

**Calgary Fire Department Zero-Based Review  
Work Plan for an Updated Approach to Performance Measurement  
for Planning and Evaluating Fire Services**

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## Executive Summary

On November 23, 2015, the findings and recommendations of the Calgary Fire Department (CFD) Zero-Based Review (ZBR) were presented to Council. More than 30 recommendations were approved to improve the effectiveness and efficiency of CFD's services.

Council directed the CFD to report back with a detailed implementation plan before January 2017. Additionally, Council directed that an interim report including a work plan for developing a revised performance measurement approach for planning and evaluating CFD's services be presented by July 2016.

This work plan provides an overview of the current performance measurement approach at CFD and a look forward to the future state including research, analysis, consultation, timelines and anticipated outcomes.

The current performance measures used to plan CFD's fire and emergency response services emphasize a consistent and equitable level of response preparedness across the city, with response time as a main focus. The new approach will additionally consider more outcome-based measures, with a greater focus on risks along with the same response time goals.

## Background

A Zero-Based Review (ZBR) of the Calgary Fire Department (CFD) was completed by Behr Energy Services Ltd. in 2015. The final report with recommendations was delivered to City Council on November 23, 2015. Council approved more than 30 recommendations to improve the effectiveness and efficiency of CFD's services. The CFD is now developing plans to implement each of the recommendations.

One of the ZBR recommendations was to develop a performance management approach at CFD which emphasized citizen outcomes and which was more risk focused, measuring more than simply response times.

This high level work plan outlines how CFD will update its approach to performance measurement for fire services, giving additional context to Council when they provide strategic direction to CFD.

## An Updated Approach to Performance Measurement for Planning and Evaluating Fire Services

### Current State

Performance measurement is a key component of the Calgary Fire Department's planning processes, including those related to resource deployment and growth management. The current performance measurement approach is used to support the development of a sustainable fire service with the personnel, apparatus, and infrastructure needed to deliver effective and efficient fire and emergency response services to the citizens of Calgary. In striving for excellence, the CFD continually monitors and evaluates its performance, providing accountability and direction for improvement.

The CFD continues to rely primarily on the *Service Levels and Response Time Targets (SLRTT)*, a set of measures initially approved by Council in 2008. The SLRTT provides a framework for CFD to plan and deploy

resources, based on an assessment of various factors unique to Calgary while also considering industry benchmarks.

The CFD incorporates the SLRTT measures into the analysis and decision-making process when determining how to deploy current resources and allocate future resources. The same measures are used to evaluate the performance of the fire and emergency response system. The SLRTT measures are as follows:

- Stations per capita at or near comparable Canadian cities
- Staffing levels at or near comparable Canadian cities
- Average service area per station at or near comparable Canadian cities
- Cost per capita at or near comparable Canadian cities
- First-in engine response within seven minutes, 90% of the time
- Ninety second or less turnout time for the preparation of the first engine, 90% of the time
- Four minute and 30 second or less travel time for the arrival of the first engine, 90% of the time
- Full first alarm assignment at a fire suppression incident within 11 minutes, 90% of the time
- Eight minute and 30 seconds or less travel time for a full first alarm assignment at a fire suppression incident, 90% of the time
- Flame spread limited to within the room or object of origin in 65 per cent of building and structure fire suppressions
- CFD apparatus meeting minimum staffing requirements (four firefighters for each engine and two for rescue units, aerial units, tankers and hazmat units)
- Percentage of CFD fleet beyond recommended life cycle replacement

It is important that Calgary's fire and emergency response service needs and expectations be reassessed and updated as the characteristics of the city evolve and as industry standards change. Beyond the measures approved by Council in 2008, the CFD has continued to develop additional measures used in planning and evaluating fire and emergency response services which complement the SLRTT.

### ***Planning for Fire and Emergency Response Services – Deployment and Growth***

The performance measures currently used in planning fire and emergency response services help CFD provide an equitable level of service to all Calgarians. New station development strives to proactively match growth and contribute to communities while responsibly allocating budgets to maintain service to citizens, limit damage to property, and save lives. Performance measures, indicators, and other data are used to support informed decision making by the CFD and Council to determine when and where fire and emergency response resources are deployed and built and how budgets are approved for these resources.

Growth planning analysis includes several factors, such as geo-demographic forecasts, future service demand projections, alignment with corporate growth management priorities, asset management considerations, financial sustainability, and the SLRTT. Future stations are planned to provide an equitable level of service across the city, focusing on meeting the SLRTT targets in all districts.

Response time is the measure referenced most frequently in operational and future resource planning. Currently, the growth planning model for new station development relies on response time to develop projected coverage areas that can be reached within goal times.

Other measures currently used for resource planning include:

- Actual and predicted call volumes, including type and severity of incidents
- Number of apparatus responses, citywide and by individual apparatus
- Population and other area demographics
- Number of injuries and deaths due to fire
- Dollar loss due to fire
- Unit hour utilization (a measure of how busy apparatus are)
- Apparatus availability or response reliability (how often apparatus are available to respond to incidents within their own station district)
- Analysis of reasons for longer response times (% due to distance, coverage from a farther station due to busyness, road construction, weather, etc.)
- Actions on scene analysis (for example, the % of calls where specific actions were carried out)
- Risk analysis measures, including identification of specific higher risk occupancies, structures outside response time coverage areas, etc.

### ***Evaluating Fire and Emergency Response Services***

Through performance measurement, CFD regularly evaluates its current deployment and growth models. This is done through a wide variety of reporting mechanisms, including:

- internal monthly divisional reports
- corporate accountability reporting on ActionPlan measures
- Annual Council and public reporting through the Community Services Annual Report and update on CFD's Sustainability Plan

Measures include those in the Service Levels and Response Time Targets, as well as a variety of others ranging from employee health and safety indicators to citizen satisfaction scores. Results are used to guide strategies for continuous service improvement which are incorporated into the CFD's operations and business planning processes.

### **Future State**

CFD's current performance measures mainly define performance in terms of "how much did we do?" and "how well was it carried out?", but only include a few indicators which can demonstrate the outcome of those services on our communities and citizens (e.g., rate of injuries and deaths due to fire). The new approach will allow CFD to plan for and measure the effectiveness of fire and emergency response services through an expansion into outcomes-based measures, aligning with The City of Calgary's move to Results-Based Accountability. It will include additional performance measures to provide a more comprehensive evaluation that can inform service improvement strategies. The new approach also complements the planned enhancements to the dynamic deployment model by providing a more robust framework and data for resource allocation decisions.

It is anticipated that this will allow a more flexible and innovative approach for deployment and growth, enabling alternative approaches to maintaining and improving outcomes for citizens. It will recognize that response time contributes to outcomes and will remain a critical component of service planning, but will also include other performance measures as additional considerations.

Both the enhanced deployment model and revised approach to performance measurement will be used as the basis for planning future growth of fire services, including new stations beyond those already approved through Action Plan 2015-2018. As always, the focus of the deployment and growth planning models will remain on public and firefighter safety.

### Work Plan

A work plan for a new approach to performance measurement has been developed to achieve the following **key results**:

1. Data are collected and used for decision-making for planning related to deployment and growth management to achieve specific defined public safety outcomes (effectiveness) while optimizing resources (efficiency).
2. Data are collected, used, and reported to regularly evaluate the effectiveness and efficiency of the resulting fire and emergency response service system.
3. Evaluation results are used to direct strategies to maintain or improve outcomes and performance.

To achieve the key results, the following **deliverables** will be completed:

1. Research and literature review
  - Including best practices and industry standards
2. Alignment with related business unit projects already underway
  - Assess results of recent and ongoing CFD projects which align with the development of the revised approach to performance measurement for collaboration or impact opportunities
3. Engagement and consultation
  - Incorporate public engagement results from existing sources (e.g., citizen feedback on service needs and expectations)
  - Set up a Performance Measures Working Group to:
    - Define specific outcomes for fire and emergency response services and develop indicators to measure progress towards those outcomes in alignment with RBA, the CFD's Sustainability Plan, and Council's Priorities in Action Plan 2015-2018
    - Determine which measures are contributing factors for each of the defined outcomes/ indicators so that future evaluation efforts can clearly illustrate and support results and the factors that contribute to those results.
    - Assess the current measures used and develop a draft revised series of measures
    - Create a data development agenda for new measures where data is not currently collected or utilized.
  - Consultation with other City business units (e.g., Planning, City Manager's office, Law, etc.) regarding draft measures, approach, and potential impact to services.
  - Peer review
  - Communicate with Council
4. Process refinements, feasibility study, and impact assessment
  - Internal consultation regarding feasibility and impact of new approach on deployment and growth management planning
  - Develop method to incorporate revised measures into CFD's deployment and growth models

5. Presentation of the revised approach to performance measurement to Council for approval
  - To ensure a shared clear understanding of the measures and their impact on deployment, growth management, and resource allocation planning and decision-making.
  
6. Adoption of new approach
  - Integrate approved measures into budget and business planning
  - Integrating into deployment and growth management planning (e.g., enhanced dynamic deployment model, predictive modeling software, long-term growth planning model/infrastructure master plan, etc.)
  - Incorporate updated measures into ongoing evaluation of fire and emergency services, and integrate results into strategic planning and operational practices.
  
7. Evaluation and Sustainment (post-implementation)
  - Conduct post-change evaluation; revise model if indicated.
  - Leverage CFD experience and advocate for changes to performance measurement across the fire service industry

### **Progress to Date**

The CFD has already begun developing an updated approach to performance measurement used for planning and evaluating fire and emergency response services. The following deliverables are underway or complete:

1. Research and literature review
  - Review of fire department performance measures that align with Results-Based Accountability, and assessment of the data requirements and feasibility of the measures not currently used by CFD.
  - Survey of other Canadian fire departments regarding their station planning models and use of measures such as response time coverage
  - Preliminary research into future station growth models using expanded performance measures
  
2. Alignment with related business unit projects already underway
  - Projects and initiatives examined to date include recent analysis updates to CFD's station growth planning model and infrastructure master plan, as well as preliminary peak time service analysis and exploration of measures for first positive action on scene.

**Work Plan Timelines Summary**

<b>Deliverables</b>	<b>Nov 2015 to present</b>	<b>July 2016</b>	<b>Aug 2016</b>	<b>Sept 2016</b>	<b>Oct 2016</b>	<b>Nov 2016</b>	<b>Dec 2016</b>	<b>Jan 2017</b>	<b>2017-2018</b>	<b>Beyond 2018</b>
Research & literature review										
Project alignment										
Engagement & consultation										
Process refinements, feasibility study & impact assessment										
Presentation of revised approach to Committee/Council										
Adopt approach										
Evaluation & sustainment										