November 1999, to:

- Relevant departments in local universities, including departments of biology, chemistry, environmental science, ecology, civil engineering, geology, geography, earth science.
- Hong Kong Institute of Engineers
- Members of Country and Marine Parks Board,
- Members of the Advisory Council on the Environment
- Hong Kong Productivity Council
- Centre of Environmental Technology

The potential respondents were also invited to forward the questionnaire to those who they think are concerned with Hong Kong's sewage strategy.

To assist respondents taking part in the survey, a brief summary of the historical development of SSDS (Appendix B) was attached to the questionnaire.

Questionnaires were collected up till Up till 30 November 1999.

### 3 Results

#### 3.1 Response rate

Twenty (20) questionnaires were returned. For privacy reasons, identities of individual respondents are not given in this report. However their areas of expertise and types of organisation they belong to are summarised in Tables 1 and 2. The total number of respondents in each table exceeds 20 because some respondents may have multiple areas of expertise or belong to more than one type of organisations.

<b>Areas of expertise</b>	<b>No. of respondents</b>
Sewage treatment	8
Geotechnical	0
Civil engineering - tunnelling	0
Environmental scientists	10
Socio-economist	1
Others	8

*Table 1 Respondents' areas of expertise*

<b>Organisation</b>	<b>No. of respondents</b>
University/Research Institute	15
Consultancy	1
Engineering contractor	1
Business firm	1 (equipment supplier)
Environmental group	2
Other NGO	0
Legislator	0
Interested individual	4

*Table 2 Respondents' affiliation*

## 3.2 Results of views on SSDS

Respondents' view on SSDS and its forthcoming review are summarised in this section. In Tables 3 to 10 below, items shown in italics are not provided in the questionnaire but are provided by the respondents.

Some questions were not answered by all respondents. Therefore the number of respondents to each question differs slightly.

### 3.2.1 The overall strategy

#### 3.2.1.1 Degree of satisfaction with SSDS

Respondents were asked if they are satisfied with various aspects of SSDS. In general, respondents find SSDS unsatisfactory. Over two third of the respondents find are not satisfied with effectiveness of the current design in handling Hong Kong's sewage problem, cost estimation, and the project's transparency. Particularly, all respondents are not satisfied with the project management (Table 3).

Aspects	Number of respondents		
	unsatisfactory	acceptable	satisfactory
Effectiveness of the overall design in handling Hong Kong's sewage problem	13	4	2
Feasibility	10	7	2
Estimation of cost	13	5	0
Sewage charge scheme	6	7	5
Project management (e.g. keeping works schedule and cost under control, contingency planning)	19	0	0
Transparency and accountability	16	2	0

*Table 3 Degree of satisfaction with various aspects of SSDS*

### 3.2.2 Review of SSDS:

In tables under this subheading are arranged according to the number of respondents choosing that item, with the most frequently chosen one first.

#### 3.2.2.1 Scope of review

##### *Stages to be included in forthcoming review*

Out of a total of 19 respondents of this question, 16 think all Stages I to IV should be reviewed. Only three (3) respondents suggest reviewing Stages II to Stage IV only.

##### *Scope of forthcoming review*

All (i.e. 20) respondents answered this question. Almost all of them consider that the forthcoming review should address the sustainability of the Scheme. The design concept, environmental impact, financial viability and the engineering feasibility of SSDS should also be considered in the forthcoming review by the vast majority. (Table 4)

<b>Issues</b>	<b>Number of respondents</b>
Sustainability (i.e. Can SSDS handle the growing sewage generation? Is it easy to maintain?)	19
Environmental impacts	17
Design concept	16
Engineering feasibility of disposal option currently adopted (e.g. deep tunnels)	16
Financial viability	16
Project management	14
<i>Alternative technologies</i>	5
<i>Radon problem from rocks</i>	1
<i>Cost and benefit of discharge of heavy metal and phosphorous with and without CEPT</i>	1

***Table 4 Issues to be considered by the forthcoming IRP***

Under "environmental impacts", the following have been highlighted:

- Impact of toxic chlorinated organic (as by-product of disinfection) released into the environment
- release of sewage nutrients (especially phosphorous) and the possibility of stimulating harmful algal bloom, including red tide
- disposal of sewage sludge

#### ***Alternatives for SSDS***

Six respondents have suggested alternatives for the current SSDS. These alternatives are:

- Ozonation and ultra-violet light for disinfection
- Biological secondary treatment
- Recycle of waste for energy generation
- Localised treatment by a number regional treatment plants
- Waste water treatment technologies that enable recycling of waters, such as grey water systems.

The advantage of lower capital and maintenance cost, as well as of cleaner effluent, of the last two suggestions have been highlighted by some respondents.

### ***Issues to be reviewed in Stage I***

18 respondents answered this question. More than half of the respondents consider that the causes of delay and the adequacy of feasibility studies in Stage I should be reviewed (Table 5).

<b>Issues</b>	<b>No. of respondents</b>
Causes of delays	15
Adequacy of feasibility studies	14
Continuation of works in Stage I	10
<i>Responsibility of decision making</i>	2
<i>Consider linking North Point and Chai Wan to Stage III/IV network to avoid cross-harbour link</i>	1
<i>Immediation actions need to be taken</i>	1

***Table 5 Issues in Stage I to be reviewed***

### **3.2.2.2 Facilitation of review**

#### ***Professions to be included in the forthcoming IRP***

Only one respondent had no opinion on the composition of the forthcoming IRP. The result is shown in Table 6.

	<b>No. of respondents</b>
Sewage experts	14
Tunnel/Geotechnical experts	14
Environmental management or policy experts	13
Hydraulic and water quality monitoring	11
economists	10
Marine ecologists	10
environmental groups	8

***Table 6 Area of expertise to be included in the forthcoming IRP***

In general respondents consider that the forthcoming IRP should have a wide representation of expertise in the forthcoming panel. (Table 7)

<b>No. of expertise areas suggested</b>	<b>No. of respondents</b>
3 to 5	8
6 to 7	8
1 to 2	3

***Table 7 Number of expertise areas suggested***

### ***Representation of 1994/95 Panel members in the forthcoming IRP***

Opinion on whether members of the 1994/95 IRP should be appointed in the forthcoming one is divided. (Table 8)

	<b>No. of respondents</b>
Members of previous IRP should be appointed	7
Members of previous IRP should not be appointed	7
No opinion	5

***Table 8 Opinion on whether members of 1994/95 IRP should be appointed in the forthcoming IRP***

The reasons for not including the previous IRP members are to avoid bias and to enable new ideas to be introduced. Some respondents also suggest that members of the previous panel should be available to answer questions in the forthcoming review, and highlight that previous members from the overseas may not fully understand local situation.

Seven (7) respondents suggest including member(s) of the previous IRP in the forthcoming one, the reason being mainly to maintain continuity and to provide background information. Five (5) of these respondents think one member of the previous IRP would be adequate.

### ***Consultation for the appointment of the forthcoming IRP***

All respondents answered this question. Most of them think that LegCo members, professionals and academics should be consulted in upon appointment of the forthcoming IRP. (Table 9)

	<b>No. of respondents</b>
Professional	18
Members of the Legislative Council Panel on Environmental Affairs	17
Academics	15
<i>Concerned NGOs (including environmental groups)</i>	4
<i>Community</i>	1
<i>International experts in the field of alternatives</i>	1

***Table 9 Opinion on who should be consulted for the appointment of IRP***

### *Nomination of panel experts from the public*

There are more respondents who consider that the public should nominate panel expert for the forthcoming IRP than those with opposite opinion. (Table 10)

	<b>No. of respondents</b>
Yes	9
No opinion	6
No	5

***Table 10 Opinion on whether the public should nominate panel experts***

There are five nominations by seven respondents. Please contact us for details of the nomination.

### *Dissemination of information about the review to the public*

Almost all respondents (19 out of 20) consider that the public should be kept informed about the progress and the result of the review. One respondent does not have any opinion on this issue.

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