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**SAFER ROAD
INFRASTRUCTURE
SPECIALIST
SERVICES**

BROCHURE
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ARRB'S SPECIALIST SERVICES

ARRB is a recognised leader in the development of the **Safe System** vision for road transport. The Safe System approach involves a holistic view of the road transport system and the interactions among roads and roadsides, travel speeds, vehicles, road users and post-crash response and care. It is an inclusive approach that caters for all groups using the road system, including drivers, motorcyclists, passengers, pedestrians, cyclists, and commercial and heavy vehicle drivers.

It is our core belief in the Safe System vision that guides everything we do.



ROAD SAFETY MANAGEMENT SOLUTIONS FOR SAFER ROAD INFRASTRUCTURE

It is ARRB's mission to provide Federal, State, industry and the community with practical tools and evidence-based support for ethical and economical decision making which will drive the Nation's road toll toward zero by 2050. Achieving this goal will require effective safety leadership with limited allocation of funding. The greatest impact on safety will be achieved through the integration of risk management principles throughout the road design and planning, construction, asset management, operations and maintenance disciplines.



RISK MANAGEMENT (ISO 31000) AND ROAD SAFETY RISK MANAGEMENT (ISO 39001) SOLUTIONS

Road Safety is fundamentally backstopped by Risk Management (i.e. ISO 31000). ARRB offers a **holistic model** of Road Safety (Risk) Management Systems (i.e. ISO 39001), which deliver tangible outcomes for safer road infrastructure. We bring innovative methods of evaluation and investigation and provide you with design advice through the careful consideration of all road user groups. We also promote leadership, strategic planning, collaboration and practitioner support through upskilling and empowerment, delivering a successful Road Safety Management System with the aim of zero deaths and injuries on your road network.



GENERATING ROAD SAFETY LEADERSHIP IN YOUR ORGANISATION

Our experience working with national, state and territory agencies means we understand your policy development needs. We can help deliver an integrated approach to ensure the network provides a safer and more cost-effective environment for all road users, including:

- **Road Safety / Towards Zero Strategies** and associated **Road Safety Action Plans**
- **Transport Integration Plans**
- **Network Safety Plans** and Network Integration and Improvement Plans
- High-Level **Frameworks** such as Safe System, Movement and Place
- **Grant Applications Support** – including Blackspot / Black length scoping reports, other Federal and State targeted programs
- **Speed Limit Selection and Speed Management**
- **Road user behaviour**



STRATEGIC ROAD SAFETY PLANNING

With limited road space, it is essential that often-competing needs of all road users are managed systematically, effectively and equitably. Strategic planning is centred in the effective identification and evaluation of risks relating to the network and road user risk; identifying crash factors, crash hot spots, and, proactively, locations where crashes are waiting to happen. Understanding where crash risk exists on your effective and within road user groups are important to develop effective treatment programs that can integrate across road management functions such as asset management, construction, operations and maintenance. ARRB can assist you by identifying risk using a systematic process involving:

- **Historical Risk indicators including:**
 - **Road Safety Strategies and Action Plans** – developed using strategic planning and engagement principles to ensure all evidence based road user and network safety issues and community concerns are captured and addressed
 - **Network crash analysis** – evaluating where crashes are occurring, crash demographics, key crash types (e.g. run off road and head on crashes on high-speed undivided roads or crashes with pedestrians and cyclists in peri-urban environments)
 - **Blackspot identification** – evaluating locations and corridors with high crash risk, including Benefit Cost Assessment, assessing and prioritising countermeasure options; and assistance with funding applications
- **Predictive Risk Indicators including:**
 - **Road safety audits** – providing you with expert guidance about design vulnerabilities and improving treatments to achieve greater safety gains
 - **Safe System Assessments** – Thought-leading advice about how to improve roads to better align with Safe System principles
 - **Road Safety Plans or Network Safety Plan** – developed using the Network Design for Road Safety (Stereotypes for Cross-sections and Intersections): User Guide (authored by ARRB for Austroads)
 - **Crash Reduction Factors (CRF)** – including the ARRB National clearinghouse of Crash Reduction Factor-values to justify business cases for road infrastructure projects

STAR RATING FOR DESIGN

Improving safety of roads at the design phase



PREDICTIVE MODELLING

As **iRAP** Centre of Excellence, our team can help provide a network view of infrastructure risk and advise on solutions that reduce the risk of road trauma in a cost effective and sustainable way. We can provide government agencies with the information needed to deliver cost effective road infrastructure strategies by undertaking:

- **Risk assessment and star rating existing roads** – identifying where risk is and what is contributing to it (AusRAP star ratings, ANRAM analysis or evaluation of road stereotypical cross sections)
- **Risk rating for design** – giving insight to how new road infrastructure will contribute to a safer network before it is built
- **Safer Road Investment Planning** – providing organisations with advice about improvement program options that optimise safety and identify the reduction in risk, the potential for lives saved, and serious injuries prevented through development of a Safe System
- **Star Rating for Schools** – working with road agencies and school communities to assess road safety risk to pedestrians around schools
- **Vulnerable Road User programs and Human Centred Design**

*International Road Assessment Program (iRAP)



BENEFITS FOR ALL ROAD USER GROUPS

Historically the road network has been a car-centric corridor. Achieving a step-change in road safety requires consideration of the needs of all road users, from heavy trucks and buses to small children walking to school. ARRB can provide innovative solutions for addressing the following critical areas:

- **Pedestrian and cyclist safety** – promoting sustainable travel and protecting the most vulnerable on the road
- **Motorcycle safety** – developing innovative safety solutions for 2-wheeled vehicle operators
- **Fleet safety** – encouraging and improving the uptake of vehicle safety technologies in both the road agency's-owned fleet and their grey fleet through procurement procedures which ensure vehicles purchased or hired have advanced safety features, as well as advising on inexpensive retro-fittable advanced vehicle safety features
- **Workplace safety** – ensuring safety at roadworks and in the interaction between heavy equipment and people, including Construction Logistics and Community Safety (CLOCS-A) guidance for infrastructure projects.



www.clocs-a.com.au



ROAD PRACTITIONER EMPOWERMENT

We all need to be empowered to do good work. It is ARRB's role to empower road practitioners to become part of the road safety solution - to save lives and reduce injuries on the road. In government, where road safety funding is limited, we must reach beyond traditional mechanisms and engage with other disciplines to achieve more holistic benefits.

It is ARRB's aim to embed Safe System thinking within the entire lifecycle of the road – from asset management, to planning and design, to construction and finally to operations and maintenance – ensuring that safety transcends across all these disciplines using the ARRB impact outreach:

- **Promoting road safety** awareness through events, seminars, workshops, webinars and e-learning
- **Developing road safety resources for practitioners** including practical toolkits, training materials, practical guidance, guidelines, and user manuals



MONITORING AND EVALUATING ROAD SAFETY PERFORMANCE

To deliver road safety in government agencies we need to be pragmatic. We need to know WHERE WE WANT TO BE (and that's achieving Zero deaths and serious injuries in Australia by 2050) and WHERE WE ARE NOW in order to drive the actions we need to take. To understand where we are now, we need data and we need to go beyond the reactive approach historically applied to road safety. Once we are equipped with the power of data to identify problems, we become empowered to take effective and innovative actions to solve these problems.

ARRB has a suite of tools and services available to enable government agencies to monitor and evaluate network safety performance including:

- **Road Asset Data Collection including:**
 - automated pavement surface assessments
 - automatic crack detection
 - traffic speed assessment of structural condition
 - friction measurement surveys
 - geometry and mapping surveys
 - roadside inventory and asset management
 - road safety assessment
 - speed and travel time surveys
- **Performance dashboards** – development of bespoke web-based dashboard interface providing a transparent evaluation of safety performance and tracking of Key Performance Indicators (KPIs)
- **Treatment and program evaluations** – measuring the 'before' and 'after' safety or speed performance of network, infrastructure, and behavioural treatments and programs
- **Systematic crash investigations and reviews** - evaluating the role of each pillar of the Safe System: the road, the speed, the vehicle, the user and the post-crash response; to identify systematic responses for reducing risk and trauma
- **Human factors analysis** – evaluating road user demographics and behaviour trends
- **Community sentiment and engagement surveys and consultation** – understanding community support for safety treatments and programs, and factors that influence this support



ROAD USER BEHAVIOUR AND SAFETY

International studies suggest road user behaviour makes some contribution to almost all crashes (approximately 19 out of 20 crashes). Behavioural factors contributing to crashes include illegal behaviours, such as speeding, impairment by alcohol or other drugs, mobile phone use, and failure to wear a seatbelt or helmet. They also include a range of other factors that can contribute to making unsafe decisions, such as inexperience, fatigue, distraction, and aggression.

ARRB has a long history of investigating road user behaviour issues such as these to reduce road trauma. Our studies have generated new knowledge required by road authorities, licensing agencies, and other road safety stakeholders to provide a basis for the development, evaluation and refinement of policies and programs. ARRB's road user behaviour specialists utilise the Safe System as our guiding principle for understanding road safety issues and developing solutions.

We are experienced in working with a wide range of data related to behaviour and road safety, including crashes, offences, penalties (demerit points, licence bans, licence conditions, vehicle impoundments), traffic counts, exposure (VKT), data logged by in-vehicle systems, census data, quantitative and qualitative responses to surveys and focus groups, and more.

ARRB

We work closely with road, ITS and vehicle safety specialists to provide a holistic view of factors affecting road safety.

Our Human Factors Specialist Services Include:

- problem definition and quantification
- options analyses and gap analyses
- literature reviews, stakeholder engagement, and benchmarking
- feasibility studies
- design and execution of trials and evaluations of initiatives and programs, including road safety technologies
- evaluations based on established frameworks, methodologies, and best practice
- observational studies, randomised controlled trials, and before/after studies
- data management and validation
- statistical analyses ranging from simple summaries to advanced modelling and prediction
- defining, generating, validating, and analysing safety surrogate measures
- assessments using standardised and validated tools, and/or development of bespoke tools
- surveys and focus groups
- development or update of safety guidelines
- preparation of road safety plans and strategies, and development of safety performance indicators

SAFER ROAD INFRASTRUCTURE SPECIALIST SERVICES

THE ARRB DIFFERENCE

Our links to leading road research agencies in Australia and overseas sees our team involved in developing the latest thinking in road safety and traffic engineering. We work with the nation's road agencies to pilot new techniques and review new practices for improving road infrastructure focussing on tomorrow's transport challenges for today.

We have national experience and are connected to global experts in road safety, bringing the best people together to support your challenges. We offer countless solutions for your bespoke needs.



At ARRB we understand that the success of transport infrastructure projects hinges on your ability to choose partners that understand the unique requirements of the Australian transport landscape. Experience, expertise, and a trusted advisor - that's what you get when you work alongside ARRB. That equals peace of mind, allowing you to focus on results that you will be proud to share with the community.

OUR TRANSPORT SAFETY LEADERS



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National Leader, Transport Safety



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