

## **The Corporation of the City of London**

### Fire process assessment

Audit Performed: November 2021 – January 2022  
Report Issued: January 28, 2022

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# Executive summary

## Background

The City of London (the “City”) aspires to identify opportunities to help ensure emergency readiness and improve the service delivery efficiency of the London Fire Department. To this end, the City expects that there may be opportunities to enhance internal controls, key performance indicators (KPIs), policies and procedures over Fleet operations and so requested that Internal Audit focus on identifying leading practices as applied to the Fire fleet for consideration.

## Objectives and scope

As part of the November 2021 to January 2022 Internal Audit plan, Internal Audit conducted a review on the Fleet operations. The purpose of this review was to assess the adequacy of the policies and procedures and provide guidance on industry leading practices relating to controls, potential improvements and optimizing fleet lifecycles that assist Fire Master Plan development. The review also assessed the current KPIs already implemented and recommended additional KPIs to implement.

The detailed Internal Audit scope is at *Appendix 1*.

## Areas for continued enhancement

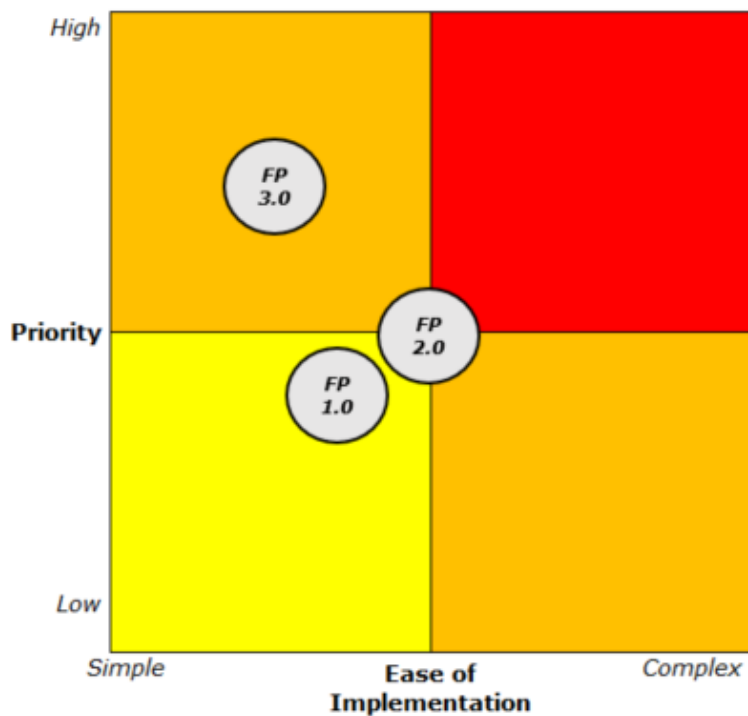
Based on our review of the City’s fleet operations and KPIs, we identified three medium priority observations and an additional leading practice that The City of London should consider actioning. Please refer to *Appendix 2: Internal Audit rating scale* for definitions of the four-point scale.

	<b>High priority</b>		<b>Medium priority</b>		<b>Low priority</b>		<b>Leading practice</b>
	<b>0</b>		<b>3</b>		<b>0</b>		<b>1</b>

Priority	Observation Id	Observation Summary
<b>Medium priority</b>	FP 1.0	<b>KPIs:</b> No existing KPIs in place to monitor Fire fleet performance.
<b>Medium priority</b>	FP 2.0	<b>Condition based vehicle assessments:</b> Lack of an objective and repeatable assessment for Fire apparatus that identifies candidates for replacement based on actual condition.
<b>Medium priority</b>	FP 3.0	<b>Preventative maintenance and inventory requirements:</b> Lack of preventative maintenance due to amount of reactive maintenance being completed and lack of control over maintenance productivity. No processes/control of inventory on hand.
<b>Leading practice</b>	FP 4.0	<b>Telematics:</b> Telematics is currently not applied to Fire fleet vehicles.

### Priority heat map

The diagram below maps each of the three medium-rated opportunities for enhancement based on their priority and estimated ease of implementation. Item ID #4 has been excluded since it is a Leading practice.



### Conclusion

The identified considerations and observations noted in this report should be addressed in a timely manner to enhance current controls and mitigate associated risks.

# Areas for continued enhancement

In completing the procedures noted in *Appendix 4: Audit procedures performed*, Internal Audit identified the following items for continued enhancement.

Medium Priority	FD 1.0 Key Performance Indicators (KPIs)
<b>Observation</b>	<p>Per the interviews performed and documents reviewed, there is an intent for the Fire fleet to develop and monitor KPIs to help drive leading practice; however, there are currently no KPIs in place to help measure and drive performance. KPIs proposed for implementation by Fire are below.</p> <ul style="list-style-type: none"> <li>• Breakdown maintenance hours, Maintenance schedule completion (%), Check completion (%);</li> <li>• Fleet availability (%);</li> <li>• Downtime (days);</li> <li>• Cost/hours of planned vs. unplanned maintenance (%);</li> <li>• Comeback rate (%);</li> <li>• Average age of Fleet (years);</li> <li>• Mechanic on-task (%), Mechanic efficiency (%);</li> <li>• Fleet in fair or better condition (%);</li> <li>• Fuel consumption per year per vehicle (L/Km); and</li> <li>• Km and/or hours of use per year.</li> </ul> <p>Also, KPIs are not used for budgeting and forecasting to help drive good fiscal management.</p> <p>Management is aware of the deficiencies in place and is acting to remedy the situation, in part through the implementation of ICO.</p>
<b>Implication</b>	<p>Without KPIs in place, there are risks related to apparatus readiness, asset usage, fuel efficiency, and operational efficiencies. The main risk is apparatus readiness as this can impact delivery of service. The Fire fleet should ensure minimum breakdown maintenance, high fleet availability percentage, low apparatus downtime (days), and have an strict preventative maintenance program in place.</p>
<b>Recommendation</b>	<p>We recommend implementing a process to establish benchmarks and monitor the KPIs above in conjunction with the implementation of the ICO Solutions fire department management system (ICO system) to drive leading practices and better controls through fleet operation efficiency and fleet readiness. We also recommend that the KPIs be used to assist in preparing budgets and forecasting performance.</p>

<b>Management Comments</b>	<p>The ICO implementation team has the KPIs that should be utilized. These data capturing requirements will be built into the ICO processes. This will provide the ability to run reports as needed. This enhancement is contingent on the completion of the ICO system and the ability of personnel to log data appropriately.</p> <p>Please note, if this recommendation requires updates or enhancements to the current ICO system, from either an ITS perspective and/or service area perspective, Civic Administration will take this project through the next multi-year ITS and budget approval processes.</p>
<b>Responsible Party and Timing</b>	<p>Richard Hayes, Deputy Fire Chief-Operations, December 2022 (if additional resources required, the timeline would be adjusted to align with the next multi year budget approval process: 2024-2027)</p>

Medium Priority	FD 2.0– Condition based vehicle assessments
<b>Observation</b>	We noted that asset replacements are based on useful lives and observed performance. We also reviewed the Fire Fleet asset register, which also outlined asset age and expected retirement date as the key considerations for replacements. There are no policies or procedures in place that require an objective and repeatable assessment of Fire apparatus that identifies candidates for replacement based on actual condition in conjunction with maintenance data.
<b>Implication</b>	Without a repeatable condition assessment, there is a risk that apparatuses may be replaced earlier/later than truly required and that asset maintenance costs may be inflated.
<b>Recommendation</b>	We recommend implementing policies and procedures to require and drive the completion of condition assessments in conjunction with maintenance data, that will support the Corporate Asset Management Plan and Fire Department Financial Capital Planning.
<b>Management Comments</b>	<p>This initiative is two fold. Firstly, there is the need to align policies and procedures to the actions that will be undertaken within the current ICO Records Management system. Secondly, the ICO implementation team has the KPIs that should be utilized. These data capturing requirements will be built into the current ICO processes. This will provide the ability to run reports as needed. This enhancement is contingent on the completion of the current ICO system and the ability of personnel to log data appropriately.</p> <p>Please note, if this recommendation requires updates or enhancements to the current ICO system, from either an ITS perspective and/or service area perspective, Civic Administration will take this project through the next multi-year ITS and budget approval processes.</p>
<b>Responsible Party and Timing</b>	Richard Hayes, Deputy Fire Chief-Operations, December 2022 (if additional resources required, the timeline would be adjusted to align with the next multi year budget approval process: 2024-2027)

Medium Priority	FD 3.0– Preventative maintenance, productivity and inventory requirements
<b>Observation</b>	<p><b>Maintenance</b>                      Fire's maintenance effort has had challenges completing preventive maintenance in accordance with their plans due to an increase in vehicles and equipment, creating increased maintenance needs while staffing levels remain stagnant. Management is aware of the deficiencies and is working to rectify the issue.                      Work orders are not electronic; however, the aspiration is to move to an electronic system (ICO) that would provide for improved maintenance tracking and management and the provision of data for KPI development.                      Mechanics' hours are tracked using time sheets and manual workorders; however, the actual working hours are not compared with standard times to help drive productivity.                      Further, we observed that mechanics are performing non value add activities such as parts sourcing. Per management this accounts for ~25% of their time.</p> <p><b>Parts Inventory</b>                      Mechanics attempt to maintain an adequate parts inventory manually and occasionally fail to record quantities used, resulting in inaccurate inventory records. Management is aware of the deficiencies for parts inventory tracking and is working to rectify the issue, in part through the implementation of the ICO Solutions management system.</p>
<b>Implication</b>	<p><b>Maintenance</b>                      Lack of a strong maintenance program can lead to reduced effectiveness and efficiency and eventually impact apparatus availability. The currently ongoing ICO system implementation could be helpful in driving maintenance productivity and hence in helping to break the heavy reliance on reactive maintenance.</p> <p><b>Parts Inventory</b>                      Without mechanisms in place for the tracking inventory there is a risk of stock outs and/or inflated inventory carrying costs. Stock outs may also reduce mechanic labor productivity.</p>
<b>Recommendation</b>	<p><b>Maintenance</b>                      The ICO system modules for mechanic productivity improvement, telematics data (once available) and KPIs should be used to drive maintenance effectiveness and productivity and help address the balance of reactive and preventive maintenance.</p> <p><b>Parts Inventory</b>                      We recommend implementing a policy and supporting process to track parts inventory and required parts on hand (minimum stock holdings for example).</p>
<b>Management Comments</b>	<p>This initiative is two fold. Firstly, there is the need to align policies and procedures to the actions that will be undertaken within the ICO Records Management system. Secondly, the ICO implementation team has the KPIs that should be utilized. These data capturing requirements will be built into the ICO processes. This will provide the ability to run reports as needed. This enhancement is contingent on the completion of the ICO system and the ability of personnel to log data appropriately.</p> <p>The implementation of this recommendation is also contingent on the additional resources requested through the 2022 annual budget approval process.</p>
<b>Responsible Party and Timing</b>	<p>Richard Hayes, Deputy Fire Chief-Operations, December 31, 2022 (if additional resources required, the timeline would be adjusted to align with the next multi-year budget approval process: 2024-2027)</p>



Leading practice	FD 4.0 – Telematics
<b>Observation</b>	Per the interviews performed, telematics is not used on the Fire fleet vehicles. Use of telematics provides the opportunity to realize efficiencies through fuel reduction and maintenance costs.
<b>Implication</b>	Operational savings and improvements available through the use of telematics driven by reduced fuel (idling and driving style) and reduced maintenance (based on wear and tear/condition) are not being maximized.
<b>Recommendation</b>	We recommend management consider implementing full telematics capabilities on assets that are more likely to have an acceptable payback. Further, we recommend implementing policies and procedures on how to effectively manage and analyze telematics data to aid decision making.
<b>Management Comments</b>	<p>The reality of implementing a fully telematics enabled fleet is yet to be determined. It is anticipated that this will be at least a five year program, if not more. The challenge is to capture the correct data, send the data automatically to a centralized location, and have the appropriate tool report on all the data that is collected from various sources.</p> <p>This recommendation requires further analysis with ITS and Finance and would be required to go through the necessary ITS and multi-year budget approval processes identifying any additional resources if required.</p>
<b>Responsible Party and Timing</b>	Richard Hayes, Deputy Fire Chief-Operations, the timeline will be identified as part of the next multi-year budget process: 2024-2027 as it is dependent on securing additional resources)

# Appendix 1 - Internal Audit detailed scope

Specifically, the Internal Audit addressed the following areas:

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## **Review of the London Fire department's fleet management processes:**


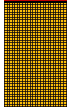


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- Confirm current, and develop, assess, and review the key performance indicators (KPIs) to be implemented for Fire; and
  - Based on the above and through an analysis of the baseline data provided, identify potential improvements in managing the London Fire Department fleet and optimizing life cycles that aid and/or align with Fire Master Plan development.
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# Appendix 2 - Internal Audit rating scale

## Individual observation prioritization

Internal Audit has prioritized each observation and recommendation within this report using a four point rating scale. The four point rating scale is as follows:

Description	Definition
 <b>High</b>	Observation is high priority and should be given immediate attention due to the existence of either significant internal control risk or a potential significant operational improvement opportunity.
 <b>Medium</b>	Observation is a moderate priority risk or operational improvement opportunity and should be addressed in the near term.
 <b>Low</b>	Observation does not present a significant or medium control risk but should be addressed to either improve internal controls or process efficiency.
 <b>Leading Practice</b>	Consideration should be given to implementing recommendations in order to improve the maturity of the process and align with leading practices.

# Appendix 3 - Stakeholder involvement

In conducting this assessment, the following City of London management and staff were interviewed to gain an understanding of the Fire Services processes and practices.

Stakeholder	Position	Division
Lori Hamer	Fire Chief	City of London – Fire Services
Richard Hayes	Deputy Fire Chief	City of London – Fire Services
Katerina Barton	Manager, Finance and Planning	City of London – Fire Services
Douglas Drummond	Financial Business Administrator	City of London – Financial Services
Cheryl Smith	Deputy City Manager	City of London – Neighborhood and Community-Wide Services

# Appendix 4 - Audit procedures performed

As part of the review of the London Fire department's fleet management processes, the following procedures were performed:

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- Conducted planning meeting with the fire chief and deputy fire chief;
  - Updated and issued finalized Project Charter and request for information;
  - Conducted meetings and interviews with Fire management to obtain an understanding of operational processes and KPI status;
  - Development Leading practices applicable to fire fleet operations and developed Leading practice KPIs applicable to fire fleet;
  - Inspected support documentation, in conjunction with management interviews to assessment whether the fire fleets operations were aligned with Leading practice;
  - Responding to emails, phone calls and in-person requests, ensuring adequate process documentation (service requests), tracking and monitoring performance, and compliance with applicable policy requirements;
  - Consulted with subject matter expert(s) on the City of London's current processes and compared to Leading practices used by industry leaders;
  - Using the reviewed documentation and interview narratives, assessed the effectiveness of the fire fleet management process and KPIs;
  - Drafted preliminary observations and verified observations with management;
  - Conducted a closing meeting with key management stakeholders to validate and communicate our findings; and
  - Issued this Internal Audit report with our detailed observations.
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