# ABSTRACT SUBMISSION FORM

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Primary author – for all correspondence | | | | |
| **First name** | Alan | | **Surname** | Nicholson |
| **Organisation** | University of Canterbury | | | |
| **Postal address** | Private Bag 4800, Christchurch 8140 | | | |
| **Email address** | alan.nicholson@canterbury.ac.nz | | | |
| **Phone number** | (03) 3434253 | **Mobile** | | 0210446705 |
| 2nd co-author | | | | |
| **First name** |  | | **Surname** |  |
| **Organisation** |  | | | |
| 3rd co-author | | | | |
| **First name** |  | | **Surname** |  |
| **Organisation** |  | | | |
| Paper details |  | | | |
| **Paper title**  **(limited to 6 words)** | Intelligent Transportation Engineering: What is Needed? | | | |
| **Overview of presentation** (300-word maximum)  There has in recent times been rapidly growing interest in innovative technologies to improve transportation systems, including advanced traffic management technology for real-time traffic management, and advanced vehicle technology (i.e. autonomous vehicles) to improve traffic safety.  The use of innovative technology has been promoted by technology suppliers (e.g. vehicle manufacturers) and advocacy groups (e.g. the Intelligent Transportation Society of America), with claims of very large benefits. However, there have in the past been quite a few instances of innovative technologies, widely heralded as solutions to transportation problems, failing to fulfil the claims of their promoters or having unexpected and unintended adverse effects.  This paper will argue that intelligent transportation engineering involves much more than simply adopting the latest technological innovations. It requires one to clearly identify objectives, then to identify options with high potential for achieving the objectives, then to appraise those options thoroughly (including anticipating future problems), then to select and implement the best option, and finally to recognise uncertainty in estimates of the impacts of options (including the potential for ‘optimism bias’) and to evaluate the implemented option thoroughly, to facilitate evidence-based decisions in the future.  This paper will review recent research on the effects of autonomous vehicles (private and shared) on road network capacity, urban form, travel behaviour and traffic safety. It will also discuss legal liability issues (civil and criminal) and ethical issues.  This paper will argue that intelligent transportation engineering requires a more discerning approach, recognising the hype and vested interests associated with some options, the importance of basing decisions on evidence rather than ideology, and the scope for achieving objectives via good existing low-technology options. It will be argued that transportation engineers should be active in setting objectives and specifying what is needed to achieve them, and not just passive recipients of innovative technology. | | | | |