

NOTE FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

Supplementary information on 112CD – Drainage improvement in Northern New Territories - package A

INTRODUCTION

In considering PWSC(2001-02)30 on **112CD** at the Public Works Subcommittee meeting held on 30 May 2001, Members requested the Administration to provide supplementary information on how we could, by adopting appropriate measures and requirements at the planning stage, ensure that the drainage systems put in place in new towns could cater for possible developments in the area.

THE ADMINISTRATION'S RESPONSE

Development of a flood control and prevention strategy

2. In 1990, we completed the phase I of the Territorial Land Drainage and Flood Control Strategy Study (the study). Based on the recommendation of the study, the Government adopted a set of flood protection standards for the design of stormwater facilities to withstand a severe flood event within a "Return Period".

The standards are set out below -

	<u>Return Period</u>
• Urban drainage trunk systems	200
• Urban drainage branch systems	50
• Main river and rural drainage channels	50
• Village flood protection scheme	50

/"Return Period"

"Return Period" is the average number of years during which a certain severity of flooding will occur once, statistically. A longer return period means a rarer chance of occurrence of a more severe flooding. For urban areas, a 200-year protection standard is specified for trunk drains so that adequate protection is provided against extensive regional flooding. For branch networks, a 50-year protection standard is adopted on cost-effectiveness grounds, as the catchment areas served by branch drains are relatively small.

3. In 1993, we completed the phase II of the study which provided a rational framework for managing the drainage systems in the flood prone basins in the territory, implementing flood mitigation measures and responding to requests for development.

4. In 1995, we promulgated the procedures on the application of Drainage Impact Assessment (DIA) process to the public sector projects. At the same time, similar procedures for compliance in private sector projects are promulgated under Drainage Services Department (DSD) Advice Note No. 1 "Application of the Drainage Impact Assessment Process to Private Sector Projects." The following paragraphs set out in detail the measures and requirements aimed to ensure the adequacy of drainage systems in the territory including the new towns.

Drainage infrastructure to be provided by the Administration

5. An effective drainage system to protect the new town from undue flooding is of paramount importance. At the planning stage, we will first carry out a Drainage Impact Assessment (DIA) study of the new town and its areas of influence. A systematic approach will be adopted to identify and assess the potential adverse drainage impacts which may arise from the new town development. In the DIA study, we will take into account other known public and private developments at the periphery of the new town and the possible topographic changes to the surrounding areas due to site formation works. The cumulative effect of all the developments will be assessed to ensure that it will not cause unacceptable risk of flooding, both to the new town and its adjacent areas. Where appropriate, hydraulic modeling will be carried out to assess the overall impact of the proposed new town development and the drainage pattern of the existing and planned drainage network.

6. Based on the findings and recommendations of the DIA study, we will design the drainage system in accordance with established design standards and guidelines to ensure that the drainage facilities will achieve the required flood protection standards. We will pay particular attention to the likely increase in impervious area as a result of developments and, where the main drainage channels are subject to tides, to the combination of rain and tidal effects on the drainage design.

Drainage impact mitigation measures to be undertaken in association with subsequent developments

7. While we would endeavour to take all known factors into consideration in the course of the planning, design and construction of new towns, further and subsequent developments might put pressure on the planning parameters adopted and render the drainage systems inadequate. In view of that, we have established procedures in assessing and mitigating potential drainage impacts which might be brought about by public as well as private sector projects.

8. Under current procedures, the potential impacts of public sector projects on drainage are considered at the early stages of the project planning and design in order to minimise drainage problems. If a project is likely to have an impact on drainage, the proponent shall notify DSD by submitting a project profile. Based on the information provided in the project profile, DSD shall advise the proponent whether a DIA study is required by considering the likely impact of the proposed project on -

- (a) the existing capacity of watercourses and drainage paths;
- (b) the change in surface runoff hydrographs and flood storage; and
- (c) the risk of flooding in other areas in the catchment.

9. If the drainage impacts arising from the proposed project are likely to be serious or the necessary mitigation measures technically complicated, DSD may advise the proponent to undertake a DIA study. On the basis of the findings of the DIA study, the proponent and DSD will seek to agree on any necessary mitigation measures and monitoring requirements.

10. Accordingly, the proponent shall be responsible for implementing the drainage impact mitigation measures and the monitoring programme during the construction stage to ensure that the expected drainage performance of the project is achieved. DSD may conduct audit checks from time to time to ensure the implementation of the agreed mitigation measures and shall refer any non-compliance or inadequacy to the proponent for rectification.

11. Similar procedures are applicable to private sector projects. The Planning Department or the Lands Department (the approving authority) will initiate a similar process upon receipt of an application from a private developer for revising the Outline Zoning Plan and Layout Plan of a new town or for lease modification.

Development and implementation of drainage improvement measures

12. To investigate and resolve the drainage problems in specific areas, we have, from 1995 to 2000, progressively completed eight Drainage Master Plan studies covering most areas in the territory, in the following chronological order -

- 1 West Kowloon
- 2 Yuen Long, Kam Tin, Ngau Tam Mei and Tin Shui Wai
- 3 Northern Hong Kong Island
- 4 Tuen Mun and Sham Tseng
- 5 Tsuen Wan, Kwai Chung and Tsing Yi
- 6 Northern New Territories
- 7 Sha Tin and Tai Po
- 8 Sai Kung, East Kowloon and Southern Lantau

Taking into account the subsequent and future developments of the new towns, as well as increasing public expectation for higher flood protection standards, these studies have comprehensively examined the adequacy of existing drainage infrastructure and systems and formulated measures to upgrade them to the required standards. These improvement measures are now underway and at different stages of planning, design and construction.

Works Bureau
September 2001