



生態教育及資源中心
Eco-Education & Resources Centre

BY EMAIL ONLY

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Permanent Secretary for the Environment / Director of Environmental Protection
EIA Ordinance Register Office
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Dear Ms. Cheng,

Tung Chung Line Extension – Project Profile

Green Power would like to draw your attention to the above-captioned Project Profile.

Long-term preservation of Tung Chung River-cum-Bay system

1. Tung Chung River is one of the few remaining major streams in Hong Kong which has not been overly affected by channelization or water pollution. Largely retaining its natural state from headwaters to its estuary, Tung Chung River is unique in the local context. The high connectivity and continuity of the river system from the montane area to the estuary, as well as diverse habitat types available in the surrounding land area make the valley exceptionally rich in aquatic, terrestrial and coastal biodiversity, and accommodate species of ecological importance, e.g. Beijiang Thick-lipped Barb (*Acrossocheilus beijiangensis*) 北江光唇魚, Philippine Neon Goby (*Stiphodon atropurpureum*) 紫身枝牙鰕虎魚, Romer's tree frog (*Liuixalus romeri*) 盧氏小樹蛙, Chinese Horseshoe Crab (*Tachypleus tridentatus*) 中國鱟, Seaweed Pipefish (*Syngnathus schlegelii*) 舒氏海龍, Swinhoe's Egret (*Egretta eulophotes*) 黃嘴白鷺, Mangrove Skimmer (*Orthetrum poecilops*) 斑灰蜻, Common Birdwing (*Troides helena*) 裳鳳蝶 and Eurasian Eagle Owl (*Bubo bubo*) 鵂鴞.
2. The Tung Chung Line Extension Project (hereinafter referred to as "the Project"), with part of its footprint situated on or in immediate vicinity of the Wong Lung Hang mangrove stand, which is an integral part of the unique and ecologically sensitive Tung Chung River-cum-Bay system, would directly impact the fragile system through habitat destruction, or indirectly through pollution and vandalism during the construction and operational phases.

Project alignment and footprint

3. According the Project Profile (Section 3.1.1 & Figure 1), an underground tunnel constructed by Tunnel Boring Machine (TBM) will pass underneath sensitive coastal habitats, including an estuary, mudflat and mangrove stands, and the village with well-preserved rural character at Ma Wan Chung. Given unstable geological characteristics of coastal regions (i.e. soft and shallow sediments), we are highly concerned that the construction would cause any adverse impact on these habitats and the coastal village.

4. The proposed Tung Chung West Station also encroaches the estuary of Wong Lung Hang Stream, where any disturbance and pollution generated by construction works (e.g. dredging, site formation, stockpiling of materials, surface runoff etc.) will impact Tung Chung Bay directly. This is of particular concern as the Project Profile proposed to construct the underground station and tunnel portal by cut-and cover method which generates large amount of fill materials that needs to be disposed of.
5. Regarding the above concerns, we opine that the proposed alignment should be justified by comprehensive assessments on the environmental and hydrological impacts to Tung Chung River Valley and Bay area, and full consideration of alternative alignments of the proposed railway so that the sensitive coastal habitats around Tung Chung River Valley and Bay can be protected. Construction methods other than cut-and-cover should also be used as far as technically possible to avoid establishment of offsite work areas such as those for stockpiling, particularly in vicinity of estuaries and associated mangroves and mudflats, and in Tung Chung West (i.e. Tung Chung River Basin).
6. As stated in the Project Profile (section 1.4.2), the underground Tung Chung West Station and its associated structures “are proposed to be located at the existing rural area to the west / south-west of Yat Tung Estate and around Yu Tung Road”. The associated structures (e.g. above-ground entrances, vent shafts etc.), although exact locations not mentioned, highly likely affect Areas 38A, 38B (both designated as “Commercial” zone) and 98A (“Coastal Protection Area” or “CPA”) within the Approved Tung Chung Valley Outline Zoning Plan (TCVOZP, S/I-TCV/2), especially when a public transport interchange (PTI) is proposed in Area 38A as stated in the Explanatory Statement (section 7.1.5) of the TCVOZP.
7. The general planning intention for area within the TCVOZP is “to conserve the ecologically sensitive areas, to protect the rural and natural character, to maintain the unique landscape character and cultural heritage of the Area” (first half of Section 8.1 of the Explanatory Statement). Currently Areas 38A, 38B and 98A are mostly covered by woodland, mangrove stands and a small stream flowing into the mangroves among some rural structures, with important ecological sensitive receivers identified (see sections below). It is clear that any ecological data revealing the values of the habitats should be recognized, and that land use zonings intended for habitat protection should be observed in any development proposals.
8. The project proponent shall not use any of the ecologically important areas and their vicinity (including Areas 38A, 38B, all CPAs, CAs, freshwater bodies and area with important species recorded in any ecological studies) within TCVOZP as site options for any structures associated with the station, including above-ground entrances, vent shafts etc. Also, the project proponent, including its contractors, subcontractors and associated service providers shall not use these areas as construction sites, including but not limited to works areas, site offices, barging points, vehicle parking, equipment and C&D material storage spaces or other related activities. The boundaries of these sites shall also be well defined and maintained.

The Vulnerable dragonfly *Orthetrum poecilops* as an ecological sensitive receiver

9. Green Power has been conducting annual dragonfly surveys in Tung Chung Valley since 2015, and has recorded the Mangrove Skimmer (斑灰蜻 *Orthetrum poecilops*), a locally uncommon dragonfly which is listed as “Vulnerable” on the IUCN Red List, at various locations around the estuaries of Tung Chung River and Wong Lung Hang Stream between 2015 – 2019.

10. In Areas 38B and 98A where a small stream flows into the mangrove stand, we recorded the species annually between 2015-2019. Mating behavior has also been observed. According to literature description, this species is mainly found in coastal habitats with freshwater input, such as streams in tidal mangroves (Zhang 2019) just below the tidal limit (Wilson 2001 & 2020). The species also appeared to be “the only dragonfly larvae in the Old World that can tolerate fully saline immersion for short periods during high tide...its habitat in streams below the Mean High Water Spring mark needs to be flushed by freshwater stream input during the mid and low tide periods.” (Wilson 2020)
11. The special habitat requirements of the species imply it may be highly vulnerable to habitat degradation and pollution of freshwater input. In fact, coastal habitat destruction and water pollution are listed among the major threats it is facing in its IUCN Red List assessment (Wilson 2009). Our most recent understanding of this species and threats this particular population in Tung Chung is facing are also recognized and summarized in Wilson (2020).
12. In the case of Areas 38B and 98A, the mangrove around the small stream is likely its core habitat, and thus protection by the CPA zoning (if any) only is insufficient and inadequate for the survival of this species. This location, together with the surrounding mangrove stand (in Areas 38A, 38B and 98A) and upper course sections of this small stream, should be protected from development and pollution including surface-runoff discharged from development sites.
13. We strongly urge the project proponent to conduct thorough assessment of this area and this species during the EIA study, and the authority to apply stringent standard and control during the issue of the EIA study brief and assessment of the subsequent EIA report.

Aquatic biodiversity, fisheries and water quality

14. Green Power and the Eco-Education & Resources Centre conducted survey in Tung Chung Bay in 2012 and found that Tung Chung Bay is of high ecological importance for pipefish. Also, larvae of economical species, including those of families Callionymidae, Clupeidae, Engraulidae, Gobiidae, Sciaenidae, Sillaginidae, Lutjanidae, were found. The Administration’s ecological and fisheries survey findings also confirm that Tung Chung Bay is an important spawning and nursery ground for sea horses and other marine life, and a rich fisheries resources site. We are highly concerned about the impacts of the construction works to the water quality and ecology of Tung Chung Bay, given the proximity of the construction sites to the sensitive ecosystem.
15. In order to avoid alteration of physical setting, damage to ecology and deterioration of water quality of natural streams in the area, all stream courses and water channels, their tributaries as well as small streams with unclear sources (such as that flowing into the Wong Lung Hang mangroves), and their riparia should be avoided from any construction sites (see para. 8), diversion, excavation, shotcreting, paving of beds and banks, stockpiling, and any sewage and effluent discharge during both construction and operational phases.
16. We urge that no sewage and effluent shall be directly discharged from any construction sites (including those listed in para. 8) into Wong Lung Hang stream and Tung Chung Bay.
17. Monitoring of water quality in water bodies nearby the construction sites during the construction phase is an essential control measure. As the existing statutory water quality objectives (WQO) have not been proven to be suitable for the survival and reproduction of aquatic life, ecological-based standards of water quality should be derived for the preservation of aquatic ecosystem of Tung Chung River, Estuary and Bay.

18. Strict compliance and enforcement of such measures are of particular importance, especially when discharge of wastewater or other pollutants from construction sites into ecologically sensitive areas are very difficult to rectify, and that dumping or stockpiling of such pollutants (e.g. C&D materials) offsite are usually difficult to monitor (see section below).

Waste disposal and enforcement of vandalism

19. Although the C&D materials generated during site-clearance and site formation are proposed to be reused on site as far as practicable, there is still high possibility that such materials are dumped or stored at ecologically important areas near to project site. This is particularly possible for sites on Lantau because of the long transport distance to waste facilities such as landfills, and the charging for vehicles travelling through North Lantau Highway.

20. Although the eastern part of Tung Chung Valley and Wong Lung Hang areas are covered in the Tung Chung Town Center Area Outline Zoning Plan (S/I-TCTC/22), these areas have never been covered by any Development Permission Area (DPA) Plans, and thus any incompatible developments or environmental vandalisms, such as filling of land/pond or excavation of land, cannot be controlled or enforced under the legal framework.

21. Even for areas formerly covered in DPA plans (e.g. Tung Chung Valley), the plans are still not effective for banning illegal dumping and landfilling because:

- (a) the scale of dumping or landfilling (e.g. piling of soil on river banks) may not be considered as a development in view of the interpretation of Town Planning Ordinance;
- (b) the nature of dumped or landfilled materials may not be considered as breach of land use of zoning in DPA plan, for example, filling of topsoil in a wetland which is formerly a wet agricultural land;
- (c) even remediation is implemented after vandalism, the offender may not need to reinstate the site back to the original physical setting;
- (d) remediation of damaged habitats cannot guarantee the reinstatement of substratum, vegetation, hydrology, water quality, flora and fauna, etc.

Prevention of such activities in addition to strong enforcement of the planning regulations is thus essential to the protection of the vulnerable areas around Tung Chung River-cum-Bay.

22. Filling of the river banks and wetlands with wastes and/or soil debris are continually reported in areas around Tung Chung West. Given the proximity of the proposed railway structures to, and high accessibility from the existing road networks of the ecologically sensitive areas, there is high chance that such activities would spread to and proliferate in these areas, including mangroves in CPA zones, riparian areas in CA zones or even those within the future River Park area, thereby destroying the natural habitats within Tung Chung River Valley.

23. The relevant authorities must confirm a Construction & Demolition Material Management Plan (C&DMMP) that constitutes workable measures, including mandatory collection of C&D waste and provision of transportation to ensure no C&D materials are dumped or stored in ecologically-sensitive areas identified by all EIA Reports, including but not limited to SSSI, CPA, CA, GB, the proposed River Park, SUDS and Country Parks, and transferred to designated facilities.

24. Regarding Section 5.5.1 of the Project Profile, proper implementation of trip-ticket system should effectively avoid illegal dumping and landfilling of C&D materials at unauthorized sites. However, there have been many cases of cheating of the system. Stringent documentation, verification and monitoring for the waste disposal system (e.g. using GPS devices) must be implemented to avoid landfilling of ecologically sensitive areas.
25. In order to protect the ecosystem and natural environment of Tung Chung River Basin-cum-Bay and South Lantau from air pollution and illegal dumping, large vehicles, construction / dump trucks and similar machineries must be prohibited from entering the section of Tung Chung Road between Ha Ling Pei and Shek Mun Kap, and all sections of South Lantau Road, as well as Chung Mun Road. Vehicles that have justified reasons for entering need to seek formal approval from relevant authorities and be closely monitored (e.g. using GPS devices).

Conclusion

26. Currently, preservation of the Tung Chung River-cum-Bay system, is processed as a mitigation measure rather than a “conservation-orientated” objective which only aims to gain granting of Environmental Permits under EIAO. Comprehensive and proactive conservation plan is not the proponent’s priority.
27. Under such institutional and statutory arrangement, long-term conservation for Tung Chung River-cum-Bay system can only be guaranteed with rigorous and thorough environmental impact assessments, as well as stringent clauses listed in Environmental Permits to protect the fishery resources, water quality, important species and their habitats in Tung Chung Bay including those in Wong Lung Hang estuary.
28. We hereby reiterate our requests for:
- (a) comprehensive assessments on the environmental and hydrological impacts to Tung Chung River Valley and Bay area generated by the proposed alignment, full consideration of alternative alignments as well as construction methods other than cut-and-cover for the proposed railway;
 - (b) prohibition of usage of any ecologically important areas and their vicinity (including Areas 38A, 38B, all CPAs, CAs, freshwater bodies and area with important species recorded in any ecological studies) within TCVOZP as sites for station-associated structures or as construction sites;
 - (c) protection of the core habitats of Mangrove Skimmer, which should include mangrove stands in Areas 38A, 38B and 98A and full course of the small stream, from development and pollution, as well as thorough assessment of this area and this species during the EIA study; stringent standard and control during the issue of the EIA study brief and assessment of the subsequent EIA report should also be applied by the authority;
 - (d) avoidance of all stream courses and water channels, their tributaries as well as small streams with unclear sources (such as that flowing into the Wong Lung Hang mangroves), and their riparia from any construction sites, diversion, excavation, shotcreting, paving of beds and banks, stockpiling, and any sewage and effluent discharge during both construction and operational phases;
 - (e) prohibition of direct discharge of sewage and effluent from construction sites into Wong Lung Hang stream and Tung Chung Bay;

- (f) formulation and adoption of ecological-based statutory water quality standards for preservation of aquatic ecosystem of Tung Chung River, Estuary and Bay;
- (g) mandatory collection of C&D waste and provision of transportation to designated facilities to ensure no C&D materials are dumped or stored in ecologically-sensitive areas;
- (h) prohibition of large vehicles, construction / dump trucks and similar machineries from entering the section of Tung Chung Road between Ha Ling Pei and Shek Mun Kap, and all sections of South Lantau Road, as well as Chung Mun Road;
- (i) close monitoring (e.g. using GPS devices) of activities on Lantau of all large vehicles, construction / dump trucks and similar machineries related to the Project.

Thank you very much for your kind attention. I look forward to your favorable decision to protect Tung Chung River-cum-Bay.

For and on behalf of
**Green Power and
Eco-Education & Resources Centre,**



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References

- Wilson, K.D.P., 2001. *Orthetrum poecilops* Ris - A marine dragonfly of conservation priority. *Porcupine! Newsletter of the Department of Ecology and Biodiversity, the University of Hong Kong* 22: 5-6.
- Wilson, K.D.P., 2009. *Orthetrum poecilops*. The IUCN Red List of Threatened Species 2009: e.T60302A12340184. <https://dx.doi.org/10.2305/IUCN.UK.2009-2.RLTS.T60302A12340184.en>. [Accessed on] 4 May, 2020.
- Wilson, K.D.P., 2020. Marine dragonfly under threat at Lantau, Hong Kong (Odonata: *Orthetrum poecilops*), *AGRION* 24(2): 162-168
- Zhang, H., 2019. *Dragonflies and Damselflies of China*. Chongqing University Press, China, Chongqing. 2 vols, 1459 pp