MOVING TOWARDS SAFER SPEED: A NEW DIRECTION IN SPEED MANAGEMENT IN QUEENSLAND, AUSTRALIA

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ABSTRACT

Speed in Queensland is managed in accordance with the methodology provided in the *Manual of Uniform Traffic Control Devices (MUTCD) Part 4*, which is based on Australian Standard 1742.4. The methodology considers the function of road, prevailing speed, road and roadside environment and crashes. For sections of road that have lower crash risks, provision in the *MUTCD* can be applied for implementing higher speed limits for ensuring transport efficiency. For sections of road with significant road and roadside deficiencies and a history of high crash rates, the current *MUTCD* provides for implementing reduced speed limits which are appropriate for safe mobility. However, these provisions rely heavily on experiential judgements that can be influenced by variations in practitioners' knowledge and experience. In some cases, opportunities to manage crash risks through speed management may not be taken because the current methodology is not providing clear guidance to practitioners to support the implementation of safe speed.

This paper outlines the three-stage speed management method proposed for use in Queensland. The method includes important additional triggers which would call for a change in the speed limit, and captures both infrastructure risks and crash risks proactively and collectively in a very objective manner. The suggested method is analytical and prescriptive, yet flexible enough to allow practitioners to develop recommendations based on their experience and local knowledge. It's simple, yet robust enough to explain the likelihood of potential risks in a statistically acceptable manner. The method advances the speed limit setting method in Queensland one step closer to adopting Safe System speed.

INTRODUCTION

In Queensland (Australia), speed limits are set in accordance with the Department of Transport and Main Roads (TMR) *Manual of Uniform Traffic Control Devices (MUTCD) Part 4: Speed Controls* which is based on the Australia Standards' equivalent document (AS1742.4). The current speed limit setting guidelines seek to achieve a balance between safety, mobility and access through consideration of the function of a road, prevailing vehicle speeds, road and roadside environment.

However, the current speed management process requires practitioners to assess the safety of road users by subjectively reviewing the historical crash rates and likely risks related to the road and roadside infrastructure of a road corridor. This approach relies heavily on the experiential judgments that can be influenced by variation in practitioners' knowledge and experience. As such, opportunities to manage crash risks through speed management may not be taken because the current speed management process does not provide clear guidance to practitioners to support consistent implementation of safe speed limits.

Accordingly, TMR has reviewed the existing speed management process and identified opportunities to improve the consideration of road safety in order to support practitioners understanding of potential risks and decision making. This paper presents the new speed management process currently being developed by TMR. Additionally, this paper details how the new speed management process supports the Queensland Government's ultimate goal to eliminate Fatal and Serious Injury (FSI) crashes on the Queensland road network by applying a Safe System approach to road safety.

QUEENSLAND IN CONTEXT

TABLE 1 presents a comparison of Queensland and Australia with respect to a number of countries across the globe.

TABLE 1 Queensland In Context

Region	Population	Land Area (km^2)	Population Density	Road Fatalities per 100,000 persons (2015)
Queensland	4,883,700 (1)	1,723,936 (2)	2.83/km^2	5.08 (3)
Australia	22,992,654 (4)	7,682,300 (4)	2.99/km^2	5.18 (5)
New Zealand	4,474,549 (4)	264,537 (4)	16.91/km^2	5.65 (5)
United States	332,995,528 (4)	9,147,593 (4)	36.40/km^2	9.83 (5)
United Kingdom	64,430,428 (4)	241,930 (4)	266.32/km^2	2.75 (5)
Canada	35,362,905 (4)	9,093,507 (4)	3.89/km^2	5.87 (5)
Sweden	9,880,604 (4)	410,335 (4)	24.08/km^2	2.63 (5)
Netherlands	17,016,967 (4)	33,893 (4)	502.08/km^2	3.35 (5)
India	1,266,883,598 (4)	2,973,193 (4)	426.10/km^2	10.86 (5)

In comparison to the countries outlined in the Table above, Australia is a large country by land mass and relatively small by population. The result of such a large land mass and small population is that Australia has one of the lowest population densities of all countries.

The population density value shown above represents the average for Queensland, however, the south-east corner accounts for almost two-thirds of the population of Queensland. Therefore, Queensland can expect to have higher population densities in the south-eastern corner and lower population densities within the central, western and northern regions of the state.

Posted speed limits in Queensland range from between 10km/h (6mph) in Shared Zones to 110km/h (69mph) on high-standard Motorways. Since February 2003, the default speed limit in a built-up area in Queensland has been 50km/h (31mph) whereas the default speed limit in an area outside a built-up area is 100km/h (63mph). This means that in the absence of any sign posted speed limits drivers must lawfully travel at or below 50km/h (31mph) or 100km/h (63mph) depending on whether the driver is within a built-up area or not (6). These speed limits are also typical of New South Wales – which borders Queensland to the south (7). In comparison, the Northern Territory – which borders Queensland to the west – has default speed limits of 60km/h (38mph) and 110km/h (69mph) in built-up and outside built-up areas respectively (8). Additionally, Northern Territory has posted speed limits of up to 130km/h (81mph) (9).

Accordingly, TMR – Queensland Governments state road agency – is faced with the difficult challenge of being able to balance drivers expectations while managing the safe and efficient transportation of goods and people between locations separated by large distances and low population densities and short distances with high population densities.

IMPORTANCE OF APPROPRIATE SPEED MANAGEMENT

Road trauma has traditionally been measured in Queensland based on the number of fatalities that occur on the road network during a calendar year. While the long-term trend indicates that the number of fatalities on the Queensland road network is reducing, this measure presents an incomplete picture as to the road safety issue. Many victims of road crashes are seriously injured and many will never live their lives in the way they had previously. Thinking about the road toll in terms of the number of FSIs more accurately captures the impact of road safety on the community. FIGURE 1 presents a view of the number of FSIs that have occurred on the Queensland road network in recent history.

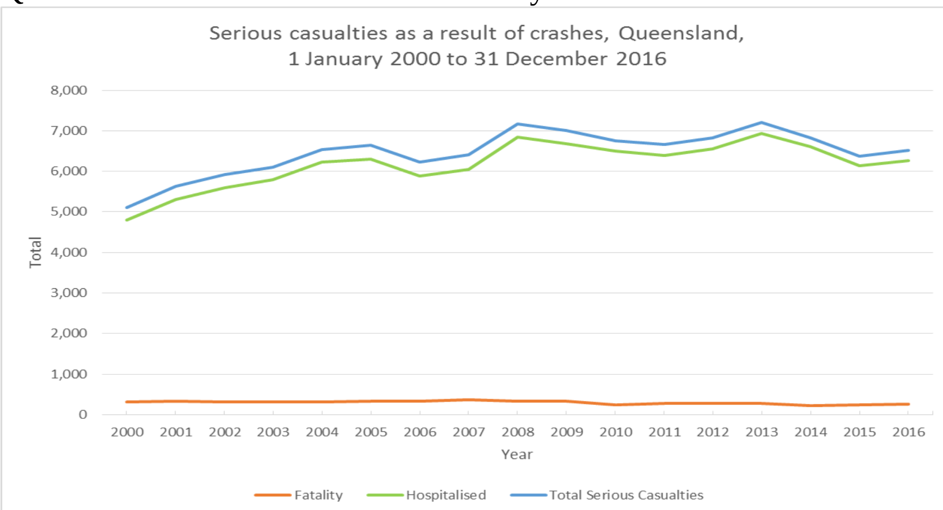

FIGURE 1 Queensland's FSI crashes by year (2000-2016)

The Figure indicates an upward trend in the number of persons seriously injured each year on the Queensland road network. To combat this trend the Queensland Government in 2015 through TMR's *Safer Roads, Safer Queensland: Queensland's Road Safety Strategy (2015-21)* identified an ultimate goal to reduce the number of people killed or seriously injured on Queensland roads to zero. *Queensland's Road Safety Strategy* also reaffirmed Queensland's Safe System approach to road safety which acknowledges that people make mistakes and crashes will continue to occur; however we don't need to accept that crashes will result in fatalities and / or serious injuries to the road users involved.

The Safe System framework supports appropriate speed management through recognition that the survivability of a crash decreases rapidly above certain impact speeds known as 'Safe System Speeds'. The 'Safe System Speeds' for various crash types can be seen in FIGURE 2 (10). It should be noted that 'Safe System Speeds' have been challenged by a number of studies and hence should be treated as indicative only (11) (12). However, the studies conclude that there is a consistent relationship between survivability of crashes and impact speeds for various crash types as shown graphically in FIGURE 2.

A 'Black Links' speed reduction project undertaken by TMR in Queensland commenced in 2008. As part of this project, speed limits on several roads with a high rate of severe crashes were reduced from 100km/h (63mph) to 90km/h (56mph). The speed restriction reductions also included high visibility speed limit signs, speed limit repeater signs installed at closer than normal intervals and highly visible 'high crash zone' signs. The 'Black Links' study found that there was an average reduction of 26% FSI crashes and 7-12km/h (4-8mph) reduction in 85^{th} percentile vehicle speeds.

These results show promising reductions in FSI crashes and vehicle speeds can be achieved. As such, similar outcomes (or better) are desired on a state-wide basis as part of the revised speed management process.

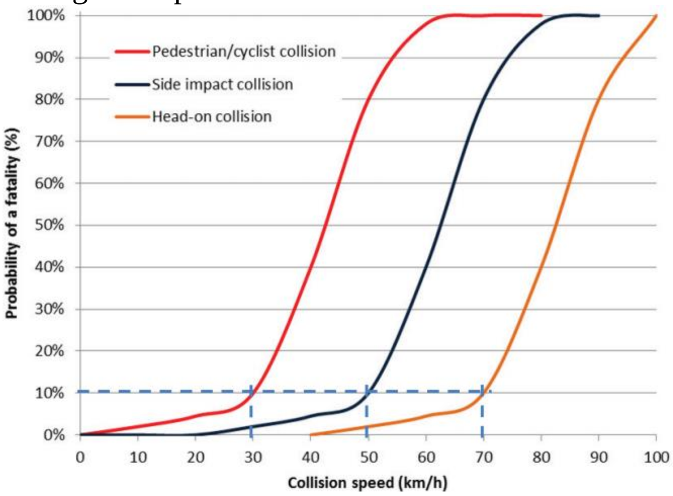

FIGURE 2 Relationship between probability of a fatality and impact speed

Despite the outcome from the 'Black Link' initiative, there are a considerable number of studies which have been conducted both nationally and internationally regarding the effects of reducing speed limits without physical speed reducing infrastructure. The studies report that mean vehicle speeds are typically reduced by a quarter of the speed limit reduction i.e. where a speed limit has been reduced by 10km/h (7mph) the resulting mean speed is reduced by approximately 2 - 3 km/h (1-2mph) where no additional infrastructure or enforcement actions have been taken (13).

The lesson from these conflicting findings is that the relationship between posted speed limit and the actual speed chosen by drivers is complex. In some cases, where safety problems arise, drivers will adjust their speeds when a speed limit is reduced and measures are provided to highlight the risks of the road corridor to the road user. However, this is not the case if this practice is adopted unilaterally and on a network basis. To achieve crash reductions, the goal is that any reduction in speed limit results in an equivalent reduction in vehicle speeds and in turn the probability of a fatality is reduced.

Studies examining the contribution of speed limits to speeding behaviour show that drivers don't usually comply strictly with speed limits. The extent of speeding varies depending on the perceived reasonableness of the speed limit amongst other factors. The high percentage of drivers speeding excessively can in some cases be explained by the "contradiction" between the road design and the speed limit on that road. This understanding has led to the concept of 'credible speed limits' which has been an element in TMR's previous Speed Management Strategies. 'Credible speed limits' are speed limits that are considered logical in the light of the characteristics of the road and the environment. Speed limits which are considered 'credible' are expected to result in a greater number of drivers obeying the speed limit; which in turn can lead to a reduction in the number and likelihood of FSI crashes occurring (14).

Taking into consideration the above, there is a large onus on the speed management process in being able to balance the speed limit along a road corridor with the road and roadside infrastructure, while meeting the expectations of the road user. Should an appropriate balance be achieved, there is the expectation that the speed management process will contribute to reduced FSI crashes on the road network.

OBJECTIVES OF THE NEW SPEED MANAGEMENT PROCESS

In light of the importance of a sound speed management process outlined above, TMR identified three objectives that the new speed management process was intended to meet. These objectives are as follows:

1. the speed management process should not assume that all road practitioners have significant experience with respect to the relationship between road safety issues and speed management;
2. there must be sufficient flexibility within the speed management process to ensure that practitioners are able to make recommendations based on their local knowledge, road safety and / or speed management experiences; and
3. the recommendations from the speed management process must seek to meet driver's expectations with respect to the road environment and speed limits.

TMR'S PROPOSED SPEED MANAGEMENT PROCESS

TMR's proposed speed management process comprises the following three key stages:

- **Stage 1: Speed Limit Review** – this stage comprises a series of technical tasks required to be undertaken by a practitioner to analyse and review a road or road segment. The outcome of this stage is a recommended action – be it infrastructure or speed limit related – by the practitioner with respect to speed management;
- **Stage 2: Endorsement and Implementation** – the Stage 1 findings and recommendations are submitted to the road authority's responsible officer for review and approval. Once approved, the recommendations are then submitted to local Speed Management Committee. The Speed Management Committee – which is made up of engineers from the local government, TMR and a representative of Queensland Police Services – considers the recommendation and responds to the road authority's responsible officer. If the Speed Management Committee does not endorse the recommendation of the road authority's responsible officer, further advice is sought from a Speed Limit Review Panel. Ultimately, the road authority's responsible officer is responsible for the approving and implementing the recommendations, however, consideration should be given to the review and associated comments of the Speed Management Committee and Speed Limit Review Panel (if required); and
- **Stage 3: Evaluation and Monitoring** – following implementation the outcome is evaluated shortly thereafter. Additionally, ongoing monitoring is programmed for roads by the responsible road authority to ensure that the road environment and speed limit meet the traffic characteristics, speed environment and land use and to ensure that there is no increased casualty crash rate.

As previously mentioned, the objective in revising TMR's speed management process is to ensure more consistent consideration to road safety within the initial stages. As such, Stages 2 and 3 of the speed management process above have been unchanged from TMR's pervious speed management process. Accordingly, this paper will focus on Stage 1 of TMR's proposed speed management process.

SPEED LIMIT REVIEW (STAGE 1)

The outcome of Stage 1 of the new speed management process – known as the Speed Limit Review (SLR) stage – is a recommendation with respect to the road corridor and / or the speed limit. The Speed Limit Review stage requires a practitioner to undertake the following five steps:

1. Criteria to initiate Speed Limit Review;
2. Identify Road Class and Typical Speed Limit;
3. Adjust Typical Speed Limit based on Road Risk Metric;
4. Analyse Speed Data; and
5. Develop Recommendation.

Each step of the process is described in greater detail in the following sections.

Step 1: Criteria to initiate Speed Limit Review

Road authorities are encouraged to develop a forward work program to undertake reviews of the speed limits on roads in their jurisdictions. Desktop reviews are recommended to be undertaken every five years to account for changes in the environment that may impact the safety of a road corridor or the speed environment. Should the desktop review identify changes to the speed environment a detailed Speed Limit Review is to be undertaken. Additionally, a Speed Limit Review may be required on a road corridor as a result of community - residents, representatives of local law enforcement, politicians and so on – requests or inquiries.

Step 2: Identify Road Class and Typical Speed Limit

It’s well established that driver’s determine their ‘desired speed’ based on elements – including road function, road characteristics, surrounding land uses and posted speed limit – of the road. Therefore, to ensure uniformity in design, operation, road quality and predictability within the road network – which are concepts of Sustainable Safety and the basis of Safe System – it’s important to ensure that a speed limit is based on the roads’ functional classification.

TMR has defined a concise Road Classification System that can be applied across the Queensland road network and assigned a Typical Speed Limit for each road class. TABLE 2 below presents a summary of the proposed functional Road Classes and Typical Speed Limits for the purposes of Speed Management.

TABLE 2 Summary of Road Classes and Typical Speed Limits for consideration

Roads in an Urban Context (Typical Speed Limit)	Roads in a Semi-urban Context (Typical Speed Limit)	Other (Typical Speed Limit)
Access or local street (40km/h)	Access or local street (50km/h)	Local or access roads (60km/h)
Collector street (50km/h)	Collector street (60km/h)	Collector Road (70km/h)
Trunk collector road (60km/h)	Trunk collector road (70km/h)	Trunk Collector road (80km/h)
Sub-arterial road / Arterial Road (70km/h)	N/A	Arterial road (100km/h)
Motorway/Freeway/Expressway (100km/h)	N/A	N/A

Definitions are provided to assist practitioners in defining the appropriate road class and roadside environment (i.e. Urban, Semi-urban and Other). The roadside environment definitions are based on the Queensland Road Rules descriptions for general speed limits in built-up areas and outside built-up areas as detailed above. Aligning speed limits with the Road Rules in which drivers are required to obey is considered a significant aspect of the proposed speed management process by ensure that speed limits better meet driver's expectations of a road corridor.

Step 3: Adjust Typical Speed Limit based on Road Risk Metric

The Typical Speed Limit identified in Step 2 is adjusted based on the Road Risk Metric (RRM). The RRM is detailed later in this paper, however, the RRM is an objective analysis of both the crash history on the road corridor and the likely risks associated with the road. TABLE 3 details how the Typical Speed Limits are proposed to be adjusted based on the RRMs.

TABLE 3 Adjusted Speed Limits based on RRM for consideration

<table>
<tr><th rowspan="2">Typical Speed Limit</th><th colspan="3">Adjusted Speed Limit</th></tr>
<tr><th>High Risk</th><th>Medium Risk</th><th>Low Risk</th></tr>
<tr><td>40 km/h</td><td colspan="2">40 km/h</td><td>50 km/h</td></tr>
<tr><td>50 km/h</td><td>40 km/h</td><td colspan="2">50 km/h</td></tr>
<tr><td>60 km/h</td><td>50 km/h</td><td colspan="2">60 km/h</td></tr>
<tr><td>70 km/h</td><td>60 km/h</td><td>70 km/h</td><td>80 km/h</td></tr>
<tr><td>80 km/h</td><td>70 km/h</td><td colspan="2">80 km/h</td></tr>
<tr><td>90 km/h</td><td>90 km/h</td><td colspan="2">100 km/h</td></tr>
</table>

As can be seen from the Table, speed limits are reduced on roads that are considered to have a High Risk whereas the speed limits are higher on roads that are considered to have a Low Risk.

Step 4: Analyse Speed Data

Speed data is obtained by recording the speeds of vehicles travelling along the road corridor under free-flowing conditions. Vehicles travelling under free-flowing conditions are representative of the driver's desired speed in unconstrained (i.e. uncongested) conditions. The speed data is analysed to provide guidance on whether existing vehicle speeds are consistent with the existing speed limit and to recommend a speed limit based on the speed data.

The analysis process involves first reviewing the recorded Mean Speed, Upper Limit of 15km/h (mph) Pace Speed and the Percentage of Vehicles in the Pace Speed and determining if these values are within suitable ranges for the existing speed limit. The purpose of this step is to determine whether existing vehicle speeds conform to the existing speed limit and whether there is an acceptable distribution of vehicle speeds. If it's determined that the existing vehicle speeds fall within an acceptable distribution for the existing speed limit then the existing speed limit is the speed limit recommended from the speed data.

Should the existing vehicle speeds not conform to the existing speed limit then a speed limit is suggested based on the Upper Limit of 15km/h (9mph) Pace Speed.

The speed data analysis detailed above rigorously assesses the distribution of vehicle speeds and ensures that 'outlying' speeds don't influence the recommendation. Additionally, the speed limit recommended following the speed data analysis is consistent with the attitudes of the majority of existing drivers and within 12km/h (8mph) of the Mean Speed for normally distributed vehicle speeds. This technique is based on the understanding that the greatest safety benefits are achieved when there is – as best as possible – uniformity of vehicle operating speeds and when the speed limit is within 16km/h (10mph) of the mean vehicle speed (15) (16) (17) (18).

Step 5: Develop Recommendation

Having completed Steps 1-4 the road practitioner has a high-level understanding of:

- a speed limit that is appropriate for the class and potential risks associated with the road corridor (Steps 2 and 3); and
- the travelling speed of drivers along the road corridor with respect to the road corridor and existing speed limit.

Accordingly, the road practitioner is faced with a number of options to ensure that the speed limit meets the expectations of the drivers and is appropriate for the risks associated with the road. The following options are presented for the road practitioner to consider:

- Option 1 – the road has been assessed to have a High Road Risk (see Road Risk Metric below). Having a High Risk indicates that either there is a history of FSI crashes AND / OR an assessment of road infrastructure indicates that the risk of a FSI crash is high. In this instance, the lower of the speed limits suggested by the adjusted typical speed limit (Step 3) or the speed limit suggested by the speed data analysis (Step 4) is to be adopted. Additionally, road upgrades should be considered to reduce the risk of FSI crashes occurring along the road corridor. Road corridors where the speed limit suggested by the speed data analysis (Step 4) is greater than the adjusted typical speed limit (Step 3) should be treated as high-priority roads for infrastructure improvement programs;
- Option 2 – the speed limit suggested by the speed data analysis is greater than the adjusted typical speed limit and the road has a Medium or Low RRM (see Road Risk Metric below). This suggests that drivers are exceeding the speed that is appropriate for the class of road. In this instance practitioners should adopt the adjusted typical speed limit (Step 3). The need to increase enforcement measures along the road corridor should be considered; OR

- Option 3 – the speed limit suggested by the speed data analysis is less than or equal to the adjusted typical speed limit and the road has a Medium or Low RRM (see Road Risk Metric below). This suggests that vehicle speeds are constrained and drivers are unable to travel at the speed limit that is typical of the road. In this instance practitioners shall adopt the speed limit that is recommended as per the speed data analysis (Step 4) to improve uniformity of vehicle speeds.

While the above options present a good basis for the practitioner to make a strong speed management recommendation, the options above are to be used as a guide for consideration by the practitioner in conjunction with constraints such as available budgets, programming of works and the needs of the community. The new speed management process developed by TMR will allow the practitioner to make a recommendation that differs from the above. This allows flexibility for the road practitioner to exercise judgment built upon by experience and local knowledge.

ROAD RISK METRIC

Crucial to TMR’s new speed management process is the RRM that provides an objective analysis of the road safety risk of a particular road corridor. The RRM comprises the following two components:

- **Crash Risk Ra**ting (CRR)– an analysis of the historical FSI crashes along a road corridor; and

- **Road Risk Rating** – an analysis of the risks that the road and roadside infrastructure along a road corridor pose to road users.

The above components are detailed further in the following sections.

Crash Risk Rating

The CRR is the first component of the RRM and allows practitioners to assign a CRR of Low, Medium or High to the road corridor under review. The CRR is an analysis of the crashes that have occurred along the section of road under review for the preceding five year period. The CRR analysis requires calculation of the Casualty Crash Rate based on the road corridors history of FSI crashes.

The CRR is then obtained by comparing the Casualty Crash Rate for the road corridor against the Average and Critical Casualty Crash Rate thresholds of typical Queensland roads that are similar in nature (i.e. road class, volume and existing speed zone). In defining the CRR's risk threshold levels the results shown in TABLE 4 were achieved.

TABLE 4 Crash Risk Rating Thresholds

Crash Risk Rating	Proportion of TMR Network Length	Injury Crash Rate (per MVKT)	Proportion of Injury Crashes	FSI Crash Rate (per MVKT)	Proportion of FSI Crashes
High	10.7%	64.6	29.3%	34.9	27.3%
Medium	25.2%	27.8	34.6%	15.5	33.4%
Low	64.1%	9.0	36.1%	5.7	39.3%

As can be seen from the Table above, roads that are considered to have a High CRR represent 10.7% of TMR's road network, however, account for 27.3% of the FSI crashes. Additionally the FSI Crash Rate for High risk roads is more than double that of Medium Risk roads.

FIGURE 3 presents a graphical representation of the CRR for TMR's road network. As can be seen from the Figure, the majority of roads that are deemed to have a High CRR are typically located in the highly populated areas in the south-east corner and along the eastern coast of Queensland. While it's not intended to indicate that the roads located away from the populated areas are of a lower risk, due to the lower population levels the number of FSI crashes are lower and hence the CRR score is lower.

By including a measure of CRR within the speed management process the practitioner undertaking the Speed Limit Review stage is objectively made aware of the significance of the number of FSI crashes that have occurred along the road corridor. This awareness allows the practitioner to consider all appropriate actions with relation to the road and roadside infrastructure and speed limit.

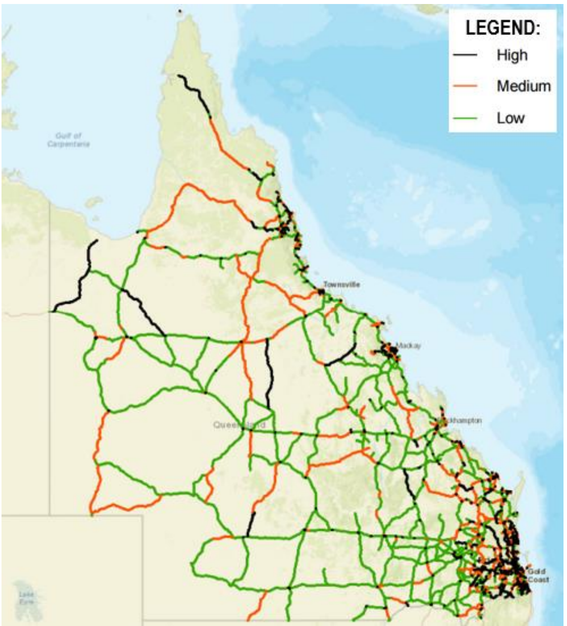

FIGURE 3 Queensland's state control road network by crash risk rating

Road Risk Rating

The Road Risk Rating (RRR) is the final component of the RRM. The RRR is an analysis of the risks that the road and roadside infrastructure pose to road users. As previously mentioned, the CRR is an analysis of the historical FSI crashes along a road corridor and roads with a High CRR are typically located in highly populated regions of the state. However, the RRR is required to highlight roads that present a High risk to the road users where a FSI crash may not have previously occurred. Therefore, RRR is considered a proactive analysis to identify roads or road corridors with a high crash risk potential.

While there are a number of existing national and international Infrastructure Risk tools (e.g. QRAM, AusRAP / iRAP etc.) these assessments require the collection and analysis of a large number of road infrastructure attributes. The collection and analysis of the data required for these assessments are therefore not considered practical or feasible along lower-order typical local-government controlled roads where budgets are typically less. Accordingly, TMR commissioned the development of a RRR tool that is based on the AusRAP / iRAP Star Ratings process insofar that it involves coding a number of road and roadside features to predict the underlying risk of a road or section of road. The key difference between the RRR and AusRAP / iRAP Star Rating process is the number of attributes used to derive the risk. The RRR model requires the following 12 attributes:

1. Road Stereotype (i.e. divided / undivided, single / multi-lane, sealed / unsealed);
2. Horizontal Alignment;
3. Lane Width;
4. Shoulder Width;
5. Surrounding Lane Use;
6. Traffic Volume;
7. Pedestrian Volume;
8. Cyclist Volume;
9. Presence of On-Street Parking;

10. Intersection Density;
11. Access Density; and
12. Roadside Hazard.

The above attributes that feed into the RRR model were selected on the basis of having a major influence on informing the underlying risk of a road or section of road. Additionally the attributes don't require the specialist collection / analysis of the road corridor.
The 12 attributes are entered into the RRR formula which produces an RRR score of typically between 0 and 3.0. The RRR score is then compared against the RRR thresholds to produce a risk score of Low, Medium or High.

It should be noted that the results of the RRR model have been compared to the AusRAP Star Ratings. The RRR model is able to estimate up to an 80% accuracy the roads that have a High Risk as determined by the AusRAP Star Ratings. This is considered a significant benefit to the speed management process that the RRR reasonably gives a reliable measure of risk from a dataset that can be collected easily and quickly.

Identifying the Road Risk Metric

Having determined the CRR and RRR the Matrix shown in TABLE 5 is used to obtain the RRM for the road corridor.

TABLE 5 Road Risk Metric Matrix

Road Risk Metric		Road Risk Rating		
		Low	Medium	High
Crash Risk Rating	High	High Risk	High Risk	High Risk
	Medium	Medium Risk	Medium Risk	High Risk
	Low	Low Risk	Medium Risk	High Risk

The following presents a key summary of the Table above:

- Low Risk – are roads that have both no significant history of FSI crashes and the road and roadside infrastructure represent no significant risk to the road users;
- Medium Risk – are considered roads to have either a moderate history of FSI crashes or represent a moderate risk to the road users based on the road and roadside infrastructure or both; and
- High Risk – are considered roads to have either a history of FSI crashes or represent a high risk to the road user or both.

SUMMARY AND CONCLUSIONS

There is a growing appetite from practitioners for more technically-based speed management methods both in Queensland and around the globe. The new three-staged speed management process developed by TMR includes an analysis of a road corridor to provide practitioners the ability to make an informed and objective decision with respect to speed management and setting of speed limits. The speed management process also enables the flexibility for practitioners to exercise judgement based on local knowledge and road safety experience.

TMR recognised the importance of the new speed management process with respect to reducing the trauma on Queensland roads and achieving the ultimate objective of zero FSI crashes. Accordingly, the new speed management process will undergo continual evaluation, monitoring and refining (if necessary) upon implementation.

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