

Comments on Replacement of Fire Alarm System and Manual Toll Collection System in the Aberdeen Tunnel, and Traffic and Control Surveillance Systems in the Eastern Harbour Crossing and the Kai Tak Tunnel for Legco's Panel on Transport

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Summary

According to Legco paper CB(4)831/15-16(07), the primary objective of the proposed Project is to replace various existing systems of the Eastern Harbour Tunnel, Kai Tak Tunnel and Aberdeen Tunnel. In our opinion, there are a number of safety problems with these road systems which justify concurrent rectification. Such problems cover incorrect signage information, roadside safety hazards and potentially dangerous exposure of staff during manual traffic control. These problems not only contribute to significant safety risks for road-users and staff, but the authority is also susceptible to litigation in case of accidents due to a preventable problem.

The Project would be an excellent opportunity to alleviate these problems and to modernize the road infrastructures with intelligent transportation system (ITS) technologies. However, we consider that rather than simply concentrating on the systems, the Project should also aim at reducing safety risks and bringing visible benefits to road-users. This article illustrates some existing safety problems which have gone undetected over the years, including grossly misleading signage. Given this situation, the Project scheme design should also be subject to independent expert review.

We consider that a broader and road safety oriented approach for this Project will make a much better use of the funding. Such approach should not require a substantial increase of budget if properly incorporated in the early stage.

Recommendations for Incorporation into the Scope

- Initiate a study of road safety risks and historic accidents to provide a solid basis for the design.
- Improve all traffic and directional signs which do not form part of the system replacement.
- Improve roadside safety barrier systems which do not form part of the system replacement.
- Enhance the safety of operational staff with advanced technologies and automation under the Project.

Examples of Issues requiring Rectification

Eastern Harbour Tunnel



Contrary to the sign display, only the outmost right lane leads to "Tai Koo Shing & Sai Wan Ho" whereas only the second right lane leads to "Chai Wan" via Route 4. Misleading signage on high speed roads is a significant safety problem.

Source of all photos: Google Street View

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The median opening at the Quarry Bay tunnel entrance entails the risk of head-on collision if a vehicle loses control on the tight bend.



Unguarded support posts for traffic control system equipment are safety hazards.

Kai Tak Tunnel



Contrary to the sign display, right lane traffic cannot access "To Kwa Wan" whereas left lane traffic can also access "Kwun Tong". Information on the upstream sign is also inconsistent with that on the downstream sign. Misleading signage on high speed roads is a significant safety problem.



Current directional sign towards "Kowloon City" is inconspicuous and too late. Advanced direction signs are missing.

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Guidance to "To Kwa Wan" on westbound tunnel tube is too late. Advance direction signs for the exit are missing.



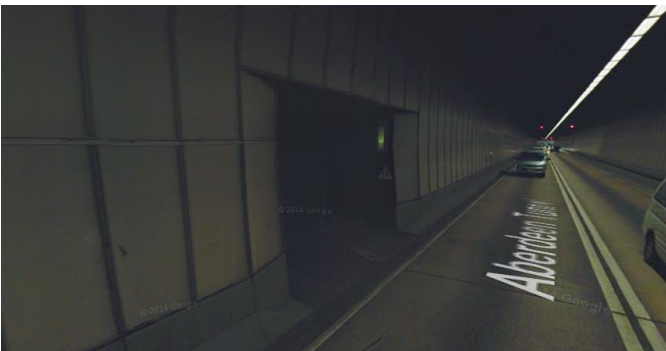
Existing movable barrier gates at the tunnel entrances could incur severe injuries if an errant vehicle collides with the equipment. The Project should specify passive safety requirements to contemporary standard for the replacement.



Unprotected kiosk for operational staff and hazardous discontinuity of the median barrier.

Aberdeen Tunnel

- The Project only features the replacement of the fire alarm system.
- Current tunnel design standard specifies emergency pedestrian cross-passage at 100m interval.
- There are only three vehicle cross-passages at approximately 450m interval.
- Suitability and ease of use of the vehicle cross passages for pedestrian evacuation in a fire needs verification.
- Signage for emergency evacuation is aging and not conspicuous
- Overall rationale of fire evacuation requires a review in light of the lack of cross-passages
- Toll collectors are vulnerable to impact by an errant vehicle mounting the toll islands



A vehicle cross-passage in the tunnel at 450m interval. Their operation and adequacy of signage should be reviewed in the Project.