



Safety and Human Factors



ARA has the capability, expertise, and drive to tackle critical human factors problems that will make the world safer, more efficient, and more secure by solving complex problems with innovative cognitive solutions.

Safety Solutions

ARA's safety research develops cutting edge solutions that save lives. Our work has earned us the title of FHWA-designated Center of Excellence in Finite Element Crash Analyses. ARA has experience in crashworthiness of highway vehicles, trains, roadside hardware, and aircraft. Our team has worked in naturalistic decision making and human automation interaction; we have a deep understanding of engineering psychology and human factors that allow us to approach problems from a unique perspective. Emerging transportation technology such as autonomous vehicles and unmanned aerial vehicles require multifaceted skill sets that the ARA team has; we have the technical expertise as well as the human factors knowledge to consider these challenges from all angles. We have worked with various Federal and local agencies to develop data-driven safety analyses including developing local road safety plans. Our team has worked with local transportation offices and State Departments of Transportation to address their critical safety problems.

ARA brings on site staff to support the mission, provides on-site technical support for safety analysis, data collection and management, and research development and implementation. ARA is a prime contractor supporting the FHWA's National Highway Institute, Office of Highway Policy and Information, and Turner Fairbank Highway Research Center. ARA leads a team supporting the Federal Motor Carrier Safety Administration and is also supporting other FHWA offices through team activities. We support State DOTs in a wide range of implementation and research efforts, including the Missouri, Illinois, Wisconsin, Florida, and Ohio research programs. We have the equipment needed to investigate and provide innovative solutions including falling weight deflectometers, engineers and technicians, high-speed profilers, heavy weight deflectometers, pavement marking retroreflectometers pavement friction testers, lightweight deflectometers, ground penetrating radar, and runway friction testers.





Research & Development

ARA's transportation research and training expertise spans many technical areas, including:

- Commercial Motor Vehicle Safety and Operations
- Pavements & materials
- Research management and technology transfer
- Risk management
- Traffic monitoring
- Crashworthiness & safety
- Sustainability and safe food and water access
- Airport design and safety

For almost 40 years, ARA has conducted leading-edge research for national agencies including the Federal Highway Administration (FHWA), the American Association of State Highway and Transportation Officials (AASHTO), the National Cooperative Highway Research Program (NCHRP), the Transportation Association of Canada (TAC), and others. ARA has also performed dozens of research studies for State/provincial highway agencies and support research efforts of many key professional associations at state or provincial levels.

Keys to our Success

In addition to highway safety, ARA has a full suite of research in support of other critical areas including infrastructure and asset management, health, and aviation. We help protect critical infrastructure through traffic monitoring, transportation system security and safety, crashworthiness of roadside equipment, and risk management. ARA uses behavioral psychology to develop decision-centered solutions for understanding the interactions of people with technology, tools, automation, environments, and other people. We approach applied cognition from the perspective of consumer decision making, injury biomechanics and protective design, information processing and assessment, group interactions and collaborative work, performance enhancement and training, system design, cognitive psychology, and technology development. ARA works with the FAA Human Factors Laboratory supporting technical work in the areas of human automation interaction and design error, with the FAA Aircraft Materials & Structures Lab supporting finite element analysis and providing on-site technical support, with the FAA on airport research and development, with the FAA National Aviation Research Plan, and with the Airport Cooperative Research Program in areas of airfield pavement, pavement management, airport safety management systems, and runway safety.

The ARA Added Value

Our success is based on our proven approach, assigning qualified project staff based on the appropriate subject matter experts within the company, and strategic partnerships. ARA provides full research services leading to measurable and traceable results that communicate value added and return on investment with factual content at different stages of project or program at development, and execution.

We know the obstacles facing safety improvement and work to develop appropriate processes, procedures, and details to demonstrate value of any project outcomes. All our research work is tailored to sponsor needs and goals and consistent with our clients' traditional business and technical culture. ARA understands the dynamic and changing nature of safety projects and has the depth of experience and knowledge to ensure successful work efforts.

We strive to continue to be the company that government and industry turn to for innovative technologies and solutions to critical human problems that will make the world safer, more secure, and make a difference in our daily lives.