

Attachment 2

Mercury Executive Summary and Report - Joint Fire Fleet Services

“The Town of Georgina and the Town of East Gwillimbury Joint Fire Fleet
Services Alternatives Assessment”

Report No. GFRS-2023-0001

February 15, 2023

Total pages - 74

Executive Summary

Georgina and East Gwillimbury Joint Fire Fleet Services Alternatives Assessment

Background:

The purpose of this document is to provide a summary of the Town of Georgina and the Town of East Gwillimbury Joint Fire Fleet Services Alternatives Assessment, undertaken in collaboration with the Mercury Associates Inc.

Mercury is the largest dedicated fleet management consulting firm in North America. Mercury's expertise includes assisting organizations with improving their fleet management practices, increasing operational safety and efficiency, optimizing asset utilization and reliability, and operating a cost competitive fleet operation. Mercury has some familiarity with Georgina's Operations and Infrastructure Department, Fleet Division, having undertaken work on their behalf in 2020.

The details to support this Summary are provided in Mercury's report entitled, "Towns of Georgina and East Gwillimbury, Study for Fire Fleet Services Alternatives Full Report" and dated, January Jan 17, 2023.

Current state:

- Georgina Fire and Rescue Services (GFRS) fleet is starting to be serviced by Georgina's Operations and Infrastructure Department, Fleet Division and by third-party fleet maintenance and repair providers; and
- East Gwillimbury Emergency and Community Safety Services (ECSS) vehicles are serviced by a third-party fleet maintenance provider.

Objectives:

The purpose of the study was to determine whether ECSS vehicles could also be serviced by Georgina's Fleet Division, and if so, would there be benefits for both departments. The study is limited to the maintenance and repair functions for the fire fleet assets in the Town of East Gwillimbury and the Town of Georgina, while the Towns' overall fleets are considered for context. The main objectives include the exploration of cost efficiency through economies of scale and improved service levels and quality.

Key project components are:

- Establish the current mode of operation (CMO) for both Towns;
- Develop options or scenarios for future mode of operation (FMO);
- Compare and contrast the FMO options and identify the most optimal option;
- Identify impacted areas highlighting the critical success factors for the FMO option; and
- Provide conclusions and recommendations for the FMO.

Staffing Requirements for Fire Fleets:

- Workforce (number of technicians) determined by calculating total required demand hours (workload) based on Vehicle Equivalent Unit (VEUs) and projected technician tolerance levels (i.e., annual demand hours per technician):

	Georgina Fleet Including Fire Fleet	Georgina Fire Fleet	East Gwillimbury Fire Fleet	Subtotal for Two Fire Fleets	Total for Three Fleets
Number of active assets	268	24	25	49	293
Number of VEUs	406	103	89	192	495
Demand hours	4,872	1,236	1,062	2,298	5,934
Number of required technicians	3.4	0.9	0.7	1.6	4.1

- Currently, Georgina Fleet Services has two technicians and with the GFRS fleet migration to Fleet Division, there is a staffing shortage;
- It was indicated by Georgina that budget has been requested for one additional technician in 2023;
- Fire fleet maintenance and repair work migration to Georgina fleet services has just begun and a significant amount of work is still being sublet to external commercial vendors;
- Some maintenance and repair work for the Town fleet (i.e., not fire fleet) is also sublet; and
- The calculation indicates that at least two more technicians will be required for maintenance and repair work for the two fire fleets for work in-house.

Options for fire fleet maintenance and repair – Future Mode of Operation:

Options	Georgina	East Gwillimbury	Advantages	Disadvantages
1. Status Quo	<ul style="list-style-type: none"> Continue with migration of Georgina fire fleet maintenance into the Operations and Infrastructures, Fleet Division Continue to utilize external vendors Continue with asset specifications that facilitate in-house maintenance and repairs 	<ul style="list-style-type: none"> Continue with external vendors for fire fleet 	<ul style="list-style-type: none"> One additional mechanic requested in 2023 budget No process or procedural change 	<ul style="list-style-type: none"> Long downtimes Service quality not optimized and quality uncertainty Cost uncertainty Two drivers and long travel time to sublet vendor Time to empty asset/refill asset
2. Sublet Contract	<ul style="list-style-type: none"> Leverage both fire fleet asset quantities to contract external vendor(s) through a procurement process Ensure contract includes service level agreement, e.g., turnaround times for work type, corrective measures, service quality, right to inspect and audit, etc. Develop and conduct vendor work quality assurance methodology 		<ul style="list-style-type: none"> Potential for higher priority with contracted vendor Cost certainty Service quality optimized 	<ul style="list-style-type: none"> Up-front effort for the procurement process for contract Additional effort for quality assurance Active contract management required Long downtimes continue if established service levels cannot be met Time to empty asset/refill asset

Options	Georgina	East Gwillimbury	Advantages	Disadvantages
3. Transition	<ul style="list-style-type: none"> Georgina Fleet Division manages East Gwillimbury maintenance and repairs Georgina Fleet Division uses some in-house and largely sublet vendors for East Gwillimbury fire fleet 	<ul style="list-style-type: none"> Migrate East Gwillimbury fire fleet maintenance and repairs to Georgina Fleet Division - similar process to Georgina's fire fleet Use Work Order management system for maintenance and repairs workflow 	<ul style="list-style-type: none"> Cost consistency and potential for reduction, if combined with Option 2 above Potential for reduced vehicle downtime especially for small and running repairs Downtime improvement Reduction in 2-drivers for delivery and pick-up Reduction in time to empty asset/refill asset 	<ul style="list-style-type: none"> Additional mechanic and admin staffing System of Record and FMIS establishment Cost transfer process establishment Operating guidelines establishment
4. In-house maintenance and repairs (Final Future State)	<ul style="list-style-type: none"> Largely in-house work at Georgina Fleet Division facility with some sublet work for specialty repairs Stocked parts inventory and management for commonly used fire fleet parts 	<ul style="list-style-type: none"> Provides vehicle and information for maintenance and repairs work Arranges for asset transportation to/from Georgina facility 	<ul style="list-style-type: none"> Much more influence and control over work quality, prioritization, and scheduling Cost control Ability to set maintenance and repair priorities Downtime improvement Increased subject 	<ul style="list-style-type: none"> Enhanced facility – significant modification or careful work planning for mix of light and heavy vehicles in facility at the same time. Facility enhancement is important for long-term efficiency. Additional mechanic and admin staffing System of Record and FMIS establishment

Options	Georgina	East Gwillimbury	Advantages	Disadvantages
			matter expertise for Fire apparatus	<ul style="list-style-type: none"> • Cost transfer process establishment • Operating guidelines and service level establishment

Key success factors for in-house fire fleet maintenance and repair at Georgina fleet services:

Governance	Staffing	Facilities	Maintenance and Repairs Work Design and Management	Fleet Management Information System
Oversight, operating guidelines, service level agreements, business reviews and issue resolution	Bandwidth - need more technicians and a parts person at Georgina Fleet Division	Modifications to facility and/or work planning to accommodate Fire Fleets M&R. Facility enhancement is required for long-term efficiency	Preventative Maintenance program, Legislated Inspections – CVOR and NFPA; garage process and procedure improvement	One system of record for assets and enabling fleet workflows
Cost transfer (e.g., chargeback method and rate) from Georgina to East Gwillimbury, and invoicing (e.g., accounts payable and accounts receivable)	Technician - training, fire fleet knowledge and Emergency Vehicle Technician (EVT) qualifications	MTO certification for maintenance and repairs	Quality Assurance	Maintenance and repairs parts, labour, and sublet cost capture for rate plan development

Governance	Staffing	Facilities	Maintenance and Repairs Work Design and Management	Fleet Management Information System
Insurance considerations - East Gwillimbury vehicles at Georgina garage	Labour Union and Collective Agreement implications		Parts inventory and management	Management reports, ad-hoc reports, key performance indicators (KPIs) and maintenance and repairs performance management and metrics
Liability considerations, i.e., who is liable if vehicle is unsafe due to deficient maintenance and repairs			Warranty and recall management	Cost capture and billing for East Gwillimbury fire fleet

Significant cost elements for final future state:

1. One-time costs:

- Fleet Maintenance Information System (FMIS) selection and implementation as the system of record for all fleets that Georgina Fleet Division maintains and repairs, and to facilitate garage workflows – cost will depend on the chosen system and fleet functions to be implemented;
- Facility enhancement for long-term efficiency;
- Process and procedure improvement for Georgina’s garage services;
- Training for mechanics to have their EVT certification – current cost for a 4-day course is \$650 USD per person; and
- Parts management process development.

2. Ongoing costs:

- Additional technicians – cost of 2 FTE of which budget has been requested for 1 FTE in 2023;
- Addition of a parts person at 0.5 FTE – the same individual would do sublet management, service writing, and admin tasks for a full FTE role;
- Subscription or licence cost for the FMIS; and
- Ongoing training and professional development cost.

Anticipated Benefits:

- More control over work scheduling and quality when Fire Fleet work is done in-house.
- Economies of scale with both Fire Fleets and Georgina Town Fleet using the same garage services, the same external vendors and the same FMIS.
- Asset downtime reduction.
- Reduction in time to empty asset/refill fire asset.
- Improved negotiating position with external vendors due to larger quantity of assets to establish higher priority and service levels.
- Potential for external vendor cost reduction for both Town Fire Fleets.
- Reduction in time to empty/refill fire assets and for driving assets to an external vendor.

Next Steps:

- A stepped approach is recommended, and the four options provided herein are building blocks that ensure a migration path to the final future state in which Georgina Fleet Services largely does the M&R in-house for both Towns' Fire Fleets.
- A deeper dive for each step is required to develop the detailed implementation and transition plan. Key Performance Metrics (KPIs) and detailed Service Level Agreements between the two Towns can only be developed thereafter.
- Key success factors or enablers need to be developed and implemented as the Towns move towards the final future state. The core enablers such as staffing, FMIS implementation, and facility enhancement are time consuming and therefore, the planning work needs to be started well in advance.

Implementation Steps, Timeline and Level of Effort for Final Future State:

- The table below depicts a conceptual timeline and level of effort as Low (less than 3 months), Medium (3 to 6 months) and High (more than 6 months).
- Task details need to be developed for the Steps to refine the timelines and level of effort.
- A project management approach is recommended.
- Level of Effort column indicates whether Internal and/or External resources may be utilized.

Steps	2022 Q		2023				2024				2025				Level of Effort External (E) Internal (I)
	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
Fire Fleet maintenance and repair alternatives study															E - Low
Budget request for additional mechanic for Georgina (completed)															
Budget request for Georgina garage facility minor upgrade (completed)															
Continue Georgina Fire Fleet migration to Fleet															I - Medium
Garage process improvement and work flow documents															I, E - Medium
Planning and execution to establish Sublet Contracts															I, E - Medium
Planning for FMIS and budget request															I, E - Low
Planning for Facility enhancement or new facility and budget request															I, E - Medium
Budget request for 1 mechanic and 1 parts/admin person															I - Low
Planning for East Gwillimbury Fire Fleet migration to Georgina Fleet Services															I, E - Medium
Development of cost transfer and invoicing method															I - Medium
Development of Georgina garage performance metrics															I, E - Medium
Development of operating guidelines and SLA between the two Towns															I, E - Medium
Start of East Gwillimbury Fire Fleet migration to Georgina Fleet Services															I - Medium
FMIS procurement															I, E - Medium
FMIS implementation as System of Record, and enabler of key work flows, cost transfer data files, KPIs, etc.															I, E - High
Facility enhancement															I, E - High
Completion of migration of Fire Fleets to Georgina Fleet Services															I - Medium



Towns of East Gwillimbury and Georgina

STUDY FOR FIRE FLEET SERVICES ALTERNATIVES

Final Report

January 18, 2023

MERCURY

SUMMARY



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Purpose

- The project objective includes an assessment of Georgina Fleet Services Division providing fleet maintenance and repair services for East Gwillimbury Fire and Emergency Fleet.
- The purpose of this project deliverable is to document the project team's findings, conclusions and recommendations.



Project Description

- Study is limited to the maintenance and repair functions for the Fire Fleet assets in the Towns of East Gwillimbury and Georgina while the Town Fleets are considered for context.
- Key project components are:
 - Establish the current mode of operation (CMO) for both Towns.
 - Develop options or scenarios for future mode of operation (FMO).
 - Compare and contrast the FMO options and identify the most optimal option.
 - Identify impacted areas highlighting the critical success factors for the FMO option.
 - Provide conclusions and recommendations for the FMO.
- Objectives
 - Cost efficiency through economies of scale.
 - Improved service levels and quality.
- Compressed Project timeline:
 - Project initiation and kickoff on October 19, 2022.
 - Mercury Request for information was sent on October 23, 2022, and documents and data received as recently as December 20, 2022.
 - Mercury interviews with both Towns concluded on November 21, 2022.
 - Draft report provided for feedback from Towns' project working team on November 30, 2022.
 - Report revised and in-depth discussions were held on December 21, 2022 and on January 5, 2023.



Methodology

Collect, review, and analyze data, documents, and narratives

- Fire Fleet inventory data normalized to Vehicle Equivalent Unit (VEU) to derive staffing requirements, and Cost per VEU.
- Establish current mode of operation for Fire Fleet maintenance and repair for both Georgina and East Gwillimbury.
- Conduct facility assessment for Georgina and East Gwillimbury.
- Gather qualitative benefits of Georgina Fire Fleet maintenance and repair migration to Fleet Services.
- Develop Georgina and East Gwillimbury Town Fleet context.

Develop alternatives for future mode

Considerations for future mode:

- - Current situation and readiness for change to ensure success.
- Status of required enablers, e.g., Fleet Management Information System (FMIS), facility, staffing, etc.
- Practicability – difficulty, time requirement, budget requirement.
- Probability of success.
- Systematic building block approach to minimize wasted effort or work.

Comparison of four options which can be standalone or used as migration steps: (1) Status Quo, (2) Sublet Contracts, (3) Transition, (4) In-house Final Future State.

Conclusions and recommendations

In-house maintenance and repair of Fire Fleets requires technology (FMIS) enabler, garage process improvements, facility enhancements.

Garage staffing of an additional two mechanics (one requested in 2023 budget), parts person/ admin.

Parts stockroom for commonly used parts for Fire Fleets.

Facility with 6 to 8 work bays are required for a total of 4 mechanics – the current 5 times 2 bays may suffice depending on the mix of light and heavy vehicles for maintenance and repair at a given time. For efficient operation, the facility needs to be enhanced for the long-term.



Staffing Requirements for Fire Fleets

- Workforce (number of technicians) determined by calculating total required demand hours (workload) based on VEUs and projected technician tolerance levels (i.e., annual demand hours per technician).

	Georgina Fleet Including Fire Fleet	Georgina Fire Fleet	East Gwillimbury Fire Fleet	Subtotal for Two Fire Fleets	Total for Three Fleets
# of Active Assets	268	24	25	49	293
# of VEUs	406	103	89	192	495
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# of Required Technicians	3.4	0.9	0.7	1.6	4.1

- Currently, Georgina Fleet Services has two technicians and with the Fire Fleet migration, there is a technician staffing shortage.
- Fire Fleet M&R work migration to Georgina Fleet Services has just begun and a significant amount of work is still being sublet to external commercial vendors.
- Some M&R work for the Town Fleet (i.e., not Fire Fleet) is also sublet¹.
- The calculation indicates that at least two more technicians² will be required for M&R work for the two Fire Fleets for work in-house.

¹ Findings documented in: *Georgina - Mercury Associates Fleet Diagnostic Review FINAL Report 12092020*

² It was indicated by Georgina that budget has been requested for one technician in 2023.



Options for Fire Fleet M&R – Future Mode of Operation (FMO)

Options	Georgina	East Gwillimbury	Advantages	Disadvantages
1. Status Quo	<ul style="list-style-type: none"> Continue with migration of Georgina Fire Fleet into Fleet Services Continue to utilize external vendors Continue with asset specifications that facilitate in-house M&R 	<ul style="list-style-type: none"> Continue with external vendors for Fire Fleet 	<ul style="list-style-type: none"> One additional mechanic requested in 2023 budget No process or procedural change 	<ul style="list-style-type: none"> Long downtimes Service quality not optimized and quality uncertainty Cost uncertainty Two drivers and long travel time to sublet vendor Time to empty asset/refill asset
2. Sublet Contract	<ul style="list-style-type: none"> Leverage both Fire Fleet asset quantities to contract external vendor(s) through a procurement process Ensure contract includes service level agreement, e.g., turnaround times for work type, corrective measures, service quality, right to inspect and audit, etc. Develop and conduct vendor work quality assurance methodology 		<ul style="list-style-type: none"> Potential for higher priority with contracted vendor Cost certainty Service quality optimized 	<ul style="list-style-type: none"> Up-front effort for RFP and procurement process for contract Additional effort for quality assurance Active contract management required Long downtimes continue if established service levels cannot be met Time to empty asset/refill asset



Options for Fire Fleet M&R – FMO Cont'd

Options	Georgina	East Gwillimbury	Advantages	Disadvantages
3. Transition	<ul style="list-style-type: none"> Fleet Services manages East Gwillimbury M&R Fleet Services uses some in-house and largely sublet vendors for East Gwillimbury Fire Fleet 	<ul style="list-style-type: none"> Migrate East Gwillimbury Fire Fleet M&R to Georgina Fleet Services - similar process to Georgina's Fire Fleet Use Work Order management system for M&R workflow 	<ul style="list-style-type: none"> Cost consistency and potential for reduction if combined with Option 2 Potential for reduced vehicle downtime especially for small and running repairs Downtime improvement Reduction in 2-drivers for delivery and pick-up Reduction in time to empty asset/refill asset 	<ul style="list-style-type: none"> Additional mechanic and admin staffing System of Record and FMIS establishment Cost transfer process establishment Operating guidelines establishment
4. In-house M&R (Final Future State)	<ul style="list-style-type: none"> Largely in-house work at Fleet Services facility with some sublet work for specialty repairs Stocked parts inventory and management for commonly used Fire Fleet parts 	<ul style="list-style-type: none"> Provides vehicle and information for M&R work Arranges for asset transportation to/from Georgina facility 	<ul style="list-style-type: none"> Much more influence and control over work quality, prioritization and scheduling Cost control Ability to set M&R priorities Downtime improvement Reduction in time to empty asset/refill asset Increased subject matter expertise for Fire apparatus 	<ul style="list-style-type: none"> Enhanced facility – significant modification and/or careful work planning for mix of light and heavy vehicles in facility at the same time. Facility enhancement is important for long-term efficiency. Additional mechanic and admin staffing System of Record and FMIS establishment Cost transfer process establishment Operating guidelines and service level establishment



Key Success Factors for In-house M&R at Georgina Fleet Services

Governance	Staffing	Facilities	M&R Work Design and Management	FMIS
Oversight, operating guidelines, service level agreements, business reviews and issue resolution	Bandwidth - need more technicians and a parts person at Georgina Fleet Services	Modifications to facility and/or work planning to accommodate Fire Fleets M&R. Facility enhancement for long-term efficiency.	PM program, Legislated Inspections – CVOR and NFPA; garage process and procedure improvement	One system of record for assets and enabling fleet work flows
Cost transfer (e.g., chargeback method and rate) from Georgina to East Gwillimbury, and invoicing (e.g., accounts payable and accounts receivable)	Technician - training, Fire Fleet knowledge and EVT qualifications	MTO certification for M&R	Quality Assurance	M&R parts, labour, and sublet cost capture for rate plan development
Insurance considerations - East Gwillimbury vehicles at Georgina garage	Labour Union and CBA impact		Parts Inventory and Management	Management reports, ad hoc reports, key performance indicators (KPIs) and M&R performance management and metrics
Liability considerations, i.e., who is liable if vehicle is unsafe due to deficient M&R			Warranty and recall management	Cost capture and billing for East Gwillimbury Fire Fleet



Significant Cost Elements for Final Future State

One-time or Transition Cost

- FMIS selection and implementation as the system of record for all fleets that Georgina Fleet Services maintains and repairs, and to facilitate garage workflows – cost will depend on the chosen system and fleet functions to be implemented.
- Facility enhancement for long-term efficiency.
- Process and procedure improvement for Georgina's garage services.
- Training for mechanics to have their EVT certification – current cost for a 4-day course is \$650 USD per person.
- Parts management process development.

Ongoing Cost

- Additional technicians – cost of 2 FTE of which budget has been requested for 1 FTE in 2023.
- Addition of a parts person at 0.5 FTE – the same individual would do sublet management, service writing, and admin tasks for a full FTE role.
- Subscription or licence cost for the FMIS.
- Ongoing training and professional development cost.



Anticipated Benefits

- More control over work scheduling and quality when Fire Fleet work is done in-house.
- Economies of scale with both Fire Fleets and Georgina Town Fleet using the same garage services, the same external vendors and the same FMIS.
- Asset downtime reduction.
- Reduction in time to empty asset/refill fire asset.
- Improved negotiating position with external vendors due to larger quantity of assets to establish higher priority and service levels.
- Potential for external vendor cost reduction for both Town Fire Fleets.
- Reduction in time to empty/refill fire assets and for driving assets to an external vendor.



Conclusions and Recommendations

- Anticipated benefits from East Gwillimbury Fire Fleet M&R migration to Georgina Fleet Services similar to benefits seen by Georgina Fire Fleet.
- Benefits seen by Georgina Fire Fleet from migration:
 - Turn around times seem to be better, i.e., truck returns to service faster – metrics not available.
 - Fire apparatus-related knowledge has increased in Fleet Services.
 - Frequently used parts are in stock for faster turn-around.
 - Fleet Services has direct input for apparatus specifications.
 - Similar Heavy Duty Trucks and the same OEM for aerials will lessen the learning curve.
- Georgina Fire Fleet migration to Fleet Services is in early stages with significant remaining work pertaining to process and procedure improvement and the need for enablers.
- Chargeback or cost transfer rates can only be developed once M&R cost capture is systematic and supporting back-up data can be made available with relative ease.
- A stepped approach is recommended and the options provided herein ensure a migration path to the final future state in which Georgina Fleet Services largely does the M&R in-house for both Towns' Fire Fleets.
- A deeper dive for each step is required to develop the detailed implementation and transition plan. Key Performance Metrics (KPIs) and detailed Service Level Agreements between the two Towns can only be developed thereafter.
- Key success factors or enablers need to be developed and implemented as the Towns move towards the final future state.



Implementation Timeline for Final Future State

- This table depicts a conceptual timeline and level of effort as Low (less than 3 months), Medium (3 to 6 months) and High (more than 6 months).
- Task details need to be developed for the Steps to refine the timelines and level of effort.
- A project management approach is recommended.
- Level of Effort column indicates whether Internal and/or External resources may be utilized.

Steps	2022				2023				2024				2025				Level of Effort External (E) Internal (I)
	Q	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
Fire Fleet maintenance and repair alternatives study																E - Low	
Budget request for additional mechanic for Georgina (completed)																	
Budget request for Georgina garage facility minor upgrade (completed)																	
Continue Georgina Fire Fleet migration to Fleet Services																I - Medium	
Garage process improvement and work flow documents																I, E - Medium	
Planning and execution to establish Sublet Contracts																I, E - Medium	
Planning for FMIS and budget request																I, E - Low	
Planning for Facility enhancement or new facility and budget request																I, E - Medium	
Budget request for 1 additional mechanic and 1 parts/admin person																I - Low	
Planning for East Gwillimbury Fire Fleet migration to Georgina Fleet Services																I, E - Medium	
Development of cost transfer and invoicing method																I - Medium	
Development of Georgina garage performance metrics																I, E - Medium	
Development of operating guidelines and SLA between the two Towns																I, E - Medium	
Start of East Gwillimbury Fire Fleet migration to Georgina Fleet Services																I - Medium	
FMIS procurement																I, E - Medium	
FMIS implementation as System of Record, and enabler of key work flows, cost transfer data files, KPIs, etc.																I, E - High	
Facility enhancement																I, E - High	
Completion of migration of Fire Fleets to Georgina Fleet Services																I - Medium	



ATTACHMENT: DETAILED REPORT



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Purpose

- The project objective includes an assessment of Georgina Fleet Services Division providing fleet maintenance and repair services for East Gwillimbury Fire and Emergency Fleet.
- The purpose of this project deliverable is to document the project team's findings, conclusions and recommendations.
- This document has been revised to address the feedback received from the Towns' project teams as of January 12, 2023.



PROJECT OVERVIEW



Project Background and Objectives

- As part of the overall assessment, the Towns of Georgina and East Gwillimbury are interested in assessing the impact of any potential fleet maintenance and repair (M&R) services that may be offered by Georgina Fleet Services Department for the East Gwillimbury Fire and Emergency Fleet including specialty apparatus, vehicles, and other support equipment.
- Project started on October 19th with a formal project kickoff meeting. Mercury sent the request for information for both Towns on October 23rd.
- The majority of documents and data received by the Mercury Team on or about November 11th and additional information and revised documents provided until Jan 9, 2023 which are used for this document. Fleet data can change over time.
- Mercury interviews with both Towns concluded on Nov 21st with relevant personnel in East Gwillimbury and Georgina – interview details are provided in Appendix A.
- Previous Town of Georgina Diagnostic Review Report completed in 2020 by Mercury was leveraged for background.
- Objectives:
 - Cost efficiency through economies of scale.
 - Improved service levels and quality.



Project Description

- Study is limited to the Fire Fleet assets in the Towns of East Gwillimbury and Georgina while the Town Fleets are considered for context.
- Project scope examines fleet maintenance and repair functions only.
- Key project components:
 - Establish the current mode of operation (CMO) for both Towns.
 - Develop options or scenarios for future mode of operation (FMO).
 - Compare and contrast the FMO options and identify the most optimal option.
 - Identify impacted areas highlighting the critical success factors for the FMO option.



Approach and Deliverables

- Collaborative approach requiring Fire Chiefs and Deputy Chiefs, Fleet Directors, and other stakeholders' active involvement.
- Information collection for CMO through:
 - Review of documents and analysis of fleet inventory data received as recently as December 20, 2022.
 - Interviews with fleet management personnel and Fire Department representatives.
- Findings and conclusions presented in project report on November 30, 2022. Written feedback addressed.
- Full report review by project working team completed in two sessions: December 21, 2022 and January 12, 2023.
- Presentation document including an Executive Summary to Georgina and East Gwillimbury Senior Staff by December 28, 2022.
- Final Mercury deliverables and project closure January 18, 2023.



BASELINE METRICS FOR FIRE FLEETS



Georgina Fire Fleet Data

- Two Fleet Management Information Systems (FMIS) are being utilized
 - Fleet Services utilizes *WorkTech™ Pearl* as its FMIS which has Fire Fleet asset inventory along with the Town fleet assets (see Appendix B).
 - Maintenance and repair (M&R) cost by asset was not be provided.
 - Fire Fleet uses *TargetSolutions™* for M&R work orders, however, M&R costs by asset were not provided.
- Work orders are not centralized in one system, i.e., Fleet Services cannot see M&R history for an asset for which the Work Order was in *TargetSolutions*. Complete M&R history is important for the mechanic to know warranty and recall work performed and to identify any rework/quality issues.
- Fire Fleet category costs were provided as follows (Source document: *Copy of Fire services budget history, November 4, 2022*):

Fleet Expenses	Actuals (\$)				Budget (\$)	
	2018	2019	2020	2021	2021	2022
Internal Vehicle Maintenance	17,212	18,955	22,599	24,348	18,000	76,000
Fuel-Vehicles	72,395	68,035	57,485	57,177	58,900	
Repairs	147,943	157,207	199,787	241,467	147,500	147,500
Reserve for Fire Eqmt	474,900	474,900	474,900	529,700	529,700	529,700
Total	712,450	719,097	754,771	852,692	754,100	753,200



Georgina – Fire Fleet Profile

Count and percentage of active assets by Asset Type¹

Asset Type	Active Count	% of Active Fleet
Pickups	2	8%
Trailer	4	17%
HD Truck	11	46%
Sport Utility	5	21%
Watercraft	2	8%
Total	24	100%

¹ Source document, *Book 2, December 15, 2022* included fire fleet data, however, further granularity was provided by Georgia Fire directly, and it is shown in this table.

Vehicle Equivalent Unit (VEU)² for active assets by Asset Type

Asset Type	VEU Sum	% of Active Fleet
Pickups	3	3%
Trailer	4	3%
HD Truck	80	77%
Sport Utility	9	8%
Watercraft	8	8%
Total	103.0	100%

² Mercury uses an analytical technique based on the Vehicle Statistical Referencing System (VSRS). This technique allows us to compare statistics from diverse fleets by converting vehicle and equipment types to their equivalent in terms of the level of effort required to maintain a standard passenger sedan, which is used as a baseline and given a value of 1.0 Vehicle Equivalent Unit (VEU).



East Gwillimbury Fire Fleet Data

- Fire Fleet does not have or use an FMIS for work orders.
- Detailed asset level maintenance and repair information is not being captured and reported.
- Fleet cost information is summarized below (Source documents: *Fleet Repair Variance Analysis 2020- Mercury, Fleet Repair Variance Analysis 2021- Mercury, Fleet Repair Variance Analysis 2022- Mercury, November 11, 2022*).

	2020	2021	2022 YTD
Actual (\$)	200,007	170,861	163,372
Budget (\$)	42,235	50,000	100,000
Variance (\$)	(157,772)	(120,861)	(63,372)

- During an interview, it was indicated that the 2023 budget request will be increased to \$200,000.
- The Fire truck replacement cycle is 12 years and funding is reserved for such replacement.
- The other vehicles in the Fire Fleet are replaced dependent on vehicle age, odometer reading, and condition.



East Gwillimbury – Fire Fleet Profile

Count and percentage of active assets by Asset Type¹

Asset Type	Active Count	% of Active Fleet
HD Truck	10	40%
Pickups	8	32%
Trailer	4	16%
Carts (ATV and UTV)	2	8%
Van	1	4%
Total	25	100%

¹The Source Document, *Vehicle Information Listing - EG, November 11, 2022* was used to summarize the information shown in this table. Fleet data can vary over time.

Vehicle Equivalent Unit (VEU)² for active assets by Asset Type

Asset Type	VEU Sum	% of Active Fleet
HD Truck	71.0	80%
Pickups	12.0	14%
Trailer	2.0	2%
Carts (ATV and UTV)	2.0	2%
Van	1.5	2%
Total	88.5	100%

² Mercury uses an analytical technique based on the Vehicle Statistical Referencing System (VSRS). This technique allows us to compare statistics from diverse fleets by converting vehicle and equipment types to their equivalent in terms of the level of effort required to maintain a standard passenger sedan, which is used as a baseline and given a value of 1.0 Vehicle Equivalent Unit (VEU).



Georgina Fleet Employees (FTEs) and Fleet Size

	Georgina	
	Town Fleet	Fire Fleet
FTE		
Director or Deputy	0.2	0.25
Supervisor or Coordinator	1.0	0.0
Mechanics	2.0	0
Admin	0.5	0.2
Active Asset Count	244	24
VEU Count	305	103

- Mercury estimated the VEU for each asset provided in the fleet inventory data to calculate the VEU Counts.



East Gwillimbury Fleet Employees (FTEs) and Fleet Size

	East Gwillimbury	
	Town Fleet	Fire Fleet
FTE		
Director or Deputy	0.1	0.35
Supervisor or Coordinator	1.0	0
Mechanics	0	0
Admin	0	0.15
Active Asset Count	103	25
VEU Count	128	88.5

- Mercury estimated the VEU Count using vehicle and equipment Class Codes at a high level.



Staffing Requirements for Fire Fleets

- Workforce (number of technicians) determined by calculating total required demand hours (workload) based on VEUs and projected technician tolerance levels (i.e., annual demand hours per technician).

	Georgina Fleet Including Fire Fleet	Georgina Fire Fleet	East Gwillimbury Fire Fleet	Subtotal for Two Fire Fleets	Total for Three Fleets
# of Active Assets	268	24	25	49	293
# of VEUs	406	103	89	192	495
Demand Hours	4,872	1,236	1,062	2,298	5,934
# of Required Technicians	3.4	0.9	0.7	1.6	4.1

- Currently, Georgina Fleet Services has two technicians and with the Fire Fleet migration, there is a technician staffing shortage.
- Fire Fleet M&R work migration to Georgina Fleet Services has just begun and a significant amount of work is still being sublet to external commercial vendors.
- Some M&R work for the Town Fleet (i.e., not Fire Fleet) is also sublet¹.
- The calculation indicates that at least two more technicians² will be required for M&R work for the two Fire Fleets for work in-house.

¹ Findings documented in: *Georgina - Mercury Associates Fleet Diagnostic Review FINAL Report 12092020*

² It was indicated by Georgina that budget has been requested for one technician in 2023.



CURRENT MODE OF OPERATION FOR TOWN OF GEORGINA AND TOWN OF EAST GWILLIMBURY FIRE FLEETS



Georgina – Fire Fleet M&R Process

- M&R work is largely identified as a result of pre/post trip inspections.
- Fire staff creates a work order (WO) in *TargetSolutions* for M&R work. Fire staff determines whether the work will be performed by Georgina Fleet Services or an external vendor. Fleet Services has only recently started performing M&R services for the Fire Department.
 - Work assignment decision to use external vendor or Fleet Services is not clear and not documented.
- Fire Fleet asset database exists in *WorkTech* and in *TargetSolutions* and Work Orders are created as follows:
 - For external vendors, WO is created in *TargetSolutions*.
 - For inhouse work Georgina fleet services takes the information flag from TargetSolutions and creates a Fleet work order in WorkTech.
 - Fleet Services creates WO in *WorkTech*.
- No data exchange between the two systems -- Fleet Services would need to look up the WO in *TargetSolutions* for M&R history.
- An external vendor, comes in bi-monthly to conduct inspections and perform minor repairs, and some large repairs (e.g., pump).
- Three external vendors are used on a regular basis and some long downtime issues were reported.
- No vendor contracts, performance requirements, service level agreements, etc. are in place.



Georgina Fleet Services Role for Fire Fleet

- A recent endeavour is to migrate M&R for fire fleet assets from external vendors to Georgina's Fleet Services.
- Georgina has one Emergency Vehicle Technician (EVT).
- EVT provides input on specifications that facilitate in-house M&R.
- Fleet Services performs running repairs (i.e., quick repairs).
- Fleet Services performs mechanical repairs such as brake jobs¹.
- Fleet Services has performed warranty work in-house and invoiced the OEM for the costs of this work.
- Fleet Services occasionally performs small engine repairs only if mechanics have capacity.
- Fleet Services manages mechanical sublet work on behalf of Fire Fleet, e.g., Cummins for EGR, transmission work, etc.
- Some Fire Fleet parts are kept in stock at Fleet Services.
- It was indicated that the intention in 2023 is for Fleet Services to bear all Fire Fleet M&R costs.

¹ EVT certification is not mandatory for such mechanical work, but EVT certification is required for fire specific apparatus M&R.



Reported Improvements – Georgina Fire Fleet Migration to Fleet Services

- Turn around times seem to be better, i.e., truck returns to service faster – metrics not available to support this viewpoint, however, anecdotal evidence would suggest significant positive result in that at times it is worth it for Fire staff to wait for a repair to be completed rather than travelling to drop-off and thereafter, travelling to pick-up the truck.
- Fire apparatus-related knowledge has increased in Fleet Services, i.e. for common repairs and required parts.
- Frequently used parts are in stock for faster turn-around.
- Reduction in two drivers to deliver asset to external vendor and time to empty and refill asset.
- Fleet Services provides input for apparatus specifications which might result in added costs, but the benefits are:
 - Reduction in M&R work through use of better components (i.e., a better and more durable coolant hose, chassis lubrication system, moisture ejectors).
 - Improved safety due to use of disc brakes.



East Gwillimbury – Fire Fleet M&R Process

- Fire Fleet M&R is sublet to an external vendor in Brampton, Ontario which is about an hour drive from East Gwillimbury.
 - Long downtimes reported (see Appendix C) using this approach – Fire uses their own units that are not currently in use to maintain critical service numbers while the unit is at the Brampton shop.
 - Two drivers are needed to shuttle vehicles back and forth to the vendor.
 - Apparatus has to be changed out before sending an empty asset to the vendor and then again when the asset returns¹.
- Some minor fixes may be done by Queensville Fire personnel, but not routinized or planned. On-site small repairs can be scheduled with the vendor, but appointments are approximately 2 weeks out.

¹ In industry we typically see anywhere from 30 minutes to 2 hours depending on the level of change out.



East Gwillimbury – Town Fleet Services

- The Fleet Services facility is located in the newly built Operations Center. The facility is not staffed with a mechanic.
- Facility is not MTO (Ministry of Transportation Ontario) certified for CVOR (Commercial Vehicle Operator Registration) vehicles.
- Only running repairs are being done by the Fleet Coordinator who has a 310S (Sedan) and 310T (Truck) licence.
- No diagnostic tools are available. All M&R work requiring diagnostics are sublet to external vendors.
- As a new facility, fleet M&R infrastructure and work practices are currently under development and evolving.
- Approximately 80 percent of all M&R is sublet to external vendors.
- Fleet Services does not utilize an FMIS – *Excel*[™] is used for fleet management.



Georgina Maintenance and Repair Facility

- Town of Georgina maintains its fleet at a single maintenance facility located at 25291 Warden Avenue (“Bell Haven Yard”).
- The five-bay drive in/back out configured shop is approximately 500 square meters (5,400 square feet). Each bay can reportedly accommodate 2 light or 1 heavy vehicle.
- The facility sits on approximately 4.5 acres. A separate cold storage building and two material domes are also situated on the property.
- Most of the driving/parking/staging surface is hard-packed material or old asphalt/concrete surface. The remaining property is a grass field.



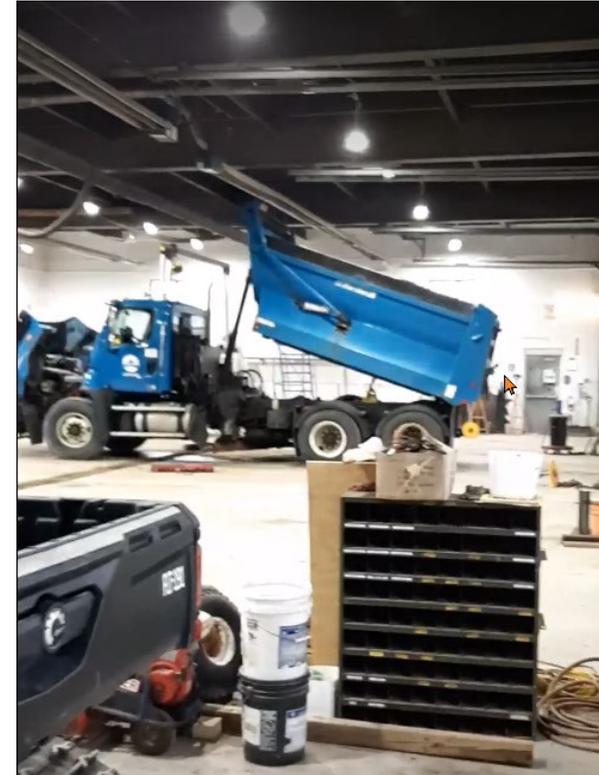
Georgina – Facility Cont'd

- The shop services all of the Town's vehicles and equipment that are not outsourced to local commercial vendors.
- The facility includes a maintenance and repair shop, tool room, two offices, two restrooms, a lunch/break room, and a mezzanine that is used for storage of parts, tires, and other seasonal tools, equipment, etc.
- A small area in the shop has been designated as a tire repair area.
- The shop air compressor is situated on the shop floor against an exterior wall.
- A small overhead gantry crane, a vehicle exhaust system, and a two-post vehicle lift are available in the shop.
- Natural light appears to be abundant through windows throughout the shop including the overhead garage doors.



Georgina – Facility Cont'd

- The effective bay sizes (actual working area of the bays) are approximately 5.5m x 15m (18' x 50').
- The standard for a heavy duty maintenance bay is 7m x 13m (24' x 45').
- For the Town of Georgina and the Town of East Gwillimbury, a bay sized at 7m x 15m (24' x 50') would be appropriate for large fire apparatus.



Georgina Facility Assessment for Future Mode of Operation

- Some large aerial ladders, quints, platforms, booms, etc. may require up to 25' of unobstructed overhead clearance so that for example a ladder can be raised far enough to allow for the cab to be tilted forward for access to the engine.
- The site has two points of ingress/egress and appears to have space to either expand or replace the fleet maintenance shop and add additional parking and vehicle and equipment staging depending on the placement of the septic system and provided there are no other limitations in the field area. The additional space would be required for large fire apparatus parking (i.e., dead line, ready line, etc.).
- Using standard bays to technician ratios, the shop as currently sized and configured can reasonably accommodate 2.5 to 3.5 wrench turning full-time equivalent technicians.
- Based on the staffing analysis, the total Fleet would require 4 full-time 100 percent wrench turning technicians.
- Using the minimum bay to technician ratio of 1.5 bays for every technician, a total of 6 bays would be the minimum number of bays required to maintain the combined fleet.
- However, the optimal number of bays to maintain the fleet would be 8 bays (2 bays per technician) to accommodate poor weather conditions, delays in part acquisition, peak demand (i.e., winter storms), indoor quick fixes, etc.
- Additional shop space would also be required to appropriately store additional shop equipment (i.e., portable column vehicle lifts, work benches, toolboxes, etc.) without impacting the actual working space within the bays.



Georgina Facility Assessment for Future Mode of Operation Cont'd

- To serve the entire Town of Georgina and the Town of East Gwillimbury Fire Fleet, consideration should be given to:
 - Number of existing maintenance and repair bays
 - Effective size of each bay and unobstructed overhead clearance
 - Additional available workspace in the shop, shop support space (i.e., parts room, bulk fluid storage, compressor room, tool storage, shop equipment storage, reference library, etc.), employee amenity areas (i.e., lunch/break room, restrooms, locker rooms, wellness center, etc.)
 - Administrative areas (i.e., offices, workstations, business machines, collaboration areas, meeting rooms, conference rooms, file storage, etc.).
- Based on the limited size of the bays, no additional workspace, lack of appropriately configured shop support areas, etc., the current facility should only be considered for this additional workload as a temporary solution until a larger more appropriately configured facility is available to support the fleet maintenance and repair mission. Facility enhancement is required for long-term efficiency.
- A formal space needs assessment and the development of a Fleet Maintenance Facility Master Plan should be accomplished to identify the appropriate space requirements for a properly sized and configured fleet maintenance facility.
- This would include primary and secondary adjacencies, general space characteristics, critical equipment, all developed with an eye towards improving the effectiveness of the fleet maintenance operation.



East Gwillimbury Facility

- In 2021, the Town of East Gwillimbury opened a new Operations Centre at 19850 Woodbine Avenue.
- The facility supports many core services including Roads, Fleet, Water and Wastewater, Parks, Facilities, and Emergency Services training and emergency operations.
- Based solely on photographs provided and the EG Operations Centre Virtual Tour, it appears that the 58,000 square foot facility was constructed with many features that positively support these operations including administrative space, training rooms, lunch/break room, locker rooms, etc.
- It is worth reiterating that 80% of the core services Fleet M&R work is sublet due to lack of staffing, diagnostic tools, etc. and the facility is not MTO certified.



East Gwillimbury Facility Cont'd

- Based on photographs provided, there are two large drive through maintenance and repair bays (or 4 standard size bays if utilized as drive in/back out configuration).
- Adjacent to the shop there appears to be an office and some partially secured space for tools, parts, supplies, and other equipment.
- Unobstructed overhead clearance appears to be adequate.
- There is an abundance of natural light in the shop area.
- There is also a large drive through vehicle wash bay with two standard high-pressure manual hose wands and center drain. Circulation and vehicle/equipment staging on the site appears to be adequate.
- For reference purposes, the two fleet maintenance facilities are approximately 17 km from each other.
- The shop is appropriate for 2 fleet maintenance technicians. Any additional workload from the Town of Georgina Fire fleet would add additional workload and a requirement for another fleet maintenance technician.
- Three technicians in this space would put pressure on the facility to accommodate workspace, the workforce, additional tools, work benches, etc.



OPTIONS FOR FUTURE MODE OF OPERATION



Future Mode of Operation – Considerations for Options

- Synthesis of information gathered from:
 - Documents, data files, photographs, and online information (e.g., virtual tour of East Gwillimbury Operations Centre).
 - Interviews with key fleet personnel and project leaders.
 - Industry norms.
- Current situation and readiness for change to ensure success.
- Status of required enablers, e.g., FMIS, facility, staffing, etc.
- Practicability – difficulty, time requirement, budget requirement.
- Probability of success.
- Systematic building block approach to minimize wasted effort or work.



Options for Fire Fleet M&R – Future Mode of Operation

Options	Georgina	East Gwillimbury	Advantages	Disadvantages
1. Status Quo	<ul style="list-style-type: none"> Continue with migration of Georgina Fire Fleet into Fleet Services Continue to utilize external vendors Continue with asset specifications that facilitate in-house M&R 	<ul style="list-style-type: none"> Continue with external vendors for Fire Fleet 	<ul style="list-style-type: none"> One additional mechanic requested in 2023 budget No process or procedural change 	<ul style="list-style-type: none"> Long downtimes Service quality not optimized and quality uncertainty Cost uncertainty Two drivers and long travel time to sublet vendor Time to empty asset/refill asset
2. Sublet Contract	<ul style="list-style-type: none"> Leverage both Fire Fleet asset quantities to contract external vendor(s) through a procurement process Ensure contract includes service level agreement, e.g., turnaround times for work type, corrective measures, service quality, right to inspect and audit, etc. Develop and conduct vendor work quality assurance methodology 		<ul style="list-style-type: none"> Potential for higher priority with contracted vendor Cost certainty Service quality optimized 	<ul style="list-style-type: none"> Up-front effort for RFP and procurement process for contract Additional effort for quality assurance Active contract management required Long downtimes continue if established service levels cannot be met Time to empty asset/refill asset



Options for Fire Fleet M&R – FMO Cont'd

Options	Georgina	East Gwillimbury	Advantages	Disadvantages
3. Transition	<ul style="list-style-type: none"> Fleet Services manages East Gwillimbury M&R Fleet Services uses some in-house and largely sublet vendors for East Gwillimbury Fire Fleet 	<ul style="list-style-type: none"> Migrate East Gwillimbury Fire Fleet M&R to Georgina Fleet Services - similar process to Georgina's Fire Fleet Use Work Order management system for M&R workflow 	<ul style="list-style-type: none"> Cost consistency and potential for reduction if combined with Option 2 Potential for reduced vehicle downtime especially for small and running repairs Downtime improvement Reduction in 2-drivers for delivery and pick-up Reduction in time to empty asset/refill asset 	<ul style="list-style-type: none"> Additional mechanic and admin staffing System of Record and FMIS establishment Cost transfer process establishment Operating guidelines establishment
4. In-house M&R (Final Future State)	<ul style="list-style-type: none"> Largely in-house work at Fleet Services facility with some sublet work for specialty repairs Stocked parts inventory and management for commonly used Fire Fleet parts 	<ul style="list-style-type: none"> Provides vehicle and information for M&R work Arranges for asset transportation to/from Georgina facility 	<ul style="list-style-type: none"> Much more influence and control over work quality, prioritization and scheduling Cost control Ability to set M&R priorities Downtime improvement Reduction in time to empty asset/refill asset Increased subject matter expertise for Fire apparatus 	<ul style="list-style-type: none"> Enhanced facility – significant modification and/or careful work planning for mix of light and heavy vehicles in facility at the same time. Facility enhancement is important for long-term efficiency. Additional mechanic and admin staffing System of Record and FMIS establishment Cost transfer process establishment Operating guidelines and service level establishment



Other FMO Options Considered

Discussion took place for option to provide a Georgina mechanic at East Gwillimbury Operations Centre Facility. This is not a practicable solution due to:

- The current Fleet area is a “flex” space which is jointly used by either Fleet or Roads operations subject to evolving daily needs. There is a future “wing” being planned for Town Fleet M&R, however the time horizon is quite long and reportedly it is part of a much larger buildings project.
- Georgina garage services would be impacted negatively due to mechanic shortage.
- Inefficient use of mechanic resource, especially if the required parts for M&R are not readily available.

We also discussed the option to provide an external vendor mechanic at East Gwillimbury Operations Centre Facility. This is not a practicable solution due to:

- Reportedly, currently on-site work request to external vendors can take a long time – there is no contract, priority establishment, or service level agreements.



Key Success Factors for In-house M&R at Georgina Fleet Services

Governance	Staffing	Facilities	M&R Work Design and Management	FMIS
Oversight, operating guidelines, service level agreements, business reviews and issue resolution	Bandwidth - need more technicians and a parts person at Georgina Fleet Services	Modifications to facility and/or work planning to accommodate Fire Fleets M&R. Facility enhancement for long-term efficiency.	PM program, Legislated Inspections – CVOR and NFPA; garage process and procedure improvement	One system of record for assets and enabling fleet work flows
Cost transfer (e.g., chargeback method and rate) from Georgina to East Gwillimbury, and invoicing (e.g., accounts payable and accounts receivable)	Technician - training, Fire Fleet knowledge and EVT qualifications	MTO certification for M&R	Quality Assurance	M&R parts, labour, and sublet cost capture for rate plan development
Insurance considerations - East Gwillimbury vehicles at Georgina garage	Labour Union and CBA impact		Parts Inventory and Management	Management reports, ad hoc reports, key performance indicators (KPIs) and M&R performance management and metrics
Liability considerations, i.e., who is liable if vehicle is unsafe due to deficient M&R			Warranty and recall management	Cost capture and billing for East Gwillimbury Fire Fleet



Anticipated Benefits

- More control over work scheduling and quality when Fire Fleet work is done in-house.
- Economies of scale with both Fire Fleets and Georgina Town Fleet using the same garage services, the same external vendors and the same FMIS.
- Asset downtime reduction.
- Reduction in time to empty asset/refill fire asset.
- Improved negotiating position with external vendors due to larger quantity of assets to establish higher priority and service levels.
- Potential for external vendor cost reduction for both Town Fire Fleets.
- Reduction in time to empty/refill fire assets and for driving assets to an external vendor.



One-time or Transition Costs for Final Future State

- FMIS selection and implementation as the system of record for all fleets that Georgina Fleet Services maintains and repairs, and to facilitate garage workflows – cost will depend on the chosen system and fleet functions to be implemented.
- Significant facility enhancement or a new facility – 2023 budget request includes minor upgrades only.
- Process and procedure improvement for Georgina’s garage services.
- Training for mechanics to have their EVT certification – current cost for a 4-day course is \$650 USD per person (<https://www.oafc.on.ca/fdsoa-emergency-vehicle-technician-class-f1-f2-0>) for:
 - **LEVEL 1 / F-1 Maintenance, Inspection & Testing**
This course covers the maintenance, inspection and testing of Fire Apparatus as described in NFPA 1911, Standard for the Inspection, Maintenance, Testing and Retirement of In-Service Fire Apparatus.
 - **LEVEL 1 / F-2 Design & Performance Standards and Preventative Maintenance of Fire Apparatus**
This course covers the standards for fire apparatus as described in NFPA 1901, Standard for Automotive Fire Apparatus, and in NFPA 1911, Standard for the Inspection, Maintenance, Testing and Retirement of In-Service Automotive Fire Apparatus.
 - **Level 2 and Master EVT** certification programs are also available, and the associated cost will need to be considered for this training.



Ongoing Cost Elements for Final future State

- Additional technicians – cost of 2 FTE of which budget has been requested for 1 FTE in 2023.
- Addition of a parts person at 0.5 FTE – the same individual would do sublet management, service writing, and admin tasks for a full FTE role.
- Subscription or licence cost for the FMIS.



Conclusions and Recommendations

- Anticipated benefits from East Gwillimbury Fire Fleet M&R migration to Georgina Fleet Services similar to benefits seen by Georgina Fire Fleet.
- Benefits seen by Georgina Fire Fleet from migration:
 - Turn around times seem to be better, i.e., truck returns to service faster – metrics not available.
 - Fire apparatus-related knowledge has increased in Fleet Services.
 - Frequently used parts are in stock for faster turn-around.
 - Fleet Services has direct input for apparatus specifications.
 - Similar Heavy Duty Trucks and the same OEM for aerials will lessen the learning curve.
- Georgina Fire Fleet migration to Fleet Services is in early stages with significant remaining work pertaining to process and procedure improvement and the need for enablers.
- Chargeback or cost transfer rates can only be developed once M&R cost capture is systematic and supporting back-up data can be made available with relative ease.
- A stepped approach is recommended and the options provided herein ensure a migration path to the final future state in which Georgina Fleet Services largely does the M&R in-house for both Towns' Fire Fleets.
- A deeper dive for each step is required to develop the detailed implementation and transition plan. Key Performance Metrics (KPIs) and detailed Service Level Agreements between the two Towns can only be developed thereafter.
- Key success factors or enablers need to be developed and implemented as the Towns move towards the future state.



INTERVIEW DETAILS

Appendix A



Interview Details

Interview Date	Town Represented	Town Attendees' Titles
November 10, 2022	Georgina	Fleet Services: <ul style="list-style-type: none"> • Director • Supervisor • Coordinator Fire Fleet: <ul style="list-style-type: none"> • Deputy Fire Chief • Admin
November 16, 2022	East Gwillimbury	Fire Fleet: <ul style="list-style-type: none"> • Deputy Fire Chief
November 18, 2022	East Gwillimbury	Director of Operations
November 21, 2022	Georgina	Fleet Services Supervisor

All calls were attended by the Towns' project manager and interviews were conducted by Mercury team.



GEORGINA FLEET METRICS

Appendix B



Town of Georgina Fleet Profile by Division or Department

Asset Count

Asset Type	Active Count	% of Active Fleet
Parks	95	32.8%
Roads	80	27.6%
Fire and Emergency Services	24	15.9%
Water	20	6.9%
Facilities - Elect. Mainten.	9	3.1%
Fleet	8	2.8%
Facilities - GIP	6	2.1%
Recreation and Culture	6	2.1%
Building	5	1.7%
MLEO	5	1.7%
Development Engineering	3	1.0%
Facilities - SA	2	0.7%
Administrative Services	1	0.3%
Facilities - Civic Centre	1	0.3%
Facilities - Egypt Hall	1	0.3%
Facilities - Peff. Ice Pad	1	0.3%
Public works	1	0.3%
Total	268	100%

VEU Count

Asset Type	Active Count	% of Active Fleet
Parks	111.1	26%
Roads	116.4	27%
Fire and Emergency Services	103	28%
Water	20.9	5%
Facilities - Elect. Mainten.	13.0	3%
Fleet	2.7	1%
Facilities - GIP	8.0	2%
Recreation and Culture	4.8	1%
Building	6.5	2%
MLEO	6.5	2%
Development Engineering	4.5	1%
Facilities - SA	3.0	1%
Administrative Services	2.0	0%
Facilities - Civic Centre	1.0	0%
Facilities - Egypt Hall	1.0	0%
Facilities - Peff. Ice Pad	1.0	0%
Public works	1.5	0%
Total	407	100%



Town of Georgina Fleet Age by Asset Type

We calculated the Mean and Median averages for fleet age as well as showing the Minimum and Maximum age. Generally, the Median average can be used to calculate the de facto replacement cycle.

Asset Type	Min Age	Mean Age	Median Age	Max Age
Grounds Equip	0.6	7.1	5.1	27.6
Pickups	0.6	4.5	3.6	9.6
Trailer	0.6	12.3	12.6	34.6
Attachments	0.6	10.1	10.6	22.6
Off Road and Construction	0.6	8.5	5.6	29.6
Mounted	0.6	7.8	4.1	27.6
HD Truck	0.6	9.4	6.6	24.6
Sport Utility	0.6	3.9	3.6	12.6
MD Truck	1.6	3.6	3.6	7.6
Van	2.6	8.1	6.6	14.6
Stationary	1.6	13.6	17.6	22.6
Non Self Propelled	8.6	12.6	12.6	17.6
Carts	2.6	10.6	7.1	25.6
Material Handling	11.6	20.3	22.6	26.6
LD Truck	2.6	2.6	2.6	2.6
Watercraft	2.6	8.6	8.6	14.6
Total	0.6	8.1	5.6	34.6



EAST GWILLIMBURY FIRE FLEET DOWNTIME

Appendix C



November 2022 Fire Fleet Downtime Tracking

ADMINISTRATION STATION 2-4

Car 1	GMC Sierra	2020	BB56177	2 days
Car 2	GMC Sierra	2021	BK25927	10 days (warranty)
Car 3 (E14-25)	Chevrolet Silverado	2014	BP86535	2 days
Car 4 (E13-24)	Dodge Ram 1500	2013	BP86534	5 days
Car 5 (E15-27)	Chevrolet Silverado	2015	AL81261	2 days
Car 6 (E15-26)	Chevrolet Silverado	2015	AL81256	2 days
Car 7 (E16-21)	Chevrolet Silverado	2016	AN76069	2 days
Car 8 (E16-22)	Chevrolet Silverado	2016	AN82220	2 days
Pub Ed Van	GMC Savannah	2018	BL91080	2 days
ATV	Honda TRX350FE6	2006	96KM4	2 days

HOLLAND LANDING STATION 2-4

Pumper 241	Spartan Advantage	2008	834WK	46 days
Tanker 244	Spartan Metro Star	2011	1598ZZ	23 days
Aerial 246	HME Specter 111'	2017	BA40680	7 days plus 120 days for warranty work
Trailer	ATMT 7x16 TA2	2020	S5926T	1 day
Trailer	ATMT 6x12 SA	2020	S7311W	1 day



2022 Fire Fleet Downtime Cont'd

MOUNT ALBERT STATION 2-6

Pumper 261	Spartan Metro Star	2014	AJ35390	12 days
Tanker 264	Spartan Gladiator	2012	AJ71213	10 days
Rescue 269	Freightliner FM2	2016	AN42537	7 days
Trailer (E16-51)	Neo 716	2016	N9096J	1 day
Polaris (E16-41)	Polaris Ranger 6x6	2016	2EM56	16 days
Trailer	NEO 610	2018	P9185S	1 day

QUEENSVILLE STATION 2-8`

Pumper 281	Spartan	2021	BN167790	15 days
Tanker 284	Spartan	2015	AK52883	12 days
Aerial 286	Freightliner 80	2003	DP2380	14 days
Rescue 289	Freightliner FM2	2016	AN42536	7 days



ABOUT MERCURY

Appendix D



About Mercury Associates, Inc.

- Established in 2002
- Largest dedicated fleet consulting and technology service provider in North America
- Serve fleets of 50 to 250,000 vehicles and pieces of equipment
- Assist organizations improve fleet management practices, increase operational safety and efficiency, optimize asset utilization and reliability, and operate a cost competitive fleet operation



Headquarters - Rockville, MD



Canada Client List

- Alberta Treasury Bureau
- Aurora, ON
- Calgary, AB
- Capital Regional Dist., BC
- Gravenhurst, ON
- Guelph, ON
- Halton, ON
- Medicine Hat, AB
- Metro Vancouver, BC
- North Bay, ON
- Oakville, ON
- Prince George, BC
- Province of Saskatchewan
- Province of New Brunswick
- Quesnel, BC
- Red Deer, AB
- Region of Waterloo
- Saint John, NB
- Strathmore, AB
- Surrey, BC
- City of Sault Ste. Marie
- Town of Georgina
- Waterloo



Select United States Client List

- Alexandria, VA
- Annapolis, MD
- Asheville, NC
- Baltimore, MD
- Boston, MA
- Boynton Beach, FL
- Brownsville, TX
- Corpus Christi, TX
- Cumberland City, NC
- Delray Beach, FL
- District of Columbia
- Duluth, MN
- Encinitas, CA
- Fresno, CA
- Glendale, CA
- Gresham, OR
- Harford City, MD
- Harris City, TX
- Huntington Beach, CA
- Jamestown, NY
- Janesville, WI
- Kent, WA
- Kissimmee, FL
- Lincoln, NE
- Los Angeles City, CA
- Maricopa City, AZ
- Mequon, WI
- Montgomery City, MD
- Montgomery City, OH
- Mountain Brook, AL
- Norman, OK
- Oak Brook, IL
- Odessa, TX
- Olympia, WA
- Orange City, CA
- Orange City, FL
- Orlando, FL
- Palm Beach, FL
- Palo Alto, CA
- Port Moody, BC
- Prince George, BC
- Richardson, TX
- Richmond, VA
- Sacramento, CA
- Sacramento City, CA
- Salem, OR
- San Francisco, CA
- Sioux Falls, ID
- Topeka, KS
- Travis City, TX
- Wilmington, DE



Mercury Clients Overview

- ≈ 50 unique clients served per year
- 33 of 50 largest cities in U.S., including 10 largest, and many of the largest counties
- 34 states / 4 provinces
- U.S. Army, Navy, Air Force, Marines
- GSA, NASA, U.S. Postal Service
- 13 of 16 executive branch agencies including Defense (202,000 vehicles), Homeland Security (58,000 vehicles), State (15,000 vehicles)



Mercury Project Team



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