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April 8, 2019

British Columbia Utilities Commission  
Suite 410  
900 Howe Street  
Vancouver, BC V6Z 2N3

Attention: Mr. Patrick Wruck, Commission Secretary and Manager, Regulatory Services

**Re: Filing of Supplemental Information in the Response to Round 1  
Information Requests: 2019.1 RR BCUC.29.2 and 2019.1 RR BCUC.29.3**

Dear Mr. Wruck:

In the filing of ICBC's responses to Round 1 Information Requests (IRs) on March 8, 2019, there were two IRs, 2019.1 RR BCUC.29.2 and 2019.1 RR BCUC.29.3, which requested information from the Cochrane Database of Systematic Reviews, "Speed Cameras for the Prevention of Road Traffic Injuries and Deaths", that was subject to copyright. Accordingly, ICBC did not provide a full response to the questions and advised that it was in the process of receiving the appropriate permissions. ICBC has now received permission from the publisher, John Wiley and Sons Inc., to provide the information for the purposes of the 2019 Revenue Requirements Application and related regulatory proceeding.

Please find the revised responses to IRs 2019.1 RR BCUC.29.2 and 2019.1 RR BCUC.29.3 attached.

This additional information has no impact on the rate change to cover costs or on the proposed rate change of 6.3%.

Yours truly,

June Elder  
Manager, Corporate Regulatory Affairs  
/tj

Cc: Registered Interveners  
Bill Carpenter, Vice President, Insurance, ICBC

Attachments

British Columbia Utilities Commission Information Request No. 2019.1 RR BCUC.29.2 Dated 05 February 2019 Insurance Corporation of British Columbia Response Issued 08 March 2019 <b>Re-issued April 8, 2019</b>	Page 1 of 1
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**2019.1 RR BCUC.29.2 Reference: ACTUARIAL RATE LEVEL INDICATION ANALYSIS  
Exhibit B-1, Chapter 3, Appendix E.0, p. 10; Appendix E.4  
Prospective adjustments – Intersection safety camera - speed activation (ISC-SA)**

**On page 10 of Appendix E.0 of the Application, ICBC states that it has relied on research published by the Cochrane Group<sup>2</sup> in order to estimate the crash reduction benefits for the ISC-SA program. ICBC states:**

**These 28 studies indicated crash reduction rates in the vicinity of camera sites ranging from 8% to 49%, with most studies falling within the 14% to 25% range... As a result, the mid-point of this range, 19.5%, is selected as the expected crash reduction factor used to estimate the cost savings impact of the ISC-SA program for PY 2019.**

**Please provide the applicable distance radius as it relates to crash reduction rates “in the vicinity of camera sites”.**

<sup>2</sup> <https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD004607.pub4/full>

**Response:**

While a few of the speed camera studies reviewed by Cochrane defined a distance radius for the crash reduction rates, the distance was not consistent between jurisdictions; measuring from 250 metres up to a radius of two kilometres in some cases.<sup>1</sup> The crash reduction forecast for ISC-SA has been calculated using only the crashes at the treated intersections; a distance radius has not been incorporated into the forecast.

However, please note that the crash reduction forecast for ISC-SA has been calculated using only the crashes at the treated intersections; a distance radius has not been incorporated into the forecast.

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<sup>1</sup> Wilson C, Willis C, Hendrikz JK, Le Brocque R, Bellamy N, *Speed cameras for the prevention of road traffic injuries and deaths*, Cochrane Database of Systematic Reviews, (2010), Issue 11, Art. No.: CD004607. DOI:10.1002/14651858.CD004607.pub4, at pages 10, 31, and 64.

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**2019.1 RR BCUC.29.3 Reference: ACTUARIAL RATE LEVEL INDICATION ANALYSIS  
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**Please provide a graph showing the distribution of crash reduction rates amongst the 28 studies.**

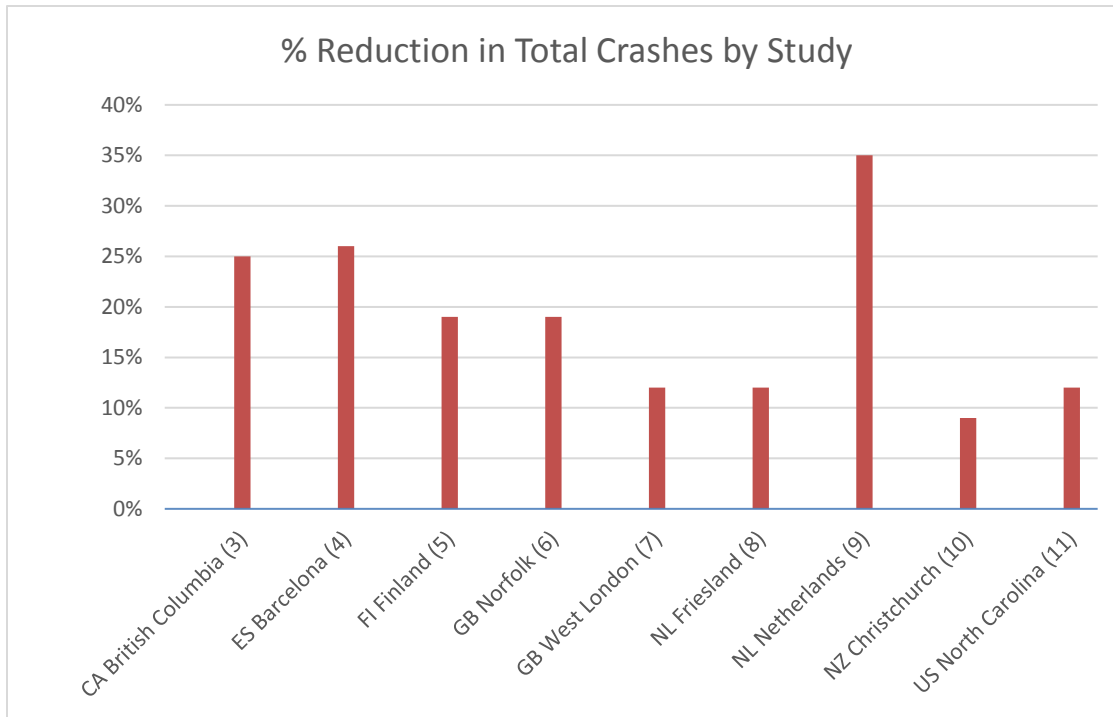
<sup>2</sup> <https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD004607.pub4/full>

**Response:**

Crash reduction rates are not comparable across the 28 studies. Of the 28 studies that reported on crash outcomes, 9 of these studies measured total crashes. These results reported total crashes ranging from 9% in Christchurch (NZ Christchurch) to 35% in the Netherlands (NL Netherlands), with all remaining studies reporting reductions in crash outcomes of 11% to 27%.<sup>1</sup> The following graph shows total crash reduction rates taken from the 9 studies with comparable results.<sup>2</sup>

<sup>1</sup> Wilson C, Willis C, Hendrikz JK, Le Brocque R, Bellamy N, *Speed cameras for the prevention of road traffic injuries and deaths*, Cochrane Database of Systematic Reviews, (2010), Issue 11, Art. No.: CD004607. DOI:10.1002/14651858.CD004607.pub4, at page 10.

<sup>2</sup> Ibid., pages 20-41 and 54-67.



Please see corresponding footnotes for references on studies examined.<sup>3,4,5,6,7,8,9,10,11</sup>

<sup>3</sup> CA British Columbia {published data only} Chen G, Wilson J, Meckle W, Cooper P. *Evaluation of photo radar program in British Columbia*. *Accident Analysis and Prevention* 2000;32:517–26.

<sup>4</sup> ES Barcelona {published data only} Perez K, Mari-Dell’Olmo M, Borrell C. *Reducing road traffic injuries: Effectiveness of speed cameras in an urban setting*. *American Journal of Public Health* 2007;97(9):1632–7.

<sup>5</sup> FI Finland {published data only} Makinen TE. *Halo effects of automatic speed enforcement*. *Technical Research Centre of Finland (VTT)* 2001:341–5.

<sup>6</sup> GB Norfolk {published data only} Jones AP, Sauerzapf V, Haynes R. *The effects of mobile speed camera introduction on road traffic crashes and casualties in a rural county in England*. *Journal of Safety Research* 2008;39:101–10.

<sup>7</sup> GB West London {published data only} Highways Agency’s London Network and Customer Services (LNCS). *West London speed camera demonstration project*. London Accident Analysis Unit (LAAU), London Research Centre (LRC) 1997:1–45.

<sup>8</sup> NL Friesland {published data only} Goldenbeld C, van Schagen I. *The effects of speed enforcement with mobile radar on speed and accidents: An evaluation study on rural roads in the Dutch province Friesland*. *Accident Analysis and Prevention* 2005;37:1135–44.

<sup>9</sup> NL Netherlands {published data only} Oei HL. *Automatic speed management in the Netherlands*. *Transportation Research Record* 1996;1560:57–64.

Oei HL, Polak PH. *Effect of automatic warning and enforcement on speed and accidents: Results of an evaluation study in four Dutch provinces* [Effect van automatische waarschuwing en toezicht op snelheid en ongevallen: Resultaten van een evaluatie–onderzoek in vier Provincies]. Leidschendam, Institute for Road Safety Research SWOV, Netherlands 1992; Vol. R–92–23.

<sup>10</sup> NZ Christchurch {published data only} Tay R. *Do speed cameras improve road safety?* *Traffic and transportation studies: International conference on traffic and transportation studies*. Beijing, China. July 2000:44–57.

<sup>11</sup> US North Carolina {published data only} Cunningham CM, Hummer JE, Moon J-P. *An Evaluation of the Safety Effects of Speed Enforcement Cameras in Charlotte, NC. Final Report*. Presented to the North Carolina Governors Highway Safety Program. Institution for Transport Research and Education. North Carolina State University, Raleigh, North Carolina October 2005:1–156.

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Among the other 19 studies, crash outcome measures differed considerably. Although all 28 studies did find a reduction in certain crash outcomes after implementation of the program, most studies analyzed crash numbers, or measured crash rates. Studies variously included, excluded, or combined all crashes, injury crashes, serious injury crashes, and fatal crashes in combinations that cannot be compared amongst the studies.<sup>12</sup>

The summary section of the Cochrane review indicates that reductions in the vicinity of the camera sites ranged from 8% to 49% for all crashes, with reductions for most studies in the 14% to 25% range.<sup>13</sup> These ranges were based on standardized calculated results where possible and do not fully correspond to the outcomes reported by each study's author.

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<sup>12</sup> Wilson C, Willis C, Hendrikz JK, Le Brocque R, Bellamy N, *Speed cameras for the prevention of road traffic injuries and deaths*, Cochrane Database of Systematic Reviews, (2010), Issue 11, Art. No.: CD004607. DOI:10.1002/14651858.CD004607.pub4, at page 12.

<sup>13</sup> Ibid., page 10.