

**EIA report on
“Improvement of Lion Rock Tunnel”**

**Relevant Extract of the draft minutes of
the Environmental Impact Assessment Subcommittee meeting
held on 17 October 2022**

Question-and-Answer Session (Open Session)

Compensatory Tree planting

1. Noting that woodland compensation would be provided at the Sha Tin South Fresh Water Service Reservoir (STSFWSR) which was outside the Lion Rock Country Park (LRCP), a Member was of the view that the compensation for the permanent loss of 0.16 ha of woodland should be provided within the LRCP. Mr Tony Cheung advised Members that no suitable site could be identified for the purpose upon site inspection in the LRCP. In response to the Member's suggestion to seek assistance from the Country and Marine Parks Authority (CMPA) in identifying suitable sites within the LRCP, Mr Cheung said that they had already been in liaison with AFCD and the Country and Marine Parks Board (CMPB) on the matter and would continue to do so with a view to identifying suitable sites for tree compensation as far as practicable.

2. A Member shared with Members that there was unauthorised cultivation near the proposed site at the STSFWSR and she was concerned about the management plan and management responsibility of the compensated trees. Mr Tony Cheung advised in the meeting that the project proponent would be responsible for monitoring and maintaining the compensation woodland for at least nine years. They would liaise with AFCD to devise an appropriate plan with a view to protecting and upkeeping the condition of the compensation woodland.

3. A Member suggested with the support of two Members that the tree compensation ratio should be at least 1:1.5 considering that their expected survival rate would be less than 100%. To compensate the removal of about 2,900 trees, Ms Elly Leung indicated that the total number of trees to be compensated at the STSFWSR, along the sides of Lion Rock Tunnel Road (LRTR) and at other locations would be about 3,400 in total. The compensation ratio would be more than 1:1. Apart from the above, Mr Tony Cheung added that the project proponent would explore the possibility to further increase the compensation ratio at the design stage.

4. A Member enquired whether the temporary habitat loss within the project footprint would be compensated. With reference to the Preliminary Reinstatement plan in Appendix 8.8 of the EIA report, Ms Connie Tsoi explained that the temporary habitat loss of 1.48 ha in total would be reinstated by mixed tree planting after the completion of the construction work.

5. A Member enquired whether the permanent habitat loss of 4.26 ha tallied with the total number of trees to be felled in the project. The Chairperson and another Member further enquired whether the woodland compensation was provided on a like-for-like basis in terms of area and ecological functions. They also asked about the total area involved for the some 3,400 compensatory trees. Ms Elly Leung advised Members that about 2,900 trees out of the total of about 5,000 trees in the project site would be felled. Against the permanent loss of 0.62 ha of mixed woodland, Ms Anna Chung pointed out that the plantation of about 2,000 trees as a reinstatement of the loss in mixed woodland would be about 0.8 ha.

6. Against the permanent loss of a total of 4.26 ha of woodland, mixed woodland and plantations, a Member further enquired why only 0.25 ha of compensation woodland would be provided. As regards the some 2,900 trees to be felled, he asked if some of the trees would be compensated within the proposed area of 0.25 ha. If that was the case, it would reduce the actual area of compensation for permanent habitat loss. Ms Connie Tsoi explained that there would not be compensatory planting for the affected woodland or mixed woodland outside the LRCP as the ecological impacts were considered to be minor or minor to moderate, given the affected areas were of small size and exposed to high level disturbance due to their proximity to the heavy traffic roads and tunnel portal. The proposed woodland compensation provided in the project was mainly for the permanent and temporary woodland loss within the LRCP. In addition to the compensation at the STSFWSR, roadside plantation would be provided where possible. The Chairperson pointed out that the total compensation area might not add up to the permanent habitat loss of 4.26 ha and suggested the project proponent set out the habitats which would not be compensated with justifications.

7. A Member sought clarifications on whether the compensatory tree planting along the LRTR and the portal areas was for habitat loss or for landscape purposes. Ms Anna Chung clarified that the planting would serve as compensation of felled trees and a reinstatement of woodland, mixed woodland and plantation loss. To address Members' queries, Mr Tony Cheung agreed to provide a separate

breakdown and details regarding the tree removal and corresponding compensation plan in terms of the number of trees and areas concerned as well as the justifications for not providing tree compensation for the specific locations after the meeting.

(Post-meeting notes: Supplementary information on the breakdown of tree removal and compensation was passed to Members for reference on 31 October 2022.)

Noise Impact

8. Given the noise nuisances associated with the operation of the tunnel toll plaza, a Member wondered why noise enclosures were not to be provided near the toll plaza area. Mr Tony Cheung explained that noise barriers or enclosures would be provided in locations with projected noise level above 70dB(A) as stipulated in the Technical Memorandum (TM). As the projected noise level at the toll plaza did not exceed the aforesaid benchmark, noise barriers were not required. Mr Cheung stressed that the proposed noise mitigation measures had complied with the relevant EIAO requirements. He added that with the scheduled implementation of the Free-Flow Tolling System in end-2022, the noise nuisances at the toll plaza would be minimised. While it would be desirable to mitigate all noise impacts as far as possible, Mr Cheung explained that the project proponent also needed to exercise fiscal prudence in the project.

9. Pointing out that the noise level below 70 dB(A) was only an estimation, a Member questioned the adequacy of the coverage of the noise barriers given that the road traffic would increase after the widening of the tunnels. She enquired about the plan to mitigate noise impact and the possibility to extend the noise enclosures when the new tunnels were in operation. Mr Tony Cheung reiterated that the proposed noise mitigation measures were designed in accordance with the requirements set out in the TM. He highlighted that the projected noise level of most noise sensitive receivers would be lower than the current level and in compliance with the relevant criteria under the EIA study brief. Ms Anna Chung supplemented that the worst-case scenario during peak hours in 2041 had been adopted for the noise impact assessment. She highlighted that the project proponent would monitor the noise level in the early operation phase according to the proposed Environmental Monitoring and Audit programme to ensure that it would be within the predicted level in the EIA report.

10. In designing the noise barriers, a Member suggested that the project proponent should draw references from previous experience to prevent bird

collision. Mr Tony Cheung indicated that the neighbouring residents were concerned about the visual impact of the noise barriers and requested a clear and transparent design. He said the project proponent would strike a balance between the concern of residents and the safety of birds. Another Member echoed the Member and shared with the Members that there were new technologies on bird-friendly screens which were only visible to birds. He suggested the project proponent should explore new technologies in the market in designing the noise barriers with a view to avoiding bird collisions. Mr Cheung thanked the Member for his suggestion and said that they would consider the innovative technology available.

11. In view of the proximity of the neighbouring residents, a Member suggested that the project proponent should carefully consider the appropriate size of the noise enclosures and barriers to avoid blocking the views of the local residents, especially those living on the lower floors of World-wide Gardens. Mr Tony Cheung understood the concerns of the neighbouring residents. Bearing in mind the visual impact while accommodating the street lamps as well as the overhead road signs, the height of the noise enclosures would be kept to a minimum. With the aid of a photomontage, Mr Cheung illustrated that although the view of those residents on 2/F and 3/F of World-wide Gardens might be affected, the distance between the road and some of the housing blocks would increase by 5 m with roadside plantation in-between, which would be an improvement to the current situation. He remarked that the project proponent would continue to engage the relevant stakeholders to address their concerns as far as practicable.

12. The Chairperson enquired whether the project proponent had explored other mitigation measures such as using noise-reducing materials for road surface pavement as some drivers found the noise enclosures unpleasant. Ms Anna Chung advised Members that the predicted noise level of some noise sensitive receivers would exceed the benchmark of 70dB(A) even though low noise road surfacing was used. As such, installation of noise barriers at those locations would be a necessity under the prevailing requirements.

Air Quality Impact

13. In response to a Member's enquiry, Ms Anna Chung confirmed that air quality modelling assessment had been conducted and the predicted concentrations of air pollutants such as Nitrogen Dioxide, Respirable Suspended Particulates and Fine Suspended Particulates would be well below the standards stipulated in the Air

Quality Objectives. As such, the deployment of standard ventilation equipment at the ventilation outlets would suffice. Ms Chung confirmed that the operational phase air modelling assessment had taken into account the worst-case scenario with the highest vehicular emission of air pollutants within 15 years after the commencement of the project.

Cultural Heritage Impact

14. Noting that there were some graves along the LRTR, a Member enquired on the cultural heritage value of the graves and the proposed measures for handling them. Mr Kelvin Leung advised Members that there were only one grave and one urn that would be affected by the project. The villagers concerned had been notified of the need of relocation of the affected grave and urn. Ms Anna Chung added that the graves in the project site were not graded cultural heritage. Mr David Ho furthered that other graves in the uphill area would not be affected by the project.

Waste Management

15. Pointing out that only a small proportion of the construction and demolition (C&D) materials would be reused on-site, the Chairperson enquired about the possibility to minimise the generation of C&D waste as well as reusing and recycling the waste in the current project and other projects close to the project site. Mr Tony Cheung explained that the project proponent would liaise with the Public Fill Committee to reuse and recycle the C&D materials in other public works projects as far as practicable.

Construction Time and New Tunnel Usage

16. Noting that the project was scheduled for completion in 2034, the Chairperson asked if there was the possibility to reduce the construction period, such as through the adoption of a more efficient tunnel construction method, with a view to minimising adverse environmental impact and nuisances. Given the complexity of the project, Mr Tony Cheung explained that the project had to be implemented in phases which would involve more time. He assured Members that the project proponent would strive to minimise the construction period as far as practicable through various means, including the adoption of an Early Contractor Involvement approach where the design and construction of the project could commence earlier to optimise the preparation time. They might also accord priority to proposals with a more efficient project programme in the tendering process. Mr Cheung shared

that the deployment of a tunnel boring machine for the project was meant to balance work efficiency as well as safety of the existing tunnel tubes.

17. In response to a Member's enquiry, Mr Tony Cheung said that the project proponent had received different comments on the possible usage of the new tunnel, including keeping it as a backup tunnel in times of traffic congestion. Mr Cheung advised Members that the usage of the new tunnel would be worked out later, taking into account various considerations such as the availability of connecting roads and fire safety issues, in consultation with the relevant authorities in the design stage.

Impact on Existing Facilities and Wild Animals

18. Having regard to the construction works near the entrance of Hung Mui Kuk Hiking Trail in the LRCP, a Member was concerned about the impact on the recreational function of the Hung Mui Kuk Barbecue Area during the construction phase. Mr Tony Cheung responded that the project would help improve the existing ancillary facilities including the toilet located near the entrance of the country park. As the construction area would be fenced off by hoarding, the barbeque area would not be affected by the works. Another Member pointed out that the CMPB should be consulted on the construction works in relation to the ancillary facilities within the LRCP. Mr Cheung revealed that the project proponent had already approached the Chairman and some Members of the CMPB to gauge their views and they would further consult the Country Parks Committee in mid-November this year.

19. Based on her community services experience in Sha Tin District, a Member was worried that the various development projects would cause disturbances to the local habitats of the wild animals and in turn trigger nuisances to the neighbouring residents. She pointed out that mitigation measures should be devised to avoid potential nuisances to the residents. Ms Anna Chung advised Members that the ecological survey had included an assessment within 500 m of the project site where wild monkeys and wild pigs were spotted. This notwithstanding, Ms Chung opined that there would not be a significant change in the habitat for the wild animals near the project area considering that the project site was close to the developed areas. She added that the project proponent would carry out an environmental audit during the construction phase and liaise with AFCD on the appropriate follow-up actions if needed.

Conclusion

20. Mr Tony Cheung aspired that the project would alleviate the traffic congestion problem in connection with the LRT. He remarked that the project proponent would strive to minimise adverse environmental impacts as far as possible and continue to liaise with the stakeholders to address their concerns.

21. There being no further questions from Members, the Chairperson thanked the project proponent team for their detailed presentation and clarification in relation to the project.

(The presentation team left the meeting at this juncture.)

Internal Discussion Session (Closed-door Session)

22. The Chairperson advised Members that the EIASC should make recommendations to the ACE on the EIA report with the following consideration -

- (i) endorse the EIA report without condition; or
- (ii) endorse the EIA report with conditions and / or recommendations; or
- (iii) defer the decision to the full Council for further consideration, where issues or reasons for not reaching a consensus or issues to be further considered by the full Council would need to be highlighted; or
- (iv) reject the EIA report and inform the project proponent of the right to go to the full Council.

23. The Chairperson proposed and Members agreed to endorse the EIA report with conditions and recommendations.

Compensatory Tree Planting

24. A Member enquired about the respective requirements for compensatory tree planting under the EIAO for landscape and ecological functions. In terms of ecological functions, Mr Terence Tsang said that the conservation importance of the tree species as well as the ecological value of the habitat should be considered and assessed as a whole. He shared that habitat compensation, for example woodland of conservation value, would be in a ratio of 1:1 in terms of area or ecological function. As for those trees serving landscape functions, Mr Tsang indicated that

the compensation ratio would be 1:1 in terms of the number. He added that compensatory trees could sometimes serve both landscape and ecological purposes.

25. For the current project, Ms Cynthia Chan pointed out that the woodland within the LRCP was assessed to have moderate to high ecological value and thus compensation for the permanent loss of woodland within LRCP would be necessary. As for the loss of mixed woodland and vegetation outside the LRCP which were assessed to be of low significance, compensation was not obligatory. This notwithstanding, Ms Chan said that the project proponent had proposed to provide reinstatement of the temporary habitat loss. While a Preliminary Woodland Compensation Plan, a Preliminary Reinstatement Plan and a Preliminary Plant Preservation and Transplantation Proposal had been set out in the EIA report, she remarked that detailed vegetation survey would be conducted prior to the commencement of the construction works and the foregoing Plans would be finalised and submitted by the project proponent to AFCD and relevant authorities for agreement at a later stage.

26. With reference to the deliberation on another EIA report, a Member furthered that the environmental standard should be elevated with a higher tree compensation ratio of 1:1.5 for the number of trees felled while that for the area of ecological habitat could remain as 1:1. Pointing out that it was not a requirement under the EIAO to provide tree compensation at a ratio of 1:1.5, the Chairperson remarked that it would be more appropriate to include it as a recommendation. Referring to Ms Cynthia Chan's advice on the significance of the ecological impacts on the habitats outside the LRCP, the Chairperson reminded that ecological compensation for these areas might not be necessary.

27. While a higher compensation ratio would be beneficial to the environment, Mr Terence Tsang pointed out that the prevailing requirement for tree compensation under the EIAO was 1:1. He understood that Members asked for a higher compensation ratio with consideration of the survival rate of the planted trees. Given that the project proponent would be responsible for maintaining the roadside plantations and a maintenance and monitoring programme of nine years would be put in place for the woodland compensation at the STSFWSR, he considered the proposed compensation and management plan could ensure the survival and establishment of the compensated trees. A condition to increase the compensation ratio might not be necessary.

28. A Member was of the view that a condition should be imposed to require the project proponent to provide in-situ compensation for the loss of 0.16 ha of woodland within LRCP. Mr Terence Tsang and Ms Cynthia Chan agreed that it would be most desirable to provide the compensation within the LRCP if possible. However, suitable sites which would be large enough for the purpose could not be identified in the LRCP. In view of the difficulty in identifying a suitable site within the LRCP, another Member suggested the project proponent to consider other mitigation measures such as joining hand with AFCD in the enrichment measures under the Country Parks Plantation Enrichment Programme (PEP). Ms Chan advised Members that appropriate sites for enrichment measures under the PEP could not be identified near the project and within LRCP. While they would continue the search effort, it was crucial to identify suitable site for woodland compensation so as to ensure the practicability and effectiveness of the recommended mitigation measures under the EIA Study. The proposed STSFWSR site identified by the project proponent in consultation with the lands authority, which was readily available and was ecologically connected to other woodlands within the study area, was considered appropriate.

29. With reference to Table 8.6 of the EIA report, a Member highlighted that the ecological value of the mixed woodland within the LRCP was moderate and thus corresponding compensation was necessary. The Chairperson pointed out that according to the presentation slides of the project proponent, the permanent loss of mixed woodland was entirely outside the LRCP.

30. A Member was concerned about the proper management and monitoring of the compensatory trees after the completion of the project. She suggested to set out clearly the department which would be responsible for the management of the compensation woodland to avoid ambiguity. Another Member enquired and Mr Terence Tsang confirmed that the project proponent's proposed woodland compensation of 0.25 ha at the STSFWSR as well as the proposed monitoring and maintenance programme of at least nine years would be incorporated in the Environmental Permit. Mr Tsang added that the proposed STSFWSR site under WSD would be readily available for compensatory planting in the early stage of the project. While agreeing that the compensation should be provided within LRCP as far as practicable, the Member considered the STSFWSR an acceptable alternative in view of the good ecological connectivity with the woodland nearby.

31. The Chairperson suggested that a condition should be imposed to require the project proponent to devise detailed Compensatory Tree Planting Implementation

Plans (the Plans) to compensate the loss of 0.25 ha of woodland within the LRCP in a ratio of no less than 1:1 in terms of area and to compensate the tree loss under the project in a ratio of no less than 1:1 in terms of number. The Plans should include planting objectives, planting details including numbers, locations and areas, as well as arrangement and responsibility of maintenance and monitoring of the proposed planting. The project proponent should consult the Director of Agriculture, Fisheries and Conservation and relevant authority on the Plans prior to submission to the DEP for approval before the commencement of compensatory tree planting.

32. The Chairperson further suggested with the agreement of Members that the project proponent should be recommended to explore the possibility to provide compensation for the permanent loss of 0.16 ha of woodland within the LRCP, in liaison with AFCD, as far as practicable.

Noise Barriers

33. The Chairperson pointed out that the neighbouring residents, particularly those of the World-wide Gardens, were concerned about the potential noise impact given their proximity to the construction works. Some people considered the design and visual impacts of the proposed noise enclosures unpleasant. With reference to the EIA report on Tung Chung Line Extension, a Member suggested that a similar recommendation should be included for the set up of a community liaison group to address residents' concerns on the project.

34. With reference to a Member's suggested adoption of environmental-friendly and green designs for the noise barriers, another Member shared with Members some examples of environmental-friendly and green noise barriers. Given the limited space available, he indicated that it might not be feasible to adopt natural noise barriers like sand dunes and tree plantations in the project site. Pointing out the poor survival of the plantations erected in the green noise barriers along Tuen Mun Road, another Member expressed concerns about the effectiveness of the green designs considering that the tunnel environment was unfavourable for plant survival. One of the above Members further suggested that climber frames could be incorporated in the design for the growth of natural plantations.

35. The Chairperson suggested and Members agreed that the project proponent should be recommended to adopt appropriate, innovative, environmental-friendly and bird-friendly noise mitigation measures, including but not limited to the provision of noise barriers and enclosures, to mitigate the road traffic noise impacts

arising from the project. A community liaison group should be set up for maintaining regular communication with the relevant stakeholders with a view to achieving consensus on the design of the noise barriers / enclosures in terms of colour, material and dimension taking into account their landscape and visual impacts.

Nuisances from Wild Animals

36. The Chairperson opined that the project proponent had not addressed the potential nuisances of wild pigs and monkeys on the neighbouring residents arising from the disturbed habitat due to the project. A Member was concerned about the potential nuisances of wild animals as AFCD might not have sufficient manpower to handle their sudden surge in the community. Ms Cynthia Chan indicated that as the project site was regularly disturbed by heavy road traffic in the vicinity, the number of wild animals in the areas concerned should not be significant. Site hoardings would be installed to confine the project footprint during the construction phase. As such, the proposed project should not lead to drastic changes to the existing situation.

37. The Chairperson suggested and Members agreed to recommend that in case of any wild animal nuisance arising from the project, the project proponent should propose and implement appropriate management and remedial measures, in consultation with AFCD.

Construction Time

38. In view of the long construction programme from 2025 to 2034, the Chairperson suggested with the support of the meeting to recommend the project proponent to explore ways to shorten the construction time with a view to minimising the disturbances and nuisances to the neighbouring residents as far as practicable.

Waste Management

39. Similar to some other EIA projects, the Chairperson suggested and Members supported to recommend the project proponent to minimise the generation of C&D materials as well as reuse and recycle the C&D materials and yard waste (e.g. felled trees) on site or in other projects.

40. There being no other comments from Members, the meeting agreed that the EIA report could be endorsed with one condition and five recommendations. The

project proponent team would not be required to attend the subsequent full Council meeting.

(Post-meeting notes: The list of proposed condition and recommendations was circulated to Members for comment on 21 October 2022.)

**EIA Subcommittee Secretariat
November 2022**