



**Road Safety
Camera
Commissioner**

ROAD SAFETY CAMERA PROGRAM – LUMS INQUIRY

21 June 2021

The Road Safety Camera Commissioner respectfully acknowledges the Traditional Owners of the land of Victoria and pays respect to their culture and their Elders past, present and emerging.

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EXECUTIVE SUMMARY

As part of the ongoing monitoring of the Road Safety Camera network, issues impeding effective enforcement of reduced speed limits at Lane Use Management System (LUMS) sites along Victoria's Managed Motorways were identified. There was an observed increase in the rejection of detected incidents of speeding in reduced speed zones from under 40,000 in 2018, to nearly 120,000 in 2020. An Inquiry, in accordance with section 10(g) of the *Road Safety Camera Commissioner Act 2011*, was commenced to identify the reason for that increase.

The failure to enforce incidents of speeding at LUMS sites poses an increased risk to the community, as reduced speed limits are used to manage hazardous situations on these high speed, high volume roads.

Issues impeding enforcement relating to data quality, the need to enhance systems, interagency collaboration, and improving governance of traffic management contractors were identified during this Inquiry.

Whilst the road safety partners have commenced addressing the issues, driver behaviour at LUMS sites, however, remains problematic. Previous Road Safety Camera Commissioners identified many drivers do not comply with reduced speed zones; they make their own judgements about when it was safe to accelerate, or what a 'safe' speed is when a reduced speed limit is posted. As previously recommended in 2013 and 2017, there is an opportunity for greater community education and engagement about this very important issue.

REPORT PURPOSE

- 1 This report details the findings of the Road Safety Camera Commissioner's (RSCC) inquiry into rejections of road safety camera speed detections on Managed Motorways, where the Department of Transport (DOT) operates LUMS.

BACKGROUND

- 2 DOT has installed LUMS along sections of Victorian freeways. It is a key component of a Managed Motorway (MMW). LUMS comprises overhead electronic signs installed lane-by-lane at regular intervals along a freeway.
- 3 The signs can be used to lower the speed limit and display signals indicating lane access. For example, a red 'X' means that the lane is closed ahead. Because they are installed at regular intervals, LUMS allows live monitoring and control of speed limits and lane access where a hazard has occurred or roadworks are taking place. DOT operates LUMS along sections of the: -
 - Western Ring Road.
 - Westgate Freeway.
 - Monash Freeway.
 - Tullamarine Freeway.
- 4 Systems serving similar functions are also used along CityLink and inside the EastLink tunnels.
- 5 In addition to DOT, which administers the LUMS system, the other primary stakeholders are: -
 - The Department of Justice and Community Safety (DJCS), which manages the fixed road safety cameras along MMWs.
 - Victoria Police, the enforcement agency.
 - Transurban, which administers the CityLink Tunnels and parts of the Tullamarine and Monash Freeways.
- 6 Using reduced speed limits to help manage road safety risks around hazards and works can, on occasion, lead to large numbers of fines being detected within a short period and can result in community concern and media attention. Two historical instances along the Western Ring Road have led to inquiries by previous RSCCs: His Hon. Gordon Lewis AM at [Keilor Park Drive Bridge in 2013](#), and Mr John Voyage at [Sydney Road Bridge in 2017](#).
- 7 Both inquiries found that many drivers would judge when they perceived they had passed the 'risk' on the road and speed up, or determine for themselves what they believed should be the 'appropriate' speed limit, despite what might be displayed on signage.

- 8** The Victoria Police, Traffic Camera Office (TCO) exercises its discretion to enforce the speed limit. It and DJCS assess the suitability of reduced speed limit events for enforcement. Sessions are assessed against various criteria, including, but not limited to: -
- Whether signage was appropriate.
 - Whether the relevant incident was near the camera.
 - Fairness.
- 9** DJCS has published a DJCS *LUMS Business Rule Process Guide* (the Process Guide), which outlines the assessment criteria for enforcement at LUMS sites. The Process Guide is a response to historical instances of community concern about enforcement in reduced speed limits.
- 10** DJCS also provides monthly reports to this Office, which includes the number of detections rejected under the Process Guide. It was observed on review of these monthly reports that LUMS rejections were consistently being reported as caused by Victoria Police not satisfied it met its own policy. Initial inquiries found that in fact Victoria Police did not have its own policy and applied the Process Guide.
- 11** To understand this issue, Victoria Police provided to this Office their rejection data for the calendar year 2020. A review of the 2020 data identified rejections were substantial, with more than 22,000 rejections occurring during February 2020 alone, being the highest monthly figure.
- 12** A review of rejection data raised questions as to the effective and consistent enforcement of reduced speed limits along MMWs. As reduced speed limits and lane access signals are used to help manage increased risks on the roadway, such as during roadworks, debris on the road, or to people who were in or were assisting with a response to a collision, compliance with LUMS is a road safety imperative. However, without effective enforcement, drivers will increasingly make inappropriate safety judgements rather than complying with the posted speed limit. This will further increase risks during these high-risk situations.
- 13** Inconsistent enforcement will also lead to the questioning of the integrity of the camera system. Road safety cameras are an essential tool used to ensure drivers comply with the posted speed limits. However, high rejection rates will lead to the community questioning why some people receive fines, while others with the same driving behaviour in similar situations, may not.
- 14** This inquiry established the frequency and volume of rejections, and the rejection reasons within the Process Guide. The root cause of the issues was identified. Finally, reflecting on the recommendations of the 2 previously published reports on LUMS, this Inquiry identifies further steps that can be taken to address the issues.

SCOPE OF INQUIRY

- 15** This review consisted of identifying: -
- Where rejections occurred, and the frequency and volume of those rejections.
 - The factors causing detections to be rejected by Victoria Police.
 - Who owns, influences, and are affected by those factors.
 - What can be done to enable consistent and effective enforcement during reduced speed limit situations.

METHODOLOGY OF THIS INQUIRY

- 16** This inquiry had two major components: data analysis and stakeholder engagement.

DATA ANALYSIS

- 17** Analysis of data provided by Victoria Police into rejections occurring during the calendar year 2020, identified the locations, frequency, and volume of rejections. A *Preliminary Analysis Report* containing data analysis and a series of focused critical questions for stakeholders was prepared and facilitated consultation with key stakeholders.

STAKEHOLDER ENGAGEMENT

- 18** The *Preliminary Analysis Report* was provided to DOT, DJCS, and Victoria Police. Each of these stakeholders provided formal responses to the questions contained in the consultation report.
- 19** Structured interviews were conducted by the Road Safety Camera Commissioner with staff from: -
- Victoria Police Road Policing Command.
 - The Department of Transport.
 - The Department of Justice and Community Safety.
 - Transurban.

RESULTS OF INQUIRY

KEY FINDINGS FROM DATA ANALYSIS

- 20** Data analysis identified that during 2020, Victoria Police rejected 119,904 detections at LUMS sites on 3 motorways, being CityLink, the Monash Freeway, and the Western Ring Road.
- 21** Rejections occurred across 380 camera sessions. The camera site on the Western Ring Road, approximately 600 metres west of Sydney Road, Glenroy (Sydney Road, Glenroy) was particularly problematic as infrastructure limitations on approach to this location resulted in all detections recorded in 2020 being rejected during reduced speed times.

- 22** The rejection reasons for each session were provided. 27 of the 64 sessions on CityLink were rejected because of insufficient information provided to Victoria Police for it to make an enforcement decision. Victoria Police advised that Transurban has since improved the quality of information it is providing in support of enforcement. Transurban, in its meeting with the Commissioner, was unaware Victoria Police was not previously receiving sufficient information, however did commit to resolving any further issues related to information provision to Victoria Police if they arose.
- 23** Rejection reasons were categorised into the following primary factors: -
- **Speed limit reduction not required** – where the speed limit reduction was not required for the full period or applied at the wrong location.
 - **Insufficient information/evidence** – where Victoria Police did not receive enough information to verify traffic management was in accordance with the Process Guide.
 - **Inappropriate signage** – where 'End of Roadworks' signage was deployed at or near the camera, or in the wrong place.
 - **Policy** – rejections made after reviewing detections against policies from either Victoria Police or the DJCS.
 - **Roadworks on or near cameras** – where the cameras should have been deactivated due to roadworks on or near them.
 - **Environmental** – cables required for the operation of some LUMS gantries were subject to recurring theft starting in September 2020 along the Western Ring Road, near Ballarat Road. As a result, the relevant sessions were rejected.
 - **Rejected at processing** – sessions which were rejected by contractors during processing.
 - **Technical issue** – where a technical issue, other than cable theft, affected the operation of the LUMS signage.
 - **Infrastructure limitations** – this reason relates to the fixed camera site near Sydney Road, Glenroy.
- 24** The Monash Freeway and the Western Ring Road accounted for 316 sessions (83%) and 109,315 (91%) of all the rejections. The remainder occurred on CityLink. There were 216 sessions along the Western Ring Road accounting for 87,450 rejected detections. This was 57% of all sessions, but 73% of all rejected detections.
- 25** It became apparent during the inquiry that issues with the Process Guide were not in fact the significant cause of infringements being rejected.
- 26** Analysis demonstrated that of the 380 sessions across all 3 MMWs, only 37 (approximately 10%) were rejected because they did not meet the requirements for enforcement outlined in the Process Guide. These sessions were included in the Policy rejection factor total. The remaining 343 sessions (approximately 90%) were rejected for other reasons.

- 27** The below table shows the frequency of each primary rejection factor for all 380 sessions: -

PRIMARY REJECTION FACTOR	SESSIONS	(%)
Speed limit reduction not required	111	29.21%
Insufficient information or evidence	98	25.79%
Inappropriate signage	65	17.11%
Policy	49	12.89%
Roadworks on or near cameras	41	10.79%
Environmental	11	2.89%
Rejected at processing	3	0.79%
Technical	1	0.26%
Infrastructure limitations	1	0.26%

APPLICATION OF THE PROCESS GUIDE

- 28** Victoria Police applies the Process Guide after it has established clarity and certainty about signage and other factors needed to assess whether a session can be considered for enforcement. Victoria Police advises that it considers the Process Guide to be sound and when applied is fair, open, transparent, and supports current legislation and policy.
- 29** Victoria Police indicated that 82% of sessions relating to crashes and hazards were rejected due to reduced speed limits displayed near fixed road safety cameras not meeting the requirements of the Process Guide. This part of the Process Guide relates to situations where the LUMS gantry, immediately following a fixed camera, was visible to drivers and showed a higher speed limit than the previous gantry. Victoria Police considers this situation unfair for enforcement, as drivers will naturally increase their speed upon seeing a higher speed limit immediately ahead. I accept the Victoria Police advice that the application of the policy is fair for drivers. This suggests that there are limitations on enforcement caused by the current LUMS infrastructure.
- 30** There is an opportunity for DOT, in consultation with the road safety partners, to examine infrastructure design along Victoria’s motorways so that modifications can be made to facilitate enforcement.

IMPROVING DATA AND INFORMATION

- 31** The stakeholders that manage the systems collect considerable data to support operations in a complex environment. This inquiry began after monthly reports to my office indicated rejections described as ‘TCO LUMS Rejection Policy’ under the Process Guide were consistently high during the survey period. The level of rejections was considered routine.
- 32** Victoria Police acknowledged that the use of an all-encompassing rejection reason in the back office did not allow adequate understanding of the issues and factors for

those rejections. Whilst the stakeholders had been aware of the issues that were affecting effective enforcement, it appeared those issues had not been clearly identified prior to this inquiry due to the way in which the data were recorded.

- 33** Victoria Police advised that most issues encountered in enforcement related to traffic management at planned roadworks. For example, detections recorded during 91 roadworks sessions accounted for 74% of the Western Ring Road rejections. Victoria Police advised that the main causes of those rejections were 'End of Roadworks' signs being placed near a camera, or DOT not providing sufficient or timely information about the traffic management setup.
- 34** DOT receives Traffic Management Plans (TMPs) as part of the roadworks planning process. In some cases, these plans are generic in that they can be applied to an environment that has similar characteristics to those depicted on the plan, such as road geometry or features like bridges. All final traffic management layouts may still be tailored to suit to the conditions of the day the work is being carried out. However, if the traffic management layout is changed on the day, or if a generic plan was used, Victoria Police advised it could not always get timely, clear, and accurate information about the final setup to enable enforcement decisions.
- 35** Improving the quality of data, information, and analytics used by the stakeholders is needed to quantify, understand, and remediate ongoing issues or address emerging ones. There is also an opportunity to develop better aligned rejection reasons to provide better business intelligence and improve reporting, both for internal and external stakeholders. Improved rejection codes will also allow a greater understanding of whether changes being made are helping to resolve the issues.

BETTER SYSTEMS TO ENHANCE COLLABORATION

- 36** As described above, each stakeholder is responsible for specific functions within the road safety camera network. Enforcement requires a coordinated and collaborative effort from each stakeholder. Each agency records, receives, creates, and maintains its own data to support those functions. There are interagency data sharing procedures, though there remains the need for manual intervention. Victoria Police advised that there are times when the current approach to the sharing of information "can be ineffective".
- 37** As already identified in this report, DOT provides DJCS with automated notifications of upcoming roadworks that may affect the operation of road safety cameras. The cameras will be deactivated, or some detections quarantined, if their operations will be disrupted by a significant change in the environment such as permanent changes to speed limits or reconfiguration of lanes. However, the information provided to DJCS does not include the full application submitted to DOT. As already indicated, DJCS staff make an initial assessment on the impact of the traffic management plan on the impact of camera operations. They will seek further information if clarification is required. However, DJCS does not assess whether the quality of information provides the clarity

and certainty Victoria Police requires to determine enforcement. There is room for DJCS to consider its role in the process, such as making a more robust assessment into whether the DOT information provides enough clarity and certainty to determine enforcement, and to work with DOT to improve the quality of information if it is insufficient.

- 38** DOT acknowledges that its IT system does not have the capability to automatically provide the complete traffic management information. DOT has advised that it is upgrading its IT systems so that it can provide the full suite of information about planned roadworks to DJCS. It has advised this work has a target completion date of 1 July 2021. DOT has indicated confidence that the upgraded IT functionality will assist DJCS and Victoria Police with business intelligence and planning in relation to camera enforcement. DOT and DJCS officers interviewed during this inquiry indicated that since the commencement of this inquiry, interim processes (work arounds) have now been put in place to provide additional information where required.

ENHANCING COLLABORATION AND INTEGRATION

- 39** The road safety environment is complex, and each stakeholder contributes specific functions to manage community risk during incidents and roadworks. These functions operate within independent systems. Issues affecting one part of the system can impact other parts.
- 40** Relationships between the officers directly responsible for those functions across the 3 primary agencies appear to be well established. There are also established joint committees such as the Road Safety Camera Action Group (CAC), chaired by the Director, Road Safety (DJCS), that are well placed to address issues raised in this report. These working groups are established to understand and find solutions to problems encountered by the agencies in performing their functions.
- 41** While interagency information exchange between road safety partners has improved since the commencement of this inquiry, there remain opportunities for enhancing collaboration and coordination, and for closer systems integration. There is a need for each agency to understand each other's role when designing systems (such as LUMS), operational processes, and information requirements. Enhancing this understanding will improve road safety outcomes in the future. Established working groups and committees could take the opportunity to address issues identified in this Report.

REVIEWING EXISTING POLICIES

- 42** As indicated earlier in this Report, the Process Guide is used to determine enforcement at LUMS sites. Sessions are only assessed against the Process Guide after Victoria Police is satisfied that traffic management plans are consistent with legislative and policy requirements. During consultation with Victoria Police, it was clear that 'fairness' to the motorist is a major consideration in whether to enforce detections. While I commend Victoria Police in taking this course of action, its data shows that rejections have increased substantially from 36,545 in 2018 and 79,662 in 2019, to 119,904 in

2020 – an increase of 228% in two years. DOT, advised it brought forward some roadworks in 2020 during the COVID-19 restrictions, which may have contributed to the 2020 figures.

- 43** VicRoads (now part of DOT) provided this Office with its *Managed Freeways Handbook* as part of the 2017 Inquiry into reduced speed limit events at the fixed camera site along the Western Ring Road, near Sydney Road Bridge in Glenroy. That document, drafted in 2013, provides principles and standards for active freeway management tools like LUMS, variable speed limits, and traveller information.
- 44** As part of this inquiry, the Office was advised that DOT has not revised its *Managed Freeways Handbook* in the intervening period. LUMS and other MMW tools are increasingly being installed on Victoria's motorway network. There is an opportunity for DOT to consider whether the standards contained in this document should be updated to ensure they facilitate and support enforcement. There is also an opportunity for DJCS to review the Process Guide to ensure that it keeps pace with changing standards and processes.

GOVERNANCE OF TRAFFIC MANAGEMENT

- 45** As Victoria Police indicated, traffic management plans at roadworks comprised most issues encountered when determining enforcement during reduced speed limits at LUMS sites. DOT advised that any traffic management contractor can currently work in any environment regardless of experience or capability, including on MMWs.
- 46** DOT have advised they are exploring the opportunity to improve the standards for traffic management contractors by moving to a 3-tiered system. Traffic management contractors will initially qualify for low-complexity environments, such as council roads in the first tier. Contractors who want to provide traffic management in more complex road environments, such as dual carriageways and MMWs, will need to demonstrate their capability before being certified for those respective qualification tiers.
- 47** DOT advised it is also working with its interstate and New Zealand partners through Austroads to improve the standards relating to roadworks and MMWs. Traffic management plans are designed for the safety of drivers and workers, but current standards do not consider the operation of road safety cameras. Road safety camera operations are sometimes ineffective in protecting those same drivers and workers where traffic management set ups do not consider enforcement standards. DOT acknowledges that there needs to be consistency of signage near road safety cameras.
- 48** Further, DOT advised it has been conducting workshops with its contractors and internal stakeholders. These workshops are designed to emphasise the requirement to provide video footage of the setup and takedown of the traffic management layout as recommended in the Road Safety Camera Commissioner's FY2018–19 Annual Report. These workshops include educating staff to consider road safety camera

operations in their traffic management designs. DOT has reported significantly fewer issues emerging since these workshops began.

- 49** DOT expressed confidence that these initiatives will substantially improve the way in which traffic management is implemented on the road network and will provide Victoria Police with the timely clarity and certainty required to enforce during roadworks.

EDUCATING THE COMMUNITY

- 50** Road safety cameras are a vital road safety tool in managing hazardous environments and situations. The current level of major infrastructure works across Victoria has caused additional complications for traffic management and road safety.
- 51** Supporting and enforcing safer driver behaviour is an important pillar of the Victorian Road Safety Strategy 2021–2030. Both the 2013 and 2017 Inquiries by this Office found that many drivers often judge for themselves what speed is appropriate when they have passed a hazard on the road.
- 52** DJCS has provided data analysis of all camera sessions for 2020 which demonstrated this behaviour continues, particularly when the speed limit has been reduced to 40km/h. When the speed limit was 40km/h, almost 80% of vehicles were detected exceeding that speed limit on the Western Ring Road, approximately 50% on the Monash Freeway and approximately 35% on CityLink. Environmental factors that affect differing driver behaviours on each of those roads were not the primary focus of this Inquiry. Road safety partners may consider investigating the reason for these differences. However, if reduced speed zones are not enforced, as found in this Inquiry, the general and specific deterrent value of road safety cameras is lost.
- 53** Both predecessor Commissioners recommended that the public be educated about the rationale of reduced speed limits and the importance of complying with them. I take this opportunity to reinforce that recommendation. Ensuring motorists understand how and why the road network is managed during hazardous situations is imperative to ensuring compliance with posted speed signage.

CONCLUSIONS

- 54** Road safety camera enforcement plays an essential role in managing hazardous situations, particularly during roadworks, after collisions, and other incidents on the roadway. However, 119,904 reduced speed limit detections were rejected by Victoria Police in 2020.
- 55** This Inquiry has found that the road safety partners have now identified and understand the issues impeding effective enforcement of reduced speed limits. These

issues include the need to improve information quality, IT systems, integration of processes, and governance of contractors. It is pleasing to see that the collaboration between the road safety partners to resolve these issues has improved since the commencement of this Inquiry. However, there remains considerable work ahead for them.

- 56** Finally, the issue of driver behaviour remains. Consistent with the principles of Victoria's Road Safety Strategy 2021–2030, it is imperative that drivers are educated about how the roads are managed so they comply with signage, particularly in hazardous situations.

RECOMMENDATIONS

BETTER DATA AND INFORMATION

- 1** That DOT improves the quality of information it collects from its traffic management contractors and ensures that traffic management set ups comply with approved traffic management plans.
- 2** That DJCS, in collaboration with Victoria Police, develop broader LUMS enforcement rejection reasons to enhance business intelligence and reporting.

BETTER SYSTEMS AND INFRASTRUCTURE

- 3** That DOT deliver its upgraded IT system to enhance information sharing capabilities for the road safety partners.
- 4** That DOT, in consultation with its partners, review the design of fixed LUMS infrastructure, with the view to improving effective enforcement on MMWs.

REVIEW AND ENHANCE POLICIES

- 5** That DOT reviews its Managed Motorways policies and standards and continues to do so periodically.
- 6** That DJCS reviews the *DJCS LUMS Business Rule Process Guide* and continues to do so periodically.

GOVERNANCE

- 7** That the road safety partners review the membership, agenda, performance, and roles of established joint committees in relation to LUMS enforcement.
- 8** That the road safety partners monitor LUMS enforcement performance and act to address issues affecting that performance.
- 9** That DOT ensures traffic management contractor performance is in accordance with published standards and approved traffic management plans.

EDUCATION

- 10** That DOT develops an education program for its traffic management contractors and internal stakeholders to improve their understanding and consideration of camera operations when planning and undertaking roadworks.
- 11** That the road safety partners deliver community messaging relating to the safety needs in complying with reduced speed limits along MMWs.

APPENDIX - CONSULTATION

In completing this review, the Road Safety Camera Commissioner and his staff consulted with: -

DEPARTMENT OF TRANSPORT

- Ms Robyn Seymour, Deputy Secretary, Network Planning
- Mr Keith Weegberg, Senior Manager, Real Time Management
- Mr Robert Priest, Infrastructure Liaison Officer to DJCS
- Mr Ross Gregory, Speed Management Specialist, Road Safety Victoria.

DEPARTMENT OF JUSTICE AND COMMUNITY SAFETY

- Mr Simon Grieve, Director, Road Safety
- Mr Shane Slupek, Manager, Camera Compliance and Research & Development

VICTORIA POLICE

- Assistant Commissioner Libby Murphy, Road Policing Command
- Acting Assistant Commissioner Debra Robertson, Road Policing Command
- Acting Superintendent Tony Long, Traffic Camera Office
- Acting Superintendent Dallas Normington, Traffic Camera Office
- Acting Inspector Michael Kelly, Traffic Camera Office
- Ms Jenny Pavlou, Executive Advisor, Road Policing Command

TRANSURBAN

- Mr Philip Naulls, General Manager, Operations, Victorian Business, Transurban
- Ms Liz Waller, National Road Safety Manager, Transurban