

S T A R L O R D

BUILDING A MORE RESILIENT POLICE FLEET

Prepared to evaluate fleet modernization, energy security,
operational resilience, and long-term lifecycle costs
for the Surrey Police Service.



SURREY
POLICE SERVICE

Prepared for the Surrey Police Board

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TABLE OF CONTENTS

	1	Executive Summary
	2	The New Risk: Gasoline as a Public Safety Exposure
	3	Surrey Police Service: Fleet, Budget and Operating Context
	4	The Russia–Ukraine Fuel Shock
	5	The Iran Conflict and the New Geopolitical Fuel Premium
	6	Ten Years of Metro Vancouver Fuel Volatility
	7	The True Lifecycle Cost of Gas-Powered Police Vehicles
	8	Why Electrification Is a Fleet Resilience Strategy
	9	North American Police EV Case Studies
	10	Surrey Police EV Pilot Project: 6–10 Vehicles
	11	Financial Model, ROI and Risk Mitigation
	12	Recommendations and Conclusion

1. Executive Summary






Surrey Police Service is building one of the most important municipal police platforms in Canada at the same time that global energy markets have become more volatile, more political, and less predictable. For a police service, this matters because mobility is not optional. Patrol vehicles must operate twenty-four hours a day, respond across the city, idle during calls, power onboard equipment, support investigations, transport prisoners, enforce traffic safety, and remain available regardless of whether gasoline is stable, expensive, or disrupted. The Surrey Police Board's own financial reporting confirms the scale of the organization: the 2026 plan is based on a targeted policing strength of **808 sworn members**, with year-to-date expenditures of **\$77.85 million** as of April 30, 2026, representing **27% of the approved budget**. Salaries and benefits remain the largest cost, but fleet, equipment, capital assets, insurance, repairs, maintenance, and fuel all form part of the operating infrastructure needed to keep officers mobile.

The core thesis of this report is simple: gasoline is no longer just a fleet expense; it is a public safety exposure. Russia's full-scale invasion of Ukraine began on **February 24, 2022**, and Metro Vancouver gasoline prices later reached approximately **236.9 cents per litre** in June 2022, a record-level shock for the region. A police fleet of 350 to 400 vehicles absorbs that shock differently than a household. Every additional cent per litre is multiplied across daily patrol, idle time, emergency response, specialty units, and long vehicle lifecycles. The same logic applies to the more recent Iran conflict risk, where the market response may be smaller but still demonstrates how quickly overseas events can affect local fleet costs.

This report does not recommend replacing the entire fleet overnight. It recommends a disciplined **6–10 vehicle pilot project** designed to test electric police vehicles under Surrey conditions, measure total cost of ownership, compare maintenance and energy costs, validate charging logistics, and protect operational readiness. Electrification should be framed not as an environmental experiment, but as a long-term asset strategy: reduce exposure to oil shocks, use British Columbia's domestic electricity advantage, lower lifecycle volatility, and make future fleet decisions based on evidence. The recommendation is not fleet-wide electrification. The recommendation is to begin measuring, validating, and managing long-term fleet risk through a disciplined pilot project that allows future decisions to be guided by evidence rather than assumptions.

KEY FINDINGS



	01	GLOBAL FUEL VOLATILITY IS INCREASING. Geopolitical events and market disruptions are driving higher and more unpredictable fuel prices.
	02	POLICE FLEETS CANNOT REDUCE FUEL CONSUMPTION DURING CRISES. Public safety demand is constant—vehicles must operate 24/7, regardless of fuel price or availability.
	03	FUEL SHOCKS CREATE MATERIAL BUDGET EXPOSURE. Price spikes translate directly into millions in additional costs for a 350–400 vehicle fleet.
	04	EVs REDUCE LIFECYCLE OPERATING RISK. Lower energy cost, reduced maintenance, and price stability improve long-term budget predictability.
	05	A 6–10 VEHICLE PILOT MINIMIZES RISK WHILE GENERATING SURREY-SPECIFIC EVIDENCE. Test performance, costs, charging, and operations under real Surrey conditions before any future expansion.

2. The New Risk: Gasoline as a Public Safety Exposure

For decades, police fleet management was treated as a procurement and maintenance function. Vehicles were bought, equipped, repaired, fuelled, and replaced. The fuel line item mattered, but it was not usually treated as a strategic risk. That has changed. Over the past five years, fuel has become tied directly to global events: pandemic supply-chain disruption, Russia’s invasion of Ukraine, sanctions, refinery capacity, currency movement, Middle East conflict risk, and uncertainty around major shipping corridors. These are not variables controlled by Surrey, the Province of British Columbia, or the Government of Canada. Yet the cost lands directly on municipal operating budgets.

This is especially important for police services because patrol demand is not elastic. A private driver can delay a trip when fuel is expensive. A police service cannot delay a violent call, traffic collision, missing person response, domestic violence call, gang investigation, impaired driving stop, or prisoner transport. Patrol vehicles are not optional assets; they are frontline public safety infrastructure. When gasoline rises, the service still drives. When gasoline spikes, the service still drives. When international conflict creates uncertainty, the service still drives.

This is why the electrification discussion should not start with climate. It should start with resilience. British Columbia's electricity system creates a different risk profile than gasoline because local electricity is not priced every morning by global oil markets. BC Hydro's own fleet electrification material describes British Columbia as having advantages for fleet electrification, including available charging solutions and incentive programs. The strategic opportunity is to shift a portion of high-use municipal fleet activity away from globally priced petroleum and toward a more predictable domestic energy source.

3. Surrey Police Service: Fleet, Budget and Operating Context

Surrey is not a small fleet environment. The historic Surrey RCMP operation had **347 marked and unmarked police vehicles**, described in a 2018 City report as the largest police vehicle fleet among RCMP detachments in Canada. Those vehicles supported core policing, investigative services, operations support, and community services. The same report also emphasized that faster vehicle fit-up protected frontline operations from vehicle shortages, which confirms a basic operational truth: fleet availability is directly connected to policing capacity.

SPS is now operating in a larger and more complex context. The 2026 financial update shows the service scaling around a planned strength of **808 sworn members**, including SPS and RCMP members during transition. The April 2026 report identifies spending pressures around overtime, auxiliary staffing, supplies and materials, and uncertainty around SPOSU costs, while noting that capital acquisitions and equipment purchases do not occur evenly throughout the year. This matters because fleet costs are not isolated from the rest of the budget. When fuel, repairs, insurance, or vehicle costs move higher, they compete with other operational priorities.

The March 2026 SPS financial report specifically notes that fleet-related expenses include **fuel, supplies, insurance, repairs, and maintenance**, and that those costs were expected to increase later in the year because of timing around purchases, vehicle deliveries, and transfers. That makes fleet electrification a budget management issue, not just a vehicle choice. A police vehicle is a long-life operating asset. The purchase price is only the opening cost. The real cost is fuel, maintenance, downtime, upfitting, insurance, repairs, lifecycle replacement, and operational availability over the full service life.

4. The Russia–Ukraine Fuel Shock

The Russia–Ukraine war is the clearest recent example of how a geopolitical event can move directly into Metro Vancouver police fleet economics. Russia’s full-scale invasion began on **February 24, 2022**. Within months, Metro Vancouver gasoline prices reached approximately **236.9 cents per litre** in June 2022, with CityNews reporting it as another all-time high for the region.

The operating lesson is not simply that prices went up. The lesson is that they went up quickly, at scale, and for reasons entirely outside municipal control. If Metro Vancouver gasoline moved from roughly **170 cents per litre** before the shock to approximately **237 cents per litre** at peak, the increase was about **67 cents per litre**. For one civilian vehicle, that is painful. For a police fleet of 350 to 400 vehicles operating continuously, it becomes a material budget event.

Using a working assumption of **400 vehicles, 50 litres per vehicle per day, and a 120-day shock period**, the fleet would consume roughly **2.4 million litres** during that window. A **67-cent per litre** shock would imply approximately **\$1.6 million** in additional fuel cost during that period alone. At **350 vehicles**, the same assumption produces roughly **\$1.4 million**. That is not new policing capacity. It does not add officers, technology, training, safety equipment, or service improvement. It is simply the cost of being exposed to oil volatility.

This is the first major financial argument for electrification: every electric patrol kilometre reduces exposure to the next oil shock. The issue is not whether the next shock will look exactly like Ukraine. It likely will not. The issue is that a large police fleet should not remain fully dependent on a single energy source whose price can be reset by war.

5. The Iran Conflict and the New Geopolitical Fuel Premium

The events of 2026 demonstrated that the financial risks facing municipal police fleets are no longer limited to major global wars. Unlike the Russia–Ukraine conflict, which disrupted one of the world's largest oil-producing regions, the conflict involving Israel, Iran, and the United States highlighted an equally important reality: fuel prices can increase significantly even when oil production itself remains largely unaffected. Markets no longer wait for physical shortages. They respond to uncertainty.

Iran occupies one of the world's most strategically important geographic positions through its proximity to the Strait of Hormuz, the narrow maritime corridor through which approximately one-fifth of globally traded oil is transported. When military conflict escalated during June 2026, international energy markets immediately priced the possibility of disruption to this critical shipping route. Although relatively little physical infrastructure was damaged, the perception of risk alone was sufficient to move oil

markets upward. Analysts across Canada warned that gasoline prices could rise almost immediately as traders reacted to geopolitical uncertainty rather than actual supply shortages.

Within days, Metro Vancouver experienced another increase in retail gasoline prices. While the increase was considerably smaller than that experienced during the Russia–Ukraine conflict, it reinforced a pattern that municipal governments can no longer ignore. International events occurring thousands of kilometres away now influence the operating costs of local police services almost immediately. This pattern has repeated itself several times within only a few years and suggests that fuel price volatility should no longer be viewed as an extraordinary occurrence. It has become a recurring operating risk.

For Surrey Police Service, this distinction is important. Fuel represents one of the few operating expenditures that can change materially within a matter of days without any change in policing activity. Officer deployment remains constant. Emergency calls continue. Patrol coverage is maintained. The organization absorbs the higher operating cost while delivering exactly the same level of public service. Every geopolitical event therefore acts as an external tax on municipal policing without creating any additional public safety value.

This emerging "geopolitical fuel premium" represents a new category of financial exposure. Unlike inflation, which generally occurs gradually and can be incorporated into long-term budgeting, geopolitical fuel shocks are sudden, unpredictable, and largely uncontrollable. Municipal governments cannot influence military conflicts, OPEC production decisions, sanctions, or international shipping routes. They can, however, reduce the extent to which those events influence local operating costs. Diversifying a portion of the police fleet away from petroleum becomes not only an environmental decision, but a financial hedge against future geopolitical uncertainty.

6. Ten Years of Metro Vancouver Fuel Volatility

Historically, fuel prices followed relatively predictable economic cycles driven by seasonal demand, refinery maintenance, and changes in crude oil production. While short-term fluctuations occurred, municipal fleet managers could generally forecast

annual operating costs with reasonable confidence. That stability has deteriorated over the past decade.

Between 2016 and 2019, Metro Vancouver gasoline prices generally fluctuated within a comparatively narrow range. Although prices reflected refinery outages and seasonal demand, the market remained largely driven by conventional economic forces. Beginning in 2020, however, the relationship fundamentally changed. The COVID-19 pandemic temporarily reduced global fuel demand to historic lows before economic reopening created rapid supply shortages. The result was one of the most volatile periods ever experienced in modern energy markets.

The Russia–Ukraine conflict accelerated this trend. Metro Vancouver gasoline prices climbed to approximately 236.9 cents per litre during June 2022, establishing record retail prices across the region. Although prices eventually moderated, they did not return to the long-term stability experienced during previous decades. Instead, the market entered a new environment characterized by persistent volatility driven by international conflict, refinery capacity constraints, supply chain disruptions, carbon pricing, exchange rates, and geopolitical uncertainty.

The events of 2026 further reinforced this structural shift. While the increase associated with the Iran conflict was smaller than the Ukraine shock, it demonstrated that the market remains highly sensitive to geopolitical developments. Rather than representing isolated events, these price increases now form part of a broader pattern affecting municipalities across North America.

For organizations operating large fleets, volatility itself is often more problematic than high prices. Municipal budgets are prepared months before the beginning of each fiscal year. Sudden changes in fuel prices reduce forecasting accuracy and create pressure on operating budgets already committed to salaries, equipment, facilities, and public safety programs. Unlike private businesses, municipalities cannot rapidly increase prices to recover unexpected operating costs. Taxpayer-funded organizations must instead absorb these increases within existing financial plans.

This changing environment suggests that future fleet planning should no longer rely upon average gasoline prices alone. Decision-makers must instead consider long-term exposure to volatility itself. A transportation strategy built entirely around one globally traded commodity leaves essential public services vulnerable to events beyond local control. Diversification therefore becomes an important component of responsible municipal financial management.

7. The True Lifecycle Cost of Gas-Powered Police Vehicles

The purchase price of a police vehicle represents only a small portion of its total financial impact. Over its operational life, every patrol vehicle becomes a long-term municipal asset requiring continuous investment in fuel, maintenance, repairs, replacement parts, insurance, upfitting, tires, servicing, and eventual replacement. The true cost of policing is therefore measured not by acquisition cost, but by total lifecycle ownership.

Police vehicles operate under conditions substantially more demanding than ordinary passenger vehicles. They routinely remain in service throughout multiple shifts, spend extended periods idling while powering emergency equipment, accelerate aggressively during emergency response, and operate continuously throughout every season. These demanding duty cycles accelerate mechanical wear and increase maintenance requirements well beyond those experienced by typical commercial fleets.

Internal combustion engines contain thousands of moving components operating under high temperatures and pressures. Throughout the life of a patrol vehicle, municipalities must budget for oil changes, engine servicing, cooling systems, fuel systems, exhaust systems, transmissions, spark plugs, alternators, belts, hoses, emissions equipment, engine diagnostics, and numerous other maintenance requirements associated with conventional gasoline engines. As mileage increases, repair frequency generally increases as well.

Fuel compounds these costs. Every kilometre travelled requires continuous fuel purchases whose price is determined externally by international commodity markets. During periods of geopolitical stability this cost remains manageable. During periods of international conflict, however, municipalities face immediate operating cost increases without receiving any improvement in operational capability.

When evaluated over an eight- to ten-year service life, fuel frequently becomes one of the largest single operating costs associated with police vehicles. The cumulative effect of routine maintenance, mechanical repairs, downtime, and unpredictable fuel pricing significantly exceeds the initial purchase price. Fleet managers therefore increasingly evaluate vehicles using total cost of ownership rather than acquisition cost alone. This methodology provides a more complete understanding of taxpayer value and better reflects the long-term financial implications of municipal fleet decisions.

8. Why Electrification Is a Fleet Resilience Strategy

The strongest argument for fleet electrification is not environmental policy. It is organizational resilience.

Resilience describes an organization's ability to continue delivering essential services despite external disruption. For police services, resilience means responding to emergencies regardless of natural disasters, cyber incidents, supply chain interruptions, infrastructure failures, or geopolitical events. Transportation is fundamental to that mission. Every patrol vehicle that remains operational contributes directly to public safety.

Electric vehicles introduce a second energy pathway into municipal fleet operations. Rather than relying exclusively upon internationally traded petroleum, a portion of the fleet operates using electricity generated primarily within British Columbia. This diversification reduces exposure to geopolitical fuel shocks while improving long-term operating cost predictability. It does not eliminate risk, but it changes the organization's overall risk profile.

British Columbia is uniquely positioned to benefit from this strategy. The province's electricity system is predominantly hydroelectric, providing one of the cleanest and most reliable electrical grids in North America. Electricity prices have historically exhibited considerably less volatility than gasoline because they are regulated domestically rather than determined by international commodity markets. This provides municipalities with an energy source whose pricing characteristics differ fundamentally from petroleum.

Importantly, resilience does not require complete electrification. A balanced fleet consisting of conventional patrol vehicles and electric vehicles provides operational flexibility while reducing dependence upon any single energy source. This portfolio approach mirrors principles used throughout finance and infrastructure management, where diversification reduces exposure to individual risks without compromising operational performance.

Viewed through this strategic lens, electrification is not about replacing gasoline vehicles simply because new technology exists. It is about strengthening one of Surrey

Police Service's most important operational assets for the next twenty years. Every electric vehicle introduced into the fleet represents one less vehicle whose operating cost is directly tied to global oil markets. Over time, these incremental reductions improve budget certainty, enhance financial resilience, and create a more sustainable foundation for policing one of Canada's fastest-growing cities.

9. North American Police EV Case Studies

Across North America, police agencies are no longer treating electric vehicles as theoretical. They are testing them, deploying them, and measuring them against real operational requirements. The strongest example is South Pasadena, California, which launched the first all-electric police fleet in the United States in 2024, using **20 Tesla vehicles: 10 Model Ys for patrol and 10 Model 3s for detective and administrative functions**. City materials estimate approximately **\$4,000 per vehicle per year** in energy savings, plus additional maintenance savings from reduced oil changes, brake wear, filters, and other internal-combustion servicing. The city also stated that EV operating costs are expected to be at least **half the per-mile cost** of gasoline-powered vehicles.

The South Pasadena case is important because it separates the fleet into roles rather than treating every police vehicle the same. Patrol vehicles were assigned to one platform, while detective and administrative vehicles were assigned to another. That is the right lesson for Surrey. The goal is not to force every police function into one electric vehicle. The goal is to match the right vehicle to the right duty cycle, then measure fuel, maintenance, downtime, officer acceptance, and charging reliability over a full operating year.

New York City provides a different but equally useful case. The NYPD began deploying fully electric Ford Mustang Mach-E GT patrol vehicles, with reports noting the department's order of more than 100 Mach-E units and later deployment into precinct operations. New York is a high-density, high-demand policing environment, so its adoption matters because it shows EVs are being tested not only in smaller cities, but also in complex urban policing systems. The lesson for Surrey is not that Surrey should copy New York; the lesson is that major agencies are now comfortable using EV platforms in operational roles where performance, acceleration, visibility, and equipment integration matter.

Irvine, California adds a further point: EV adoption does not need to be limited to frontline patrol. Irvine introduced a Tesla Cybertruck primarily for school programs and

community outreach rather than high-speed patrol, with the department framing the vehicle around public engagement and long-term operating life. For Surrey, that matters because an EV pilot could include multiple vehicle categories: patrol, traffic, community policing, supervisory use, and administrative/investigative assignments. A mixed pilot produces better data than a single-use pilot and avoids overstating what any one vehicle can do.

The broader lesson from these case studies is disciplined segmentation. Police fleets are not one fleet; they are multiple fleets inside one organization. Patrol, traffic, investigations, community policing, administration, specialty units, and command functions each have different duty cycles. Surrey Police Service should use North American evidence carefully, not as proof that EVs solve every fleet issue, but as proof that the technology is mature enough to test under local conditions. The strategic opportunity is to produce Canadian evidence in a British Columbia operating environment, supported by local electricity economics and Surrey's own fleet data.

10. Surrey Police EV Pilot Project: 6–10 Vehicles

Surrey Police Service should proceed with a limited, evidence-based pilot of **6–10 electric police vehicles** over a minimum **12-month operating period**. The pilot should be designed as a controlled business case, not a branding exercise. Its purpose should be to determine where electric vehicles can reduce lifecycle costs, improve energy resilience, maintain operational readiness, and support frontline policing without compromising officer safety, vehicle availability, or public service.

The pilot should include a balanced mix of vehicle functions. A practical structure would include electric vehicles assigned to frontline patrol, traffic or enforcement visibility, supervisory use, community policing, and administrative or investigative duties. This structure would allow SPS to compare high-utilization and moderate-utilization roles while avoiding the mistake of judging the entire technology on a single duty cycle. A patrol vehicle operating through multiple shifts is a different asset than an investigative vehicle driven between appointments, and both should be measured separately.

The pilot should be governed by clear performance metrics from day one. SPS should track daily kilometres, energy consumed, charging time, charger availability, vehicle

downtime, maintenance cost, fuel avoided, officer feedback, equipment integration, emergency response suitability, winter and summer performance, range under load, idle-time substitution, and total cost per kilometre. This must be compared against matched gasoline or hybrid police vehicles operating in similar roles. Without a control group, the pilot will produce anecdotes. With a control group, it will produce board-level evidence.

Charging infrastructure should be treated as part of the pilot, not an afterthought. BC Hydro's fleet electrification guide emphasizes early infrastructure planning, charging strategy, and utility engagement as core elements of successful fleet electrification. Surrey should therefore begin with a site assessment, electrical capacity review, charger placement plan, overnight charging model, backup charging protocol, and operating rules for when vehicles return below defined battery thresholds. BC Hydro also has fleet electrification rate structures and incentive pathways that may support larger fleet planning.

The pilot should be structured around a "measure, validate, scale" framework. Phase one should confirm infrastructure, procurement, upfitting, officer training, and dispatch integration. Phase two should operate the vehicles under real conditions for 12 months. Phase three should evaluate the results and determine whether to expand, pause, redesign, or limit EV use to specific fleet categories. This protects taxpayers because it avoids premature fleet-wide commitments while giving SPS the evidence needed to make intelligent long-term procurement decisions.

11. Financial Model, ROI and Risk Mitigation

The financial model should compare gasoline, hybrid, and electric vehicles over the full asset lifecycle, not only at purchase. For police vehicles, the real financial question is not "which vehicle is cheaper to buy?" The correct question is "which vehicle delivers the lowest risk-adjusted cost per operational kilometre over its service life?" That calculation must include acquisition cost, upfitting, charging infrastructure, fuel or electricity, maintenance, tires, insurance, repairs, downtime, depreciation, resale value, and replacement cycle.

Using the fuel-shock framework already developed, the sensitivity is clear. At **400 vehicles, 50 litres per vehicle per day**, and a major shock of **67 cents per litre**, a 120-day fuel spike can create roughly **\$1.6 million** in additional fleet fuel exposure. At **350 vehicles**, the same calculation is roughly **\$1.4 million**. Even smaller shocks matter. A **10-cent per litre** increase over the same 400-vehicle duty cycle creates roughly **\$240,000** in additional cost over 120 days. These figures do not add policing capacity; they simply absorb budget because the fleet remains tied to gasoline.

The ROI case for EVs comes from avoided fuel, reduced maintenance, and lower volatility. South Pasadena's public materials estimated approximately **\$4,000 per vehicle per year** in energy savings before additional maintenance savings. BC Hydro's fleet electrification guide provides a broader fleet example showing lower fuel and maintenance costs for electric fleet vehicles compared with diesel equivalents, reinforcing the general lifecycle direction even though police-duty assumptions must be tested separately in Surrey. The point is not to import another city's exact savings. The point is to build a Surrey model using Surrey duty cycles.

Risk mitigation is critical. The main risks are operational range, charger downtime, charging congestion, upfit compatibility, winter performance, accident repair timing, battery degradation, officer acceptance, public perception, and technology lock-in. Each risk can be managed through pilot design. Range risk is managed by route and shift tracking. Charging risk is managed by redundant chargers and operating protocols. Upfit risk is managed through tested police conversion vendors. Officer acceptance is managed through training and feedback. Technology risk is managed by keeping the pilot small and comparing multiple duty cycles before expansion.

The most important financial mitigation is not assuming success. The pilot should include decision gates. If EVs perform well in administrative and community policing roles but not frontline patrol, SPS can scale selectively. If patrol performance is strong but charging infrastructure is the bottleneck, the next investment should be infrastructure. If maintenance savings are real but acquisition costs remain too high, SPS can wait for procurement pricing to improve while continuing hybrid adoption. This is how a serious public-sector fleet strategy should operate: evidence first, scale second.

12. Recommendations and Conclusion

Surrey Police Service should adopt a phased fleet modernization strategy anchored in resilience, lifecycle economics, and operational evidence. The first recommendation is to approve a **6–10 vehicle EV pilot** with a minimum 12-month evaluation period. The pilot should include patrol, traffic or visibility, community policing, supervisory, and investigative or administrative roles so SPS can understand where electrification works best and where conventional or hybrid vehicles remain more appropriate.

The second recommendation is to create a formal fleet-energy dashboard. SPS should track fuel prices, litres consumed, electricity consumed, cost per kilometre, maintenance cost per vehicle, downtime, idle time, and fuel-shock exposure. This dashboard should be reported internally and summarized for board-level review. Fleet strategy should become a financial intelligence function, not only a procurement function.

The third recommendation is to engage BC Hydro early on infrastructure planning, charging capacity, rate options, and incentive eligibility. Fleet electrification succeeds or fails on infrastructure. Vehicles can be purchased quickly; charging systems, facility upgrades, electrical capacity, and operating protocols require planning. A pilot should therefore be treated as both a vehicle test and an infrastructure test.

The fourth recommendation is to preserve portfolio flexibility. Surrey should not frame the choice as gasoline versus electric. The right model is gasoline, hybrid, and electric vehicles matched to duty cycle. Specialized units may remain conventional. High-idle, predictable-route units may be strong EV candidates. Administrative and community vehicles may electrify earlier. Patrol deployment should be based on evidence from local testing.

The conclusion is straightforward. Surrey Police Service is building a modern police fleet during a period of global energy instability. The Russia–Ukraine shock showed that gasoline prices can move by tens of cents per litre in a short period. The Iran conflict showed that even the risk of disruption can create a local fuel premium. For a large municipal police fleet, these shocks translate into real costs over the life of the asset. Electrification is not a cure-all, and it should not be treated as one. But as a measured pilot, supported by BC Hydro planning, North American case studies, Surrey fleet data, and lifecycle financial analysis, it is a serious and responsible step toward a more resilient police service.

Appendix A

Estimated Financial Impact of Fuel Price Volatility on a 350–400 Vehicle Municipal Police Fleet

The purpose of this appendix is to illustrate the potential financial exposure of a large municipal police fleet to global fuel price volatility. These calculations are intended as scenario analyses rather than audited operating figures. Actual fleet fuel consumption will vary depending on patrol deployment, vehicle mix, operational tempo, seasonal conditions, idling time, emergency response activity, and annual kilometres travelled.

For modelling purposes, the analysis assumes a municipal police fleet consisting of approximately **350–400 operational vehicles**, with an average fuel consumption of **50 litres per vehicle per day**. This assumption reflects a combination of patrol vehicles operating continuously throughout multiple shifts together with investigative, supervisory, traffic enforcement, and specialty units.

Russia–Ukraine Fuel Shock (2022)

Russia commenced its full-scale invasion of Ukraine on **24 February 2022**. During the months that followed, Metro Vancouver experienced the highest retail gasoline prices in its history.

Metric	Assumption
Fleet Size	400 vehicles
Average Fuel Consumption	50 L/day/vehicle
Daily Fleet Fuel Consumption	20,000 litres
Analysis Period	120 days
Total Fuel Consumed	2,400,000 litres
Estimated Fuel Price Increase	\$0.67/L
Estimated Additional Fuel Cost	\$1,608,000

Conservative Scenario (350 Vehicles)

Metric	Value
Total Fuel Consumed	2,100,000 litres
Additional Fuel Cost	\$1,407,000

These costs generated no increase in policing capacity, officer staffing, public safety technology, or operational capability. They represented only the financial consequence of higher global oil prices.

Iran Conflict Fuel Premium (2026)

Although considerably smaller than the Ukraine fuel shock, the 2026 conflict involving Israel, Iran, and the United States demonstrated how rapidly international events can influence Canadian gasoline prices.

Illustrative scenario:

Metric	Assumption
Fleet Size	400 vehicles
Fuel Price Increase	\$0.10/L
Analysis Period	120 days
Estimated Additional Fuel Cost	\$240,000

Even relatively modest fuel price movements create meaningful operating cost increases when multiplied across a large police fleet operating continuously throughout the year.

Long-Term Financial Exposure

Assuming annual fleet fuel consumption of approximately **7.0–7.5 million litres**, every sustained increase in gasoline prices has the following approximate financial impact:

Increase in Gasoline Price	Annual Additional Cost
5¢ per litre	~\$365,000
10¢ per litre	~\$730,000
25¢ per litre	~\$1.83 million
50¢ per litre	~\$3.65 million
67¢ per litre	~\$4.89 million

These figures demonstrate the sensitivity of large municipal police fleets to international energy markets.

Strategic Observation

Fuel price volatility has become an operating risk rather than simply a budgeting consideration.

Every significant geopolitical conflict over the past several years—including the COVID-19 supply chain disruption, Russia's invasion of Ukraine, and the 2026 Middle East conflict—has demonstrated that municipal police services remain directly exposed to global petroleum markets.

While municipalities cannot influence international events, they can reduce their exposure through disciplined fleet diversification, lifecycle planning, and gradual adoption of alternative energy technologies where operationally appropriate.

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- BC Hydro Fleet Electrification Program

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AI Disclosure

Artificial intelligence (AI) was used as a research, drafting, editing, and formatting tool in preparing this discussion draft. All conclusions, recommendations, calculations, and opinions were reviewed by the author and are based on publicly available information, official publications, and the sources cited throughout this report. This report is intended to support discussion and further due diligence.

Figure 1: Metro Vancouver gasoline prices (2016–2026) with major geopolitical events marked (COVID-19, Ukraine, Iran).

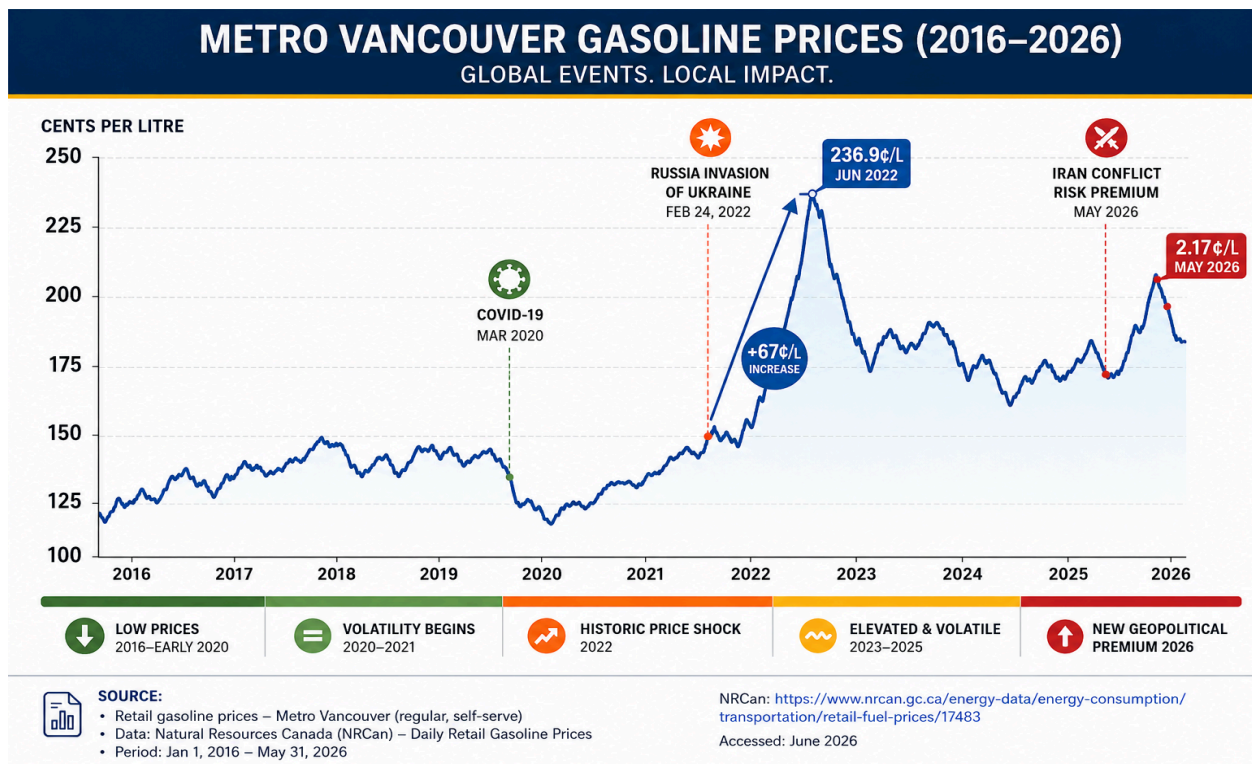


Figure 2: Total Cost of Ownership comparison (Gasoline vs. Hybrid vs. Electric Police Vehicle)

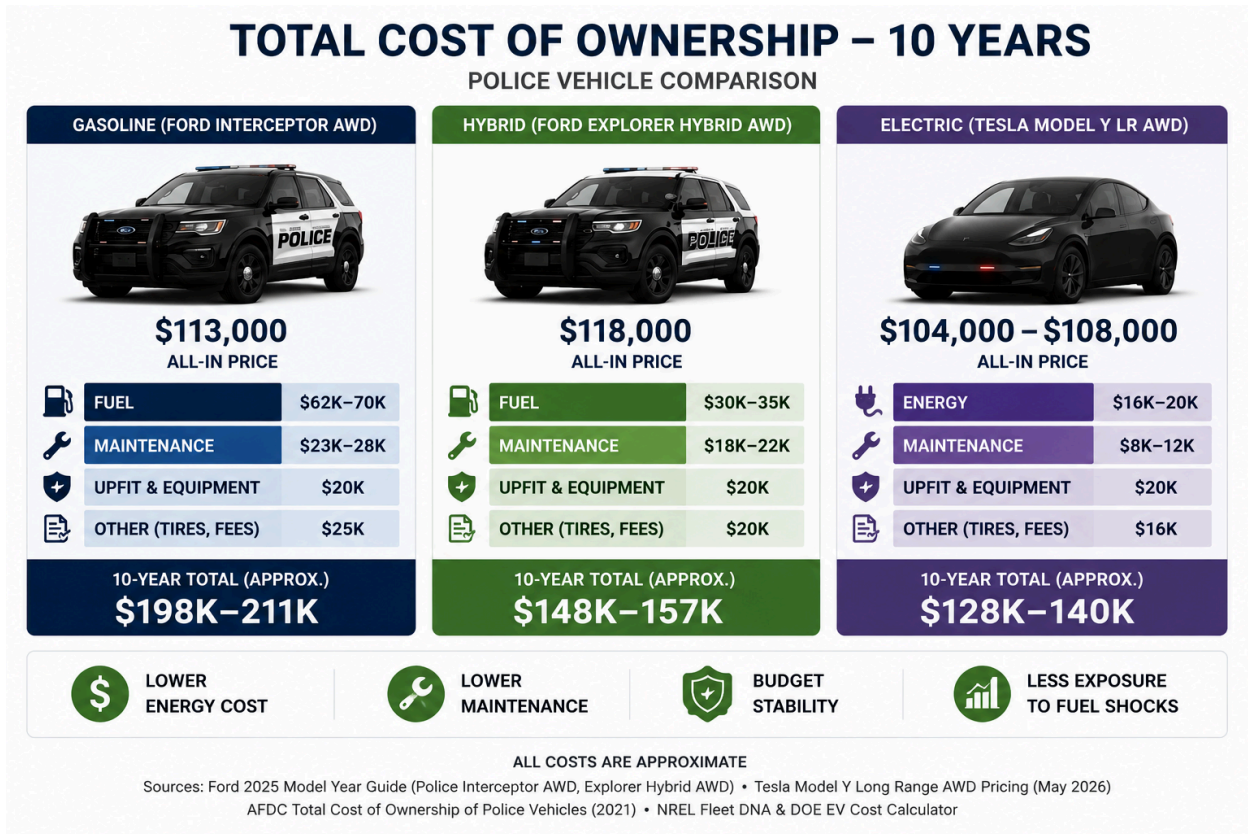


Figure 3: Surrey Police EV Pilot Roadmap (Plan → Pilot → Measure → Validate → Scale).

