SHAD CANADA

ICELERT
BUSINESS PLAN

*Don't slip, Don't slide, **ICELERT** is on your side.*

July 2025

www.icelert.ca

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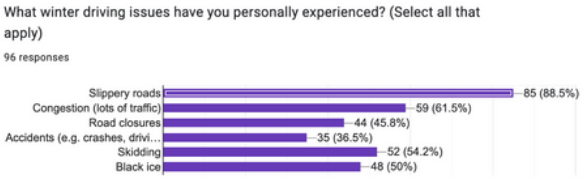
INTRODUCTION



WHO ARE WE:

ICELERT is a youth-led, innovation driven company based in Canada, founded with a clear mission: to make winter roads safer through science and technology. Based in a country where winter collisions are a daily threat, we saw a problem no one was solving fast enough – the invisibility of black ice and other dangerous road conditions. That's where we come in. At ICELERT, we believe that data should drive decisions, not assumptions. When you're driving in harsh conditions one thing should always be clear - what's under your wheels.

Our values guide everything we build. At ICELERT, safety comes first because preventing accidents is always better than reacting to them after the fact. We're committed to sustainability, ensuring that our technology doesn't just serve people, but also supports the planet by reducing emissions, waste, and road congestion. We're not here to replace vehicles, we are here to upgrade the way they interact with the road, making driving smarter, safer, and more efficient for everyone.

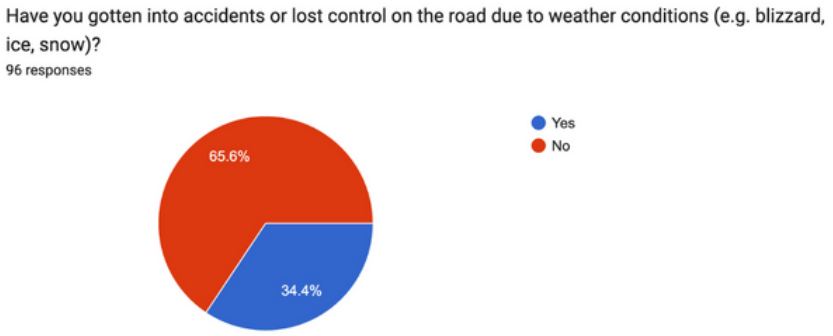
OUR PRODUCT:

The ICELERT sensor attachment is a smart vehicle mounted device designed to detect icy road conditions in real time. Installed at the bottom of the car, the sensor attachment continuously measures the surface temperature of the road ahead as the vehicle moves, giving drivers crucial seconds to react before they encounter potential dangerous black ice or other hidden hazards. Using thermal imaging technology, ICELERT identifies temperature anomalies - colder patches compared to surrounding areas which indicate black ice, refrozen meltwater, or untreated slippery surfaces. These thermal readings are then processed by a machine learning algorithm, which interprets the data and notifies the driver if dangerous conditions are ahead.

Drivers would receive real-time feedback via the ICELERT app accessible on one's mobile phone or downloaded in the car's dashboard interface to provide both visual and audio alerts. ICELERT enhances driver safety by identifying threats 30 meters ahead, before they are visible to the human eye, particularly at night, during whiteouts, or during light freezing rain when ice is effectively invisible. It's designed for regions where sudden ice formation poses a serious threat - cities like Edmonton, Calgary, Winnipeg, and Saskatoon - as well as major urban areas in Canada that experience heavy traffic congestion in winter, such as Toronto and Ottawa, where even a minor skid can cause major delays for thousands of drivers. ICELERT is built for the cities that experience long freeze cycles, frequent black ice formation, and low visibility road conditions. The areas tend to face sharp temperature drops overnight which create invisible hazards in the dark. Our rollout starts with personal vehicles, where the need for smarter and safer winter driving is most urgent and immediate.

OUR VISION:

With ICELERT, we imagine a future where winter driving in Canada becomes predictable, not panicked. A future where drivers don't have to guess whether the road is safe. Where drivers can trust their next car to turn, stop, and start. Where data replaces uncertainty, and simple alerts prevent deadly crashes. We're not just building a product — we want to redefine the relationship between drivers and the road. Our long-term vision includes a connected network of ICELERT-equipped vehicles, sharing live surface data, integration with smart city platforms to improve road clearing responses, and a commitment to reducing emissions by preventing congestion, reroutes, and unnecessary idling. With ICELERT, we envision a future that's smarter, safer, and more climate resilient, powered by innovation, not reaction.



Large scale studies revealed that over a third of Canadians suffer from weather induced driver impairment.

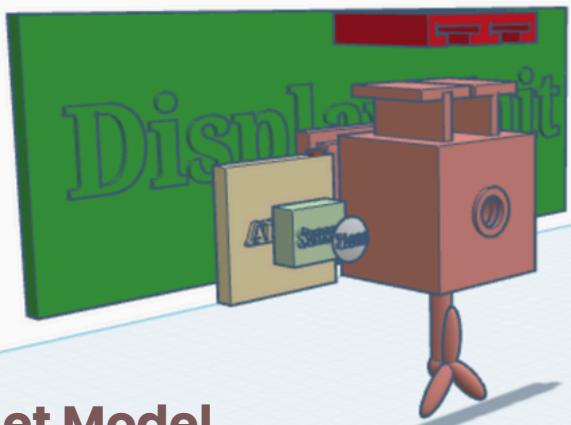
WHAT MAKES US DIFFERENT:

While other automotive technologies exist to detect ice, none combine thermal sensing, real time AI analysis, affordability, and ease of use the way ICELERT does.

- Standard vehicle systems are designed to monitor engine temperature and cabin climate, not road conditions. While useful for internal performance, they offer no insight into the road surface beneath the vehicle - and no protection against external dangers like black ice, packed snow, or slush. ICELERT fills this gap by monitoring external temperature patterns and surface composition under the vehicle in real time, offering drivers the proactive feedback existing systems simply don't provide.
- A competitor, IVS (Intelligent Vision Systems), uses high end optical sensors to detect ice ahead of a vehicle. These systems are accurate but typically integrated only into new or high end vehicles, limiting who can access the technology. ICELERT offers comparable precision in a retrofit ready format, making advanced, safety focused sensing technology more widely deployable across a range of vehicles, from personal cars to delivery vans and municipal fleets.

The ICELERT advantage is that it is designed specifically for Canadian black ice and freeze thaw patterns as well as an AI that gets progressively smarter over time and improving accuracy. There will be no complex insulation, no expensive car upgrades are required. It reduces environmental impact by preventing skids, accidents, and emissions from idling in traffic and is sustainable by using recycling parts such as recycled steel for the casing of the thermal sensor.

PROTOTYPE



Net Model

Components:

Lens	-	8mm Germanium Lens
Sensor	-	FLIR Lepton 3.5
AI Microchip	-	K210
Sensor Box	-	Recycled Steel Cast
Sensor Rail.	-	Recycled Steel Cast
Display Unit	-	Clear Nano Gel Pad

Dimensions:

Sensor:
3cm x 3.4cm x 6cm

Display:
20cm x 1cm x 6cm

Cost:

Low Estimate:
$200

High Estimate:
$350+

Key Features:

- High quality thermal imaging
- Real time AI threat detection
- Sustainably powered
- Simple to assemble by users
- Easy and cheap to produce

MARKET PROBLEM + OPPORTUNITIES

Market Problem

- *Lack of integration with real-world safety networks*
  - No current existing system connects road condition detection with emergency reporting or driver alert apps for easy access.
- *Insurance and liability challenges*
  - Without reliable evidence of snow conditions and the accident, drivers face higher costs after winter accidents.

~30% Of car accidents in Canada occur on icy or snowy roads, with over **330** collisions in a single GTA winter storm.

60% of Canadian drivers feel unsafe during winter driving, citing sudden black ice as a key stressor.

Market Opportunities

- With rising demand for affordable safety tech, most drivers lack predictive winter hazard detection
- *Our sensors deliver live black ice and road conditions detection for all vehicles.*

There is huge growth potential in EVs.

- *Our sensors are affordable and can be installed easily making advanced safety tech accessible to millions.*

FINANCES

Contribution margin is the selling price per unit minus the variable cost per unit.

CAD $350 raw materials
Selling price = $500
Year 1 target → **600 units sold**

500 x 500 = $250 000 CAD
Fixed cost = $66 000

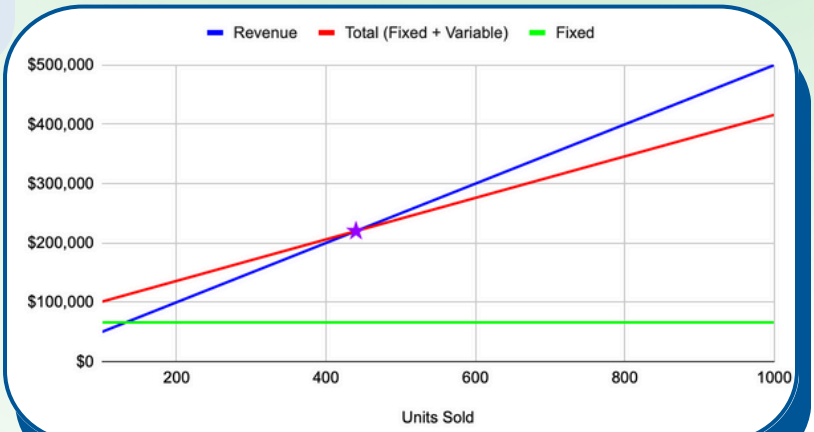
Variable cost per unit is $350 ($340 inventory cost and $10 shipping)

Contribution margin = Sales - Variable = **$150**
Fixed costs/profit per unit = $ 66,000/150 = **440 units** to break even

Contribution margin is directly proportional to the number of units sold. Therefore, a lower number of units sold results in a lower gross profit, while a higher number of units sold yields a higher gross profit.

Profit Chart

★ the break-even point



Cost Category	Estimated Cost (CAD)
General & Administrative	$25, 000 / year
Rent	$36,000 / year
Marketing Expenses	$5 000 / year
Cost of labour and material assembly	$25 / unit
Cost of Inventory / Raw Materials	$315 / unit
Shipping	$10 / unit

Sensor components, lenses and AI microchips will be bought in bulk.

Units Sold	Total Revenue	Variable Costs	Total Cost	Gross Profit
100	$50,000	$35,000	$101,000.00	-$51,000.00
200	$100,000	$70,000	$136,000.00	-$36,000.00
300	$150,000	$105,000	$171,000.00	-$21,000.00
400	$200,000	$140,000	$206,000.00	-$6,000.00
500	$250,000	$175,000	$241,000.00	$9,000.00
600	$300,000	$210,000	$276,000.00	$24,000.00
700	$350,000	$245,000	$311,000.00	$39,000.00
800	$400,000	$280,000	$346,000.00	$54,000.00
900	$450,000	$315,000	$381,000.00	$69,000.00
1,000	$500,000	$350,000	$416,000.00	$84,000.00

MARKETING

Target Market

25 - 60

years old

For our target audience, we're choosing to narrow in on the working class, specifically the 25-60 age range. Most of the people in this range in Canada meet the requirements of having a stable and disposable income, and thus have the need to commute with personal vehicles for work or other personal reasons.

Location

88.5% of respondents suffer from slippery roads

61.5% of respondents suffer from congestion

- **Major Cities**
  - Traffic congestion and accidents increase fossil fuel consumption due to extended time spent on roads.
- **Cold Rural Areas**
  - A lot of delayed road maintenance and hazardous conditions due to limited infrastructure support.

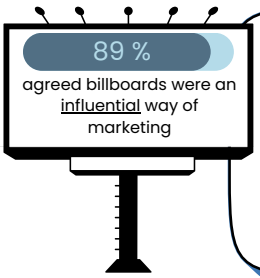
Supply Channels

- Retail stores
  - Canadian tire, MEC, Costco, etc.
- Online stores
  - Amazon, ICELERT website

- **Drivers**
  - Truck drivers, carpoolers, taxi drivers, and chauffeurs all rely on safer, more efficient winter driving to protect passengers, cargo, reduce stress, and save on energy costs.
- **Government**
  - Opportunity to prioritize road maintenance and emergency services more efficiently to reduce accidents and improve public transit flow.

- **Insurance Companies/Users**
  - Provides clear evidence for insurance claims, ensuring fair compensation for users while protecting companies from false claims.
- **Autonomous Vehicle Companies**
  - Use ICELERT to enhance vehicle safety by detecting road conditions and adjusting driving behaviour accordingly.

Marketing Strategies



Billboards

Billboards: ICELERT's billboards will be placed in city centers and highways where crowds are a guarantee in order to maximize views. Experts advise that the ideal time to have a billboard posted is 8 weeks, which is our planned time to allow word of mouth to spread. Our billboards will be simple but have vibrant colours to catch the eyes of consumers. ICELERT will be incorporating blue in a lot of our billboards as a signature colour as it's related to ice, but colour theory also suggests that blue represents trust, a major factor in our business.

Advertisements

ICELERT's online ads will be short, averaging around 5-10 seconds because most people tend to skip ads, which is why it's important to include all necessary information and grab the viewer's attention in the first few seconds. An example might be a car crash, followed by a pop up and voiceover of someone recommending our product. In addition to online ads, we will invest in advertisements being displayed on transportation, such as busses, so people conveniently driving, especially during snowy conditions, can relate to the problem and be heavily influenced to make a purchase.

Creative Marketing

- **Virtual Reality Mall Pop-Up:** ICELERT will have days where VR pop-up stations located at popular malls will be rented. Our goal is to expand the immersive experience by allowing the user to experience driving on slippery conditions and the dangers of black ice firsthand. Afterwards, we'll follow up with a recreation of driving with our product so the user can experience how the thermal sensing camera would connect to the app and send notifications. These pop-up shops will help raise brand awareness, and if kids are playing with the VR, hopefully the parents will engage in conversation with our employees to learn more.
- **Partnerships:** ICELERT will also reach out to reviewers or influencers on various social media platforms and request for them to film a video of them testing the device in order to gain feedback for growth and a positive media image.

COMPETITION vs ICELERT

- Prylada
- Intelligent Vision Systems
- Trafficalm
- Lufft
- Vaisala

✖ ***No universal app***

✖ ***Not installed on cars***

✖ ***Not focused on safety***

Attached to Vehicles and Mobile

Our thermal sensing camera attaches directly to the user's vehicle, allowing them to detect ice, snow, and other hazards in real time as they drive. This mobile setup not only covers a wider range of areas but also creates a live communication network between users, helping prevent future crashes through shared hazard alerts.

Sustainability

ICELERT is built using recycled materials like steel from decommissioned ships and aircraft, reducing industrial waste and environmental pollution. By repurposing these durable metals, we help minimize the build-up of harmful toxins and pollutants that typically result from breaking down large transportation vessels.

Cheaper Alternative

Priced at just a few hundred dollars, ICELERT's camera provides a cost-effective solution that pays off by preventing costly accidents and reducing reliance on heavy road maintenance. With an investment of $500, our users can save thousands in medical bills, vehicle repairs, and infrastructure upkeep.

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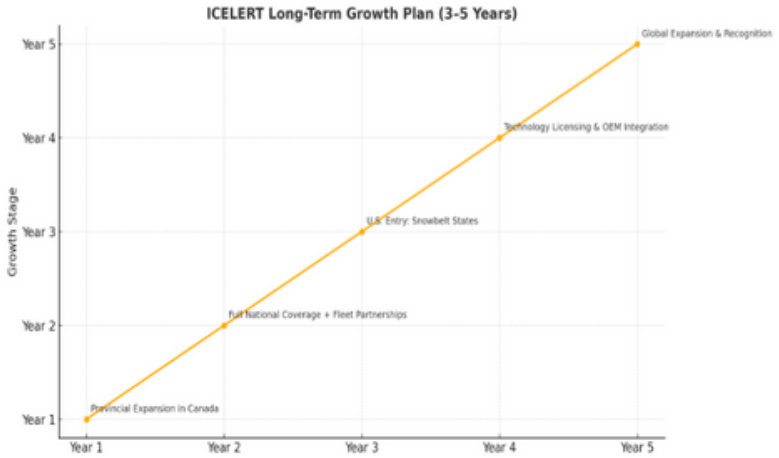
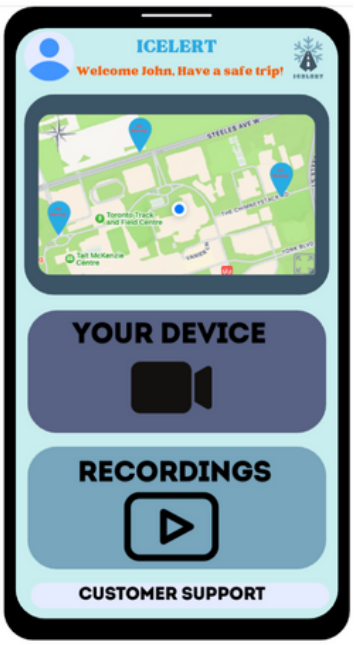
APPENDIX

Over the next 3–5 years, ICELERT aims to evolve from a Canadian winter safety tool into a globally recognised vehicle safety platform. We'll begin by targeting provinces with the highest rates of black ice related accidents and winter congestion - Alberta, Manitoba, Saskatchewan, Ontario, and Quebec. Once we've built a strong reputation among personal vehicle users, we'll expand into commercial transport, focusing on delivery fleets, trucks, rideshare services, and municipal vehicles, with the goal of making ICELERT a standard safety feature across winter reliant industries. International expansion will follow like targeting high risk winter regions in the U.S. Midwest, Scandinavia, and Northern Japan. We also plan to grow the product's capabilities by mixing the city snow response systems, enabling real-time V2V data sharing, and developing modules for other seasonal hazards like hydroplaning. Ultimately, ICELERT will become a core part of smarter, climate responsive driving everywhere.

LONG TERM GROWTH PLAN:



FUTURE AUDIENCES & PARTNERS:



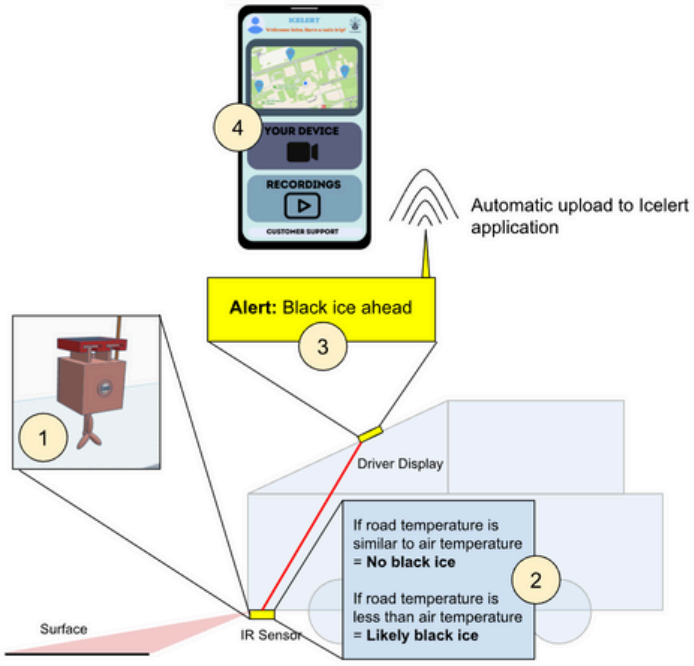
We aim to partner with municipal and provincial governments in the mentioned winter prone regions like Ontario, Quebec, Alberta, and Manitoba. These governments can integrate ICELERT into their snow plow and fleet management systems to improve winter road safety and reduce accidents..

- Delivery and logistics companies such as FedEx Canada, Canada Post, and Amazon Canada operate large fleets in harsh winter conditions. ICELERT can help them reduce crash risks, protect drivers, and keep delivery schedules on track.
- Ride sharing platforms such as Uber and Lyft have many drivers exposed to variable winter conditions. Offering ICELERT as a safety product can lower accident rates, enhance driver and passenger safety, all while supporting the platforms' safety initiatives.
- Public transportation authorities including the Toronto Transit Commission (TTC), Societe de transport de Montreal (STM), and Calgary Transit, can use ICELERT to alert bus drivers of icy roads, reducing accidents and improving passenger safety for public transport not just private use.

As well as the industries mentioned, automotive manufacturers like Ford Canada, Toyota Canada, General Motors Canada, and Stellantis are potential partners for factory level integration of ICELERT into new vehicles. This would offer advanced winter safety features directly to consumers in cold climates. Insurance providers like Aviva Canada, Interact Financial, and The Co-Operators would use ICELERT data to lower winter crash claims by encouraging policyholders to adopt the technology benefiting both drivers and insurers. Fleet safety compliance and telematics companies like Fleet Complete, Geotab, and Samsara, will all integrate ICELERT into their platforms giving fleet managers real time icy road information more efficiently to lower the risk even more of the driver safety and regular compliance.

PROCESS:

1. Sensor passively detects infrared radiation ~30 meters in front of the car.
2. The sensor relays information to the built in K210 AI Microcontroller.
3. The K210 then makes a judgement regarding road conditions by comparing thermal temperature and air temperature.
4. If a threat is detected, the driver display will flash a warning to the driver.
5. In succession, the transmitter will send data to the ICELERT servers for record and for other drivers.



89% of Canadians state slippery roads are the main cause of accidents in a recent survey.

Nearly **30%** of collisions reported happened on wet, snowy or icy roads.

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