

Measuring What Matters: Performance Measurement in Local Government Operations



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Executive Summary

Analyzing and acting on operational data can lead to major strides in the area of business improvement. Operational data is information that is tracked and provided from dispatch centres, mobile terminals, and databases – just to name a few. These real-time data streams coupled with the ability to properly ingest, process, and analyze the data, grants organizations the power of measurement to help achieve high performance and reduce inefficiencies. Nowhere is this more promising than in local government operations where smooth operation of its services is essential to the backbone of a healthy community.

This study examines how key performance indicators (KPIs) play a role in improving local government operations. It shows how performance measurement and operational data empower public sector managers with the essential tools required to make evidence-based decisions. This, in turn, results in a fiscally accountable and efficient local government that meets the needs and expectations of its taxpaying citizens. Wall and Martin (2003) places this into greater context:

If actions are simply to obey instructions, accountability only requires that those instructions have been obeyed. If actions require the exercise of some discretion (to make choices, to take decisions) then to be accountable requires also an explanation. Hence, the greater the level of information these bodies provide about their operations and performance, the greater is the extent of that explanation, thus attaining what could be regarded as enhanced levels of accountability (Wall and Martin, 2003, p. 492).

Introduction

This study is based on the City of Surrey Fire Service's (SFS) recent experience in developing KPIs and other strategic tools to "measure what matters." While this case study focuses on SFS, its findings are universally important and are beneficial for other local governments where accountability and high performance are priorities. This study, framed on a publication called *The Right Decision: Evidence-based Decision Making for Government Professionals*, is an account of how people, processes, and products were enlisted to support evidence-led operations for the fire service. It also explains the thought process that drives organizational development through the use and application of KPIs in the context of a local fire service in British Columbia, Canada.

Furthermore, this study details the method used in the planning, implementation, and administration of KPIs, and how those metrics helped increase performance. It explains how KPIs were developed through the use of such business improvement tools such as the Fire Officers Dashboard (Scorecard), and how it is used to enhance staff productivity by making it possible to quickly and accurately access reports.

The goal of this study is to describe the genesis and evolution of the performance measurement approach.

What are Key Performance Indicators: Why do they Matter?

There sometimes is confusion about what, exactly, a KPI is because its meaning and intent tends to get lost in a fog of performance management industry jargon. Some of those words include 'strategic theme', 'key result indicator' (KRI), and 'key result area' (KRA). As a result, many organizations are unknowingly working with the wrong measures, many of which are incorrectly labeled as KPIs.

For greater clarity, performance measures may be categorized into four types:

1. Key result indicators (KRIs) tell you how you have done in a perspective or critical success factor;
2. Results indicators (RIs) tell you what you have done;
3. Performance indicators (PIs) tell you what to do; and,
4. Key performance indicators (KPIs) tell you how and where to improve performance.

The type of performance measure often mistaken for a KPI is the key result indicator (KRI). Key result indicators include information such as employee satisfaction or return on capital information. It is the result of many actions that provide a clear picture of whether or not the organization is headed in the right direction. Key result indicators are typically applied over a longer period of time than KPIs thus they are reviewed on monthly or quarterly cycles. Conversely, KPIs are reviewed on a daily and or weekly basis (Parmenter, 2015, pp. 96-108).

Falling in between KPIs and KRIs are performance indicators (PIs) and results indicators (RIs). While PIs can include important non-financial related information such as complaints and late responses, they are not central to the organization. Rather, they complement KPIs and are shown on the scorecard for each division, department, and team. Results indicators or RIs cover anything to do with financial performance measures (Parmenter 2015).

In summary: a KPI is a forward-looking metric which tells management and staff what to do to dramatically increase performance (Barr 2017). It represents a set of measures that focus on those aspects of organizational performance that are the most critical for the current and future success of the organization. As the KPI looks to the future, it is inherently valuable for continuous learning and improvement as it derives insights from a foundation of evidence-based decision making. Most other measures focus on the "rearview mirror" as they are past indicators that measure events of the last month or quarter.

There are seven main characteristics of a KPI:

1. they are measured frequently (e.g. daily or 24/7);
2. they are non-financial measures;
3. they are acted upon by senior management on a daily or 24/7 basis;
4. all staff understand its measure and what corrective action is required;
5. that responsibility can be tied to the individual or team;
6. that the KPI has a significant impact on the organization; and,
7. that positive movement affects all other performance measures in a positive way.

Key Performance Indicators should also clearly link to the strategic objectives of the organization and, as a result, help to monitor the execution of the business strategy. One of the best ways to present performance measures is through a dashboard.

What Exactly are Dashboards?

It seems everybody wants a dashboard these days. They are a popular method of presenting information for at-a-glance monitoring of the health of an organization (Few, 2013, pp. 1-3). They are wonderful tools for visualization and comprehension however very few do this well. When designed properly, dashboards engage the power of visual perception to convey information quickly and efficiently, with precision and clarity. If designed poorly, they can be misleading and decision-makers will lose confidence in the tool, its message, and the messenger. Mismanagement of this tool is an unfortunate result as it can lead to missed opportunities to improve performance within an organization.

Like photographs, dashboards can tell a story. The visual attractiveness of a dashboard can show a viewer an organized summary of the good work being done. However, a poorly-designed dashboard can sink the message by using gimmicky infographics that include such design blunders as bubbles, speed gauges, and stop lights. American statistician Edward Tufte calls these “chart junk” (Tufte, 2006, pp. 152-153). These graphics can be a dangerous novelty as they are of limited value and can be potentially misleading or meaningless for the viewer. As is most often the case with experimenting with new technology, it is important to temper the excitement about using dashboards by ensuring they are used properly to deliver the message. Some good examples of cases that merit the use of a dashboard: realizing operational efficiencies, reducing workplace disease and injury, or improving client experience.

Planning and Development: The Surrey Fire Service Experience

A project management approach was utilized to provide the necessary framework for the development of KPIs and the dashboard. The first step was to create a project charter which is an official, written document that acknowledges the existence of the project. It also commits resources to the project, appoints a project manager, and provides clear objectives, deliverables, and project goals.

The second step was to develop the goals and objectives for the project to keep the overall effort focused. As Surrey Fire Service is the example for this case study, we’ll look at the overall goals of the department:

- Provide a timely response for all services through a highly trained, skilled, and efficient force;
- Reduce the incidence of injury, loss of life, and property damage by providing public education programs, fire cause investigation, and prevention services to secure public safety and code compliance;
- Conform to government acts, regulations, city bylaws and policies thereby mitigating liabilities/losses to the city’s assets attributed to personal, property or environmental litigations;

- Be responsive to local and global economics so that the department’s service model reflects the needs of the community it serves as well as the changing technologies that influence cost-effective delivery of services to recognized standards;
- Acknowledge and seek to balance the interest of private and corporate clients, employees, suppliers, and the public at large and to take into account their differing social, cultural, and economic characteristics; and,
- Maintain the highest standards of integrity in the conduct of all phases of the fire service business.

PROJECT GOAL

The goal of the project was to develop KPIs for the Fire Officer’s Dashboard by using a business intelligence tool with operational metrics specific to the fire service with a focus on the suppression division. It is designed to measure team (both shift and crew) performance and offer a clear and objective description of job performance along with supportive evidence of organizational performance.

The desired outcomes included:

- Update high-level situational awareness;
- Identify and focus on particular items that called for attention (update awareness of this item in greater detail and determine whether action is required);
- If action is required, access additional information that is needed, if any, to determine an appropriate response; and,
- Respond.

Project Deliverables

- Develop an inventory of business lines in existence within the fire service, ensuring all relevant areas are covered;
- Construct and administer worksheets to identify and gather KPIs;
- Determine what information is essential for managers to know in order to effectively manage their operations;
- Ensure that performance indicators are aligned with the organization’s strategic plan, and correspond with the city’s values;
- Formulate metrics and calculations;
- Perform data validation;
- Conduct design reviews of the dashboard;
- Engage developer for dashboard design and development; and,
- Test and deploy dashboard.

Development of Performance Measures

The next step to provide framework for the creation of the KPIs and the dashboard was the development of deliverables and success criteria. This involved refining the objectives by ranking them into specific outcomes. After that, the focus shifts to the completion of the worksheets for the

requirements-gathering stage. Once finalized, the worksheets provided structure for the development of the KPIs.

The 12 performance measures identified early in the planning process included:

1. Staffing (dept. score)
2. Annual proficiency training
3. Inspections
4. Hydrant maintenance
5. Incident reporting
6. Smoke alarm verifications
7. Monthly skills maintenance training
8. Secondary suite reporting
9. AED uploads and reporting
10. Inspection pamphlet delivery
11. Daily truck checks
12. Perfect attendance rate (dept. score)

Significance of Performance Measures to the Organization

Let's take a closer look at these performance measures that are considered key to the ongoing success of the fire service:

The City of Surrey has a long-time practice of monitoring staff attendance for all its departments, including fire service. It's important that close tabs are kept on these numbers because of cost and operational implications such as backfill and meeting minimum staff levels for calls. The staffing metric is monitored frequently to determine sick and WCB absence rates which help keep occupational health and injury rates in line with city objectives. There is a declining rate of workplace injuries and sickness (when looking at time loss occurrences per 1,000 fire service incidents) even though calls-for-service are increasing:

The department enjoys an excellent attendance rate and, thanks to the key performance metric that focuses on current and future information, any changes in this trend can be quickly acted upon. Feedback is important: "Follow-up gives credibility; no feedback means atrophy; negative-only feedback encourages game-playing" (Likierman, 1993, p.20).

All career firefighters must satisfactorily complete yearly drills that include firefighter safety, fire ground actions, self-contained breathing apparatus (SCBA); auto extrication; and must additionally complete drills in driving/operating trucks and pump operations. Fire officers must complete incident command scenarios and practice MAYDAY procedures. Adhering to these training standards set forth by the National Fire Protection Association ensures a safe and effective firefighter cadre as well as maximizes the individual's state of readiness in dealing with any emergency incident in the City.

Regular building inspections to ensure properties are compliant with the *British Columbia Fire Code* and related provincial statutes are instrumental in helping drive down rates of fire in the City of Surrey. For example, the commercial fire rate per 1,000 structures has decreased by 50% from 11.8 in 2007 to 5.2 in 2016 even during a period of an increase of new commercial buildings.

During these routine inspections and related coaching sessions, firefighters and fire prevention officers hand out pamphlets containing important fire safety tips and advice. Pamphlets are a great tool for reinforcing lessons learned through this form of community engagement, and provide citizens with an important reference guide. They are handed out to property owners and/or business occupiers during all routine fire inspections, which is why it's important to track, quantify, and score overall numbers of pamphlets and educational sessions delivered to ensure all areas in the City of Surrey are serviced.

As is the case with many other Canadian cities, fire hydrants are a crucial part of the City of Surrey's fire prevention system. Maintaining and repairing the hydrants located on public land is taken care of by the City's engineering staff and firefighters. While regular maintenance ensures the hydrants are working properly as they are a crucial part of fire suppression, it also provides an opportunity for firefighters to familiarize themselves with their locations. These maintenance visits also allow for community engagement to occur; citizens – mostly children and youth in this case – can approach and talk with a firefighter, creating another window to engage the public about fire safety.

Having complete and accurate data recorded from all incidents is vital for sound decision-making at the executive level. This regular auditing ensures the reliability of metrics needed to drive the Fire Officer's Dashboard. The whole point of having key performance indicators is to provide error-free operational data so the organization can achieve both high performance as well as reduce inefficiencies. This has worked well for the fire service to produce high-quality fire incident data that supported evidence-led fire operations, as well as providing the basis for university-level research. The information is so reliable that studies based on it have resulted in the creation of numerous publications through the University of the Fraser Valley. The results have led to significant improvements in fire safety in the province of BC, nationally and internationally.

One of the tasks duty crews perform is verifying and recording the presence of a working smoke alarm in residential properties. The results from this effort have been impressive. From January 2006 to August 2017, there has been a 76% decrease in the rate of residential fire deaths and injuries per 10,000 residents in Surrey. During this same period, there has been a 59% decrease in the rate of fires per 1,000 residential structures in the City. This is an extraordinary decline in the rate of residential structure fires considering that from January 2006 to August 2017 there has been a 29% increase in the number of residential structures in Surrey.

Surrey Fire Service requires its crews to complete a minimum of seven hours of skills maintenance training per month. These hours are over and above any formal training course scheduled for the crews and include a first-responder drill as well as an in-station session on a topic identified in the master training schedule. The remaining five hours are at the Captain's discretion and dependent on what best suits the needs of their crew or geographical area (e.g., high-rise procedures in the city centre). The training provides crews the skills necessary to stay on top of the ever-changing requests for service.

Another task crews perform is reporting the existence of secondary suites to city authorities. While these suites support the City of Surrey's affordable housing goals by both providing a rental housing to a range of tenants and a "mortgage helper" for homeowners who rent out these self-contained living quarters in their homes, they must meet city policy and be in compliance with fire safety

regulations. The existence of unauthorized or illegal suites may pose life safety hazards to the community.

Any time fire crews use an Automated External Defibrillator (AED), a doctor must review the patient's heart rate and quality of the cardiopulmonary resuscitation (CPR) performed. This Fire Rescue Physician Advisory service is provided by Iridia Medical, a company that provided the first public access AED program in British Columbia. In addition, Surrey Fire Service provides response time information so AED data can be used for the Resuscitation Outcomes Consortium (ROC), an ongoing study regarding the effectiveness of CPR and AED protocols for out-of-hospital cardiac arrests. This is yet another example why it's imperative the data collected is accurate and accessed on a timely basis.

Finally, daily truck checks help ensure all fire apparatus are compliant with the province's Commercial Vehicle Safety and Enforcement (CVSE) standards relating to road safety.

Requirements for Gathering Information

Worksheets were given to command staff to note additional details for each performance measure and their relevance to the organization. The following is an example of a completed AED worksheet:

FIGURE 1: PERFORMANCE INDICATOR WORKSHEET

1	Strategic Objective <i>Which strategic objective or critical success factor is the indicator relating to?</i>	100% compliance with AED reporting requirements
2	Key Performance Question (KPO): <i>What question do you want to have an answer to? What are our information needs?</i>	Is every time an AED is utilized the data and reports are transmitted to medical oversight? (Data upload, post incident report emailed)
3	Who is asking this question?	Operations Chief
4	What will they do with the information? <i>Why are they asking?</i>	Ensure compliance rate is acceptable
Indicator Tracking:		
5	ID	
6	Name	AED reporting
7	Owner	Operations Chief
How will the data be collected		
8	What is the data collection method?	Transmitting data and report to medical oversight
9	What is the source of the data?	AED and Reports from crew
10	What is the formula / scale / assessment method?	No missing AED uploads and no missing medical reports
11	How often, when and for how long do we collect the data?	Real time
12	Who collects the data?	Medical oversight
Target		
13	What are the target or performance threshold(s)?	statistic
Good measure tests		
14	How well is the indicator measuring performance?	
15	What are the costs for collecting the data? Justified?	
16	What unintended or negative behaviour could this indicator trigger?	
Reporting		
17	Who is the primary and secondary audience for this indicator? Access?	Admin –primary , BC & Captain - secondary
18	Reporting frequency (when and for how long will this indicator be reported?)	Real time as well as monthly
19	Reporting channel (which channels will be used to report this indicator?)	Qlikview tab titled operations, officer report card
20	Reporting formats (in which format will the information be reported?)	

FIGURE 2: COMPLETED PERFORMANCE INDICATOR WORKSHEET

0.07 AED reporting	
Definition:	An Automated External Defibrillator (AED) is a portable electronic device that automatically diagnoses the life-threatening cardiac arrhythmias of ventricular fibrillation and ventricular tachycardia in a patient, and is able to treat them through defibrillation, the application of electrical therapy which stops the arrhythmia, allowing the heart to re-establish an effective rhythm. When AEDs are deployed by suppression units in the field, attending officers and crews are expected to transmit data and report to medical oversight.
Rationale:	Iridia Medical continues to support Fire Services across the province of BC in all aspects of their first responder AED programs. Iridia Medical is British Columbia's sole distributor of Physio-Control's LIFEPAK 1000 AED which is currently the AED unit of choice for the majority of Fire Services, including BC Ambulance Services. All First-In SFS apparatus (not volunteer trucks, tenders, etc.) have an AED stowed on-board and when they are deployed, vital patient information must be uploaded to Iridia Medical or specified agency and reports entered in FDM. Timely uploads ensures the proper deployment of AED in the field and crucial medical oversight, both of which are subject to scrutiny. It is proposed that the AED reporting statistic be displayed in Qlikview tab titled operations, officer report card. It is considered a performance indicator or PI.
Type of Indicator:	<input type="checkbox"/> KPI <input checked="" type="checkbox"/> PI <input type="checkbox"/> RI <input type="checkbox"/> KRI
Calculations:	1. YTD, Last 12 months, YTD vs. PY, MTD, MTD vs. PY, Goal, YTD vs. Goal (Variance). 2. Counts and percentages (Unit of Measure refers)
Data Source:	AED and reports from crew. Real-time as well as monthly.
Data Limitations:	Uploads are not always carried out in a timely fashion for a variety of reasons, and reporting errors and/or incompletes are seen. Crews sometimes forget to upload/report data or complete only part of the task. Missing post-incident reports and missing uploads will invariably occur, and are flagged by Iridia Medical for response. There is a time-lag in error identification at Iridia Medical largely due to their reporting process, and lack of a consistent contact person at their point. Preferably, an automated and near-real time auditing process should be implemented to ensure AED reporting compliance rate is acceptable.
Assumptions:	Iridia Medical assumes the medical responsibility for monitoring AED program and ensures that the established first responder AED protocol is followed. This requires timely and accurate uploads and post-incident reporting by all officers and crews using the device. Management needs to be satisfied that every time an AED is utilized the data and reports are transmitted to medical oversight (data upload, post incident report emailed).
Filters:	Filtered by apparatus, shift, hall, and officer with link to Battalion Chief for compliance and mentoring purposes. Monthly and yearly filters apply.
Unit of Measure:	Measured by the total number of missing post-incident reports and missing uploads reported by Iridia Medical as a percentage of all AED used at incidents (reported to other) to Chief responsible for EMS.
Preferred Trend:	100% compliance with AED reporting requirements. No missing AED uploads and no missing medical reports.
Target:	AED uploads and post-incident reporting - 95% of all AED uploads and post-incident reporting requirements must be received by Iridia Medical (or specified agency).
Chart type:	Histogram or bar chart showing counts and percentages.
Grading Rubric:	This measure relates to suppression with 5 total points possible. Point scoring: 95% compliance = 5 points, 90% compliance = 4 points, 80% compliance = 3 points, 70% compliance = 2 points, 60% compliance = 1 point. Five year rolling average statistic: estimated at 50%. Estimated points on rolling average: 0
Indicator Responsibility:	Deputy Chief Larry Thomas and Assistant Chief Brian Woznikoski, SFS
Indicator Owner:	Deputy Chief Larry Thomas
Participants for Analysis:	Deputy Chief Larry Thomas, Assistant Chief Brian Woznikoski, and Alex Tyakoff, Strategic Planning Analyst, SFS
References:	http://www.iridiamedical.com/
Notes:	n/a

Pay for Performance

Employee evaluation and feedback has the potential to add value to the workplace. Proactive managers and employers can use assessment tools to acknowledge valuable employees, and encourage and reward their work. Frequent feedback is preferable to a once-annual review as the former gives employees to make adjustments as needed.

Surrey Fire Service offers a performance pay incentive to its bargaining unit members. The incentive is equal to one half percent (1/2%) of base salary if performance targets are met. The targets will be set in accordance to department goals and measured over the calendar year from January to December.

For its inaugural year, 11 performance measures were selected as the department goals. They include:

1. Sick and WCB absence rates
2. Annual proficiency standard training
3. Inspections
4. Hydrant maintenance
5. FDM incident reporting
6. Smoke alarm verifications
7. Skills maintenance monthly training
8. Secondary suite reporting
9. AED incident reporting
10. Inspection pamphlet delivery
11. Daily truck check reports

None of the measures are new; they either existed as a previous department goal and/or an expectation for performance and regular duties. Granted, some of the measures apply to all staff while others may be specific to certain divisions. A rubric provides weighting to each measure and, for ease of monitoring, is attached with a total available score of 100. The target to achieve the performance pay incentive is 70 points. Data is collected from an FDM module (with the exception of Sick and WCB absence rates, which is provided by TeleStaff work codes and AED incident reporting, which is received from medical oversight).

The performance measures are previously listed during the Planning Process portion of this study, with “perfect attendance” being rolled into “Sick and WCB absence rates” measurement.

Let’s examine how a rubric works by using two measures as examples. The first measure, “Sick and WCB rates” works like this: bargaining unit staff begins with a credit of 15 points. For each 0.1 days (per member) the rate is below the specified average for that division/branch, an extra point is earned for a maximum of five. Conversely, if the rate is higher than the specified average, one point is removed for each 0.1 days for a maximum of 15. The eighth measure “secondary suite reporting” relates to suppression crews. The point system works on a sliding scale. At one end: if 800 suites are reported, five points are awarded. At the other: if 500 suites are reported, one point is awarded. An additional five bonus points are given if 1,500 or more suites reported.

Conclusion

The key idea that drives measurements that matter is meaningful outcomes. Outcomes that are relevant to the organization need to be measureable and address core objectives of the organization.

The process of gathering data needs to be dynamic; performance-related data should be continually monitored and analyzed for clues and information so those supervising can provide real-time feedback along the way. It’s important the feedback attached to measures be given on a regular basis – monthly if not even more frequently. Using a reporting tool is a great method of sharing the team’s progress and providing useful feedback for all involved in the common goal of meeting the objectives outlined in this study.

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