

BCUC Project No. 1598929  
**ICBC 2017 RATE REQUEST APPLICATION FINAL ARGUMENTS**  
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## Context

The Insurance Corporation of British Columbia (ICBC) is a Crown corporation with the responsibility to provide basic vehicle insurance in ways that maximize value to British Columbia residents. ICBC has experienced increases in claim frequency and severity, and associated costs, and is requesting a 6.4% rate increase for all rate classes to fund anticipated cost increases.

Many factors can affect claim frequency and severity. One important factor not currently considered in ICBC actuarial analysis is vehicle operating costs, such as fuel. An extensive body of research indicates an inverse relationship between vehicle operating costs and crashes. See for example:

Hamed Ahangari, Jason Outlaw, Carol Atkinson-Palombo and Norman Garrick (2014), "An Investigation Into The Impact Of Fluctuations In Gasoline Prices And Macroeconomic Conditions On Road Safety In Developed Countries," *Transportation Research Record* 2465 ([www.trb.org](http://www.trb.org)); at <http://bit.ly/2zcgwq1i>.

Paul J. Burke and Shuhei Nishitatenno (2015), "Gasoline Prices and Road Fatalities: International Evidence," *Economic Inquiry* (DOI: 10.1111/ecin.12171); at <http://bit.ly/1QBY62Z>.

G. Chi, et al. (2010). "Gasoline Prices And Their Relationship To Drunk-Driving Crashes," *Accident Analysis and Prevention*, Vol. 43(1), pp. 194–203; at <http://tinyurl.com/lxhrrswd>.

G. Chi, et al. (2013), "Gasoline Price Effects on Traffic Safety in Urban and Rural Areas: Evidence from Minnesota, 1998–2007," *Safety Science*, Vol. 59, pp. 154-162; at <http://bit.ly/2nkESVx>.

David C. Grabowski and Michael A. Morrissey (2006), Do Higher Gasoline Taxes Save Lives?" *Economics Letters*, Vol. 90, pp. 51–55; abstract at [www.sciencedirect.com/science/article/pii/S0165176505002533](http://www.sciencedirect.com/science/article/pii/S0165176505002533).

Todd Litman (2012), "Pricing for Traffic Safety: How Efficient Transport Pricing Can Reduce Roadway Crash Risks," *Transportation Research Record* 2318, pp. 16-22 ([www.trb.org](http://www.trb.org)); at [www.vtppi.org/price\\_safe.pdf](http://www.vtppi.org/price_safe.pdf).

Michael Sivak (2008), *Is the U.S. on the Path to the Lowest Motor Vehicle Fatalities in Decades?*, Report UMTRI-2008-39, University of Michigan Transportation Research Institute ([www.umtri.umich.edu](http://www.umtri.umich.edu)); at <http://deepblue.lib.umich.edu/bitstream/2027.42/60424/1/100969.pdf>.

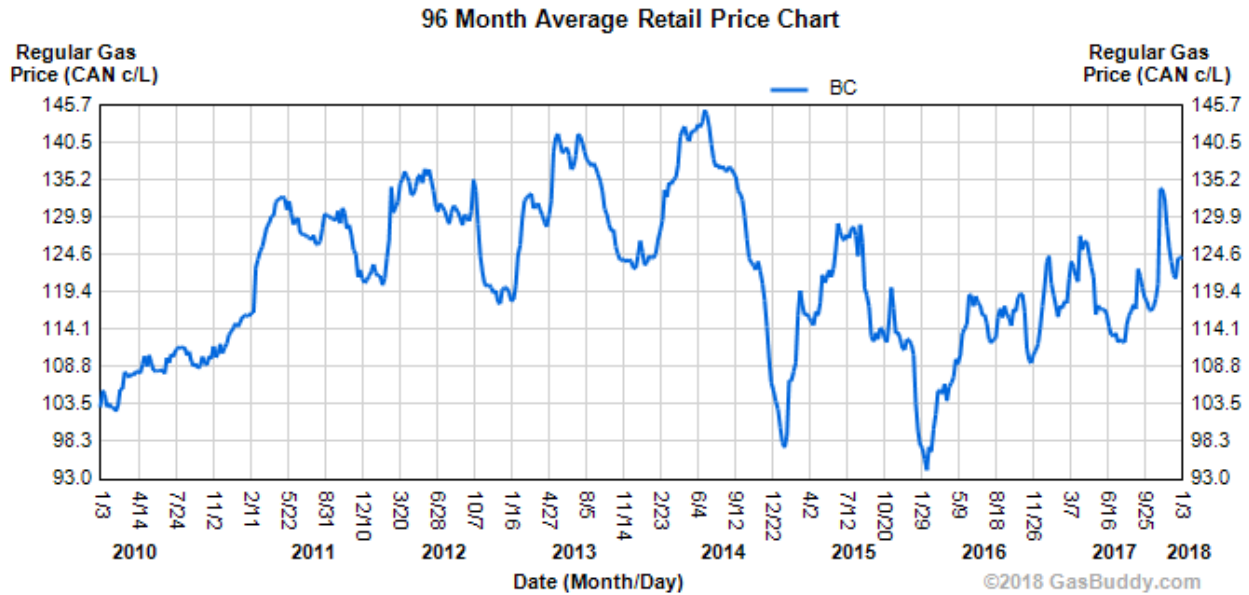
This research suggests that a 10% fuel price increase typically reduces fatalities 1-2% in the short run (less than one year), and 3-6% over the longer run (more than three years) as motorists take price changes into account when making durable decisions such as where to live. This effect is widely recognized.<sup>1, 2</sup>

<sup>1</sup> Justin Worland (2016), "The Dark Side of Cheap Gas—More Road Deaths," *Time Magazine* (<http://time.com>); at <http://time.com/4472374/traffic-deaths-gas-price>.

<sup>2</sup> NHTSA (2016), *Traffic Fatalities Up Sharply in 2015* ([www.nhtsa.gov/press-releases/traffic-fatalities-sharply-2015](http://www.nhtsa.gov/press-releases/traffic-fatalities-sharply-2015))

British Columbia fuel prices declined significantly in recent years, as indicated in Figure 1. Prices averaged about \$1.20-1.40 per litre during 2013-2014, but declined 10-20% during 2015-2017 to \$1.00-1.20. Such price declines typically increase long run vehicle kilometers traveled (VKT) and crashes by 5-10%.

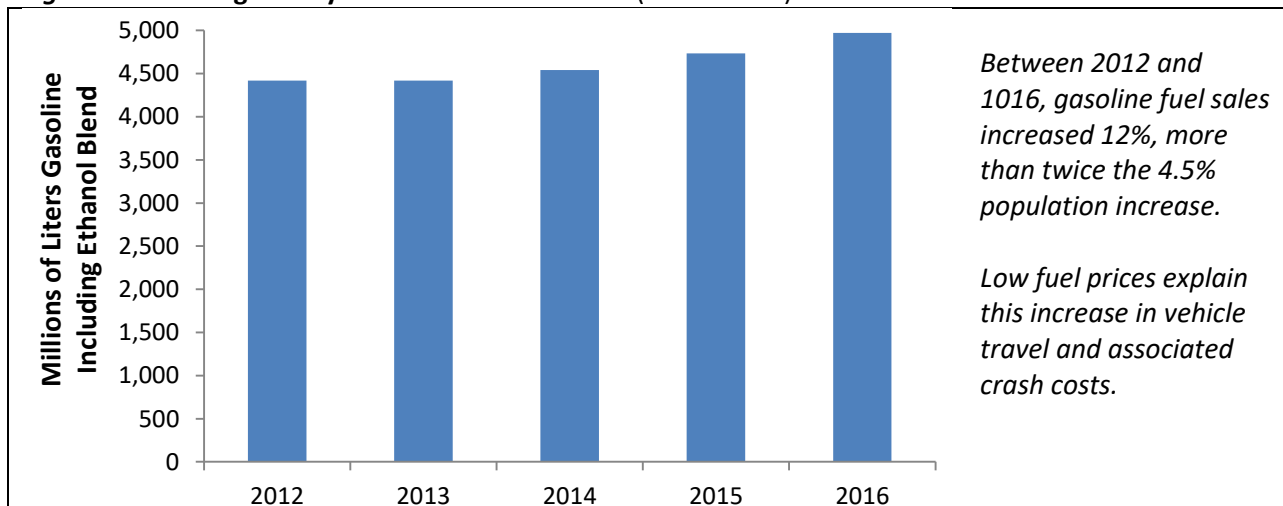
**Figure 1** British Columbia Fuel Price Trends ([www.bcgasprices.com/retail\\_price\\_chart.aspx](http://www.bcgasprices.com/retail_price_chart.aspx))



*During 2013-2014 fuel prices averaged about \$1.20-1.40 per litre, but declined significantly during 2015-2017, averaging \$1.00-1.20. Such a price decline typically increases vehicle travel and crashes 5-10%.*

This fuel price decline helps explain why light-duty vehicle fuel consumption (an indicator of VKT) increased about 12% between 2012 and 2016 (Figure 2), more than twice the province's 4.5% population growth rate. This increase in vehicle travel caused crashes and claim costs to increase faster than would have occurred had fuel prices remained high in 2015-16.

**Figure 2** Light Duty Vehicle Fuel Sales in BC (BCTFA Data)



This illustrates the importance of considering fuel prices and V<sub>k</sub>T when evaluating risks and predicting future insurance claim costs and revenue requirements. Fuel prices and taxes (including the Carbon Tax) are currently increasing. Although it is impossible to predict future fuel prices precisely, they are unlikely to return to the low levels experience in 2013-14, suggesting that the growth in crash and claim frequency that occurred during periods when fuel prices declined is unlikely to occur in the future. If true, projected revenue requirements can be reduced.

### **Performance Indicators**

As a Crown corporation, ICBC should support the province's strategic goals, including consumer affordability and environmental goals. ICBC needs performance indicators that reflect these goals.

Affordability is an important policy goal that is currently not effectively evaluated by ICBC. Affordability refers to household's ability to purchase basic goods, measured as the minimum cost of such goods as a portion of household budgets, particularly lower-income households. For many households, a certain amount of motor vehicle travel is essential for health and economic opportunity, making compulsory vehicle insurance a basic good. As a result, ICBC should track affordability, measured as the cheapest compulsory policy available to lower- and moderate-income motorists as a portion of their incomes.

ICBC does not currently collect the information needed to evaluate these affordability and regressivity (impacts on poor people). Currently, ICBC only reports average premium costs without relating these to household incomes, and so provide no guidance for evaluating how a policy decision, such as a rate structure change, affects affordability, and whether it is progressive or regressive with respect to income. Affordability analysis requires detailed information on basic premium costs, vehicle ownership, and annual vehicle travel by income class; these should be performance indicators.

Some current ICBC practices contradict affordability goals. For example, the current rate structure causes lower-value vehicle owners to pay higher premiums that subsidize the higher claim costs of high-value vehicles; this reduces affordability (it raises the costs of the least-expensive policies), and since vehicle value tends to increase with owners' incomes, it tends to be regressive (it causes lower-income motorists to subsidize higher income motorists). Similarly, because all else being equal, a vehicle's crash risk and claim costs tend to increase with annual vehicle travel, vehicles driven fewer annual kilometers tend to subsidize the higher claim costs of vehicles driven more than average kilometers in their rate class; since annual kilometers per vehicle tend to increase with income this is also reduces affordability and tends to be regressive. Since we lack affordability data (costs relative to income), we do not know how exactly much these policies contradict affordability and progressivity goals, but the impacts are probably large and should be reformed.

## Recommendations

1. Commission an independent study of how fuel prices and other vehicle operating costs affect vehicle travel, crash rates and claim costs, and therefore how current fuel price increases are likely to affect future claim cost. Revise claim cost projections based on this analysis.
2. Recognize the crash rate reductions that result when vehicle operating costs increase, and therefore the potential safety benefits and claim cost savings provided by price reforms such as fuel price increases, efficient road and parking fees, and Pay-As-You-Drive vehicle insurance.
3. Collect consistent and detailed fuel price and vehicle travel data for use in actuarial analysis, performance evaluation and traffic safety planning. This information is many purposes, besides insurance actuarial analysis, including local and provincial transportation planning, traffic safety research, energy and emissions policies, and tax revenue analysis, and so is an opportunity for government efficiencies and inter-agency cooperation through an integrated provincial fuel price and travel data collection program.
4. Develop performance indicators that reflect affordability and progressivity, measured as the cheapest available basic vehicle insurance policy as a portion of lower- and moderate-income household budgets, and evaluate ICBC policies and practices affect affordability and progressivity goals.
5. Evaluate potential rate structure reforms according to their affordability and safety impacts. These should include *Basic Pay-As-You-Drive insurance*, which prorates premiums based on annual distance travelled, and so gives motorists a new opportunity to save money when they reduce their annual vehicle travel and resulting claim costs.<sup>3</sup> Note, this is significantly different than *Instrumented PAYD*, which uses electronic instruments to track how motorists drive, since that introduces significant costs and raises privacy concerns, and so is unlikely to increase affordability.

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<sup>3</sup> Todd Litman (2011), *Pay-As-You-Drive Vehicle Insurance in British Columbia*, Pacific Institute for Climate Solutions ([www.pics.uvic.ca](http://www.pics.uvic.ca)); at <http://bit.ly/2fxQANO>. Slide show at <http://vtpi.org/PAYD%20in%20BC>.