DRIVING PROSPERITY:

The Future of ONTARIO'S AUTOMOTIVE SECTOR

Ontario | OPEN FOR BUSINESS

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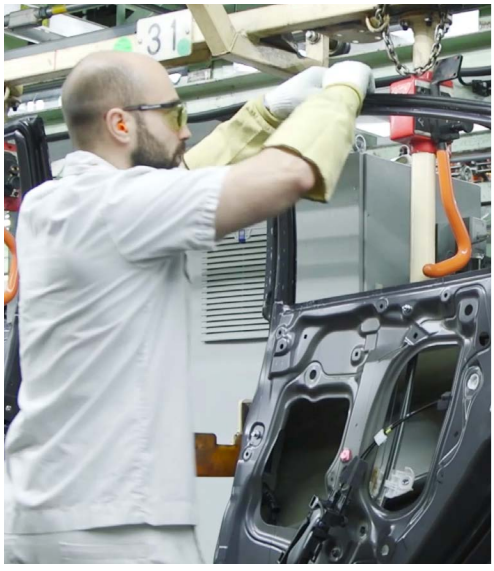
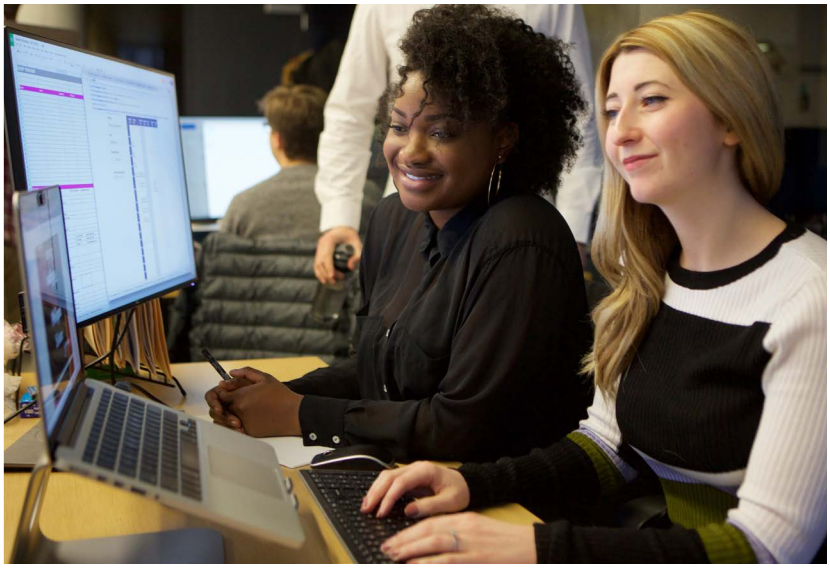




DRIVING PROSPERITY:
The Future of Ontario's Automotive Sector

Families across Ontario rely on the auto sector for their livelihoods. Building cars, and the parts that go into them, is the economic lifeblood of communities across the province. Ontario has a proud track record. The province was North America's top auto-producing region in 2017 — building almost 2.2 million vehicles. But production has fallen 25% since 2000 and there is fierce global competition in the sector.

The auto sector in Ontario is at a crossroads. Technological disruption and global industry trends present both major challenges and opportunities for our auto sector. However, the province's unique convergence of automotive and technology expertise gives Ontario a major advantage in designing and building the next generation of vehicles.

The Ontario government is reinforcing its commitment to the auto sector — it's about being strategic, leveraging collective resources and collaborating. Industry and the Province working together, along with the research and education sector and other levels of government, will create a business climate that fosters growth, innovation and helps the industry adapt to global trends. Our government is cutting red tape and reducing business costs so that job creators — including those in the auto sector — can continue to grow and thrive right here in Ontario.

Our automotive plan sends a strong signal that Ontario is Open for Business.

KEY PRINCIPLES			
Partnerships	Forward-looking (10 years)	Leveraging assets	Accountability

VISION

Strengthen and build on Ontario's North American leadership in automotive assembly and parts production.

Position Ontario to be a leader in the development, commercialization and adoption of advanced manufacturing and mobility technologies.

THREE PILLARS FOR ACTION:

COMPETITIVE BUSINESS CLIMATE

- Modernize regulations and reduce red tape
- Enable investments and partnerships
- Support market diversification
- Reduce business costs and taxation

INNOVATION

- Support new mobility technologies
- Enhance the innovation ecosystem
- Promote SME technology adoption
- Support R&D and early stage technology development
- Increase commercialization and scale-up of technology

TALENT

- Promote careers in advanced manufacturing
- Leverage industry input
- Enhance and raise awareness of existing employment and training programs
- Strengthen and formalize Ontario's technical education pathways

A MESSAGE FROM THE MINISTER

Todd Smith

Minister of Economic Development, Job Creation and Trade

Our government came into office with a clear mandate: to create and protect jobs by sending the message that Ontario is open for business. But, what exactly does this mean? Being open for business means being open for jobs, open for investment and open for opportunities. We are getting government out of the way of job creators so they can continue to grow, thrive and invest in Ontario. Because when our job creators thrive, our communities thrive.

Ontario is a great place to make great things. When it comes to the auto sector, we have the best and brightest automotive and technology experts. Our skilled workforce and dynamic companies are major selling points for companies looking to design and create the next generation of vehicles.

Our government has listened to the industry, and by working together we have already made significant progress. We are driving prosperity in the industry and creating a pro-jobs environment by cutting red tape, eliminating the cap-and-trade carbon tax, allowing businesses to write off job-creating capital investments faster, and embracing pro-jobs labour reforms.

The auto sector is key to the success of our economy. When the sector succeeds, the province succeeds. Our Driving Prosperity plan is just the first step in an ongoing consultation with the proud men and women in Ontario's auto sector. In this plan, we set out a roster of immediate action items that will support industry competitiveness.

Going forward, we will continue working with the sector, as well as municipalities and the federal government, on longer-term priorities. We are keeping our promise of making Ontario open for business.

Our government looks forward to working with you to shape the future of Ontario's automotive sector.

Todd

ONTARIO'S AUTO INDUSTRY — FACTS AND FIGURES

Ontario has a strong track record of building cars and car parts. The auto industry is a key element of Ontario's economy:

100,000+
DIRECT JOBS
plus thousands more spin-off jobs in communities across the province

ONLY PROVINCE
in Canada that builds cars and trucks

With five automakers (Toyota, Honda, GM, Ford, Fiat Chrysler Automobiles) as the anchor for economic activity up and down the value chain, Ontario's auto industry remains strong overall, with the province ranking as **North America's top auto-producing region for 2017, building almost 2.2 million vehicles.**

2.4% of Ontario's overall GDP; 18.5% of manufacturing GDP
(2017 figures)

24 Ontario colleges and 11 Ontario universities offer auto-related research initiatives and training programs

200+ companies including GM, Ford, Google, Uber, Apple and BlackBerry QNX are developing connected and autonomous vehicle technologies in Ontario

85% of Ontario-made vehicles and parts are exported — industry represents largest share of Ontario exports (over 35% for 2017)

Ontario's skilled labour force has been key to Ontario automakers. Thirty-one J.D. Power & Associates Initial Quality Awards, the industry's benchmark for new vehicle quality manufacturing, have been presented to Ontario vehicle assembly plants since 1990.

INTEGRATED SUPPLY CHAIN —

700+ parts firms and 500+ tool, die and mold makers

AUTO INDUSTRY TRENDS AND CHALLENGES

There is intense global competition for auto investments and the auto industry is changing, driven by some defining trends:

A SHIFT SOUTHWARD

In North America, auto manufacturing investment is shifting to the southern U.S. and Mexico.

While Ontario is responsible for 13% of North American vehicle production, since 2009 only 6% of new investment by auto makers has come to the province. Over the last 20 years, auto production in Ontario has declined by 25%.

A major driver of this shift is that southern U.S. states and Mexico offer lower costs and less red tape. To attract new jobs and investment, we need to cut red tape which drives up the cost of doing business in Ontario. Cutting red tape will bring jobs and investment back. We need to be faster than our competitors. Introducing an accelerated approval pathway for the development and deployment of the next generation of automobiles and production processes demonstrates that Ontario is willing to lead and gain first mover advantage.

TRADE

The U.S. trade environment remains uncertain.

Fortunately, the s.232 auto side letter, secured as part of the Canada-U.S.-Mexico Agreement, provides continued access to the U.S. market for Ontario's auto sector, although steel and aluminum tariffs continue to have a negative impact.

Government can't hold back the tides of global economic trends or market forces. But we can make sure the province is doing everything possible to protect jobs and make Ontario open for business.

TECHNOLOGICAL DISRUPTION

Cars that can drive themselves. Electric vehicles. Ride sharing apps. Smart manufacturing. Technology has made all these things possible — today.

New technologies are rapidly changing longstanding business models. Keeping pace can be extremely challenging, demanding significant and ongoing technology investment.

Ontario is well-positioned to manufacture the next generation of vehicles. We can leverage our information and communications technology strengths and innovative automotive expertise to be at the forefront. But we know any company fighting an uphill battle against uncompetitive business costs and stifling red tape will never reach its innovation potential. We must get the fundamentals right first.

TALENT DEVELOPMENT

Just as the vehicles of the future will be very different from those on the roads today, the skills required by the next generation of auto workers will be very different too.

Greater industry collaboration in skills planning and development is required to ensure the long-term supply of workers with the specific skills the auto sector requires.

There is low awareness of career options and new pathways opening up in manufacturing. Many of these careers are steeped in technology, but we are not preparing our children for this future.

We also want to minimize the disruption caused to workers and their families by technology and production mandate changes. We need to find new ways to respond to complex challenges. We need to establish new relationships with government partners in labour and academia to help Ontarians find faster and smarter training solutions.

WHY ONTARIO?
TRACK RECORD, TECHNOLOGY AND TALENT

North American restructuring, trade uncertainty with the U.S., technological disruption and changing mobility trends all pose major challenges for Ontario's auto industry. But they also offer significant opportunities. Working collaboratively and harnessing Ontario's strengths, expertise and assets in auto and tech will position the auto industry for success.

There are already a lot of great things happening in the Ontario ecosystem.

Ontario is attracting major investments from global leading automotive and technology companies that are redefining mobility. For example:

- Ford established a new Research and Engineering Centre in Ottawa, with a focus on connectivity and mobile technologies.
- GM officially opened its Canadian Technical Centre in Markham (just north of Toronto) capable of housing 1,000 engineers focused on advanced driver assistance features, its fully autonomous vehicle program, and infotainment centre design and improvements.
- Uber announced a US$150 million investment in Toronto to expand its Advanced Technology Group and establish a new engineering hub.
- British AV Shuttle Company, RDM, announced it would set up its North American headquarters for its Aurrigo brand in Ottawa to take advantage of the amazing ecosystem growing in the region with BlackBerry, Ford, Nokia and many other key global players.
- Chinese mobility giant DiDi launched its second North American R&D lab in the Toronto-Waterloo corridor to take advantage of world class AI talent and leading university research.

Ontario companies, universities, research centres and innovation hubs are developing new technologies that are transforming the next generation of vehicles and transportation experiences. Highlights from the cutting edge of auto innovation include:

- Canada's largest automotive company, Magna International based in Aurora, has increased its R&D investment to position itself at the forefront of vehicle electrification and autonomous driving.
- CanmetMATERIALS Lab, in Hamilton, is dedicated to innovation in metals and materials fabrication, processing and evaluation.
- The Fraunhofer Project Centre for Composites Research at Western University in London is developing materials that are lightweight or have low life-cycle impact for manufacturers in the automotive sector.
- Global auto assembler Infiniti launched its first North American Innovation Lab program in Toronto to take advantage of the vibrant start-up ecosystem at the intersection of automotive and technology.
- The Windsor, Ontario-built Chrysler Pacifica is the only available hybrid option in the minivan segment and has received numerous industry awards since its launch.
- Ottawa has established one of North America's leading all-weather test environments for connected and autonomous vehicles.

Talent is the new currency, whether in the form of people, start-ups or university teams. Ontario has the existing talent that industry needs, and we want to make sure people have the emerging skills required to build the next generation of cars — from machining to machine learning and everything in between. Our competitive business environment will also help encourage global investment and attract and retain talent.

- University of Toronto students won the First Challenge of the GM-SAE Auto Drive Challenge Competition in Yuma, AZ. Both University of Toronto and University of Waterloo teams are poised to challenge for gold in 2019.
- University of Waterloo's Centre for Automotive Research (WatCAR) is working directly with Renesas on their AVs that are showcased at the Consumer Electronics Show in Las Vegas.
- Ontario companies dominated the Code Hackathon at Automobility LA, with Toronto-based Tribalscale and Waterloo-based Pitstop taking home the gold and silver respectively.
- Toronto and Ann Arbor-based P3 Mobility was recently selected to lead the Oakland County, MI Connected Vehicle Pilot program that promises to showcase leading technologies and business models for V2X.
- Toyota Motor Manufacturing Canada (TMMC) has established an Innovation Laboratory at Catalyst 137 in Kitchener-Waterloo, one of the world's largest urban hubs for Internet of Things (IoT) technology development.
- Ontario-based The Knowledge Society is one of the leading innovation programs in the world for high-school aged students interested in STEM – global corporates such as Google, Microsoft and AirBnB are taking note.

DRIVING PROSPERITY:
THE FUTURE OF ONTARIO'S AUTOMOTIVE SECTOR

Ontario's auto workers and dynamic companies are among the best in the world and have the expertise, ingenuity and passion to seize new opportunities. The Ontario government is doing everything possible to create the conditions for success, while continually listening and adapting to what the industry needs to thrive.

The plan's action items build on the leadership and foresight already demonstrated by Ontario's auto industry. For example, more than 200 companies in Ontario are already developing connected and autonomous vehicle technologies — a global market expected to be worth over US$1.3 trillion by 2035.

This plan also responds directly to the insightful work previously completed, including *Drive to Win*, the report by Ray Tanguay, former automotive advisor to the governments of Canada and Ontario, and *Industrie 2030 Ontario* by the Canadian Manufacturers & Exporters (CME). Recommendations in these reports were widely supported by industry. As such, the government used these reports to lay the foundation of this plan.

Below is a summary of work already underway, and next steps under the plan's three pillars for action:

1. Creating a competitive business climate;
2. Driving innovation; and,
3. Developing talent.

CREATING A COMPETITIVE BUSINESS CLIMATE

GOALS FOR 2030:

- A sustainable Ontario auto assembly and parts supply chain.
- A business climate that is ready for industry changes, technological advancements, and global pressures.
- Ontario businesses that can diversify and take advantage of global market opportunities.

WORK ALREADY UNDERWAY...

Removing carbon pricing

The Cap and Trade Cancellation Act, 2018, ended the previous government's cap and trade carbon tax once and for all. Eliminating the carbon tax removes a burden from Ontario businesses, allowing them to grow, create jobs and compete around the world.

Cancelling Bill 148

By repealing the burdensome provisions imposed by Bill 148 and by capping the minimum wage increase at $14 per hour, Ontario is restoring auto sector competitiveness.

Reducing electricity prices

As a key input for manufacturing, high electricity rates negatively impact the auto industry. Ontario is reviewing the industrial electricity rate.

Trade issues

From testifying at s.232 tariff hearings to extensive state-level engagement, Ontario has advocated for the auto sector during Canada-U.S.-Mexico-Agreement (CUSMA) negotiations and continues to fight for Ontario workers.

Regulatory burden reduction

Ontario has listened to auto stakeholders' concerns about burdensome regulations and is committed to reducing regulatory burden by 25% by 2020.

Lowering taxes

Ontario successfully lobbied the federal government for measures to accelerate the deduction of business expenses and has committed to match the federal measures as part of the province's fiscal plan.

NEXT STEPS…

Bold ideas:

- Maintain current assembly production volume and secure new assembly commitments.
- Attract leading production mandates, including connected, autonomous and electric vehicles (CV/AV and EV).

Immediate action areas:

1. Explore support for strategic investments in the automotive industry — major strategic investments to drive long-term, sustainable growth and prosperity.
2. Deliver further red tape and regulatory burden relief for the auto sector, including:
    - A Job Site Challenge — a competition, open to municipalities, economic development corporations, and industrial developers, for a site (500 to 1,500 acres) capable of attracting a new assembly plant. Ontario would partner with the winning proponent on site-readiness and servicing to ensure the development opportunity is competitive.
    - Eliminate long-standing irritants that add to the cost of doing business in Ontario — irritants the auto sector doesn't face in the U.S. For example, improving the transparency and stability of property tax assessments.
    - Streamline the approvals and certification process for auto manufacturing sites.
3. Market Ontario as a place to invest by selling Ontario's value proposition, including Premier-led and Minister-led missions to key markets to increase foreign direct investment (FDI) into Ontario, and increase exports of Ontario-developed technology and auto parts.
4. Explore other mechanisms to enhance business climate competitiveness in Ontario, including focused engagement with the auto sector during stakeholder consultations on industrial electricity pricing.

DRIVING INNOVATION

GOALS FOR 2030:

- Ontario's auto sector is recognized as a world-class manufacturing hub with a modernized supply chain and strong support ecosystem.
- More scaled-up auto and manufacturing technology firms.
- Ontario is an early adopter of advanced automated and connected vehicle infrastructure.

WORK ALREADY UNDERWAY...

Connected and autonomous vehicle development

Through its Autonomous Vehicle Innovation Network (AVIN), Ontario is supporting industry-led projects developing CV/AV technologies.

Autonomous vehicle testing

Ontario is the first Canadian province to allow on-road testing of autonomous vehicles. As of January 2019, Ontario amended its pilot regulation to align with other global AV testing jurisdictions.

Broadband and Cellular Strategy

In the 2018 Fall Economic Statement, the province committed to a Broadband and Cellular Strategy to expand broadband, digital services and cellular access in unserved and underserved areas.

5G

Allow an estimated 1,000 small- and medium-sized businesses to plug into a 5G platform and access related research and technology.

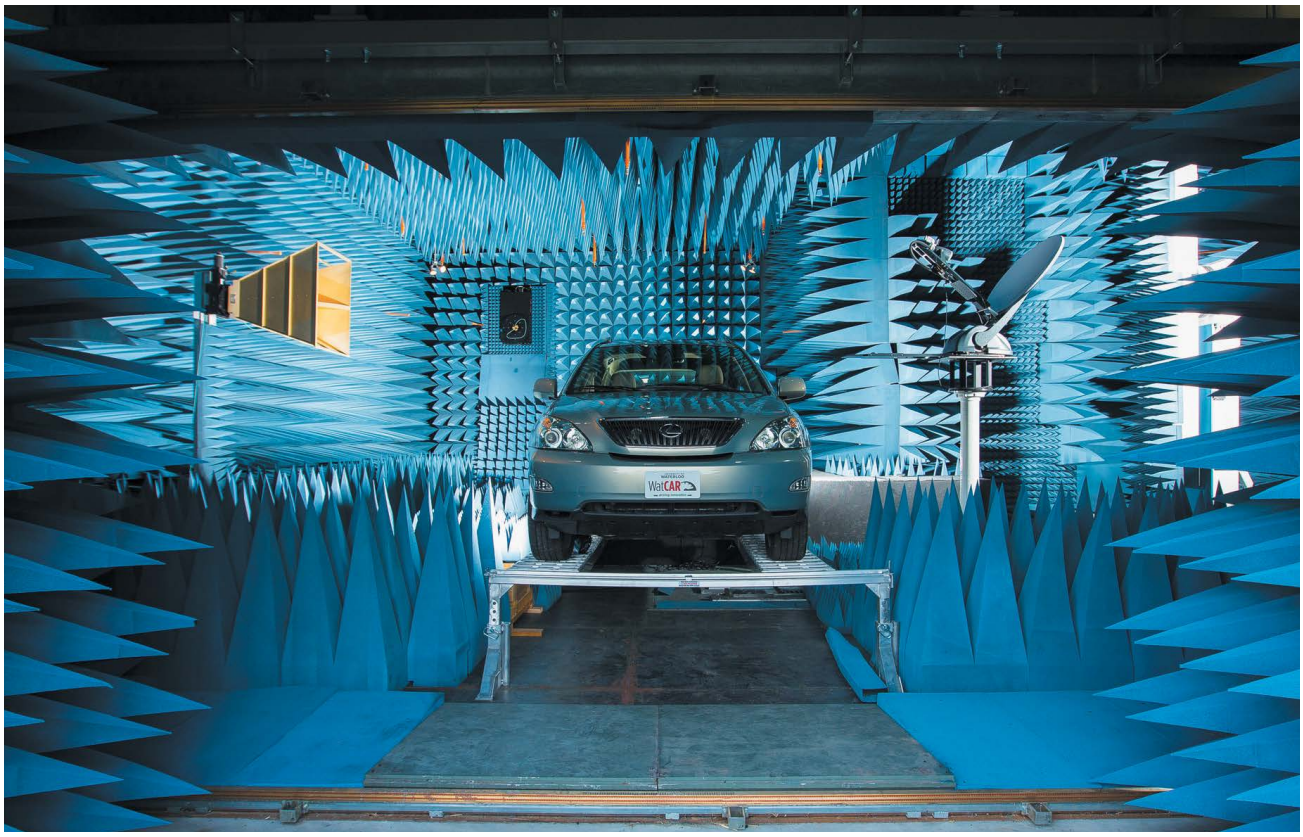
NEXT STEPS...

Bold ideas:

- Enable the private sector to develop a province-wide network of CV/AV and EV supporting infrastructure.
- Support the growth of Ontario-based CV/AV firms, including three to five North American leaders.

Immediate action areas:

1. Launch the Ontario Automotive Modernization Program (O-AMP) to assist automotive parts suppliers become more productive, innovative and export-focused through the adoption of technology. O-AMP builds off the Automotive Supplier Competitiveness Improvement Program (ASCIP).
2. Support the creation of new mobility technologies in Ontario by enhancing the province's Autonomous Vehicle Innovation Network (AVIN), including:
   - Launch a "wintertech" development stream to create a test-bed for mobility products and services in severe winter weather conditions.



HARNESSING AND DEVELOPING OUR TALENT

GOALS FOR 2030:

- Ensure greater industry collaboration in skills planning and development.
- An established talent pipeline with the next generation of highly-skilled manufacturing workers.
- Industry, training institutions and government working collaboratively to ensure responsive supports for tomorrow's workforce needs.

WORK ALREADY UNDERWAY...

Skilled trades improvement

Skilled workers are vital to the auto industry. Ontario is phasing out the Ontario College of Trades and creating a modern skilled trades and apprenticeship system that will make it easier for employers to hire apprentices and for apprentices to get trained and certified quickly.

Enhancing STEM and AI grads

Through *Raise AI*, a two-year commitment to the Vector Institute, and by enhancing the pipeline of STEM graduates by improving math teaching, Ontario is ensuring that the auto sector will have the talent it needs in the future.

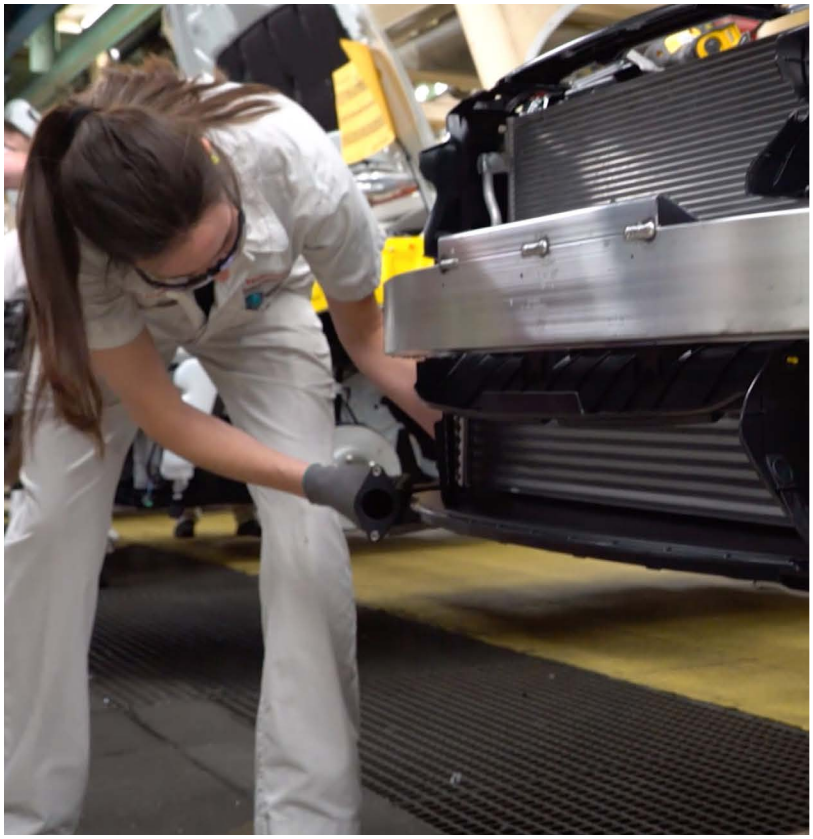
NEXT STEPS...

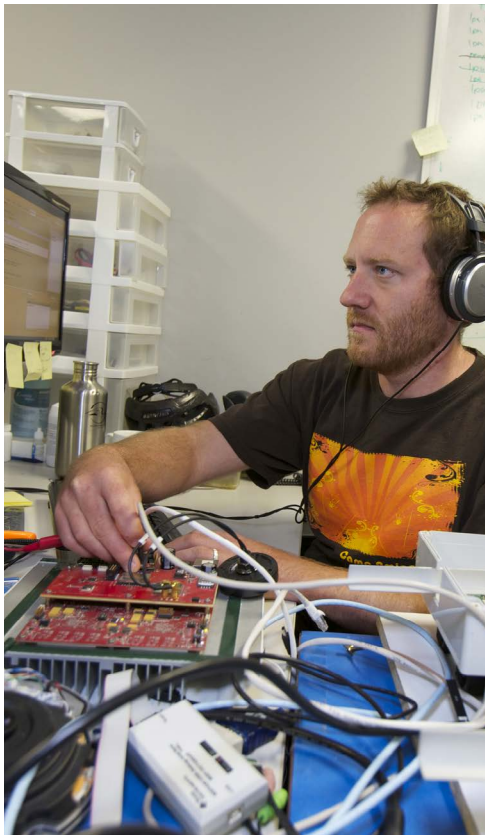
Bold ideas:

- Modernize apprenticeship training to make it more flexible and responsive to auto sector needs.
- Provide re-employment support to auto workers impacted by closures, including those in the broader supply-chain.

Immediate action areas:

1. Develop a talent roadmap and skills inventory. The talent roadmap will help identify current and future skills needs to support sector competitiveness.
2. Launch a micro-credentials pilot to test the ability of short, employer-recognized credentials, including for skilled trades and technology, to help unemployed Ontarians and at-risk workers gain the skills they need to succeed.





3. Create new internships and other experiential learning opportunities across all aspects of the auto sector, including parts suppliers.
4. Establish an online learning and training portal focused on the skills needed to succeed in manufacturing.
5. Increase funding to AVIN's TalentEdge program to support internships and fellowships for Ontario students' research into connected and autonomous vehicles.

THE ROAD AHEAD

Hundreds of thousands of direct and spin-off jobs in communities across the province depend on Ontario's auto sector. It is imperative that we have a path forward to protect and grow these important jobs. That's why Driving Prosperity: The Future of Ontario's Automotive Sector sets out key priorities and actions to transform the auto sector over the next 10 years.

Car manufacturing is a strong part of Ontario's history and a critical part of the province's future. This is why we will continue to work with our auto assemblers to ensure their continued growth in Ontario for many years to come. Ontario has a rare combination of automotive and technology expertise — that's a major advantage that we will continue to build on.

Phase one of this plan identifies immediate action items to support industry competitiveness. Phase two will address longer-term challenges and opportunities facing the sector and for sustainable economic growth. We will work with industry, municipalities and the federal government to build upon the plan.

Industry leaders and experts have already come forward with constructive, workable suggestions for the longer term. Our government thanks the industry for its ongoing engagement and commitment to strengthening Ontario's auto sector.

We're listening and we look forward to working with you.

All figures are in Canadian dollars unless otherwise noted.
This information is accurate at time of printing.

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