

Information Paper for Legislative Council Panel on Planning, Lands and Works

Supplementary Note on Proposed Drainage Tunnels and Drainage Improvement Works in Northern Hong Kong Island, Lai Chi Kok and Tsuen Wan

Introduction

In discussing the paper on the five drainage improvement project items **103CD**, **104CD**, **108CD**, **110CD** and **111CD** at the LegCo Panel on Planning, Lands and Works meeting on 5 March 2001, Members requested the Administration to provide the following supplementary information -

- (a) Why had the drainage systems in the urban areas not been improved at the same time of the reclamation projects?
- (b) Why is there a need to improve the drainage systems now?
- (c) Has any assessment been conducted on the restriction in land uses due to the proposed drainage tunnels?
- (d) Is it feasible to store the stormwater runoff intercepted by the proposed drainage tunnels?

Improvement of drainage systems under reclamation projects

2. During the implementation of the major reclamation projects in Northern Hong Kong Island, West Kowloon and Tsuen Wan in the late eighties and the early nineties, Government has undertaken a series of local hinterland drainage improvement works to mitigate the adverse effects on the existing hinterland drainage systems due to the reclamations. It was to ensure that each reclamation project would not have any adverse effect on the hinterland drainage system caused by the reclamation itself. Global improvement of the hinterland drainage system as a whole to cope with the hinterland urbanization was outside the scope of the reclamation project and would need to be carried out under a separate project.

3. To address the flooding problem arising from the hinterland urbanization (not the reclamation) over the years, we commissioned a series of studies from June 1994 to May 2000 to examine the adequacy of the existing

drainage systems and develop long term cost-effective drainage improvement measures for Northern Hong Kong Island, West Kowloon and Tsuen Wan. The studies recommended a combination of innovative drainage tunnel interception/transfer schemes and conventional drainage upgrading works with a view to minimizing the public disruptions and resolving the practical difficulties/constraints associated with extensive drainage upgrading works in heavily built-up areas. The five drainage improvement project items **103CD**, **104CD**, **108CD**, **110CD** and **111CD** are to provide a global improvement of the hinterland drainage system to cope with the hinterland urbanization (not the reclamation) in Northern Hong Kong Island, West Kowloon and Tsuen Wan.

Need to improve drainage systems now

4. The existing drainage systems in Northern Hong Kong Island, Lai Chi Kok, Sham Shui Po, Tsuen Wan and Kwai Chung were respectively built some 50, 40 and 30 years ago to meet the flow requirements at that time. Owing to rapid development and changes in land use over the years, some natural ground and slopes have been paved over and become impermeable. The rapid urbanization in the Western, Central and Wanchai Mid-Levels, Shek Kip Mei and So Uk areas, northern Tsuen Wan and northern Kwai Chung areas over the years has resulted in significant increase in surface runoff and overloading of the existing drainage systems. As such, many areas in Northern Hong Kong Island, Lai Chi Kok, Sham Shui Po, Tsuen Wan and Kwai Chung are prone to flooding during heavy rainstorms.

5. As a result of increase in runoff due to urbanization over the years, the existing drainage systems in Northern Hong Kong Island, Lai Chi Kok and Sham Shui Po, Tsuen Wan and Kwai Chung now only have a general flood protection level of around 5 to 20 years return period. To prevent further aggravation of the flooding situation and to meet the community's increased expectations for higher flood protection standard, we need to improve the drainage systems in these areas.

Assessment on restriction in land uses due to proposed drainage tunnels

6. During the feasibility study stage, we have conducted preliminary assessments on restriction in land uses due to the proposed drainage tunnels. The proposed tunnel alignments will generally be located away from existing buildings and the tunnels will generally be constructed underground in sound rock stratum and well below the foundations of existing buildings and future development.

7. During the detailed design stage, we will critically review the tunnel routes and carry out further assessment on the effect on land uses due to the proposed drainage tunnels. The restriction in land uses due to the proposed drainage tunnels will be kept to the absolute minimum.

8. We will draft and enact relevant legislation in order to provide easements over land for the purpose of the construction, maintenance and operation of the proposed drainage tunnels. Before commencement of construction, each drainage tunnel project will be gazetted under the proposed legislation which will provide channels for objections and appeals from the public before authorisation.

Feasibility of storing stormwater runoff intercepted by proposed drainage tunnels

9. The proposed drainage tunnels are to intercept and convey the surface runoff from the upper catchments directly to the sea, thus reduce the flooding risk in the hinterland areas in the lower catchments. At present, the surface runoff will be drained to the sea through the hinterland areas and flooding will occur because of the inadequate capacity of the existing drainage systems.

10. A significant large storage area in the downstream side is needed if the surface runoff is to be collected and stored for future use. The land use constraints in the fully urbanized areas, such as Northern Hong Kong Island, Lai Chi Kok, Sham Shui Po, Tsuen Wan and Kwai Chung, make the construction of large storage facilities practically impossible.

**Works Bureau
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