

## New technology, materials engineering and innovation leads the way to better roads

Technology is transforming most aspects of our lives, and from traffic apps to automated pothole repairs to autonomous vehicles, innovation continues to shape the transportation sector. Alberta must harness this power of innovation when it comes to planning, building, and maintaining our road network. Prioritizing innovation in the transportation infrastructure sector can help drive technological advancement and research.

The Alberta Road Builders and Heavy Construction Association (ARHCA) is committed to providing principled and compelling solutions to ensure Alberta's road infrastructure supports a vibrant economic climate and enhances the quality of life of Albertans.

## Recommendations

The ARHCA convened a very accomplished and diverse group of advisors from the public and private sectors to form an expert advisory panel. The [Transportation Infrastructure Advisory Panel](#) worked with the ARHCA to assess road infrastructure challenges and identify policy recommendations to support long overdue improvements. The ARHCA is advocating the following recommendations for the Alberta government.

- 4.1 Prioritize innovation in the transportation infrastructure sector to help drive technological advancement and research.
- 4.2 Develop policies that encourage, complement, and accelerate the adoption of emerging technologies.
- 4.3 Improve the rate of technological adoption by providing incentives for partners to capture efficiencies through the adoption of new technologies.
- 4.4 Facilitate the integration of road infrastructure with connected and autonomous vehicles.

## We need a clear road map for smarter roads

Vehicle manufacturers are loading our cars with incredible new technologies. Life-saving features such as lane departure warning, drowsiness monitors, adaptive cruise control, and blind spot detection have all become commonplace in modern vehicles, aimed at making individual cars safer.

A looming shift towards automated vehicles will significantly alter transportation planning. Whether it is self-driving passenger cars or commercial transport vehicles, there is the potential to move traffic more efficiently both within cities and between them.

Technological advances also make it possible to better use existing infrastructure. Traffic and other transportation apps are increasingly sophisticated, and improved use of telematics, crowd-sourced data, and data from road weather information systems will help authorities and road users improve decision making regarding deployment of resources, maintenance, emergency response, and route choice.

This may necessitate a significant technology build into our road network, but may also enable us to transport more goods and people safely around the province without requiring as much new or expanded roadway as we otherwise would need. More intense use will require stronger and more frequently maintained infrastructure.

Alberta needs to develop policies and regulations that do not raise barriers, but instead encourage, complement, and accelerate the adoption of emerging technologies, such as the work that has already been done in partnership with some of our Universities on testing autonomous vehicles.

We can improve the rate of technological adoption by updating regulations, as well as providing incentives through the planning and procurement process. Allowing more flexibility in the paving materials and practices used would facilitate further innovation and efficiencies, as the newest methods can increase the safety and resiliency of our road network, often at an equivalent or lower initial cost.



**From new materials to computer modelling, innovation in road construction technologies create economic and community benefits.**

Advances in bridge and road inspection technology, such as the use of drones and continuous recording technologies are another way to bring down costs while ensuring we direct resources where they are most needed. This is only one of the ways data can be used to drive transparent and informed infrastructure investment decision making, which is critical to getting the most return from limited public dollars.

The integration of innovation and technology in transportation infrastructure should improve public safety, drive productivity growth, increase efficiency and enable cost savings. Technologies must be harnessed to drive improvements in how road infrastructure is built, managed, maintained and operated to increase the lifecycle and resiliency of our investments.