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**Information Item No. 6**  
**Board of Police Commissioners**  
**November 20, 2017**  
**December 11, 2017**

**TO:** Chair and Members of Board of Police Commissioners

*Original signed*

**SUBMITTED BY:**

\_\_\_\_\_  
Chief Jean-Michel Blais, Halifax Regional Police

**DATE:** November 16, 2017

**SUBJECT:** Body-Worn Video (BWV)

### INFORMATION REPORT

#### ORIGIN

In the 2015 Business Plan, HRP committed to review the information available on Body-Worn Video (BWV) and submit a report on the viability of a pilot program within the HRP. This report provides an overview of the results of that exercise.

#### LEGISLATIVE AUTHORITY

*Police Act*, Section 55 (1) The function of a board is to provide (a) civilian governance on behalf of the council in relation to the enforcement of law, the maintenance of law and order and the prevention of crime in the municipality; and (b) the administrative direction, organization and policy required to maintain an adequate, effective and efficient police department.

#### BACKGROUND

The following is based on two separate reports prepared summarizing research exercises looking at (a) the Canadian context of BWV, including a presumptive cost model, and (b) the existing academic and research evidence on BWV. The former report was prepared by two senior members of HRP (Inspector Jim Butler and Gursharan Singh, Manager of the Strategic Technology Integration Unit) who spoke, met with, and reviewed documentation from a wide range of colleagues across the country in 2015 and 2016, to understand their experiences with BWV and to develop a cost model. The second report was prepared by Dr. Giacomantonio in 2017, following a review of available literature. These reports are provided in appendix.

Based on the findings of these exercises and additional information gathered on BWV in recent months, it is our belief that **BWV does not provide a cost-effective way to improve any of our present practices or processes**. While the technology may have some value, the evidence to date does not justify the expenditure – by our estimates, over \$1.4m per year in direct and labour costs, for a five-year pilot involving 50 cameras – especially when taken in consideration of other ways to use a similar amount of resources on policing or public safety initiatives in HRM. In turn, **I would not recommend that we make the**

**acquisition and deployment of BWV a priority in the near or medium term.** Further justification of this position is provided in detail in the following pages.

Our two research exercises were guided by the question, '*What problem are we trying to solve with BWV?*'. We identified four main kinds of issues that have been used to justify the deployment of BWV:

1. Public confidence and transparency (especially high-risk events such as Emergency Response Team or Public Safety Unit deployments).
2. Behavior modification (both officer and public)
3. Collection of evidence for criminal matters
4. Non-criminal litigation evidence collection

While we do not have substantial identified concerns at HRP related to any of these issues, these are nonetheless areas where ongoing improvement is probably sensible if a practice or technology actually offers improvements. However, evidence from both the Canadian case studies and the academic literature is not convincing that BWV improves outcomes on any of these issues, and in some cases BWV may have negative impacts on policing.

Most of the Canadian pilots of BWV to date have shown equivocal results, with evidence both for and against BWV's effectiveness, but nothing conclusive. Many of the large police services in the country have considered or tested BWV, though as of 2016 were at different stages in this process:

- Some, such as York Regional Police, have decided to wait and see the results of pilot programs being conducted in other agencies.
- Edmonton Police Service (EPS) began a pilot of BWV in fall 2011 and finished in fall 2014.
- In 2013 Calgary Police Service (CPS) has also completed a pilot program using BWV for their officers. This program has been viewed with positive results and will continue into a full deployment of BWV cameras on hundreds of officers within the Calgary Police Service.
- The Toronto Police Service (TPS) has implemented a pilot program using BWV. TPS appears to be continuing with a process to procure BWV for their officers, though have cited concerns with the quality of the technology.<sup>1</sup>
- The Royal Canadian Mounted Police (RCMP) participated in a pilot program using BWV in a number of ways. They deployed cameras in select detachments and also used their training academy for testing. There is more testing in the RCMP environment and their results on the future use of BWV are not available at this time.

The wider research literature echoes the Canadian experience – the evidence at present is at best equivocal on the effectiveness of BWV. In October 2017, the results of the largest single study of BWV use in the USA (Yokun, Ravishankar and Coppock 2017) surprised many when the data did not show a statistically significant change in any behaviours by officers.<sup>2</sup> However, looking at the body of literature preceding this study, such a finding may not be particularly unexpected.

Some of the main effects identified in previous BWV studies, as well as the size of effect at the high- and low-ends of measured impact are outlined in the table below:

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<sup>1</sup> <http://www.cbc.ca/news/canada/toronto/toronto-body-worn-cameras-police-technology-1.4357773>

<sup>2</sup> While this study was not subject to blind peer-review (and has been criticized on this aspect), it is nonetheless a substantial study that received extensive academic input, and the findings are worthy of consideration from our perspective.

**Table: High- and low-end measurements of effectiveness in BWV studies<sup>3</sup>**

High-end measurements of effectiveness:	Low-end measurements of effectiveness:
<ul style="list-style-type: none"> <li>• 90% <b>reduction</b> in complaints (Ariel et al 2015), possibly as high as 96% with 'full compliance'/low discretion (Hedberg et al 2016)</li> <li>• <b>No effect</b> on officer injuries (White, Gaub and Todak 2017)</li> <li>• 50% <b>reduction</b> in use of force during arrests (Henstock and Ariel 2016; White, Gaub and Todak 2017)</li> <li>• 65% <b>reduction</b> in injuries to persons arrested</li> <li>• 28% of content potentially usable in justice system processes/court cases (Grossmith et al 2015)</li> <li>• 3x <b>increase</b> in convictions in intimate partner violence (IPV) cases (Morrow, Katz and Choate 2016)</li> </ul>	<ul style="list-style-type: none"> <li>• 10% (statistically non-significant) <b>reduction</b> in complaints (Ariel et al 2016b; see also Grossmith et al 2015)<sup>4</sup></li> <li>• 71% <b>increase</b> in use of force (Ariel et al 2016a<sup>5</sup>, see also Henstock and Ariel 2016)<sup>6</sup></li> <li>• 15% <b>increase</b> in assaults against officers (Ariel et al 2016c)</li> <li>• 3x <b>increase</b> (statistically non-significant) in injuries to officers during arrest (Henstock and Ariel 2016)<sup>7</sup></li> <li>• 6-10% of content potentially usable in justice system processes/court cases (Calgary Police Service, correspondence)</li> <li>• Mixed results in IPV outcomes (Morrow, Katz and Choate 2016)<sup>8</sup></li> </ul>

In general, the evidence suggests that BWV are mostly effective at achieving aims such as reductions in use of force and reductions in complaints in 'low discretion' models – when officers' ability to turn the cameras off is highly circumscribed and internal oversight on levels of use is substantial. However, while reducing discretion may have positive impacts on complaints and use of force, it may also have negative impacts on quality of interactions. For example, the Toronto pilot (TPS 2016) suggested that BWV might have led to possible reductions in the use of officer discretion, to the detriment of people with whom the officers came into contact (e.g. increasing the likelihood of arrest or the issuance of tickets).

Any improvements from BWV may also disappear after the initial phase-in period (White, Gaub and Todak 2017), as officers become more comfortable with the technology and learn to work within/around its restrictions on behaviour. Outside of complaints, it is also hard at this stage to gauge the impact of BWV on citizen perceptions. Studies by the Metropolitan Police in the UK (Grossmith et al 2015), in Toronto (TPS 2016) and in the US (Crow et al 2017), show generally positive community views toward BWV. However, these positive views toward BWV tend to correlate with positive views about the police in general, rather than necessarily being caused by the introduction of BWV. In turn, more negative views about the police also tend to correlate with more negative views about BWV, meaning that introduction of BWV may not improve the opinions of groups or individuals who currently have more negative views relating to police.

<sup>3</sup> Please note that this chart does not represent a systematic review, although two of the cited studies (Ariel et al 2016b; Cubitt et al 2015) are systematic reviews of evidence on the impacts of BWV.

<sup>4</sup> There was a very large (93%) reduction in complaints in the police services involved in this study; however, there were no statistically significant differences between the 'treatment' (wearing BWV) and 'control' (not wearing BWV) arms of the trial. The authors argue that 'contagious accountability' from the presence of BWV affected both arms of the trial, resulting in better behaviour of all officers.

<sup>5</sup> Ariel et al argue that the increase has to do with officer discretion rather than presence of BWV.

<sup>6</sup> Henstock and Ariel argue that this is an increased transparency outcome (officers more likely to report using force when they know the incident has been recorded) rather than actual increase in use of force; and in this case only during the handcuffing procedure.

<sup>7</sup> The sample of injuries in this study – 7 in the treatment arm and 2 in the control arm – is too small to generalize but does raise a question about the degree to which officers feel able to defend themselves when wearing BWV.

<sup>8</sup> This article tested two sets of IPV cases against cases where cameras were used, and found strong effects in one instance and weak/mixed effects in the other.

Overall, based on available evidence, there is adequate reason to believe that deploying BWV could create as many problems as it solves while also increasing policing costs. The ‘success’ or not of BWV appears to hinge on the quality and oversight of the deployment of the technology, as well as clarity on the goals of the deployment. It seems likely that any deployment of BWV will reduce formal complaints at least in the short term, and cannot help but having some additional evidentiary value at court. However, the additional cost and workload involved in deploying BWV – detailed further below – may not be justified, especially given the potential negative impacts.

**FINANCIAL IMPLICATIONS**

Mr. Singh was asked to provide preliminary costs for a pilot project using BWV in HRM. It should be noted that these costs are based on the following assumptions, information provided by other agencies, and information available in public sources. We have not approached any vendors for costs/estimates.

**Table: Costing assumptions**

Category	Assumptions
Daily costs with officer	<ul style="list-style-type: none"> <li>• A pilot project for Central Division</li> <li>• 25 members (19, 2 K9, 2 ERT, 2 NCOs)</li> <li>• 50 cameras</li> <li>• 25 docking stations</li> <li>• Costs of camera/docking stations \$1500 (estimates only)</li> <li>• Based on three hours of recording per day per camera</li> <li>• 8% is evidence (based on Edmonton view of 6-10 %) – retention based on times of 2, 5, 10, 20, 70 and 84 years - we will use an average of five years for costs (based on retention plans for HRP and MRC)</li> <li>• 92% is for civil matter such as FOIPOP- retention is 18 months</li> <li>• Governance- camera turned on when encountering a member of the public. Only turned off with exception.</li> <li>• Each officer will have to review all video that may be evidence before end of each shift. That is 8% of 3 hours each shift, per officer- view 14.4 minutes per shift (considering loading, viewing and returning is 30 mins per officer per shift per officer)</li> <li>• Uploading at end of each shift- 15 minutes per officer</li> <li>• Each day is at least 45 minutes with BWV processes @ \$42/ hour</li> </ul>
Copying/costs	<ul style="list-style-type: none"> <li>• For FIS to retrieve and copy a prisoner-care facility (PCF) video is about 30 minutes per video. We will use the same time for BWV</li> <li>• 30 minutes to redact each video to remove images not disclosable- FIS</li> <li>• Total of 1 hour for evidence or FOIPOP processing for FIS @ \$30/hour</li> <li>• FOIPOP had 239 requests in 2015 for information. We will assume that will increase with video to 260 for BWV at 1 request per working day</li> <li>• FOIPOP staff will be \$30/hour</li> <li>• Will need at least 1 FTE in FIS at \$62,000/year</li> </ul>
Annual maintenance and support costs	<ul style="list-style-type: none"> <li>• 20% of total hardware/software costs</li> <li>• \$75,000 hardware/\$25,000= \$100,000- low estimate as many costs are unknown until RFP process</li> <li>• Operational costs for replacing or repairing damages outside of warranty- \$10,000</li> </ul>
Training	<ul style="list-style-type: none"> <li>• Each officer to receive 24 hours of training before deployment</li> <li>• 24 hours @ \$42/hour x 25= \$25000 for officer initial training (would be done during day shifts)</li> <li>• Technical training for FIS(3) and FOIPOP(1) staff @\$30/hour- 24 hour=\$2880</li> </ul>
Governance	<ul style="list-style-type: none"> <li>• Policy written and prepared after extensive consultation with various stakeholders</li> </ul>

Storage	<ul style="list-style-type: none"> <li>• Storage 1 for Calgary model (laptop and then back-up tapes) and one for Toronto model - all on a single server</li> <li>• Virtualize e-server</li> <li>• Consider Cloud solution @5GB/month</li> </ul>
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Following completion of Mr. Singh and Insp. Butler’s report in 2016, Axon (and other providers) have improved their Cloud-storage offering, prompting a second look at the cost model in summer 2107. The cloud option allows for a \$79-per-month-per-user access to cloud storage, which reduces the direct costs by about 12% on a five-year timeline, by removing many costs related to storage and software, though largely replacing these with user license costs. Other costs related to training, governance, vetting and archiving, and purchase of cameras and chargers, and other assumptions about usage would remain the same in this model. The total costs identified in these cost models are outlined in the table below.

**Table: Cost comparison of BWV, in-house and cloud storage options**

<i>Type of cost</i>	<b>In-house storage</b>	<b>Cloud storage</b>
Direct cost (cameras, chargers and other equipment; data storage costs)	\$2.19 million	\$1.93 million
Indirect cost (labour, training, tagging and processing evidence, etc.)	\$5.33 million	\$5.33 million
Total 5-year cost	\$7.52 million	\$7.26 million
<i>All figures assuming 50 cameras purchased and operational at HRP each year, with 400 user licenses in the Cloud storage option</i>		

**COMMUNITY ENGAGEMENT**

N/A

**ATTACHMENTS**

Appendix A: Memorandum by Dr Chris Giacomantonio- The deployment of body worn cameras for Halifax Regional Police – further considerations (2017)

Appendix B: Memorandum by Insp. Jim Butler and Mr Gursharan Singh – Executive Summary: The deployment of body worn cameras for Halifax Regional Police (2016)

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A copy of this report can be obtained online at [halifax.ca](http://halifax.ca) or by contacting the Office of the Municipal Clerk at 902.490.4210.

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 Dr Chris Giacomantonio, Research Coordinator, 902.490.1349  
 Mr Gursharan Singh, Manager, STIU, 902.490.6306

Report Approved by: \_\_\_\_\_  
 Jean-Michel Blais, Chief of Police, 902.490.6500

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Appendix A

## MEMORANDUM

Date: May 23, 2017  
To: Chief Jean-Michel Blais  
From: Dr Chris Giacomantonio  
RE: The deployment of body worn cameras for Halifax Regional Police – further considerations

Chief,

Following your request that I review the materials prepared by Insp. Jim Butler and Gursharan Singh (submitted to you in June 2016), I have considered the memorandum and cost model they prepared and consulted the existing literature, focusing on the literature that has been published since 2015. This memorandum outlines my perspective on the deployment of body worn cameras (BWC) in HRP, in light of the information I've reviewed.

This memorandum should be read in conjunction with the June 2016 report, which is a very thorough document that extensively covers the practical issues surrounding implementation in the Canadian context (where research literature is generally limited). That report also provides a valuable overview of other police forces' experiences to date with the use of BWC technology. This memorandum adds to the earlier report by focusing on the wider evidence base in the peer-reviewed literature.

In short, **I fully agree with Insp. Butler's conclusion that BWC do not provide a cost-effective solution to any of the challenges currently facing the Halifax Regional Police.** While the technology may have some value, the evidence to date does not justify the expenditure, especially when taken in consideration of other ways to spend a similar amount on policing or public safety initiatives in HRM. In turn, **I would not recommend that we make the acquisition and deployment of BWC a priority in the near or medium term.**

### Main messages in this document

- Literature on BWC deployment shows **impacts on citizen complaints and officer use of force**, but **only when officers have low discretion** on when to turn cameras on/off
- BWC can also **introduce unintended or negative consequences** such as increased violence against police, decreased professional discretion, and increased officer use of force
- Members of the public in **Common-law jurisdictions are largely supportive of BWC**, however **support is lower among people with more negative attitudes toward police**
- The measured **positive effects of BWC may decrease** or disappear over time
- The cost-effectiveness of BWC needs to be considered not only against its potential positive effects, but the **alternative ways to spend a similar amount** in support of HRP's public safety mission
- In turn, **BWC is unlikely to be the most cost-effective solution** to the main challenges currently faced by HRP
- There are **many unanswered questions about the policy and legal basis**, as well as impacts on workload and processes, for the use and retention of BWC records in Canada

- Any future approach to deployment of BWC in HRP should **focus BWC use on areas where there is better proof of effectiveness**, and only after costs relating to BWC have reduced

Recent research literature on effectiveness

Research literature on BWC has focused on a handful of areas, similar to those identified in the June 2016 report. The predominant themes in existing literature relate to the impact of BWC on citizen complaints and officer use of force. Secondary themes include impact on officer injuries/assaults on officers, use of BWC content in court cases, and public and police attitudes toward BWC. Based on available evidence from research literature, I am not convinced that BWC would be particularly effective if used in Halifax, for improvements in any of these areas.

The evidence at present is at best equivocal on the effectiveness of BWC. Some studies show BWC achieving the intended results, for example, reductions in police use of force and complaints against police. Most famously, the Rialto study found a reduction in uses of force and citizen complaints, and these findings have been replicated in a number of jurisdictions in whole or in part (Ariel et al 2015; Henstock and Ariel 2016; Hedberg et al 2016; White, Gaub and Todak 2017; Cubitt et al 2016). There was also research showing potentially promising impacts on intimate partner violence (IPV) (Morrow, Katz and Choate 2016), and more generally that BWC footage has potential evidentiary value (Grossmith et al 2015).

However, other studies show negative or unintended consequences. For example, these include increased violence against police (Ariel et al 2016c); increased use of force by police (Ariel et al 2016a; Henstock and Ariel 2016); and limited effectiveness against complaints (Ariel et al 2016b; Grossmith et al 2015) and in court (correspondence with Calgary Police Service, cited in the earlier report). In the case of IPV, processing times for court cases with cameras were substantially higher than those without BWC footage, though BWC cases yielded a higher conviction rate (Morrow, Katz and Choate 2016). Many studies also identified issues with officers not turning cameras on as required, or officers only using the cameras selectively where it suits their purposes. Importantly, selective use of cameras may actually exacerbate negative impacts of BWC rather than just negating positive effects (Ariel et al 2016a, White, Gaub and Todak 2017).

Some of the main effects identified in BWC studies, as well as the size of effect at the high- and low-ends of measured impact are outlined in the table below:

**Table: High- and low-end measurements of effectiveness in BWC studies<sup>9</sup>**

High-end measurements of effectiveness:	Low-end measurements of effectiveness:
<ul style="list-style-type: none"> <li>• 90% <b>reduction</b> in complaints (Ariel et al 2015), possibly as high as 96% with ‘full compliance’/low discretion (Hedberg et al 2016)</li> <li>• <b>No effect</b> on officer injuries (White, Gaub and Todak 2017)</li> </ul>	<ul style="list-style-type: none"> <li>• 10% (statistically non-significant) <b>reduction</b> in complaints (Ariel et al 2016b; see also Grossmith et al 2015)<sup>10</sup></li> <li>• 71% <b>increase</b> in use of force (Ariel et al 2016a<sup>11</sup>, see also Henstock and Ariel 2016)<sup>12</sup></li> </ul>

<sup>9</sup> Please note that this chart does not represent a systematic review, although two of the cited studies (Ariel et al 2016b; Cubitt et al 2015) are systematic reviews of evidence on the impacts of BWV.

<sup>10</sup> There was a very large (93%) reduction in complaints in the forces involved in this study; however, there were no statistically significant differences between the ‘treatment’ (wearing BWV) and ‘control’ (not wearing BWV) arms of the trial. The authors argue that ‘contagious accountability’ from the presence of BWV affected both arms of the trial, resulting in better behaviour of all officers.

<sup>11</sup> Ariel et al argue that the increase has to do with officer discretion rather than presence of BWV.

<sup>12</sup> Henstock and Ariel argue that this is an increased transparency outcome (officers more likely to report using force when they know the incident has been recorded) rather than actual increase in use of force; and in this case only during the handcuffing procedure.

<ul style="list-style-type: none"> <li>• 50% <b>reduction</b> in use of force during arrests (Henstock and Ariel 2016; White, Gaub and Todak 2017)</li> <li>• 65% <b>reduction</b> in injuries to persons arrested</li> <li>• 28% of content potentially usable in justice system processes/court cases (Grossmith et al 2015)</li> <li>• 3x <b>increase</b> in convictions in IPV cases (Morrow, Katz and Choate 2016)</li> </ul>	<ul style="list-style-type: none"> <li>• 15% <b>increase</b> in assaults against officers (Ariel et al 2016c)</li> <li>• 3x <b>increase</b> (statistically non-significant) in injuries to officers during arrest (Henstock and Ariel 2016)<sup>13</sup></li> <li>• 6-10% of content potentially usable in justice system processes/court cases (Calgary Police Service, correspondence)</li> <li>• Mixed results in IPV outcomes (Morrow, Katz and Choate 2016)<sup>14</sup></li> </ul>
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While many of the authors who have identified negative/unintended consequences from BWC have developed plausible explanations as to why the technology remains a net-positive investment (see especially Henstock and Ariel 2016, who have directly addressed the cost-effectiveness question), we need to remain cautious about these positive interpretations of negative results.

In general, the evidence suggests that BWC are mostly effective at achieving aims such as reductions in use of force and reductions in complaints in ‘low discretion’ models – when officers’ ability to turn the cameras off is highly circumscribed and internal oversight on levels of use is substantial. When officers are given additional control over when and where to use cameras (or, as has happened in many jurisdictions, when they go against orders to turn cameras on), null or negative effects from deployment of the cameras appear more likely. In other words, deployment of cameras under higher discretion conditions often has little or no effect, or may even work contrary to the intended purpose.

However, while reducing discretion may have positive impacts on complaints and use of force, it may also have negative impacts on quality of interactions. For example, the Toronto pilot (TPS 2016) suggested that BWC might have led to possible reductions in the use of officer discretion, to the detriment of people with whom the officers came into contact. Officers with BWC were more likely to arrest or give tickets than officers without, suggesting that officers wearing BWC felt less able to make a lenient decision; the converse of this of course is that officers wearing BWC indicated that they were more likely to do everything ‘by the book’ and proceed cautiously in citizen interactions (TPS 2016). If circumscribing officer discretion is a goal of deploying BWC, this effect may be seen as a positive; however it is equally reasonable to argue that this could have negative consequences for both officers and citizens (such as increased arrests or tickets for minor infractions). Interestingly, a different effect was identified in the London BWC pilot (Grossmith et al 2015), where arrests for violent crime were reduced for BWC-wearing teams compared to non-BWC teams.

Any improvements from BWC may also disappear after the initial phase-in period (White, Gaub and Todak 2017), as officers become more comfortable with the technology and learn to work within/around its restrictions on behaviour. Outside of complaints, it is also hard at this stage to gauge the impact of BWC on citizen perceptions. Studies by the Met in the UK (Grossmith et al 2015), in Toronto (TPS 2016) and in the US (Crow et al 2017), show generally positive community views toward BWC. However, Crow et al and Grossmith et al note that these positive views toward BWC tend to correlate with positive views about the police in general, rather than necessarily being caused by the introduction of BWC. In turn, more negative views about the police also tend to correlate with more negative views about BWC, meaning that introduction of BWC may not improve the opinions of groups or individuals who currently have more negative views relating to police.

A similar issue was identified in Toronto, where the community was largely positive about the technology, but community members who had had contact with police wearing BWC were less positive about the technology than those who only knew about it in the abstract. This further suggests that the technology may have an initial ‘honeymoon’ period amongst those in the community who believe it is a solution to

<sup>13</sup> The sample of injuries in this study – 7 in the treatment arm and 2 in the control arm – is too small to generalize but does raise a question about the degree to which officers feel able to defend themselves when wearing BWV.

<sup>14</sup> This article tested two sets of IPV cases against cases where cameras were used, and found strong effects in one instance and weak/mixed effects in the other.



accountability issues, but over time sentiments toward the technology may become less positive as people experience the negative aspects of its deployment. Emerging work (Goetschel and Peha 2017) also suggests that many police officers (albeit in the American context) believe BWC limit their ability to engage with people in a genuine way, which may help explain this 'negative' effect of contact with BWC.

Overall, based on available evidence, there is adequate reason to believe that deploying BWC could create as many problems as it solves while also increasing policing costs. The 'success' or not of BWC appears to hinge on the quality and oversight of the deployment of the technology, as well as clarity on the goals of the deployment. It seems likely that any deployment of BWC will reduce formal complaints at least in the short term, and cannot help but having some additional evidentiary value at court. However, the additional cost and workload involved in deploying BWC may not be justified, especially given the potential negative impacts.

### Cost-effectiveness

At least as important as the effectiveness question, however, is the question of cost. Based on the cost model provided to you in June 2016, establishing the infrastructure for approximately 50 cameras, with about 25 deployed at any given time, would result in approximately \$875,000 per year over a five year period in direct costs, and a similar amount in indirect costs such as officer and staff time. The model suggests that when staff time and ancillary costs are accounted for, the total annual direct and indirect cost would be in the region of \$1.6 M per year. As noted above, introducing BWC could provide very good results – substantial reductions in complaints, additional evidence for court proceedings, and reductions in use of force and assaults against police. However, none of these results are guaranteed, and negative impacts of BWC are well within the realm of possibility. BWC is therefore, at this stage, a high-risk, medium-reward technology rather than a sure thing.

Of course, we should not just consider the cost of BWC and its potential positive impact, but comparatively consider what else the funding (which would presumably be new dollars, from the City) could be used to support. \$875,000 over 5 years, or just under \$4.4 million in direct expenditure could fund a wide range of initiatives or improvements that could increase HRP capacity to prevent, detect and solve crime; to support victims of crime; to improve relationships with the community; or even to improve our technological capabilities in other ways. Without much effort, we could easily develop a long-list of areas that we would want to better develop internally – or which we would encourage the City to develop externally – in support of our public safety mission, before asking the City to set aside \$4.4 million to trial BWC technology, and committing to a long-term on-going cost.

### Policy

I have limited expertise in the law surrounding this technology, but am adequately confident that there are many unsettled questions surrounding the impact of BWC deployment on the legal and justice systems. In terms of the Canadian context, the legal and policy basis for deployment of cameras and retention of data; the magnitude of impact on courts, trial times/delays, officer and staff time; and citizen privacy concerns (both legal and in terms of opinions and public sentiment) related to BWC are all poorly understood at this time (Laming 2017).

Even if we were to undertake the substantial internal policy development required to start using BWC at HRP, only years of actual use of BWC in criminal and complaint cases, and subsequent court and tribunal rulings, will provide the required guidance on how this technology should be used. Collective experience over time will also be the only way to determine how much work BWC will create or reduce, how records should be kept, and whether the data from these recordings is public or private in nature. The question for HRP is whether we experience the development of BWC policy directly (by introducing it at HRP) or vicariously (by continuing to monitor its use elsewhere). Given the questionable cost-effectiveness of the technology, the vicarious option seems prudent for the time being.

A solution in search of a problem?

The June 2016 report claimed that it is not clear what problem we would be trying to solve with BWC at HRP. This sentiment has also been reflected in critical research literature on BWC (Palmer 2016). However, I do not necessarily agree that we do not have a problem in need of a solution, as the June 2016 report suggests. As identified in that earlier report, BWC may be deployed for any or all of the following:

1. Public confidence and transparency (especially high risk events such as ERT or PSU deployments)
2. Behavior modification (both officer and public)
3. Collection of Evidence
4. Non-criminal litigation

It is true that in HRP, as elsewhere, police use of force has been declining for a number of years; officer injuries relating to altercations with offenders have remained stable year-on-year; and we have not identified a substantial issue in on-scene evidence gathering (i.e. relating to evidence that would have otherwise been caught by BWC). We have also just implemented Verbal Judo training, which similar to BWC is intended to reduce complaints and use of force, thus having impacts on public confidence, behaviour modification and litigation, so the additive effect of BWC on these areas may be limited.

Nonetheless, in the past year, we have clearly faced challenges relating to public trust and confidence arising from for example a high-profile complaint against a police officer for excessive force on-duty, and the community's concerns around street checks. Looking at professional standards statistics, 2016 also saw what appears to be an increase in formal and informal complaints against the police (in defence of the earlier report from Jim and Gursharan, it was written before these issues had fully become known).

However, from the available literature, there appears to be no strong reason to believe that BWC would necessarily solve these kinds of problems, and even if BWC provided a partial solution to public trust and confidence issues, it may introduce other (expected or unexpected) consequences. Moreover, as noted above in relation to cost-effectiveness, there are a wide range of areas for improvement at HRP for which would seem at this stage to be a higher priority for nearer-term implementation.

### Considerations on the future of BWC

There is a prevailing sentiment in much literature on BWC that all police officers in routine uniformed day-to-day duties such as patrol, traffic and emergency response will wear BWC in the future. This may be the case – the technology is likely to get less expensive over time, and citizens or courts may increasingly expect police to be wearing BWC in certain situations. On one level, an argument could be made that it's better to get the technology into HRP in advance of an event, court ruling or legislation that requires it, so that officers become familiar with it and place our organization 'ahead of the curve' on this technology (without being forced to adopt it in a politically-charged situation).

However, much of the equivocal evidence in the literature relating to the value of BWC appears to have to do with unique circumstances in each jurisdiction that deploys it. Some communities, and some police services, may be more inclined to accept and use BWC technology as part of a consent-based community policing model, which may enhance its effectiveness. In others, community members (or specific groups in the community), officers, or both may be resistant to the technology for justifiable reasons, which may reduce its effectiveness. At the moment, we do not know where either public or police sentiment stands on the issue, and before any deployment of BWC this would be essential information.

Additionally, I do not believe that BWC are an inevitability for all police officers in public-facing uniformed roles. Rather than expecting that all patrol officers in most large police forces will be wearing BWC within the next few years, I would consider it just as likely that BWC are used in a "limited deployment" model for specific kinds of duties as the technology progresses. Given the privacy and procedural concerns surrounding BWC there will be good reasons to substantially limit their deployment. Analogously, as with the proliferation of closed-circuit television (CCTV) cameras in decades past, in the Canadian context these

have been deployed more sparingly than in other countries, and we have of course just recently seen the mixed public sentiment relating to the possible installation of CCTV in public housing areas in HRM.

Of course, a limited deployment model will still require a certain amount of infrastructure – and that infrastructure has a high fixed cost whether we deploy 10 or 100 cameras at any given time. Additionally, as the earlier report from Jim and Gursharan suggests, once we begin to develop any BWC capacity it will be hard to ‘roll back the clock’ and demands for the technology may expand throughout the organization. Again related to cost-effectiveness, it is also likely that the technology will rapidly evolve, meaning that in a few years the available technology should be much better and less expensive than what is available now. If we were to pursue a limited deployment model (using BWC in those specific situations where we were confident the evidence supported it), it would therefore make sense to wait until the equipment and infrastructure were less expensive.

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Appendix B

## MEMORANDUM

Date: June 8, 2016  
To: Chief Jean-Michel Blais  
From: Inspector James Butler and Gursharan Singh  
RE: Executive Summary- The deployment of body worn cameras for the Halifax Regional Police

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Chief,

I have been asked to research and evaluate whether the use of body worn cameras (BWC) is a viable option for our officers. HRP staff has read numerous reports, articles and have completed site visits with three large urban agencies. During our research we found that we have many more questions than hard answers from those who have gone before us.

This will all come down to one question; **“Is the deployment of body worn cameras on HRP the right decision for the Halifax Regional Municipality?”** We have to determine the exact problem we are trying to solve.

In our research, we have discovered that this is a very complicated question to answer. In order to make an informed decision, many areas will need to be considered and we have reviewed the various options for your consideration.

A number of high profile incidents involving law enforcement agencies and their citizens in the United States of America (**USA**), has created significant interest in those communities about the accountability of their police officers. The response to these concerns, in some cases, has been to deploy BWC on officers to record interactions between officers and members of the public. At this point, there is no clear answer on the effectiveness of BWC in the USA as the reasons for deploying them are unique to each agency.

The utilization of BWC has also created significant interest in **Canada** among police agencies, the communities they serve and the public in general. Three large urban areas have deployed BWC in their communities. They are Edmonton, Calgary and Toronto Police Services. We have met with a variety of senior officers, project managers and technical managers within these agencies. We were provided with documentation to support their particular pilots including policies, training documents and project charters. In our research, we will focus on these centres, as well as reference the research done for the RCMP.

In **Toronto**, the “nationally asked question” on the value of BWC was part of their decision process, as it is for all Canadian agencies. Other factors such as a community engagement review report in 2013, PACER, and a report written in 2014 by the Honorable Frank Iacobucci. This was entitled “Police Encounters with People in Crisis”, and it helped frame the decision to undertake a pilot program on BWC. TPS is still involved in their pilot program and cannot offer an opinion as to the success of the pilot at this time. Their advice was to wait until they have completed their pilot and have access to their lessons learned on the successes and issues of BWC in TPS.

We have also met with both **Edmonton** and **Calgary** Police Services. The EPS started a pilot program in the fall of 2011 and finished in the fall of 2014. They wanted to have enough objective evidence to form all future decision of BWC. They used a 4 part test in looking at BWC:

1. Necessity-do we have a problem?
2. Effectiveness-does this solve our problem?
3. Proportionality- is the change worth the effort needed to solve the issue?
4. Alternatives- are the other means to this end?

CPS had started a pilot program in 2014 and the pilot was completed in 2015. They were in the process of full deployment of BWC and preparing to purchase as many as 1100 devices. Their pilot had 200 cameras. They were very positive about their pilot program and the benefits of BWC.

They started a program for 5 key reasons:

1. collection of evidence,
2. enhance transparency, public trust and confidence,
3. enhance officer accountability and professionalism,
4. protect officers from unfounded allegations of misconduct
5. de-escalate a situation

The **RCMP** had asked that DRDC-CSS assist them with studying the use of BWC for their agency. We were provided with a report entitled "Scoping, Technical, and Operational Evaluation of Body Worn Video CSSP-2014-TI-2031 Final Report". This was a very comprehensive report detailing many benefits and limitations of BWC. They also have provided HRP with an extensive literature review on BWC. There is no defined way forward for the RCMP at this time, as testing is still ongoing.

Considering all the information available to us, the **primary categories** for the implementation of BWC are:

1. Public confidence and transparency (especially high risk events such as ERT or PSU deployments)
2. Behavior modification (both officer and public)
3. Collection of Evidence
4. Non-criminal litigation

In reviewing all the information, these 4 themes seem to guide the conversation. There are more reasons noted by various agencies. A long standing distrust or a single interaction with serious consequences, are also catalysts in some areas and communities.

HRM and HRP ask the public "**How are we doing?**" through citizen satisfaction surveys on a regular basis. This was done from 1999-2013. These results are made public and considering the role of police in the community, we have a very strong and positive response from our public.

In the six main categories from 2009-2013, the responses are as follows:

- Quality of Policing provided
- Satisfaction with Police Visibility
- Confidence in Emergency Response
- Satisfaction with neighborhood peace and order
- Feeling Safety where you live( home community)
- Feeling of Safety where you go for shopping, recreation and work

While these do not specifically address public confidence, one would assume that if the public did not have confidence in their police officers as a group, the level of satisfaction would not rise over this period.

In HRM, we have a **layered and effective governance model for police officers** and their behavior. We are a "rank based" organization and have a legal responsibility to address any observed behavior that is unacceptable.

In HRP we have as many as 140,000 calls for service each year. They are documented occurrences when our officers have contact with the public. This does not include the thousands of undocumented contacts

we have with citizens. It could be argued that we contact the community we serve as many as 150,000-200,000 times a year.

We keep statistics in our Professional Standards office on the number of internal and external complaints made about our officers each year. There are three areas of note as it pertains to BWC;

- public complaints over a 5 year period
- internal complaints
- Criminal complaints made against police officers that have resulted in criminal investigations.

The second main area of discussion on the deployment of BWC is for **behavior modification**, either with the officer or members of the public. The impact will be that officers are more professional and not be involved in excessive uses of force. It will also impact the behavior of those who may act in an aggressive manner towards a police officer.

In EPS they had little evidence to support the theory that it changed behaviour. Research is needed long term to study the impact (at least 5 years) and many factors will contribute to a change in behavior. CPS felt that the use of BWC assisted in early complaint resolution. Senior officers were able to address complaints made by the public at earlier stages to resolve the complaint. In TPS, their pilot was underway and they did not have any information to suggest an impact on behavior. Several months later during his presentation at a conference, there was no information to suggest an impact, although their pilot was not completed and report written.

The **collection of evidence** is also thought to be a benefit of BWC. In EPS, the results were mixed. Some thought it lead to early resolution with guilty pleas. Some thought it was detrimental as it did not support officer's observations or it impeded the process due to delays with technology.

EPS also noted some issues with using BWC as evidence. The process of having to supply video to the crown prosecutor was adjusted and they did not supply it in disclosure until asked, in order to reduce amounts transferred. The process to redact and vet video is also costly. A robust policy will be needed if implanted full time.

In CPS, they offered that only 6-10% of all video goes to court and they did not expect a lot of vetting. They said officers will mark at the time and they have support staff to vet. They also have 2 identified crown prosecutors who do all the BWC trials. They thought it took an officer an hour to mark an hour of video.

In TPS, they also have staff they redact video for court. They estimate it may take as many as 4 hours to review and edit 1 hour of video presented by officers. They were unable to provide a cost of the time spent on officers reviewing video and support staff vetting, copying and disclosing for court. Neither CPS nor EPS could state a cost with certainty either.

We have not discussed the impact on BWC on the court process with other agencies or crown prosecutors in those areas. I have discussed this with PPS in very general terms and more conversations will be needed. I can state that PPS is not prepared to accept a large increase in video. This will require staff to watch video and technology to support it. This does not account for the larger legal community and their ability to manage this information. It will also impact the courts themselves and the use of BWC will have an impact on the court process, delays and length of trials as well as technology challenges.

While in most cases, the actions of police agencies and their officers will result in a criminal proceeding, there are **non-criminal processes and litigation** that have become part of daily business. This will include, but not limited to requests under freedom of information legislation, Police Act or Human Resources process and civil proceedings.

Citizens are becoming more aware of information collected by government agencies. They have utilized Freedom of Information and Protection of Privacy (FOIPOP) legislation to request information collected

about them for a variety of reasons. This will increase the demands on staff who currently process these requests, as well as staff who manage video collected.

We also have a number of processes that guide us in employee relations through contractual issues, Workplace Rights and Human Rights. These issues or complaints can lead to non-criminal proceedings and in some cases would lead to BWC as part of the proceedings. While not collected for that purpose, this would be an unintended consequence.

HRM is also subject to civil matters where a member of the public wishes financial compensation for a perceived wrong by an employee. The use of BWC by HRP could capture the actions of a police officer, or another HRM employee and the content would be subjected to these proceedings.

HRP has 2 civilian employees who **copy all videos for disclosure**. This does not account for vetting or redacting, which would occur on a case by case basis and does not occur on a regular basis. If we deployed BWC we will need an increase in staff to accommodate an increased workload. This only reflects copying of a video and not marking and vetting a video. We do not currently remove features from a video as part of our course of business. This would require training and software.

We are moving towards eDisclosure in HRP and are exploring the disclosure methods best suited for our environment. The use of BWC and increased disclosure of video will have an impact on this process and will need to be considered. The impact on the court process will also be significant and will require more input from other stakeholders.

The **training model** from the agencies noted was varied. Some have eLearning, training materials and staff available to assist with the functionality of the BWC. Others have also incorporated legal and privacy training and have provided as much as 28 hours of training to front line officers. I would recommend that if HRP deployed BWC, we would incorporate all methods of training used by other agencies.

We would need to provide functional training on how to use the devices. This will include turning on/ off BWC, attaching to uniforms, but also how to review and mark video captured during the course of their duties. Training videos as well as reference material will be needed.

**Legal and privacy** issues will be need to be considered in HRM. PPS will have to be engaged in providing a legal framework on when BWC could and should be used in the collection of evidence. We will also need to give training on any privacy issues on public versus private space. There are also incidents when the safety of officers will be of paramount concern, so a BWC would not be turned off. These instances can be clearly defined and officers should be trained to consider all factors.

The need for a strict **governance** model will be vital to the success of the use of BWC. There are a variety of models on governance. To purchase this equipment and deploy without any policies regarding privacy of legal issues will result in many more problems than if a sound policy was implemented.

There will need to be strict **policies** on who will be deployed wearing a BWC. Plain clothes officers should be prohibited at all times for these types of deployments. The "triggers" for turning on and off the BWC should be consistent and policy based. Even incidents where an officer has discretion should be framed with policy. Legal issues that will be faced in court much also be addressed in policy.

A number of officers and union associations have also asked about the use of the video for **discipline or punitive** measures. It could and should be used for complaint resolution, but some are concerned about "fishing" for misconduct. All this would have to be covered in the governance model.

For BWC system, there are several options available for **storage**. These options include Storage Area Network (SAN), Network Area Storage (NAS), and cloud based storage. None of the Police Services that we site visited are using cloud storage services. SAN storage is deployed by Toronto, Calgary and Edmonton Police Services.

Both SAN and NAS provide the built in fault tolerance, hardware redundancy, and the options to expand storage without downtime. Each technology has its own advantages and disadvantages.

For the video storage purposes, NAS storage offers a better ROI. The cost of a NAS is significantly less than a SAN. The estimated storage cost for a SAN is 3.52 million dollars (deployment of 100 cameras) and a NAS is estimated to be 1.8 million dollars. A total of 1.8 Petabytes (1758 Terabytes) of storage space is required for 12 month retention. This does not account for annual storage growth due to retention of video evidence that has not been presented in court. For each one megapixel bitrate increment, the storage cost increases by approximately 65 percent.

A thorough **technical and operational evaluation** of various BWC and the Body Worn Video (BWV) system was done at the RCMP's depot in Regina. The selected BWC were evaluated based upon scenario testing, technical, and tactical/user capabilities. Several capabilities were considered in their testing.

A holistic approach should be taken in order to implement BWC / BWV system. This includes creating specifications not just for the BWC but also for the software required for searching videos for FOIPOP, evidence management, vetting, redaction, policy based video retention management, backups.

We also have to consider the deployment of BWC against the **HRP 10 year Strategic Plan**. We have laid the groundwork and provided notice of what we, and our citizens, have decided is important in going forward.

How would the deployment of BWC affect or support our core values? I would suggest that the primary reasons for deployment of transparency, behavior modification, the collection of evidence and non-criminal litigation support our core values. I do not see anything regarding the use of BWC that would be contrary to our core values. If done for the noted reasons, it would support our core values. There is no information to suggest that BWC will deter or inhibit HRP from realizing its' priorities or core values.

If BWC support our core values and priorities, do we start a **pilot program**? There are **three general options** for BWC.

**1-**If we deployed on a **large scale**, the deployment model would be two ways. The first is to issue every Patrol officer with a BWC. Since any type of deployment would need the training and governance, the costs for devices and storage would be a major difference.

**2-**In the **second option**, in a limited deployment, the costs would be less on devices and storage. If we proceeded with a BWC pilot, I would recommend this measured approach. We would still need to have training and a governance model in place, as well as a limited infrastructure for storage and retention periods but the costs would be much lower.

**3-**The last option is to **defer the decision** until more information is available from other Canadian agencies. Their recommendation to us was to wait and see the results of their BWC pilot, and offered to provide us with their reports. It is essentially free lessons learned. They have a very comprehensive program. In any decision, clear, open and honest communication will be the cornerstone of success.

We have provided **preliminary costs** for a pilot project using BWC in HRM. It should be noted that these costs are based on the following assumptions, information provided by other agencies and information available in public sources. We have not approached any vendors for costs/estimates.

This was done with a variety of assumptions and considered a number of factors including:

- Daily costs with officer
- Copying/costs
- Annual maintenance and support costs
- Training



- Governance
- Storage

**Note:** a detailed breakdown included on attached spread sheet [IN ORIGINAL REPORT]

In considering all the information we have reviewed and discussed in this report, I come back to the very basic question, “**What problem are we trying to solve?**”

I do not see an issue with **transparency or public confidence** in the Halifax Regional Police. There is no information available to suggest that the use of BWC in HRM will have any significant impact on the **officer’s behaviour**, or on that on some members of the public. It is common sense that a video of a crime would greatly enhance the prosecution of that offence and lead to early case resolution. What is not clear is the **evidentiary impact** of a BWC program. The same considerations for the collection of evidence for criminal proceedings, would apply to **non-criminal litigation**. In most cases, the video will be of interactions between officers and the public that will not capture evidence, misconduct or the actions of any citizen that would be admissible in any proceeding.

In my view the four main categories of reasons do not support the deployment of BWC in HRM. While there is no negative impact on our core values and priorities, there are no identified future benefits based on these categories. This will leave us with the other, non-measurable reason for BWC-it is the future of policing.

Many believe that the future state of police accountability to the public involves the use of BWC. It is one more step in the evolution of modern policing. This may be the case. I do not know what the future holds or what critical incident that may occur here that will cause us, and our citizens, to say they want officers deployed in BWC. I can state that today, no such catalyst exists, based on the criteria used in many cases.

If asked “what problem will we be solving in deployment of BWC?”, I cannot provide an identified problem. I respectfully suggest that the evidence is still unclear on the value and need of BWC in HRM. Until we determine the success or failures of those who are in the process of BWC programs in Canada, I recommend we wait and defer any decisions until we have had the benefit of more information and evidence on BWC.

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Inspector James Butler  
Information Management Officer