

Annex G

## Response to Comments on Draft Final Report

**Response to Comments**  
**Scoping Study for Providing Direct Technical Remedies on Existing Flyovers**  
**Draft Final Report**

No.	Department	Reference	Comments	Consultants' Response
1	Transport Department 25 March 1997	RS 181/162	Please note that all the proposed direct technical remedies shall be compliance to the Transport Planning and Design Manual i.e. sight line, vertical and horizontal clearance, emergency crossings, public transport stopping activities etc shall not be adversely affected.	Noted. Consideration of the detailed design of direct technical remedies is beyond the scope of this Scoping Study but appropriate recommendations for the inclusion of such consideration during the Stage 2 Study will be made in the Final Report. In developing the proposed mitigation measures, reference has been made to the Transport Planning and Design Manual.
2	Environmental Protection Department 27 March 1997	EP42/T6/1 A1	<p><u>Section 2</u></p> <p><u>Section 2.1</u></p> <p>(1) In the 1st bullet under the 1st para., I understand from your earlier submissions that the purpose of the coarse screening of flyovers is to identify a list of flyover candidates that are suitable for direct technical remedies but not to identify those flyovers that are likely to cause adverse traffic noise impacts, as noise assessment has not yet (<i>been</i>) performed at this step. Please clarify.</p>	Agreed. This bullet will be amended to read '...to identify a list of flyover candidates that are suitable for further consideration with regard to the provision of direct technical remedies...'
			<p>(2) The task nos. shown in Figure 2.1a do not match with that described in Section 2.2. Please amend.</p>	Noted. Amendments will be made to align text with Figure 2.1a.

No.	Department	Reference	Comments	Consultants' Response
			<u>Section 2.2.1</u> (3) The argument pertaining to the purpose of the coarse screening exercise stated in the 2nd para. is not correct. For example, the exclusion of flyovers that are subject to an EIA from subsequent evaluation does not imply that these flyovers would or would not cause adverse noise impact. The exclusion of flyovers in this instance is in fact to avoid duplicating effort as the flyovers have been dealt with in other studies. (Similar comments on the 3rd para. in Section 2.2.1, Sections 3.2 and 3.3, Tables 3.2a and 3.3a)	Noted. Text will be amended.
			<u>Section 2.2.3</u> (4) To avoid confusion, amend the 2nd sentence of the 1st bullet under the 1st para. to read "Where the traffic noise contribution from other nearby sources....". (Similar comments on the 2nd sentence in the last para. of Section 5.1)	Noted. Text will be amended.
			<u>Section 3</u> (5) For ease of reference, a list of flyovers selected from coarse screening for further evaluation should be provided at the end of the section.	Noted. A list will be provided.
			<u>Table 3.2a</u> (6) For ease of reference, please provide a list of completed and current EIA studies that cover those flyovers mentioned in the table. (Similar comments on Table 3.3a)	Noted. A list of relevant EIA studies will be provided.
			(7) There are residential developments located close to the Justice Drive flyover.  However, the flyover is being under the EIA for "Design and Construction of Justice Drive Extension".	Noted.  Noted. This flyover will be excluded.
			(8) The Fenwick Pier Street flyover is being under the EIA for "Design and Construction of Justice Drive Extension".	Noted. This flyover will be excluded.

No.	Department	Reference	Comments	Consultants' Response
			(9) The Wong Nai Chung Road flyover is not located in a CBD or an industrial area. However, there are no residential developments in close proximity to the flyover. You may need to include this circumstance as a selection criterion. Please also review and verify whether there are other flyovers fall under this criterion. (Similar comments on the flyover at Ocean Park Road in this table, and the flyovers at Pui Ching Road, Ma Tau Chung Road, New Clear Water Bay Road, Sand Martin Bridge, Banyan Bridge and Tuen Mun Road near Siu Hong Court in Table 3.3a)	Noted. An additional selection criterion will be included in Table 3.2a & 3.3a to reflect where there are no residential developments in close proximity to the flyover. The list of flyovers will also be reviewed under this criterion.
			(10) Please clarify whether H25 should refer to the section of IEC between Victoria Park Road to Oil Street.	Noted and agreed. H25 will be referenced to the section of IEC between Victoria Road to Oil Street.
			(11) I am not aware there is any EIA conducted for the flyover at Fung Ha Road. Please verify. (Similar comments on the flyover at Lung Cheung Road near Choi Hung Estate in Table 3.3a)	<p>We contacted the UA and TA Groups of EPD in November 1996 to confirm whether an EIA had been conducted for a list of existing flyovers identified. Fung Ha Road was identified on our list as a flyover that had already been covered by an EIA and we did not received any negative comment from the UA Group with respect to this entry. In addition, the same section of flyover has been presented in EPD's publication <i>Screening Structures and Building Designs Against Transportation Noise in Hong Kong</i> as having noise barrier already installed. Taking the above into account, we would maintain our previous assumption that an assessment has been performed for this flyover.</p> <p>The section of Lung Cheung Road near Choi Hung Estate has been covered by the EIA for Lung Cheung Road Flyover.</p>
			(12) There are residential developments close to the Ap Lei Chau Bridge and it should be subject to further evaluation. (Similar comments on the flyover at Lai King Hill Road Network under Table 3.3a)	<p>Noted. For the Ap Lei Chau Bridge, the nearby NSRs (Wong Chuk Hang THA) are already within the shadow zone of the flyover. However, the noise impacts arising from the section of Ap Lei Chau Bridge to the residential buildings at and around Main Street will be further investigated.</p> <p>The case concerning Lai King Hill Road was a typographical mistake. Reference number for the Lai King Hill Road under Table 3.3a should be NT73 and will be amended accordingly.</p>

No.	Department	Reference	Comments	Consultants' Response
			<u>Table 3.3a</u>	
			(13) There are existing noise mitigation measures at Tate's Cairn Tunnel Network (K37 & K38).	Noted. K37 and K38 will be excluded.
			(14) I am not aware there is any noise mitigation measures provided at the Lion Rock Tunnel Road flyover. Please verify.	This is a typographical mistake. There are no residential developments in close proximity to the Lion Rock Tunnel Road flyover. <i>Table 3.3a</i> will be amended accordingly.
			(15) The flyovers at Fanling Highway and Po Shek Wu Road have been covered by the "Noise Impact Assessment for 24 Hour Opening of Border Crossings". Please check and discard other flyovers covered by this study. (Similar comments on the flyover at Tolo highway at Ma Wo in Table 4.4a)	Noted. Relevant flyovers will be excluded.
			(16) Please check and confirm whether the Po Heung Street flyover is located in a CBD or an industrial area.	Noted. Po Heung Street is not considered the dominant noise source in the vicinity.
			(17) Please clarify whether NT23 should refer to Sha Tin Road flyover. Also there are residential developments close to this flyover and it should be subject to further evaluation.	NT23 should refer to the Sha Tin Road flyover. In addition, the dominant noise source affecting the residential developments is Tai Po Road - Sha Tin Section. NT23 will not be considered further in the assessment.
			(18) Exact locations of NT50, NT63 and NT67 should be clearly described in the table.	Noted. Clear descriptions of the flyover locations will be added.
			<u>Section 4</u>	
			(19) For ease of reference, a list of flyovers selected for further evaluation should be provided at the end of the section.	Noted. A list will be provided.

No.	Department	Reference	Comments	Consultants' Response
			<p><u>Section 4.1</u></p> <p>(20) According to Table 4.1c, central barrier is considered as a generic direct technical remedy. Please clarify (a) whether this type of barrier has been considered in the mitigation evaluation process, and (b) the height(s) of the generic central barrier.</p>	<p>As we understand that central barriers must be installed in combination with roadside barriers to provide effective noise reduction, therefore, they have not been considered in the mitigation evaluation process as a stand-alone mitigation option. For some cases, we are aware that it may be possible to use a combination of roadside and central barriers to provide noise reduction equivalent to that achievable by a higher roadside barrier alone. However, the amount of fine-tuning required for a roadside &amp; central barrier combination is not considered justified for the purpose of this Scoping Study. Assessment to this level of detail is considered more appropriate for the Stage 2 Study, which will take the exact geometry of the mitigation measures into account. The application of central barriers will be recommended in the Stage 2 Study.</p>
			<p><u>Table 4.1a</u></p> <p>(21) Central barriers have been proposed in the EIA study for "Development of Areas 3, 30 and 31 of the Development Zone and the Reserve Zone".</p>	<p>Noted. Table will be amended to reflect this. However, we would appreciate EPD's indication on the exact location of the Study Area for the referenced EIA.</p>
			<p>(22) The enclosure erected at the Tate's Cairn Tunnel approach at Richland Gardens is a semi-enclosure. You may consider to quote the full enclosures proposed in the EIA study for "Reclamation and Servicing of Tuen Mun Area 38 for Special Industries - Improvement to Roads and Junctions within Tuen Mun" (i.e. Wong Chu Road) undertaken by your office.</p>	<p>Noted. Table will be amended.</p>
			<p><u>Section 4.2</u></p> <p>(23) 1st para.</p> <p>For clarity, you may need to elaborate why particular barrier heights for various types of barriers are chosen for the study.</p>	<p>Agreed. Elaboration will be provided.</p>

No.	Department	Reference	Comments	Consultants' Response
			<p>(24) 3rd para.</p> <p>Subject to a detailed engineering design and the fulfilment of other indispensable constraints, an alternative mean to cater for the additional loadings brought about by mitigation measures would be to strengthen the structure of the existing flyovers.</p>	Noted. This will be incorporated in the text.
			<p>(25) 4th para.</p> <p>Another major concern of FSD is the clearance between building facade and flyover.</p>	Noted. This will be incorporated in the text.
			<p>(26) In Figure 4.2c, the meaning of the description is not clear. Please clarify.</p>	Noted. The description in <i>Figure 4.2c</i> will be clarified.
			<p>(27) In Figure 4.2d, the meaning of the description is not clear. Also "at least 4.5 m" should read "less than 4.5 m". Please clarify.</p>	Noted. Label will be amended to read 'less than 4.5m'.
			<p>(28) Figure 4.2f is not an example of insurmountable constraint as mentioned in the text.</p>	Noted. <i>Figure 4.2f</i> is to demonstrate that for flyovers with existing direct technical remedies, these flyovers will not be considered further in the assessment. Text will be amended for clarification.
			<p>(29) There is a typo in the title of Figure 4.2g.</p>	Noted. Title will be amended.
			<p>(30) For the completeness of the section, you may need to add a para. to discuss and summarize all the insurmountable constraints identified from Table 4.2a as well as the concerns expressed by HyD, FSD and TD.</p>	Agreed. The summary already provided in the last four paragraphs will be elaborated to put it into the context of <i>Table 4.2a</i> .
			<p><u>Table 4.3a</u></p> <p>(31) It is noted that many of the flyovers are probably subject to multiple insurmountable constraints (e.g. the flyovers at Hill Road, Robinson Road, Tsing Fung Street, etc.). Please review and revise as appropriate. (Similar comments on Table 4.4a)</p>	Noted. <i>Tables 4.3a</i> and <i>4.4a</i> will be reviewed and revised accordingly.

No.	Department	Reference	Comments	Consultants' Response
			(32) In the last column, insufficient clearance/space for structural support is always due to the presence of other insurmountable constraints (e.g. supports erected on/beside the at-grade road underneath a flyover could violate traffic safety, fire-fighting and emergency access requirements, etc.). It is prudent to have these consequences indicated in the table for clarity. (Similar comments on Table 4.4a)	Noted. Clarification will be provided.
			(33) Please clarify the names/nos. of H17, H18 and H33 as they do not match with those indicated in Annex A. (Similar comments on K11, K12a and K12b in Table 4.4a; H5, H22 and H23 under Section 5.3; K4, K10, K30, NT62 and NT71 under Section 5.4)	Noted. The names and numbers of the flyovers will be amended accordingly.
			<u>Section 5</u> (34) It is likely that the section of Tsing Tsuen Road near Cheung On Estate is qualified for further investigation. Please review and, where appropriate, include this flyover section in the noise assessment and mitigation evaluation processes.	Noted. The noise impacts arising from the section of Tsing Tsuen Road to nearby residential developments will be further investigated.
			(35) Information elsewhere indicated that FSD's earlier advice is to agree on noise mitigation measures along the southbound carriageway but not the northbound carriageway of Kwai Chung Road at Mei Foo Sun Chuen. Please review and revise your mitigation provision accordingly. (Similar comments on Figure 6.1m)	Noted. The assessment will be reviewed and revised accordingly.



No.	Department	Reference	Comments	Consultants' Response
			<p><u>Section 7</u></p> <p>(36) Whilst you are required to estimate the costs of the recommended mitigation options for our consideration, it must be very cautious in providing the term "cost-effectiveness". We should at all possible avoid any conclusion drawn by someone by referring to this figure that the measures provided is "not cost-effective". Whether the mitigation measures recommended in the Final Report of this study would be further investigated/implemented depends on the policy direction of the Government rather than "cost-effectiveness". There is always argument of "value of money" and "cost-effective" should not be confined to the simple relationship of "dollar per dwelling". Other effects like social improvement, enhanced quality of living should also be accounted for. In this regard, you may consider to prioritize the selected flyovers in terms of noise performance and extent of dwellings protected/benefited based on perhaps a ranking system. (Similar comments on Section 8 and Annex F)</p>	<p>The Cost-Effectiveness Factor C used in this study has already taken into account the number of dwellings affected, the noise reduction achievable and the cost of implementation. In addition, the adoption of Factor C is in line with the assessment carried out in the previous <i>Scoping Study for Providing Retroactive Road Traffic Noise Mitigation Measures</i>. It is therefore suggested that Factor C remain unchanged to ensure continuity between the previous study and the present one.</p>
			<p>(37) The estimated unit costs for semi-enclosure and full enclosure are considered unreasonably low when compared with that of the 3 m and 5 m barriers. In the case of noise enclosures, the provision of structural supports for the noise screening structures or the structural strengthening works for the flyover itself could be very costly. Please review and revise the cost figures as appropriate. (Similar comments on Annex E)</p>	<p>Noted. Based on our understanding of structural support for barriers and enclosures, similar supporting structures are required for 3m/ 5m barriers and enclosures for an existing elevated structure. As shown in the unit cost calculations in <i>Annex E</i>, the cost of steel structural support has been included for all types of mitigation measures. The cost of structural support used for the calculations was taken from the cost estimates for the construction of the proposed Wong Chu Road enclosure in Tuen Mun. It is therefore considered that the cost estimates shown in <i>Table 7.1a</i> has provided sufficiently realistic estimates of the mitigation costs. As the cost of structural supports varied significantly from an flyover to another, a detailed cost estimation of mitigation is recommended during the Stage 2 Study.</p>

No.	Department	Reference	Comments	Consultants' Response
			<u>Annex A</u>	
			(38) The tables are difficult to follow. Please consider to separate the information related to a particular flyover from one another. (Similar comments on Annex C and Annex F)	Noted. Table formatting will be adjusted.
			(39) A no. of mistakes or discrepancies are found in the tables (e.g. K12a, K12b and NT71). Please check and correct accordingly.	Noted. Amendments will be made where appropriate.
			(40) Please incorporate all relevant comments on the main text into this annex as well.	Noted. Amendments will be made where appropriate.
3	Highways Department 1 April 1997	HH 63/50 III	<u>Section 4.1</u>  Figures 4.1 - 4.2 are misleading. As pointed out before, the noise barriers and the road bridges shall be structurally independent from each others. These figures should therefore be amended to show that the noise barriers are resting on independent structures.	<p>HyD's concerns on the structural considerations for erecting noise barriers or enclosures on existing flyovers are justified. We have already checked with EPD on the structural issue prior to commencement of this scoping study. It was confirmed that structural considerations would be included for the investigations to be conducted separately at a later stage and short-listing of flyover candidates within this stage will be based solely on factors including the prevailing noise environment, fire fighting and road safety. The output of this scoping stage will form the basis for the second stage of the study, in which each flyover short-listed in this scoping stage will be subject to further investigation, taking into account all factors including engineering and structural ones, and the suitability and the most appropriate form of direct technical remedy will be determined.</p> <p>As <i>Figures 4.1a-e</i> are included to present different types of direct technical remedies and <i>Figures 4.2a-d</i> are included to demonstrate typical road-receiver configurations only, they should not lead to any misunderstanding. Amendments are not considered necessary.</p>

No.	Department	Reference	Comments	Consultants' Response
			<p><u>Section 4.2</u></p> <p>(1) With respect to Table 4.2a, the requirements on horizontal and vertical clearances between the noise barriers and kerblines should comply with Table 26 and 27 of Structures Design Manual of this Department and TPDM V.2 3.5. (PWDTC No. 31/73 is not relevant in this case).</p>	Noted. Table will be amended to show the correct references.
			<p>(2) With respect to the 2nd paragraph on P.15, I opine that the feasibility for the installation of these barriers of ground level should be treated as a prime consideration rather than leaving it to the Stage 2 study.</p>	Investigations related to the engineering feasibility of the provision of direct technical remedies are beyond the scope of this study and it is therefore not possible to fulfil HyD's request at this stage under this study. Please also refer to para 1 of our response to the comment from HyD on Section 4.1.
			<p><u>Section 4.3 and 4.4</u></p> <p>The screening process is too crude and abrupt. In particular, a large number of road bridges were excluded from further study due to inadequate clearance (&lt; 4.5m) from adjacent buildings. I see that further discussions/clarification with FSD should be taken in this respect, bearing in mind that:</p> <ul style="list-style-type: none"> <li>these road bridges situating close to adjacent buildings are in fact the "worst" ones from a noise pollution of view.</li> <li>the clearances between the road bridges and the adjacent buildings are <u>existing</u> values; installation of the noise barriers has not worsen the situation.</li> </ul>	The technical approach for the screening process was accepted by EPD during the Inception Stage of this study and is considered sufficient for the purpose of a scoping study. In addition, FSD has not commented on the clearance between road bridges and adjacent buildings. We have therefore taken this to be acceptable to FSD.
			<p><u>Section 7.1</u></p> <p>The simple score system for a cost-effective factor in terms of construction costs only is not acceptable. It should take into account the costs of recurrent maintenance, cleansing and repair for the proposed noise barriers and enclosures, and also indirect costs of traffic delay due to lane closures for noise barriers and complete carriageway closure for semi-enclosures.</p>	Please refer to our response to Comment No. 36 from EPD.

No.	Department	Reference	Comments	Consultants' Response
			<p><u>Section 7.2</u></p> <p>Ref. para. 7.2(ii), the causes of disruption to traffic include not only the loss of road space due to the existence of mitigation measures but also the recurrent need for lane closures to facilitate the maintenance and cleansing of the mitigation measures. It is proposed that the heading of sub-para. 7.2(ii) be amended to "Loss of road space" and the following the sub-para. be added:</p> <p>"(iii) Traffic disruption</p> <p>For road safety, the construction and subsequent recurrent maintenance and cleansing of noise barriers and enclosure would necessitate lane closures and affect traffic flow. The recurrent maintenance and cleansing of the soffit of an enclosure would necessitate the closure of the carriageway."</p>	Agreed. Text will be amended.
			<p><u>Grammatical/ Arithmetic errors</u></p> <p>P.13: .....would lead to the violation of safety requirements of FSD, TD and HyD.</p> <p>P.9: Should the total number of road bridges not meeting the criteria be 54 (as stipulated in the 2nd and 3rd lines) or 57 (as counted from Table 3.3a)?</p> <p>P17: Should the total number of road bridges passing the screening process be 63 (as calculated <math>83 - 20 = 63</math>) or 60 (as stipulated in the 3rd last lines)?</p>	<p>Noted. Text will be amended.</p> <p>Numbers will be reviewed.</p> <p>Numbers will be reviewed.</p>

No.	Department	Reference	Comments	Consultants' Response
4	Fire Services Department 4 April 1997	(30) in FSD 4/130/94	<p><u>Table 4.2a in Page 14</u></p> <p>Please clarify the meaning of "where balconies are 5m or above the elevated roadway, the minimum clearance should not be less than 2.4m (PWDTC No. 31/73)" at the end of sub-section 8. In this connection, additional information with relevant sketches should be depicted and submitted for my further study.</p> <p>Further comment on each mitigation spot will be made when solid information become available.</p>	<p>The criterion relates to the requirements for lighting and ventilation but not to those for fire fighting. This reference will be deleted.</p> <p>Provision of information on the detailed design of the direct technical remedies will be included in the separate Stage 2 Study. Further consideration in this respect within the current study is not appropriate.</p>