

# One-Day Seminar: Road Safety Audit (RSA) & Traffic Management Plan (TMP)

HIGHWAY & TRANSPORTATION ENGINEERING TECHNICAL DIVISION

reported by



Ir. Ong Sheng How



Participants at the RSA seminar

The Highway & Transportation Engineering Technical Division (HTETD) and the IEM Penang Branch jointly organised a 1-day seminar on Road Safety Audit (RSA) & Traffic Management Plan (TMP) on 24 November, 2017, at the Penang Skills Development Centre (PSDC), Penang.

The speaker was Ir. Richard Wong, a veteran JKR-accredited road safety auditor. The 30 participants comprised engineers from the Penang State Government, Majlis Bandaraya Pulau Pinang (MBPP) and Majlis Perbandaran Seberang Perai (MPSP), developers, contractors, consulting engineers and some academicians.

Ir. Wong began with an overview of the current road safety situation

in Malaysia, recommendations on road safety and design, objectives of conducting road safety audit and technical guidelines published by JKR which are adopted by design engineers and road safety auditors.

He explained the 5 stages in the development of a road project when it was most appropriate to carry out a Road Safety Audit (RSA).

1. Feasibility and Planning Stage.
2. Draft (Preliminary) Design Stage.
3. Detail Design Stage.
4. During Construction/Pre-Opening Stage.
5. After Construction/Operational Stage.

#### Stage 1: Feasibility & Planning

At Stage 1, the auditor looks into the General Traffic Management – how

motorists can safely enter and exit, junction control and the use of one-way or service roads. The safety of more vulnerable users (motorcyclists and pedestrians) are also given due consideration. In the Road Evaluation Criteria of alternative roads or options, road safety performance is also weighed and audited as well as design criteria, construction cost, socio-economic and environmental issues.

#### Stage 2: Draft (Preliminary) Design

In Stage 2, checks are made on preliminary engineering drawings for the combination of horizontal and vertical profiles to ensure there are no obstructions to sight distance, appropriate cross sections of widths of lane, median, marginal strip,

shoulders, motorcycle lanes, footpaths and Right of Way. Lane continuity and balance as well as avoidance of trap lanes are important road safety issues to look into. All major junctions should have appropriate acceleration and deceleration lanes.

### **Stage 3: Detail Design**

In Stage 3, all outstanding road safety issues identified in Stage 2 have to be addressed or rectified. After road safety decisions are made and agreed upon by the designer, auditor and authorities, the designer will come up with a detailed engineering design that includes detailed cross sections, profiles, intersections, interchanges, traffic signs, road markings, safety barriers, etc. The Auditor will audit these to the best road safety guidelines and requirements.

### **Stage 4: Construction/Pre-Opening**

The Traffic Management Plan (TMP) falls under Stage 4. Before any road construction work is carried out, the contractor will need to provide the Traffic Management Plan (TMP). The road safety auditor then audits the TMP for Advance Warning Signs and Protection to both road users and construction workers (during construction).

Stage 4 also includes an audit at about 50% completion and an audit before the road opens for traffic or pre-opening. They will check if the road has been constructed according to design and if there is any unforeseen road safety issue on site and mitigating factors such as traffic signs, road markings and safety barriers will be considered.

### **Stage 5: After Construction/Operational**

Stage 5 is carried out during the Defect Liability Period at 3-6 months after opening, to check on the drainage, road defects and how the trees have matured to see if they are obstructing traffic or street lighting or if they are a road hindrance.

Before the seminar ended, Ir. Wong gave the participants some parting words. He said that while engineers, contractors, auditors and the authorities do their best to ensure road safety, the environment and design contribute insignificantly to road accidents. The greatest contributors to road accidents, he stressed, are human behaviour and attitude.

The seminar allowed participants to learn and understand Road Safety Audit, the engineering design principles behind it, and the good engineering designs and practices which we as engineers can adopt in making Malaysian roads safer for users. ■