

**For discussion
on 26 April 2019**

Legislative Council Panel on Transport

Road Safety Audit and Road Safety Check

PURPOSE

This paper briefs Members on the Road Safety Audit for new road projects and road improvement works as well as the Road Safety Check on existing roads implemented by the Government for the purpose of enhancing road safety.

BACKGROUND

2. The Government attaches great importance to safeguarding the safety of road users. To this end, we have adopted a multi-pronged approach, including amending legislation, stepping up enforcement, improving transport infrastructure, use of technology, publicity and education, etc. The Transport Department (“TD”) has been closely monitoring the traffic accident trends and analysing traffic accident statistics, etc., and making reference to the practices and experience in other jurisdictions from time to time, in order to formulate and implement appropriate road safety strategies and measures.

ROAD SAFETY AUDIT FOR NEW ROAD PROJECTS AND OTHER PROJECTS

3. Road Safety Audit has been implemented in some overseas jurisdictions¹ for years for new road projects. It is a formal and systematic examination and report on safety performance of road projects conducted by independent qualified road safety auditors. As distinct from the traditional accident investigation and improvement work, Road Safety Audit takes a precautionary approach in enhancing the safety performance of roads starting

¹ For example, Road Safety Audit has been implemented in jurisdictions like Singapore, Australia, the United Kingdom, New Zealand and South Africa.

from the design and construction stages of transport infrastructure. Road safety auditors will make use of their expertise and experience in accident investigation and preventive work to assess the road safety performance of road projects during various stages, including planning, design, construction and pre-opening stages. Taking into consideration different road users' perspectives and such relevant factors as overall effectiveness and site constraints, they will recommend corresponding road safety enhancement measures to reduce the chance of driving errors and mitigate the severity of traffic accidents arising from driving errors so as to create a safer road environment.

4. During the feasibility study or preliminary design stages of road projects, Road Safety Audit will place emphasis on the fundamental road safety issues, such as design standards, road alignments, continuity with the existing adjacent connecting road networks, the provision of junctions and interchanges, etc. At the detailed design stage, Road Safety Audit will focus on the detailed aspects of the road schemes and conduct in-depth examination of the road design, street furniture, traffic control systems, road restraint systems, traffic signs, road markings and other road safety facilities.

5. During the construction and pre-opening stages, road safety auditors will examine the roads on site from the perspectives of various road users, including motorists and pedestrians. To assist their evaluation, they will drive and walk through the roads to ensure that they have thorough understanding of the environment and site conditions. They will also consider potential impact on road safety under different conditions such as during daylight, hours of darkness, peak or off-peak traffic periods and in adverse weather conditions.

6. From a macro perspective, Road Safety Audit can enhance not only the road safety performance of new road projects, but also facilitate the accumulation of specialised knowledge and experience for enhancing road safety design and cultivating road safety culture, thereby strengthening the safety performance of road projects coming on stream.

7. In Hong Kong, there has been pilot application of Road Safety Audit in four strategic road projects under construction, namely Central Kowloon Route, Tseung Kwan O – Lam Tin Tunnel, Cross Bay Link in Tseung Kwan O and the Widening of Tai Po Road (Sha Tin Section). In these projects, Road Safety Audit has recommended safety enhancement

measures such that necessary enhancement work could be incorporated during the design and construction stages, e.g. improvement of traffic signs and road markings, provision of laybys at appropriate locations, reviewing the details of the arrangement of safety barriers and road edge markings to strengthen road protection, and erection of railings at appropriate locations for guiding pedestrians. All these recommendations arising from Road Safety Audit help enhance the overall safety performance of the relevant road projects.

8. In view of the effectiveness of the pilot schemes, TD consulted the Road Safety Council in January 2019 on the proposed implementation of Road Safety Audit for new road projects (including large-scale road improvement works) and secured members' support. With effect from 1 April 2019, TD has required works departments to carry out Road Safety Audit at various stages of all new road projects (including large-scale road improvement works), namely planning, design, construction and pre-opening stages, with a view to enhancing road safety performance. For instance, Road Safety Audit should be implemented for Hiram's Highway Improvement and the Widening of Castle Peak Road – Castle Peak Bay projects which are under design, and the Tuen Mun – Chek Lap Kok Link project which is under construction.

9. Pursuant to TD's new arrangement, works departments must deploy independent auditors equipped with specialised knowledge to conduct Road Safety Audit. The auditors must have completed professional training on Road Safety Audit and possess practical experience in such audit work. TD will render advice to works departments on the latter's nomination of auditors to ensure that the nominees are equipped with the required qualifications, experience and technical skills to conduct Road Safety Audit.

10. Works departments must prepare a Road Safety Audit brief, having regard to the characteristics of each road project, which should contain the detailed project information, including the design drawings of the roads, speed limits, traffic flows and traffic accident data on the existing roads connecting the new roads, etc. The Road Safety Audit brief has to be agreed by TD. The works department concerned will then give the Road Safety Audit brief to the road safety auditors for the auditors to carry out the Road Safety Audit in accordance with the details in the brief.

11. During the process of Road Safety Audit, auditors have to identify aspects of road design that can be improved for enhancing road safety. After examining the design and site conditions, the auditors are required to submit an audit report recommending the road safety enhancement measures for consideration by the works departments. After duly considering the recommendations in the audit report, the works departments concerned may propose alternative measures. TD will also provide advice on the road safety enhancement measures adopted ultimately. Justifications for the road safety enhancement measures will be recorded in the response report of the Road Safety Audit submitted by the works departments. A flowchart of Road Safety Audit is at **Annex 1**.

12. TD will form a dedicated team to administer and support the full implementation of Road Safety Audit in Hong Kong by formulating the implementation strategy for Road Safety Audit, developing the Road Safety Audit system, preparing detailed procedures for Road Safety Audit and establishing an inventory list of road safety auditors.

13. In addition, the concept of Road Safety Audit will also be adopted for checking the day-to-day minor district traffic improvement works by TD, such as addition of pedestrian crossings, provision of signalised pedestrian crossings, provision of bus laybys as well as improvement of traffic signs, road markings and other traffic auxiliary facilities. To this end, TD has developed a checklist system to ensure the safety performance of these district traffic improvement works by checking various design details such as sightline adequacy, visibility of traffic signs and arrangement of pedestrian railings. To ensure that the district traffic improvement works can be completed accordingly, TD will monitor the progress of the improvement works via its Transport Information System and conduct regular liaison meetings with the Highways Department (“HyD”) to review progress and priorities of district traffic improvement works with respect to the prevailing circumstances from time to time.

ROAD SAFETY CHECK FOR EXISTING ROADS

14. Since 2007, TD and HyD have been jointly conducting Road Safety Check on existing roads with speed limit of 70km/h or above to enhance road safety performance. Following completion of relevant roadside safety enhancement measures, the traffic accident rate for all roads (including those

with speed limit of 70km/h or above) in Hong Kong has been on a declining trend² in the past decade.

15. To further enhance the safety condition of existing roads, TD and HyD embarked on a consultancy study “Review of Potential Roadside Safety Hazards in the Hong Kong Road Network – Investigation” (“the Consultancy”) in May 2018 to review and enhance the roadside safety of all public roads in Hong Kong through comprehensive and systematic safety check. Estimated to take 30 months to complete, the Consultancy covers existing public roads with a total length of about 4 200 km³. The consultants are now conducting video survey on public roads and roadside facilities in both daytime and nighttime which will facilitate their assessment of the roadside safety circumstances based on their latest situations. As at March 2019, video recording of about 60% of the public roads has been completed, among which roadside safety check for expressways and trunk roads has been substantially completed.

16. The consultants will formulate the strategy for taking forward roadside safety enhancement measures, including the priority for implementation of such measures, with respect to a number of factors including prevailing traffic conditions and site constraints of the concerned locations, etc. TD and HyD will review the consultants’ findings and implement the enhancement measures progressively through various works projects. Examples of road safety enhancement measures are at [Annex 2](#).

17. The consultants will also research on the latest road safety development and technologies in other jurisdictions and investigate whether such technologies can effectively enhance roadside safety in Hong Kong and whether they are suitable for application locally through conducting trials at suitable locations. The first initiative proposed under the Consultancy is the trial erection of “Energy Absorbing Bollard” (“EAB”) introduced from Australia at roadside bus stop to reinforce the protection to intending passengers waiting thereat. When EAB is impacted by vehicles, it will absorb energy from the vehicles and reduce their speed, thereby reducing the threat of errant vehicles to pedestrians. It can also absorb part of the

² The traffic accident rate per thousand licensed vehicles decreased from 25.5 in 2008 to 20.5 in 2018.

³ The total length of public roads covered in the Consultancy is derived by counting the road length of each bound individually.

vehicular impact force and reduce the severity of the injury resulted. TD has already installed EABs at the roadside bus stop on Aberdeen Praya Road near Tin Wan Praya Road and is planning to install EABs at Tai Lam Tunnel Bus Interchange (“the Interchange”) as trials. Apart from EAB, TD is planning to lengthen the separation island at the Interchange to optimise the road spaces nearby and improve the arrangement for buses to exit from the Interchange and enter into the main carriageway. Subject to the trial results, TD will examine implementing such measures at other appropriate locations.

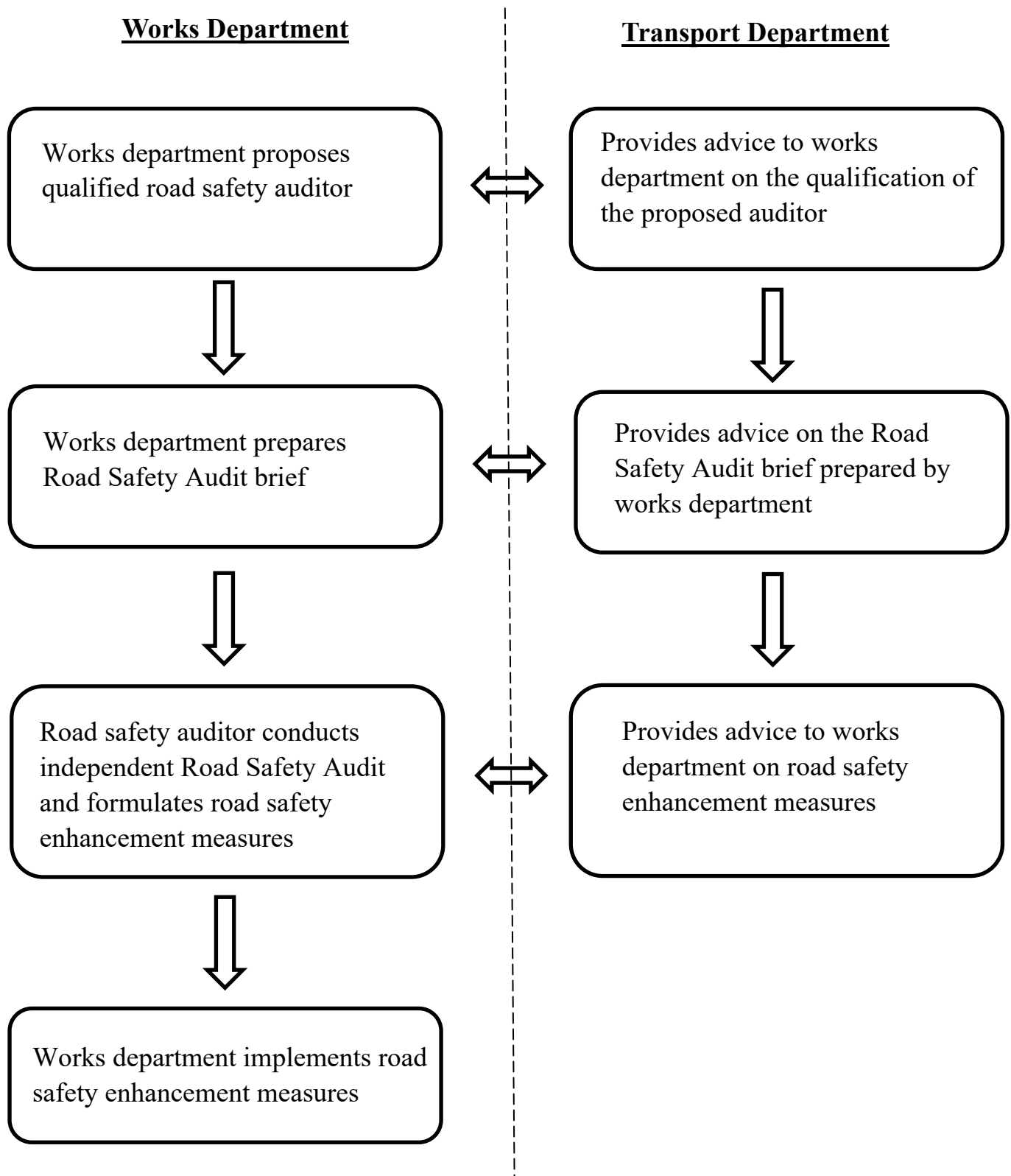
18. Apart from Road Safety Check on existing roads, TD has a regular review mechanism for reviewing the speed limits imposed on roads so as to ensure road safety while maintaining smooth traffic flow. Specifically, TD has set up a working group on speed limit review (“Working Group”) comprising representatives from the Police, Hong Kong Automobile Association and Institute of Advanced Motorists Hong Kong to carry out regular review of speed limits according to road types. In carrying out the review of speed limit of a particular road section, the Working Group will consider the accident history of the road section, the prevalent travelling speed of the majority of traffic, the environment and characteristics of the road section, as well as public views before deciding whether the current speed limit should be revised.

ADVICE SOUGHT

19. Members are invited to note the content of this paper and offer views on the implementation arrangement of Road Safety Audit and Road Safety Check.

**Transport and Housing Bureau
Transport Department
Highways Department
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Flowchart of Road Safety Audit



Examples of Road Safety Enhancement Measures



Installing crash cushion



Reinforcing safety barrier



Installing movable safety barrier at emergency opening at central medium



Installing safety barrier at bus interchange to separate main carriageway



Installing warning traffic signs at road section with sharp bend



Installing pedestrian railing at central median to prevent pedestrian from crossing the road