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**(ACE Paper 30/97)**  
**for information**

## **Update Report on the Tolo Harbour Action Plan**

### **Purpose**

The purpose of this paper is to present an updated report on the Tolo Harbour Action Plan (THAP) to the Council. A full report with progress up to December 1996 is attached for Members' information.

### **Background**

2. Tolo Harbour is an almost landlocked and poorly flushed bay. In the 1980s, the development of Sha Tin and Tai Po New Towns and increased pollution loading in the catchment caused a dramatic downturn in water quality in Tolo Harbour and an increased incidence of red tides.

3. With the operation of the Sha Tin and Tai Po Sewage Treatment Works, the deterioration was partially ameliorated. However, in order to effectively reduce organic and nutrient loadings in the catchment to an acceptable level, the Tolo Harbour Action Plan (THAP) was implemented in 1987 to save the harbour.

4. The objectives of the THAP are to reduce the amount of biodegradable, carbonaceous organic pollutants entering Tolo Harbour to **5,000 kg of BOD per day** and the amount of nitrogenous pollutants to **600 kg Total Nitrogen per day**.

5. The THAP consists of 8 different actions. These are:-

- |                 |   |
|-----------------|---|
| <b>Action 1</b> | Process modification at the Sha Tin and Tai Po Sewage Treatment Works to reduce nitrogen loading                                  |
| <b>Action 2</b> | Effluent export from the Sha Tin and Tai Po Sewage Treatment Works to less sensitive waters - Tolo Harbour Effluent Export Scheme |
| <b>Action 3</b> | Provision of sewerage to rural villages   |
| <b>Action 4</b> | Transfer of water treatment works sludge to Sha Tin Sewage Treatment Works for marine disposal                                    |

- Action 5**      Collection and treatment of livestock waste in controlled areas
- Action 6**      Banning of livestock keeping in new town areas
- Action 7**      Implementation of the Water Pollution Control Ordinance
- Action 8**      Leachate management at the Shuen Wan Landfill

6.                The attached report, being the third update of the Plan, summarizes the actions that have been undertaken between 1987 and 1996 including changes in the implementation schedule and the reduction in pollution load.

### **Progress of Actions**

7.                Several actions were completed in the late 1980s and early 1990s. They were **Action 1** (completed in 1991), **Action 4** (completed in 1991) and **Action 6** (completed in 1988). Together they have resulted in an 11% reduction in the organic (BOD) load and an 18% reduction in the nutrient (Total Nitrogen) load in the Tolo Harbour catchment.

8.                For **Action 2**, the Tolo Harbour Effluent Export Scheme was commissioned in 1995-96. However, due to technical problems with pumps and flow meters, up to the end of 1996, only part of the effluent from the Sha Tin and Tai Po Sewage Treatment Works was exported to Victoria Harbour. It is anticipated that the scheme will be fully operational after the problem is rectified in mid 1997.

9.                The implementation of **Action 3**, to provide village sewerage, has experienced an 11-month delay from the last update of the Plan in February 1996. This is due to some difficulties encountered in the acquisition of land for sewerage construction. This programme will be implemented in phases and completed in 2003.

10.              The service for the collection of livestock waste in the Tolo area has been operating since 1987 (**Action 5**). Through implementation of the Waste Disposal (Livestock Waste) Regulation and the Water Pollution Control Ordinance (**Action 7**), effective enforcement action is being taken to stop illegal discharges.

11.              A leachate collection and pre-treatment system for the Shuen Wan Landfill under **Action 8** was constructed in 1995. Pretreated leachate from the landfill is being directed to the Tai Po Sewage Treatment Works for final treatment and disposal.

## **Conclusion**

12. With the progressive implementation of the Tolo Harbour Action Plan, there has been some improvement in the rate of compliance with the water quality objectives in inner Tolo Harbour, in particular in respect of dissolved oxygen in the bottom layer. There has also been a marked improvement in the water quality of some of the rivers in the catchment. The number of red tides in the harbour has been reduced from 39 recorded in 1988 to around 10 since 1991.

13. The attached figures show the reduction of pollution loads achieved under the Tolo Harbour Action Plan. In comparing the pollution loads with and without the implementation of the THAP, at the end of December 1996, the Plan has effectively achieved :

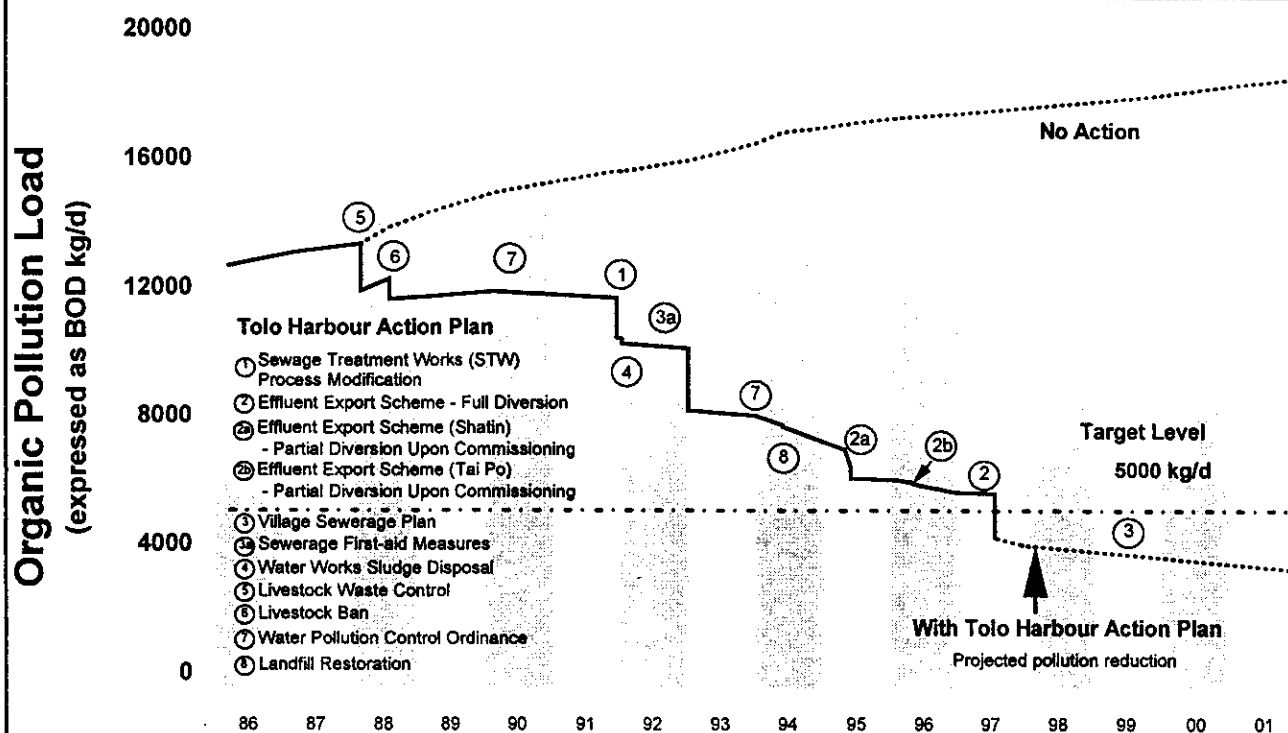
An overall reduction of **BOD load** by **65%**

An overall reduction of **Total Nitrogen load** by **47%**

14. Through the continued implementation of the remaining actions, including the provision of sewers to villages, the livestock waste control scheme, the enforcement of the Water Pollution Control Ordinance, and effective management of the Shuen Wan Landfill, the target BOD loading of 5,000 kg per day for Tolo Harbour will be achieved in 1997 and the Total Nitrogen target of 600 kg per day should be achieved around the year 2002.

**Environmental Protection Department**  
**March 1997**

## Organic Pollution Reduction by Tolo Harbour Action Plan



## Nutrient Pollution Reduction by Tolo Harbour Action Plan

