For information

Legislative Council Panel on Transport
Monitoring and Control of Road Opening Works

Purpose

This paper inform Members of the monitoring and control of road opening works.

Background

2. The roads in Hong Kong serve dual purposes. They provide passageway for vehicular and pedestrian traffic as well as underground space for the 12 utility undertakings currently in operation (Annex 1). Hong Kong has built only around 1900 km of roads to meet the ever-growing demand on underground road spaces for over 60,000 km utility services which are mainly buried underground. Photos illustrating the densely placed underground utilities are at Annex 2.

3. In 1999, the number of road openings was about 60,000 in which about 11,500 road openings were carried out in carriageway. The number of excavation permits issued was about 22,000.

4. Disruption to traffic and inconvenience to the public caused by road excavation works has long been a subject of public concern. To facilitate coordination and control of the planning and implementation process of road opening works, HyD has established a formal 3-tier system with utility undertakings at different levels, developed a computerised system to enhance efficient co-ordination, and implemented a number of collaboration arrangement and administrative measures to tighten control over road opening works.

Control/Co-ordination Mechanism on Matters related to Road Opening Works

5. Road opening works are monitored and co-ordinated through a 3-tier system with participants ranging from high-level management to working level staff. The membership and function of each of these forums are tabulated as follows –

Name of control/co-ordination forum	Year of formation	Chairman	Other members	Role/Function
Joint Utilities Policy Group (JUPG)	1989	Representative of a utility undertaking (by rotation)	Top management representatives of utility undertakings, WSD, DSD and HyD	Forum for top management to discuss policy issues
Utilities Technical Liaison Committee (UTLC)	1989	Deputy Director of Highways	Mid-level management representatives of utility undertakings, WSD, DSD and HyD	Forum for mid level management to discuss technical matters
Road Opening Co-ordinating Committees (ROCCs)	Some 20 years ago	Chief Highways Engineer of respective regional office	Working level representatives of utility undertakings, WSD, DSD, HyD, TD and Police	Forum for working level to co-ordinate front line issues of road excavation works

Improvement Measures to Minimize Disturbance to Public

6. To minimize disruption to the daily activities of the community, a number of improvement measures have already been put in place by the Government. These measures include –

I) <u>Tightening planning and co-ordination procedures to minimise re-openings</u>

(a) Imposition of road opening restrictions

As a standard practice, utility undertakings will be informed of any new road construction or reconstruction during the planning stage. After completion of constructions, road openings will not normally be allowed within a period of five years for carriageway and one year for

footway. In the case of road resurfacing, there is a one-year opening restriction.

To minimize repeated openings on the same road section, utility undertakings are required to co-ordinate with each other so that works of different utilities in close proximity with each other could be carried out concurrently. Once a series of works have been completed and the affected road section reinstated, excavation will not normally be allowed to take place in the same area for a period of three months.

(b) Co-ordination between Government roadworks and utility works

For Government roadworks, it is a standard practice for Government departments to circulate to utility undertakings the nature, extent and programme of such works at the planning stage. This would enable utility undertakings to plan their works in tandem with Government roadworks thereby eliminating the requirement of subsequent re-opening for utility installations.

II) <u>Monitoring and controlling progress of road opening work sites</u>

(a) Progress control under the Excavation Permit (EP) system

For utility road opening works, utility undertakings are required to obtain EP from HyD and to complete the works by the permit expiry date. If the road opening works cannot be completed as scheduled, the Permittee will have to apply for an extension to the Permit, which must be supported with full justifications to the satisfaction of HyD.

b) HyD control at site level

At site level, HyD has assigned supervisory staff to conduct regular inspections on road opening sites to ensure the Permittee complies with the Permit conditions including provisions on temporary lighting, signing and guarding, pedestrian/vehicular access, support to excavation, etc. Attention will also be cast on works progress and quality of reinstatement. Once inadequate safety precautions, unsatisfactory site practices, unattended sites or slow works progress are identified, HyD will urge the responsible organisations to take remedial measures and/or expedite progress as necessary. To further tighten the control on site progress, HyD has added a standard condition in 1998 to all EPs to the effect that road opening sites must not be left unattended without a valid reason.

c) Liquidated damages on delay of Government roadworks

For Government roadworks, if the Contractor fails to complete the works within the time for completion, liquidated damages will be deducted from payment due to the Contractor if no time extension is justified for the delay. In addition to the normal supervision, HyD has also established a special team to carry out quality assurance inspections on highway maintenance works. Contractors with poor performance on progress or quality will be given adverse performance reports. Lack of improvement will bring about regulatory actions including removal, suspension, downgrading or demotion of contractors from the Government approved list of Contractors for Public Works.

III) Implementation of a computerized Utility Management System

HyD has implemented a computerised Utility Management System (UMS) since October 1997 to enhance control and co-ordination of utility road opening works. Under the system, the complete processing cycle of an EP comprises the following stages -

a) Registration;
b) Co-ordination;
c) Seek Traffic Advice;
d) Permit Application;
e) Permit Extension Application (if required);
f) Reinstatement Notice; and
g) Completion.

IV) Traffic Impact Assessment requirement

Since late 1994, Excavation Permit applications for road opening works affecting 126 designated busy road sections (e.g. Nathan Road, King's Road, Connaught Road Central, etc.) have to be supported by 'Traffic Impact Assessment' studies to ensure that proper traffic management measures are devised to avoid undue impact on pedestrian and vehicular movement. By the end of 1999, the number of road sections included in this category has been increased to 144.

V) Daytime ban requirement

To avoid adverse effect on busy traffic, daytime excavations works are banned at 46 strategic road sections (e.g. Gloucester Road, Queen's Road Central, Waterloo Road, Lion Rock Tunnel Road, etc.).

VI) Publicity and more roadwork information to the public

Notwithstanding the strenuous efforts mentioned above, arrangements necessitated by practical

considerations might render road openings appeared to be repetitious or going on for an unduly long time. For example, utility works in close vicinity to each other may not be allowed on traffic grounds to proceed simultaneously. They will have to proceed in sequence, and may give the wrong impression of repeated openings or extended works without proper control. In other circumstances, road opening sites may appear to be idling in the eyes of the general public, even though works are in fact in progress. Such works may include testing of new services after installation (e.g. leakage test for gas pipes or water mains), waiting for delivery of parts, curing of fresh concrete after completion of road reinstatement works etc. To avoid misunderstanding from the public, HyD has required utility undertakings to erect display board on such sites since 1997 to advise the public the reasons of apparent unattendance and the anticipated completion date.

VII) Common opening and reinstatement of hard paving

It is not uncommon that several utility undertakings propose to carry out road opening works at the same section of road. Where site situation allows, HyD will encourage concerned utility undertakings to agree a joint programme with each other so that the first utility undertaking will open up the hard paving to a width sufficient to accommodate all the subsequent utility works. After sequential completion of the various utility works, the last utility undertaking will reinstate the entire area in one go. Such an arrangement eliminates the necessity of repeated excavation and reinstatement in the same area.

VIII) Utility reserves

Where land is available especially for new projects, Government will reserve adequate space for installation of utilities so that excavation at major roads could be reduced. The utility service road alongside the North Lantau Expressway is a typical example.

Other Improvement Measures in the Pipeline

7. Other improvement measures in the process of being put in place by the Government include –

I) Implementation of an Electronic Mark Plant Circulation (EMPC) System Stage 1

To expedite circulation of utility records, 5 utility companies and 3 Government departments under the leadership of HyD completed a joint business study in November 1999 on the feasibility of introducing the Electronic Mark Plant Circulation (EMPC) System.

The final report of the study recommends that the EMPC system be implemented in 2 stages. Stage 1 will essentially comprise a computer network linking up participants for expediting the record retrieval and delivery process. For dealing with non-participants, the current practice of releasing hard copy records will be continued.

A consultancy for implementation of the EMPC System Stage 1 is being conducted. The target date for the system operation is end 2001. The current participants will evaluate the cost effectiveness of the EMPC System Stage 1 after one year of operation and decide if they will proceed to stage 2.

II) Introduction of EP fees and penalty system for road opening works

The Government is in the course of amending the Land (Miscellaneous Provisions) Ordinance to effect charging of EP fees. Since the fees will be related to the Permit period, imposing the charges will encourage Permittees to shorten the proposed construction period as far as possible.

Amendment of the said Ordinance will also aim at tightening control over promoters and contractors in connection with road excavation works. According to the current practice, road excavations are normally

undertaken by contractors employed by works promoters (e.g. utility undertakings). The EPs are issued to the promoters who apply for the permits. As the works are normally carried out by contractors who are not Permittees, the statutory control through the EP system is somewhat indirect and there will be legal difficulties in prosecuting the working offenders. After amendment of the Ordinance, the EP issued to a promoter will be deemed to have been issued to his contractor as well so that the contractor can be prosecuted direct in case he does not comply with the permit conditions during the course of his works.

A legislative slot has been reserved in February 2001 for submission of the Land (Miscellaneous Provisions) (Amendment) Bill.

III) Internet Interface of the Utility Management System (IIUMS)

Due to technical reasons, the UMS is currently not accessible by non-utility undertakings. HyD has just completed a feasibility study on introducing an internet interface for the UMS, through which non-utility users can browse the data on road opening works proposals in the vicinity. Upon implementation scheduled for end 2001, it will enhance non-utility users for coordination of their works with others and improve operation efficiency of the UMS.

At present, both EP application form and the EP must be processed in hardcopy form. The IIUMS would allow UU with digital certificate to apply and receive EP electronically. The IIUMS is planned to be implemented in end 2001.

Regulation of Traffic during Road Openings

8. Traffic management schemes will be devised by EP applicants and submitted to the Police/Transport Department (TD) for comment/ approval after traffic impact assessment is conducted. All road closure proposals would have to be scrutinized by TD and the Police, who will examine the traffic impact of the proposals in detail. If

the impact is found unacceptable, the traffic authorities will require the proposals to be amended or impose restriction on the working hours so as to minimize the traffic disruption caused by such works. The Police will monitor the traffic management measures as stipulated in approved schemes during the implementation stage.

9. For major projects affecting critical routes, Traffic Management Liaison Group (TMLG) and Site Liaison Group (SLG) will be established for discussion on traffic arrangements in relation to the projects.

10. For road opening works without TMLG and SLG, the Police and HyD will monitor the performance of the Permittees to ensure they comply with the traffic control regulations and other EP conditions.

11. Consideration is also given to the following proposed measures for regulating traffic movement during road openings -

a) Deploying additional manpower to regulate the traffic for extended hours

To minimise traffic delays and to respond more flexibility to fluctuating traffic demand, utilities undertakers and government works departments have been asked to deploy additional manpower for manual control at critical sites at extended hours. Transport Department (TD) has identified a number of critical roads with specific time for manual control, e.g. Friday nights at the Peak whether the works agents have been asked to conduct manual regulation until late nights.

b) Adjusting the green time of temporary traffic lights to tie in with the varying traffic volume in an automatic manner

With a view to better coping with varying traffic demand and also to automate the regulation of traffic flow at the road work sites, TD has been investigating the use of infrared-detectors for automatic adjustment of green times of the temporary traffic lights. A test site on Conduit Road has been set up recently and the results are quite promising so far. Upon confirmation of the effectiveness of these

equipment, UUs will be urged to use automated temporary traffic lights more extensively.

c) Installing enforcement cameras

Up to now, suitable equipment in terms of cost effectiveness and precision has not yet been identified. We shall continue to look for new technology in this field.

d) Installing an automated drop gate

Technology and cost aspects aside, the use of automated barriers on public roads similar to carpark gates would have serious safety implications. Vehicle speeds are generally low at ingress/egress of carparks but much higher on roads. Vehicles would likely collide with a drop gate and therefore the use of such gates on the road is considered undesirable on safety grounds.

Challenges Ahead

12. There are still challenges ahead for Government to co-ordinate and control the planning and implementation process of the road opening works.

I) <u>To overcome practical problems in implementing common opening and reinstatement</u>

Although utility undertakings are always urged to adopt this common opening/reinstatement approach, it is not always feasible to do so due to various reasons as discussed below -

- When a section of road is already congested with existing installations, it is not always possible to find sufficient space to juxtapose new services in a common opening. Discrete multiple trenches separated from each other are often required.

- For parallel but not overlapping trenches, the second utility undertaking may need to divert the vehicular/pedestrian traffic onto the area reinstated by the first utility undertaking. If the first trench is kept unreinstated, the remaining width of the road may not be adequate for the traffic.

- Commercial organisations are often reluctant to compromise on cost sharing arrangement for road opening and reinstatement.

HyD will continue to look into opportunity of streamlining the process.

II) <u>To encourage full participation of EMPC scheme and migrating to the EMPC System Stage 2</u>

There are still 5 utility undertakings as listed below who have declined to participate in the project notwithstanding the repeated requests from HyD and other utility undertakings -

Hong Kong Cable Television Ltd.
New World Telephone Co., Ltd.
New T&T Hong Kong Ltd.
Hongkong Tramways Ltd.
Rediffusion (HK) Ltd.

Without their participation, the fast track process can only be a partial success. HyD will keep in view of any opportunity of encouraging the above 5 utility undertakings to participate in implementation of the EMPC System as early as possible.

The EMPC System Stage 2 will link up the Stage 1 system to a Centralized Data Processor (CDP) who will serve as a data conduit for dealing with requests from non-participants. Non-participants can approach the CDP to acquire utility information from the participants expeditiously. The current participants will evaluate the cost effectiveness of the EMPC System Stage 1 after one year of operation and

decide if they will proceed to stage 2. For a full success of the EMPC System and the benefits to the community, HyD will encourage the participants for migrating into Stage 2 of the EMPC System.

III) <u>To continue collaboration with utility undertakings to explore ways to minimise utility damages</u>

Although the EMPC System will expedite the process of acquiring records, it has no direct implication to the accuracy of the records. To minimise the chance of utility damages due to inaccuracy of utility records, HyD will work in collaboration with the utility undertakings to find out the most effective way of updating and upkeeping their utility information.

HyD will also consider methods of utility installation that will minimise utility damages. The recent CLP's proposal to install their main transmission cables within a duct bank (Annex 3) will greatly reduce the chance of accidental damages. This method has another advantage that replacement of cables will be relatively simple by pulling out the disused cables without the need to re-open the road surface.

IV) <u>To improve earlier co-ordination of planned major utility works</u>

There are major improvement works planned by some of the utility undertakings such as CLP, HEC, GAS, WSD and DSD in the next 5 to 10 years to meet the need of the community. Their indicative plans and programmes of the proposed works for the next 5 years have been submitted to HyD. Armed with the available information, HyD is considering a better co-ordination strategy to minimise the impact to the public. Information will also be passed to TD who will carry out base TIA traffic models for sensitive districts.

Advice Sought

13. Members are invited to note the content of this paper.

Transport Bureau
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Annex 1

List of Utility Undertakings

The 12 utility undertakings in operation are listed below:-

CLP Power Hong Kong Ltd.
Hong Kong Cable Television Ltd.
The Hong Kong & China Gas Co., Ltd.
Hutchison Global Crossing Ltd.
Hongkong Electric Co., Ltd.
Cable & Wireless HKT Ltd.
New World Telephone Co., Ltd.
New T&T Hong Kong Ltd.
Hongkong Tramways Ltd.
Rediffusion (HK) Ltd.
Drainage Services Department
Water Supplies Department

Annex 3