

NOTE FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

Supplementary Information on Noise Barriers of Highway Projects

INTRODUCTION

Noise barriers are proposed to be provided under three highway projects (the projects), namely, Yuen Long Highway widening, Deep Bay Link and T3. Members will be invited to consider funding application for these on 22 January 2003.

THE ADMINISTRATION'S RESPONSE

2. The provision of noise barriers under the projects is in line with the Government's policies on mitigating road traffic noise and is needed in order to comply with existing statutory requirements. The policies and guiding principles are summarised in a paper to be discussed by the Joint Meeting of the Environmental Affairs and Transport Panels on 23 January 2003. A copy of the paper is attached for Members' reference.

3. We do not envisage that consideration of the Joint Panel paper will affect the provision of noise barriers under the projects. Nevertheless, if there are any changes that need to be made following the discussion on 23 January, we will ensure, subject to PWSC's agreement for the projects to go forward to the Finance Committee, that these will be fully reflected in our submission to the Finance Committee.

**For discussion
on 23 January 2003**

LEGISLATIVE COUNCIL

PANEL ON ENVIRONMENTAL AFFAIRS PANEL ON TRANSPORT

Policy on Mitigating Road Traffic Noise

PURPOSE

At the meeting of the Panel on Transport on 22 November 2002 when the project to widen Tolo Highway was discussed, Members asked that the Administration's policies on installation of noise barriers and the principles guiding the implementation of the policies be discussed at a joint meeting with the Panel on Environmental Affairs. This paper summarizes our existing policies on mitigating road traffic noise and sets out the guiding principles for implementation of the policies.

THE POLICIES

2. The Government's objective is to mitigate road traffic noise to protect the public from excessive noise. We have adopted separate policies to mitigate road traffic noise for new roads and existing roads.

Statutory Requirement for New Roads

3. When planning new roads, or projects involving substantial widening of existing roads, the relevant government department or developer must ensure that traffic noise at sensitive receivers will stay within the noise limits. If through a defined vigorous assessment procedure the predicted traffic noise is found to exceed the noise limits, the project proponent must adopt all practicable direct measures, including adjusting the alignment, using low noise material for surfacing and erecting barriers or enclosures to reduce the impact on users of noise sensitive buildings in the neighbourhood. The noise limits of 65dB(A)L₁₀(1 hour)¹ for schools and 70 dB(A)L₁₀(1 hour) for residential premises have been prescribed in the Hong Kong Planning Standards and Guidelines since mid-1980s and have become

¹ L₁₀(1 hour) is the noise level exceeded for 10% of an one-hour period, generally used for road noise at peak traffic flow.

statutory limits for designated projects under the Environmental Impact Assessment (EIA) Ordinance since April 1998 when they were included in the Technical Memorandum of the Ordinance.

Policy for Existing Roads

4. In November 2000, we introduced the following administrative measures to address the noise impact of existing roads on residents in their neighbourhood –

- (a) engineering solutions, by way of retrofitting of barriers and enclosures, and resurfacing with low noise material, should be implemented where practicable at existing excessively noisy roads (i.e. roads generating traffic noise in excess of the noise limits mentioned in para.3 above); and
- (b) traffic management solutions, such as speed control, traffic diversion and restricting use by heavy vehicles, should be fully explored and implemented where practicable on a case by case basis where engineering solutions are impracticable or where engineering solutions alone are inadequate in reducing the noise to a level below the noise limits.

This policy is implemented through administrative arrangements.

THE GUIDING PRINCIPLES

5. In implementing the above statutory requirements and administrative measures, we follow five key guiding principles –

- **Principle 1:** Compliance with existing statutory requirements
- **Principle 2:** Timely implementation of mitigation measures, i.e. noise barriers
- **Principle 3:** Setting priority for existing roads in the retrofit programme according to excessive noise levels
- **Principle 4:** For existing roads, cost effectiveness of noise barriers
- **Principle 5:** Paying due attention to aesthetic design of noise barriers

These principles are elaborated below.

Principle 1: Compliance with statutory requirements

6. As explained in para. 3 above, a proponent of a new road, or a major extension and improvement to an existing road that is a designated project under the EIA Ordinance must comply with the noise limits set out in the Technical Memorandum of the Ordinance where practicable. The Technical Memorandum is a statutory document clearly stating noise criteria and methodology for assessment. If the project proponent finds out during the EIA that the anticipated traffic noise will exceed the noise limits, he must in the first instance consider how the noise impact could be reduced to a level below the limits through choosing a better alignment, liaison with the Planning Authority on planning properly the land uses in the neighbourhood and/or surfacing the road with low noise material. If these measures are infeasible or inadequate, he will have to consider mitigating the noise at source through erection of noise barriers or enclosures which are derived according to the noise criteria and methodology of assessment stated in the Technical Memorandum.

7. The proposed measures for mitigating road traffic noise will be included in the EIA report of his proposed project. The report will be submitted to the Advisory Council on the Environment (ACE) for comments. The Authority under the EIA Ordinance, i.e. the Director of Environmental Protection (DEP), will consider whether to approve the EIA report in accordance with the provisions in the EIA Ordinance and its Technical Memorandum taking into account also comments from ACE and the public. After an EIA report has been approved by DEP, the project proponent will then have to apply to DEP for an Environmental Permit before construction work can start. The Environmental Permit will set out the requirements that the project proponent has to meet and those will usually include, inter alia, the noise mitigation measures proposed in the EIA report. The project proponent must comply with the requirements in the statutory Environment Permit.

8. As the project proponent cannot reasonably foresee all possible circumstances when drawing up the EIA report, the EIA Ordinance contains provisions that allow the project proponent to apply for variations to the Environmental Permit to cater for any new and unforeseeable events. For instance, if the plan of a noise

sensitive building that he had taken into account in the EIA report has fallen through, the project proponent can apply to DEP for varying the location, length or design of, or even deleting the noise barriers that were included in the EIA report to protect the building. Approval for variation will be granted on the basis of the actual situation on the ground.

- **Principle 2:** Timely implementation of mitigation measures, i.e. noise barriers

9. The EIA Ordinance provides the project proponent with flexibility in terms of the timing of erecting the noise barriers so long as they are in place in time to properly protect the noise sensitive receivers. For instance, in the case of a development that will not take place until a few years after the commission of a new road, the project proponent can defer the noise mitigation measures to a later stage and, if they are no longer required because of a change of plan for the development (for instance, if the plan is cancelled or the noise sensitive development has been changed to a non-noise sensitive development), the project proponent can review with EPD appropriate adjustments to the installation programme to take account of the changes. In the light of the experience in the Tolo Highway widening project, relevant government departments have been reminded to observe this guiding principle more diligently while also taking into account other implications such as costs and disruption to traffic.

- **Principle 3:** Setting priority for existing roads in the retrofit programme according to excessive noise levels

10. In assessing the noise impact of existing roads, 32 existing roads are identified to cause excessive noise exposure and for which the retrofitting of noise barriers or enclosures might be technically feasible. The retrofit programme is massive. As a general principle, we will accord priority to existing roads with the highest noise exposure and, where practicable, plan the retrofit works having regard to new roads that have already been planned to adjoin them.

11. The same prioritization system applies to the programme to

resurface about 72 existing roads with low noise material.

Principle 4: Cost effectiveness of noise barriers

12. In assessing the adverse implications for the community under the policy for existing roads, the criteria shall include the likely size of the community that may be affected: the larger the number of people affected, the greater the importance. The comparative effectiveness can be expressed in terms of money spent per household for the noise barrier.

Principle 5: Paying due attention to aesthetic design of noise barriers

13. To soften the visual impact of noise barriers, works departments are required to pay due attention to their aesthetic design. They will consult the relevant District Councils and explore designs that would enhance the landscape and visual quality or make the noise barriers visually compatible with the vicinity. The Advisory Committee on the Appearance of Bridges and Associated Structures, which comprises representatives of the Hong Kong Institute of Architects, the Hong Kong Institute of Engineers and various government works departments, is responsible for vetting the aesthetic aspect of noise barriers. We have also published an internal guideline on effective noise shielding materials. The guidelines are updated from time to time to take account of evolving technologies.

14. Insofar as materials used for noise barriers are concerned, clear panels are usually considered less obtrusive but their use is constrained as they do not absorb noise as effectively as solid panels. Some have suggested the planting of trees to absorb noise, but we note that one or two rows of trees would have very little effect on reducing noise. Overseas experiences and studies have indicated that about 10-metre depth of densely planted 4-metre tall tree belt could only bring about 1dB(A) reduction. Hence, tree planting as one type of noise barriers may not be viable on most occasions in Hong Kong given the limited space between the roads and the nearby buildings.

TOWARDS A SUSTAINABLE DEVELOPMENT FRAMEWORK FOR ROAD TRAFFIC NOISE MITIGATION

15. The policy and principles described above guide our formulation of strategies and measures to mitigate road traffic noise. In the broader context, they also reflect the Administration's desire and determination to strike the right balance between economic development, environmental protection and social acceptability in Hong Kong's unique high-density city setting. The issues on noise mitigation demand the collaboration of efforts from all relevant government departments and non-government sectors alike. It is only with the concerted effort of all concerned that we can arrive at rational decisions and solutions that are both equitable and affordable.

**Environment, Transport and Works Bureau
January 2003**