

For discussion  
on 23 March 2004

**LEGISLATIVE COUNCIL  
PANEL ON PLANNING , LANDS AND WORKS  
AND  
PANEL ON ENVIRONMENTAL AFFAIRS**

**IMPACT OF CONSTRUCTION WORKS ON RIVERS IN HONG KONG**

**PURPOSE**

This paper summarizes the responses from the Administration to the concerns raised by both members and deputations attending the last joint meeting on 23 February 2004 and in the deputations' earlier submissions on the measures which have been or will be put in place to protect rivers in Hong Kong.

**RIVER PROTECTION MEASURES**

**Legislative and Administrative Measures**

2. Most of the rivers in the territory are on government land and hence subject to the control of the Land (Miscellaneous Provisions) Ordinance (Cap. 28), Public Cleansing and Prevention of Nuisances Regulation (Cap. 132), Fisheries Protection Ordinance (Cap. 171) and Waste Disposal Ordinance (Cap. 354). Some natural rivers in Hong Kong (on both government and private lands) have also been included in the "protected areas" including country parks, conservation areas and sites of special scientific interest (SSSI), and are protected by the Country Park Ordinance (Cap. 208), the Town Planning Ordinance (Cap. 131) and the Environmental Impact Assessment (EIA) Ordinance (Cap. 499).

3. The list of designated projects set out in the EIA Ordinance (Cap. 499) includes all projects that are likely to have a significant impact on the environment including certain small scale projects in the "protected areas". Proponents of designated projects need to get an environmental permit from Director of Environmental Protection (DEP) before the works can commence. The Government issued a circular when the EIA Ordinance (Cap. 499) was

enacted in 1998 to set out, among others, procedures for dealing with environmental implications of government projects or proposals not covered by the Ordinance. Environmental review will be required if necessary. The approach adopted in drawing up the list of designated projects is in line with that adopted under the EIA mechanisms of advanced countries such as the Netherlands, Canada and member countries of the European Union. The existing EIA mechanism has played a significant role in striking a balance between the need to protect the environment and the development needs, and facilitating the sustainable development of Hong Kong. Unnecessary expansion of the list by say, including all watercourses disregarding their size and conservation value as well as the scale and nature of the projects in question, may affect the timely delivery of the projects and cause unreasonable hindrance to development of and satisfaction of other needs of society.

4. As regards protection of ecologically important rivers, the Government is conducting a nature conservation policy review which aims to identify practicable measures to better conserve ecologically important sites, in particular those under private ownership, including rivers and other types of wetlands. In addition, Agriculture, Fisheries and Conservation Department (AFCD) is conducting a baseline study to collect ecological data of Hong Kong. They will consult ecologists and green groups with a view to identifying more ecologically important sites including rivers, and proposing appropriate conservation zonings for enhancing their protection.

5. Apart from the legislative measures, the Government has also put in place administrative measures to ensure that environmental concerns are duly taken into account throughout the implementation and operation stages of the projects. The Government required that public works shall not cause damage to or interfere with watercourses where practicable except for the necessary execution of the works. Any damage or interference caused shall be reinstated satisfactorily. In September 2002, DSD issued an internal guidance circular (DSD Technical Circular No. 4/2002) to provide reference on good practices for planning and execution of drainage maintenance works in environmentally sensitive watercourses. The Environment, Transport and Works Bureau (ETWB) will promulgate a Technical Circular (Works) [TC(W)] along the lines of the DSD internal guidance circular to provide directive for other relevant government departments. In September 2003, ETWB issue a revised TC(W) No. 13/2003 to provide updated guidelines and procedures for dealing with

environmental implications of government projects or proposals not covered by the EIA Ordinance (Cap. 499). Also, public consultation will be conducted for all capital works projects. District Councils, Rural Committees, Heung Yee Kuk, village representatives and the local communities as appropriate are always consulted. For designated projects under the EIA Ordinance (Cap. 499), there are statutory public inspection periods for both the project profiles and EIA reports, during which the public and the Advisory Council on the Environment (ACE) can provide comments to DEP.

6. For private developments, Buildings Department (BD) has been operating a centralized processing system for plans submitted by private developers, ensuring that all interested government departments are consulted and that their comments are collated by BD within the statutory time limits. An enhancement measure recently introduced is that all building development applications that affect natural rivers or streams will be circulated to AFCD and other relevant departments for comment. Advice would be given along the line set out in the above mentioned DSD internal guidance circular. DSD is preparing guidelines for the vetting engineers to give special advice to the private developers to minimize potential impacts on natural streams. BD would consider conveying guidelines on ecologically friendly design of stream channels to private practitioners for their reference through BD's practice notes.

7. Discharges into inland waters including streams and rivers are currently governed by the Water Pollution Control Ordinance (WPCO) (Cap. 358). EPD and other relevant departments have been taking necessary enforcement actions all along. Any works contractors which undertake illegal discharges will be prosecuted under the WPCO (Cap. 358). For ecologically important sites, AFCD will enhance its inspection as well. At present, septic tanks and soakaway system are also commonly used in many village areas and it is the responsibility of the owners to maintain these facilities. For villages that are densely populated or located within water gathering grounds and other sensitive areas, many of them have already been provided with public sewerage and more will be covered by our ongoing sewerage projects. However septic tanks used by village houses are not controlled.

8. On the concern about prevention of soil erosion and silting of watercourses, managing country parks under Country Parks Ordinance (Cap. 208), AFCD's main responsibilities include protection of woodland and vegetation against hill fires, afforestation and enhancement of habitats. Large-scale afforestation programmes have been carried out for controlling soil erosion and improving water supplies and quality, particularly in water catchment areas.

9. The Government has been promoting public awareness and support of nature conservation through publication of booklets, leaflets and postcards, and organization of different kinds of activities. A booklet on freshwater fish and their habitats in Hong Kong was published in 2002. Moreover, a documentary produced by Radio Television Hong Kong regarding surveys of freshwater streams by AFCD staff has recently been broadcast on television. The Government would also facilitate researches on the ecology and geography of rivers in Hong Kong conducted by local universities through issue of relevant permits and provision of logistic supports where necessary.

### **Institutional Set Up**

10. Protection of rivers/streams involves nature conservation, land administration and landscape management, and touches on the responsibilities of a number of bureaux/departments including those responsible for construction or building works. We consider that it is not practicable to set up one authority to take care of all issues involved. Instead, a more effective way is to enhance co-ordination and environmental awareness within Government. The Government is considering setting up an inter-bureaux/departamental working group to deal with issues relating to measures to minimize the impact of construction works on rivers in Hong Kong.

11. On nature conservation, AFCD is the relevant authority and will provide advice to other government departments on nature conservation issues arising from public and private projects. Information about ecologically important sites collated from the ongoing ecological surveys will be made available to all relevant government departments in due course so as to facilitate them to avoid or minimize impacts of development on ecologically important sites at the early planning stage.

12. Government departments will adopt a more environmentally conscious approach when dealing with projects involving environmentally sensitive areas including natural rivers/streams. Project officers will be reminded to observe the pertinent environmental guidelines. Workshops and seminars for enhancing the environmental consciousness of the project officers concerned will be arranged.

### **Developments in Flood Prone Areas**

13. In the planning of new development areas and processing of development proposals, Planning Department (PlanD) will take into account the advice and comments of relevant departments including DSD regarding the flood prone areas and requirements for Drainage Impact Assessment (DIA) and necessary mitigation measures. In this connection, the Town Planning Board may impose a condition of submission of a DIA and implementation of the drainage mitigation measures before approving a planning application.

14. Whether some undeveloped areas should be designated as flood absorption zones and to limit further development there should be subject to comprehensive planning and engineering assessments. The use of flood storage or retention schemes to reduce the risk of flooding is a well established method but its application in Hong Kong is extremely limited because of the shortage of land suitable for building large storage facilities, the high cost of resuming privately owned land, the very high rainfall intensities in Hong Kong and topography of the flood prone regions. Flood storage scheme is being adopted where it is shown to be cost-effective, e.g. the Tai Hang Tung flood storage tank for resolving the flooding problem in Mongkok. DSD can provide information on the extent of the flood prone areas and potential areas which can be used as flood absorption zones with restrained further development. However, there must be strong justifications for such designation in particular if private development rights are affected.

15. Similarly, whether the areas exposed to high risk of flooding should be subject to “Do not build” control has to depend on the results of various assessments. DSD can provide information on the extent of the flood prone areas which is not suitable for building developments without extensive engineering input such as massive site formation works or flood pumping facilities. Areas of high risk of flooding are generally avoided in the selection of new development

areas. Otherwise, drainage mitigation measures will be provided.

## **Flood Control Measures**

16. The current strategy on flood control has been formulated with reference to international best practice, taking into account flood plain management (land use management and development control), drainage system planning, flood loss mitigation measure and maintenance aspects etc. The current flood control policy has accorded different flood protection standards for different land uses, e.g. farmland will be subject to a lower flood protection standard as compared with the developed areas. The design standard adopted by DSD is in line with the overseas countries pertinent to highly developed areas. For major drainage improvement works items, DSD will conduct value management workshops, statutory EIA (including ecological study) and cost benefit analysis to ensure the adopted scheme is the best option and cost effective. An independent review of the current strategy is, therefore, considered unnecessary.

17. In the development of regional drainage master plan, an overview on the development scenario has been carried out based on the existing and planned development data. Where works on ecologically sensitive areas including rivers/streams are unavoidable, they will be carried out in an environmentally responsible manner and appropriate precautionary measures will be undertaken to minimize any adverse impact on these watercourses. The Package C of Drainage Improvement Northern New Territories which includes proposed works at Lin Ma Hang is a designated projects under the EIA Ordinance (Cap. 499). An EIA study will be conducted and protective measures will be identified to avoid affecting the existing habitats in the existing stream course. The proposal to designate Lin Ma Hang Stream as a SSSI is under examination and will be followed up when the statutory plan for the Frontier Closed Area is being drawn up.

18. In the planning of drainage improvement works, DSD will investigate into the existing and planned land use in order to establish the required drainage capacity. All currently operating flood prevention measures will be taken into account in deriving the recommended improvement options. In flood prone areas, widening and training of rivers have to be done to alleviate the risk of flooding and damage to life and properties. In general the drainage

improvement projects are designed to the required standards. Major river channels are normally designed for a 1-in-50-years storm. In branch streams and in areas affecting private lands, the design standard is much lower. For Kam Tin River channel, it was generally designed to a return period of 50 years and for the critical sections, it can allow the passage of a 200-year flood storm. These standards were adopted to safeguard the public from flooding. Regarding the vehicular access, it was provided for maintenance vehicles and in some occasions as re-provisioning of village accesses to compensate the removed village roads affected by the project.

19. For river improvement projects, possible alternatives would be explored to minimize impact on the environment and the villagers. We will strike a proper balance between protecting the environment and reducing the risk of flooding and damage to properties. For instance, in the San Tin Western Main Drainage Channel, DSD is evaluating the feasibility of building short floodwalls to constrain the flood flow within a flood path instead of excavating a river channel. This flood path will be the original ground slightly re-profiled to improve the flood conveyance.

20. In the implementation of flood prevention projects in recent years, DSD has been giving more consideration to the protection of the environment and preservation of natural habitats. Public river channel projects need to undergo the environmental review or the statutory EIA processes. EPD and AFCD are involved in advising on ecological issues. In general, environmentally friendly features, such as extensive vegetation and grass planting on the river embankments, will be incorporated into the public works projects. In the maintenance/desilting of river courses, the internal guideline set out in DSD Technical Circular No. 4/2002 will be followed. The 17 streams identified by the University of Hong Kong as ecologically sensitive watercourses have been incorporated into the circular and good practices will be followed for planning and execution of drainage maintenance works on these streams. A document entitled "Examples of environmentally friendly drainage channels designs arising from environmental impact assessments" has been compiled to summarize such examples for reference by project proponents.

21. Frequent and torrential rainfalls during the rainy season can result in fast moving surface runoffs which can cause severe erosion and damage to riverbanks and beds, leading to severe flooding in downstream areas as evident in

the damage of riverbed in River Beas in May 2003. A sensible balance needs to be struck between protecting the public and the environment and preserving nature. In areas where the flow velocity is high and bank erosion is a problem, concrete lining would significantly reduce the risk of flooding and erosion. Ecological improvement measures for each channelised streams/rivers will be considered on its own merits when opportunities arise in future maintenance or upgrading programmes.

### **Tung Chung Stream**

22. As regards the query on why the EIA on the Penny's Bay Development has not covered the materials to be used for the artificial lake and hence assess the possible environmental impacts, EIA Ordinance requires proponents of designated projects to assess possible impacts of the projects on the environment, including during the construction and operational phases of the projects. It is however not possible for an EIA study to cover everything especially for issues like materials to be used for construction of one single item of the project that are unlikely to be available or even considered at the early planning stage. Nevertheless, under all circumstances, project proponents and their consultants/contractors should bear the responsibility to ensure that the materials used for the development projects are obtained from legal sources. For cases like the Tung Chung Stream, the Land (Miscellaneous Provisions) Ordinance (Cap. 28) is relevant. Under the Ordinance, removal of earth, turf, or stone from unleased land is an offence. Offenders may be subject to a fine of \$5,000 and imprisonment of six months.

23. In the design of the artificial lake at the Penny's Bay Development project, natural boulders/pebbles are specified for the lake edges in order to achieve a more naturalistic appearance. Regarding the new boulder source for the artificial lake, the contractor procured it from a Mainland supplier who was authorized to extract boulders/pebbles from a river in Haifeng, Guangdong. As the contractor did not intend to disclose the exact location of the river, we are contractually bound not to disclose the information against the will of the contractor. We understand that the extraction work has to comply with local statutory and environmental requirements under the supervision of the provincial authorities. We also understand that the extraction work as well as restoration of the river have been completed.



24. We understand that Hong Kong Police Force and Lands Department are closely liaising with the Department of Justice to finalise the investigation on the Tung Chung Stream incident. As legal proceedings may be taken, it is not appropriate to comment on the responsibilities of the parties involved at this stage.

25. We thank the Green Lantau Association (GLA) in notifying the Administration of the damage to the Tung Chung Stream and its continuous concern on the stream restoration works. According to available records, District Lands Office/Islands (DLO/Is) received a letter of 10 November 2003 from the GLA and a joint site visit attended by GLA, DLO/Is, District Office/Islands and Environmental Protection Department (EPD) was conducted on 13 November 2003. Before that, the Administration already received a public complaint on the incident on 29 October 2003. The case was promptly referred to relevant departments including DLO/Is for necessary action, including stopping the excavation works. DLO/Is advised that no excavation at the Tung Chung Stream was found since 4 November 2003.

### **Ngong Ping**

26. Regarding the large-scale flood prevention project at Ngong Ping involving channelization of streams at the top of the hill, we believe it refers to the stream course diversion at Ngong Ping being implemented by the Mass Transit Railway Corporation Ltd. (MTRCL) under the Ngong Ping Cable Car Terminal and the associated theme village project. The project involves site formation and a change in land use, from natural grounds to paved area, for a tourist theme village. It is not in itself a flood prevention project. However, in order to protect the future Cable Car Terminal and the associated theme village area from the threat of flooding, an existing stream course will be diverted around the boundary of the project site.

27. MTRCL will carry out the stream diversion work which is a designated project under the EIA Ordinance (Cap. 499). The project had gone through all necessary procedures under EIA Ordinance (Cap. 499). MTRCL has also consulted the key stakeholders including ACE and GLA.

28. As required under the environmental permit, ecological enhancement features such as the use of gabion, rip rap and natural rocks shall be

incorporated with the design for construction to improve the habitat value for fishers and other aquatic organisms.

## **LAND-FILLING ACTIVITIES AND DUMPING OF CONSTRUCTION WASTES**

29. Regarding control on the dumping of construction wastes, the existing Waste Disposal Ordinance (Cap. 354) provides for sanctions against illegal disposal of waste. It is an offence if any person deposits or causes or permits to be deposited any waste on private land without the consent of the owner or occupier. Under the Waste Disposal (Amendment) (No.2) Bill (which aims to introduce the construction waste disposal charging scheme) we propose to empower DEP to enter without warrant any places, other than domestic premises and private land for dwelling purpose, to remove the waste in cases where there is an imminent risk of serious environmental impact and immediate remedial actions are required. DEP shall only enter domestic premises and private land for dwelling purpose when a warrant is obtained. DEP would be entitled to apply to the court to recover from the convicted person the cost of removing the waste.

30. Regarding control of unleased land, we will review the provisions of the Land (Miscellaneous Provisions) Ordinance (Cap. 28) to ascertain whether changes are required to facilitate more efficient land control work, e.g. to increase the amount of penalty to achieve greater deterrent effects.

31. The Government required that public works contracts shall take adequate measures to prevent excavated material, silt or debris from being deposited in watercourses and shall also incorporate a requirement to prevent unauthorized disposal of construction and demolition (C&D) materials arising from the project. The Government uses a trip-ticket system to ensure proper disposal of C&D materials to designated public filling facility/landfill operated by the Government. Additional checking and monitoring measures at site and management levels have been introduced recently to tighten the control on the disposal of C&D materials.

## **CONCLUSION**

32. The Government will continue to review and improve the existing measures to better protect natural rivers and streams. Departments concerned will step up law enforcement actions where appropriate and enhance their environmental awareness and co-ordination. Public education and publicity will also be enhanced.

**Environment, Transport and Works Bureau**  
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