

For discussion
On 10 May 2013

LEGISLATIVE COUNCIL

PANEL ON ENVIRONMENTAL AFFAIRS

**SUBCOMMITTEE ON ISSUES RELATING TO
AIR, NOISE AND LIGHT POLLUTION**

**Current Legislation and Administrative Measures on the Control of
Noise Pollution and the Associated Public Expenditure**

Purpose

This paper informs Members of the current legislation and administrative measures on environmental noise control and the associated public expenditure.

Management of Environmental Noise Pollution

2. The Government's overall policy objectives for environmental noise control are to ensure that a satisfactory noise environment is attained and maintained in order to safeguard better quality of life for the public.

3. The Noise Control Ordinance (NCO, Cap. 400) is the principal legislation for controlling noise from construction sites, industrial and commercial premises, residential premises and public places. Besides the NCO, there are also other pieces of legislation, such as the Road Traffic Ordinance (Cap. 374), the Merchant Shipping (Local Vessels) Ordinance (Cap. 548)¹, and the Civil Aviation (Aircraft

¹ The Code of Practice issued under the Merchant Shipping (Local Vessels) Ordinance (Cap. 548) sets out technical guidelines for ship surveys. One of the inspection items requires that the engine exhaust pipe be

Noise) Ordinance (Cap. 312) and/or their associated pieces of subsidiary legislation that have provisions to tackle noise pollution or nuisance from vehicles, vessels and aircrafts. Noise problems are also prevented through the statutory environmental impact assessment (EIA) process. For designated projects listed in the EIA Ordinance (EIAO), project proponents are required to alleviate noise impact from the projects to comply with the noise standards stipulated in the Technical Memorandum issued under the Ordinance (EIA-TM). A list of environmental legislation made under the NCO and other ordinances is at **Annex**.

4. Apart from legislation, we have also implemented various administrative measures to control noise pollution. These include prevention of noise problem through inputs to the land use planning system, retrofitting noisy roads with noise barriers or low noise surfacing materials, as well as partnership with stakeholders to improve work practices. Details of the legislative controls and administrative measures are provided below.

Noise from Construction Sites

5. Noise from construction sites is controlled under the NCO by means of construction noise permits (CNP) and noise emission labels (NEL). Percussive piling is restricted to day time during weekdays and the operating hours may be limited to 12, 5 or 3 hours depending on the proximity of the nearby Noise Sensitive Receivers (NSR), such as schools and residential accommodations. As of October 1999, the use of noisy diesel, pneumatic and steam hammers for percussive piling is banned in built-up areas.

6. Any construction work using powered mechanical equipment that takes place between 7 p.m. and 7 a.m. or on public holidays (the “restricted hours”) is

required to comply with stringent noise criteria stipulated in the relevant Technical Memorandum issued under the NCO to qualify for a CNP. For CNP applications to conduct construction work using specified powered mechanical equipment² or to carry out prescribed construction works³ during the restricted hours within the designated area⁴, more stringent noise requirements will apply to better protect the residents therein. Also, CNP may be issued for essential construction works such as road, rail, or utilities maintenance works during restricted hours even though the noise level exceeds the criteria. This is because conducting such work during the restricted hours will cause less public annoyance or inconvenience than during non-restricted hours. Stringent noise mitigation measures will be specified in the CNP to minimize the construction noise from such work.

7. Air compressors and hand-held breakers are controlled using a NEL system, resulting in the phasing out of noisy equipment. Construction noise control is enforced by the Police and the Environmental Protection Department (EPD) through response to complaints, routine patrol and surveillance. Since 2005, EPD has been promoting the use of Quality Powered Mechanical Equipment (QPME) for construction works through an administrative labeling system. Under the system, powered mechanical construction equipment that is new, notably quieter, more environmentally friendly and efficient can be certified for inclusion into the QPME database and uses a label. To encourage the use of these types of equipment for all projects, capital expenditure on QPME can be deducted from profit tax since April 2008.

8. For works that are classified as designated projects under the EIAO, such as new roads and new railway lines, the project proponents are required to assess

2 The specified powered mechanical equipment includes handheld breaker, bulldozer, handheld vibratory poker, dump truck and concrete lorry mixer.

3 Prescribed construction works include (i) Erection or dismantling of formwork or scaffolding, (ii) Loading, unloading or handling of rubble, wooden boards, steel bars, wood or scaffolding material, and (iii) Hammering.

4 Designated areas are predominately populated built-up areas.

and minimize the construction noise arising during the daytime in the EIA studies. The noise mitigation measures recommended in the EIA studies will be translated into conditions in the Environmental Permits (EP) for implementation by the project proponents.

Noise from Industrial and Commercial Premises

9. Noise from industrial and commercial premises is dealt with by EPD in response to complaints. Excessive noise, which is defined as that above the Acceptable Noise Level in the relevant Technical Memorandum issued under the NCO, is controlled by means of Noise Abatement Notice to require compliance of the relevant statutory limits or other requirements by certain date.

Noise from Domestic Premises and Public Places

10. The NCO provides control over noise from households and public places from annoying the neighbours. It has a general provision on controlling noise causing annoyance to any person at night or on a general holiday. The Ordinance also provides control over noise from musical instruments, animals and birds, games or trades from households and public places at any time of the day or night. These provisions are mainly enforced by the Police.

Noise from Intruder Alarm Systems

11. Section 13A of the NCO provides that controllers of an intruder alarm system installed in any premises shall ensure that audible signal from such a device shall cease not more than 15 minutes after the activation of the signal. Section 13B provides that every registered owner of a vehicle shall ensure that audible signal from an intruder alarm system installed in any vehicle shall cease

not more than 5 minutes after activation of the signal. In addition, the vehicle alarms shall not sound unless the vehicles are being tampered with. These provisions are enforced by the Police.

Aircraft Noise

12. Under the Civil Aviation (Aircraft Noise) Ordinance (Chapter 312), jet aircrafts which do not comply with the noise standards in Chapter 3, Vol. I, Part II of Annex 16 to the Convention on International Civil Aviation have been banned from operating in Hong Kong. To minimize the impact of aircraft noise on the community, the Civil Aviation Department has, in accordance with the stipulations of the International Civil Aviation Organisation, implemented a series of noise mitigating measures which include preferential use of runways and flight paths via non-populated areas during night-time, noise abatement departure procedures and continuous descent approach.

Road Traffic and Vehicle Noise

13. Road traffic noise is a common noise problem in Hong Kong. There are no simple methods or technology which can drastically reduce the overall road traffic noise level in Hong Kong. To minimize noise from vehicles, vehicles first registered in Hong Kong has to comply with noise emission standards stipulated in the Noise Control (Motor Vehicles) Regulation. The use of silencers and audible warning device of vehicles are also controlled by the Road Traffic (Construction & Maintenance of Vehicles) Regulations and the Road Traffic (Traffic Control) Regulations under the Road Traffic Ordinance.

14. To reduce road traffic noise, we completed in 1999 the Quiet Road Surface Programme which involved resurfacing of a total length of 11 km of

existing highways sections with noise absorptive material at a cost of some \$94 million and brought relief to some 50,000 residents. The Government further implemented in 2000 a policy of retrofitting noise barriers and enclosures or resurfacing with low noise materials on existing roads with a traffic noise level exceeding the limit of 70 dB(A) $L_{10}(1\text{hour})^5$ to minimize the noise impact of existing roads on nearby residents where practicable and resources are available.

15. Since 2001, the Government has carried out retrofitting works of noise barriers on 17 existing road sections in Hong Kong under the above policy. Retrofitting works on nine road sections have been completed, whereas the construction of noise barriers on the remaining eight sections is in progress. The above retrofitting works cost about \$2,800 million and will benefit some 56 000 residents when completed. Retrofitting works for about 20 existing road sections are under planning and will be implemented progressively according to the procedures of the Public Works Programme. Whilst low noise surfacing material is a standard material for high speed roads, we have selected some 90 local road sections for testing the noise reduction and engineering effectiveness of the material. So far we have completed the surfacing works for some 60 local road sections, spending about \$80 million and benefiting about 120 000 residents.

16. In line with the Government's practice to promote the use of green and recycled materials, the design and construction of the noise barrier retrofitting works have been carried out in accordance with various guidelines, technical circulars and specifications promulgated for the purpose. Means and measures related to the use of eco-materials, as well as other environmentally friendly measures, will be incorporated when implementing the retrofitting works where

⁵ Road traffic noise level is specified in terms of $L_{10}(1\text{ hour})$ which is the noise level exceeded for 10% of a one-hour period and is generally used for measuring road noise at peak traffic flow. The noise limit of 70 dB(A) for residential premises as stipulated in the Hong Kong Planning Standards and Guidelines is adopted as the administrative guideline for retrofitting projects identified under the policy introduced in 2000.

practicable. Examples include the use of QPME to reduce construction noise, the reuse of excavated materials on site to enhance waste management, the use of solar energy lanterns and solar panels to achieve better energy management and efficiency, and the use of environmentally friendly plywood for formwork construction to encourage green purchasing, etc. As the application of eco-materials is integrated into the design and construction of the retrofitting works, the costs associated have been included under the respective project expenditure.

Railway Noise

17. Noise of MTR Corporation Limited (MTRCL) trains is controlled under section 13 of the NCO, with noise standards stipulated in the Technical Memorandum issued under the NCO. EPD may require the MTRCL to implement practicable mitigation measures if the noise levels of the trains are found to have exceeded the standards. For the railway lines that were built before the NCO and the EIAO came into effect, such as the East Rail Line, Tsuen Wan Line, Kwun Tong Line and Island Line, there are practical difficulties and technical constraints in retrofitting them with noise abatement facilities. In this connection, section 37 of the NCO also stipulates that the NCO shall apply to the MTRCL only so far as is practicable and compatible with the discharge of any function or the exercise of any power or duty conferred or imposed upon it according to law.

Preventive Planning

18. The Environment Chapter of Hong Kong Planning Standards and Guidelines (HKPSG) provides a guiding framework to guide those concerned with development in planning against noise in both the public and private sectors.

Noise standards for various noise sources are also prescribed in the HKPSG.

19. Over the years, EPD has participated in the land use planning process to avoid new noise sensitive communities from being exposed to excessive noise. In urban redevelopment cases, all opportunities for noise improvements are seized as they arise. These planning measures have prevented new noise problems and will continue to improve the overall environment in the long run.

20. The noise standards for various noise sources prescribed in the HKPSG are included also in the EIA-TM. Project proponents of designated projects such as new roads and railways are required to go through the statutory EIA process to optimize the alignment, and identify mitigation measures as necessary to protect sensitive receivers nearby including residential units and schools from excessive noise impacts.

Partnership, Public Engagement and Education

21. We recognize the need to raise the awareness of all stakeholders as they can play an active role to help make environmental noises in Hong Kong more tolerable. EPD formed partnerships with the relevant trades and sectors such as those related to construction, property management, restaurant, and vehicle repair to promote the adoption of more environmentally friendly measures and to enhance compliance of environmental legislation on noise and other environmental aspects. Seminars, talks and workshops related to the best available technologies and practices were jointly conducted with the respective trades to reach out to the concerned operators and contractors.

22. As mentioned in paragraph 7 above, EPD established a QPME system to encourage the construction industry to use more advanced, good quality, efficient

and quieter construction equipment. Also, delegated websites have been established as a platform for promoting, for example, the use of the latest quieter alternatives and practical traffic noise and construction noise mitigation measures gathered through real applications in the territory. The department also published various references, guidelines and good practices to facilitate the trades and their practitioners to employ better designs and quieter alternatives, implement good management practices and incorporate effective abatement measures. All these information are available at EPD's website.

23. Education packages for school children and the public have been developed and made available on the web for dissemination of general knowledge about acoustics, noise and its generation, minimization and prevention of noise problems. Also, a three-dimensional (3D) advanced noise modeling tool has been devised to facilitate public's engagement through understanding of the traffic noise impact in 3D colour format.

Public Expenses

24. The expenditure incurred by EPD in financial year 2012-13 was about \$100 million, accounting for about 4% of the total expenditure of EPD. Expenses in relation to public works have been included in the respective projects where appropriate.

Other Issues

25. At the meeting on 12 December 2012, Members proposed to discuss several cases of noise pollution and their impacts on the health of the residents in the localities, as well as the mitigation measures taken by the Government to address the cases. Also, following a case conference held on 14 March 2011

regarding retrofitting of noise barrier on road sections with high level of noise in Eastern district, Members requested the Government to review the prioritization mechanism adopted in the retrofitting barrier programme. The Government's responses to the above issues are set out below.

Noise nuisance caused by the flyover at Texaco Road in Tsuen Wan

26. Regarding the noise nuisance arising from Texaco Road, at the request of residents and LegCo members, EPD and the Highways Department have conducted a study and identified that it was not feasible to retrofit barriers on Texaco Road flyover due to technical constraints such as inadequate supporting strength of existing flyover structure, insufficient space, hindering fire fighting, etc. Both departments also studied the feasibility of paving Texaco Road with a low noise surface. It was found that existing low noise surface material would be neither durable nor effective on this section of Texaco Road. The high traffic flow and a large number of heavy vehicles on the Texaco Road will cause rapid wear and tear of the low noise surfaces. A regular arrangement was implemented in 2005 to ban franchised buses from using the Texaco flyover from midnight to 6 a.m. to reduce noise impact on nearby residents at late night and early morning. With the above traffic arrangement, the sporadic traffic noise caused by the passing buses was reduced by at least 5dB (L_{max}) as the pass-by noise of buses along the at-grade Texaco Road was screened off by the podia of the residential blocks.

Noise nuisance caused by the operation of the logistics industry as in the case of Rambler Crest in Tsing Yi

27. Regarding the noise nuisance caused by the operation of the logistic industry as in the case of Rambler Crest in Tsing Yi, it is useful to note that

Rambler Crest locates within a Commercial zone in Tsing Yi Outline Zoning Plan (No. S/TY/24). Hotels and office buildings are the designated uses in this Commercial zone. They act as noise buffer buildings to minimize noise impact from the operation of Container Terminal 9 (CT9) on the noise sensitive receivers like Cheung Ching Estate and Mayfair Garden. The proposal of developing Rambler Crest as “Service Apartment” was submitted to the Town Planning Board (TPB) in November 1999 for consideration. To support the planning application, the developer of Rambler Crest recommended measures in the form of mechanical ventilation systems and acoustic insulation. These measures aimed at mitigating the noise impact on Rambler Crest from CT9 and adjacent roads. Noise impact from CT9 on Rambler Crest is under the control of NCO. According to NCO, acceptable noise levels at Rambler Crest of day and evening (0700 to 2300) and night (2300 to 0700) are 60dB(A) and 50dB(A) respectively. With the implemented measures in a proper operation situation, such as closing the acoustic insulated windows, the measured indoor noise levels of Rambler Crest residents’ premises did not exceed the acceptable noise levels of NCO.

Noise nuisance caused by existing highways / flyovers running outside residential developments, particularly the flyover at Wan Po Road in Tseung Kwan O

28. The noise issue of the flyover at Wan Po Road has been considered under the statutory EIA process. A comprehensive package of direct noise mitigation measures including vertical and cantilevered barriers and low noise road surface have been provided for the road improvement work with a view to meeting the requirements under the EIAO. Moreover, on the adjacent Nan Fung Plaza, mitigation measures like building setback and orientation, architectural fins and balconies were incorporated by the developers at the planning stage in accordance with the Hong Kong Planning Standards and Guidelines. The above measures have brought the noise levels of the dwellings in Nan Fung Plaza to within 70

dB(A).

Review of prioritization mechanism adopted in retrofitting barrier programme

29. We have reviewed the mechanism for implementation priority of retrofitting projects. Given that the territory-wide noise barrier retrofitting programme is massive, it is necessary for the Government to accord priority to existing roads with the highest noise exposure and the largest numbers of residents affected. Where practicable, we may adjust the priority of the retrofit works having regard to new roads that have already been planned to adjoin them with a view to minimizing the nuisance caused by the repeated works. Moreover, when modification or extension works are carried out on individual road sections, we will take opportunity to retrofit noise barriers where practicable. Subject to resources availability, we will endeavor to bring forward the projects and implement according to the established mechanism and procedures of the Public Works Programme. We will continue to monitor the situation and the need for reviewing the implementation of the retrofitting programme.

Environment Bureau/Environmental Protection Department

May 2013

Summary on Legislation for Management of Environmental Noise

Noise Control	Legislation	Description of Control	Control Authority
Planning Purposes and Daytime Construction Activities	<ul style="list-style-type: none"> Annex 5 of Technical Memorandum issued under the Environmental Impact Assessment Ordinance (Cap 499) 	Requires project proponents to demonstrate that the designated projects meet the noise standards for planning purposes and daytime construction activities.	EPD
General Construction Work	<ul style="list-style-type: none"> Section 6(1) & 6(2) of the Noise Control Ordinance (Cap 400) 	Controls construction noise between 7 p.m. and 7 a.m. and on a general holiday from (a) the use of powered mechanical equipment; and (b) the carrying out of certain noisy works in designated areas, by construction noise permits.	EPD & Police
Percussive Piling	<ul style="list-style-type: none"> Section 6(3) & 6(4) of the Noise Control Ordinance (Cap 400) 	<ul style="list-style-type: none"> Prohibits percussive piling between 7 p.m. and 7 a.m. and on a general holiday. Restricts the working hours of percussive piling at other times by construction noise permits. 	EPD & Police
Industrial and Commercial Activities	<ul style="list-style-type: none"> Section 13 of the Noise Control Ordinance (Cap 400) 	Controls noise from industrial and commercial activities, including ventilation noise and railway noise through Noise Abatement Notices.	EPD
Neighbourhood Activities	<ul style="list-style-type: none"> Sections 4 & 5 of the Noise Control Ordinance (Cap 400) 	Controls annoying noise (a) between 11 p.m. and 7 a.m. and all times on a holiday; and (b) all day for particular types of noise sources.	Police

Noise Control	Legislation	Description of Control	Control Authority
Noisy Products	<ul style="list-style-type: none"> • Sections 14 to 17 of the Noise Control Ordinance (Cap 400) • Noise Control (Air Compressors) Regulations (Cap 400C) • Noise Control (Hand Held Percussive Breakers) Regulations (Cap 400D) 	<ul style="list-style-type: none"> • Controls the import, manufacture, supply and use of hand held percussive breakers and portable air compressors. • Requires such noisy construction equipment to comply with a stringent noise emission standard and be fitted with a noise emission label before use. 	EPD & Police
Individual Motor Vehicles	<ul style="list-style-type: none"> • Road Traffic Ordinance (Cap 374) • Noise Control (Motor Vehicles) Regulation (Cap 400I) 	Requires all motor vehicles, including buses, commercial vehicles, lorries & motorcycles, first registered in Hong Kong to meet with stringent noise emission standards.	TD & EPD
	<ul style="list-style-type: none"> • Road Traffic (Construction & Maintenance of Vehicles) Regulations (Cap 374A) 	<ul style="list-style-type: none"> • Prohibits the use of any motor vehicle with no silencer, or with a modified or defective silencer. • Requires vehicles be fitted with audible device for warning purposes but prohibits any unduly harsh, shrill, loud or alarming noise. 	TD & Police
	<ul style="list-style-type: none"> • Road Traffic (Traffic Control) Regulations (Cap 374G) 	Prohibits the use of any audible warning device on a vehicle on a road except to warn any person on or near a road of danger.	

Noise Control	Legislation	Description of Control	Control Authority
Traffic Management	<ul style="list-style-type: none"> Road Traffic Ordinance (Cap 374) 	Provision for regulation of traffic for purposes including on environmental grounds.	TD & Police
Marine Vessels	<ul style="list-style-type: none"> Merchant Shipping (Local Vessels) Ordinance (Cap 548) 	The Code of Practice issued under the Merchant Shipping (Local Vessels) Ordinance has laid down technical guidelines for ship surveys. One of the inspection items requires that the engine exhaust pipe be installed with a silencer or an expansion chamber to reduce the noise generated by a vessel in operation.	MD
Intruder Alarm System	<ul style="list-style-type: none"> Sections 13A & 13B of the Noise Control Ordinance (Cap 400) 	<ul style="list-style-type: none"> Limits the sounding of alarms installed in premises to no more than 15 minutes; and Requires all vehicle alarms not to sound unless the vehicle is being tampered with and the alarm will not sound for more than 5 minutes after being triggered. 	Police
Aircraft	<ul style="list-style-type: none"> Civil Aviation (Aircraft Noise) Ordinance (Cap 312) and subsidiary legislation 	Requires all subsonic jet aircraft taking off or landing in Hong Kong to comply with the noise standards in Chapter 3, Part II, Volume I of Annex 16 to the Convention on International Civil Aviation.	CAD

Note: CAD Civil Aviation Department
 EPD Environmental Protection Department
 MD Marine Department
 Police Hong Kong Police Force
 TD Transport Department