



## Committee of the Whole Report

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**Report Number:** EMS2025-001

**Meeting Date:** March 4, 2025

**Title:** Paramedic Service Operational Key Performance Indicators

**Description:** Paramedic Service Operational Key Performance Indicators

**Author and Title:** Sara Johnston, Paramedic Chief

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### Recommendation(s):

**That** Report EMS2025-001, **Paramedic Service Operational Key Performance Indicators**, be received; and

**That** this recommendation be brought forward to Council for consideration at the next Regular Council Meeting.

**Department Head:** \_\_\_\_\_

**Financial/Legal/HR/Other:** \_\_\_\_\_

**Chief Administrative Officer:** \_\_\_\_\_

## **Background:**

This report provides a summary of operational key performance indicators (O-KPIs) used by Kawartha Lakes Paramedic Service to share with Council and the Public.

Our main goal is to provide the best possible care to the community outside of hospitals in a way that is effective and efficient. To do this, we review our performance each year by looking at a variety of measures. These measures include patient care, safety, the experience of patients, how we operate, and the financial resources used. By focusing on these areas, the Service has been able to meet and exceed response time goals while managing costs.

These O-KPIs give Council and the public a clear understanding of how well the Paramedic Service is performing. They also help us compare our progress over time, make improvements, and guide well-informed, evidence-based decisions for the future.

## **Analysis:**

The O-KPIs in this report include a combination of traditional and legislated measures, as well as performance measures developed by the Paramedic Chiefs of Canada (PCC). The goal of the PCC measures is to improve EMS delivery by using national standards that are clear, based on evidence, and can be widely applied.

In Ontario, few sources exist for comparing paramedic service performance. However, the Municipal Benchmarking Network (MBN) tracks six key EMS measures, and where applicable, this data is included for comparison in this report. While these benchmarks provide context, the most recent MBN report was released in 2021. Given the significant changes since then, the data is likely outdated and may serve as a less reliable benchmark.

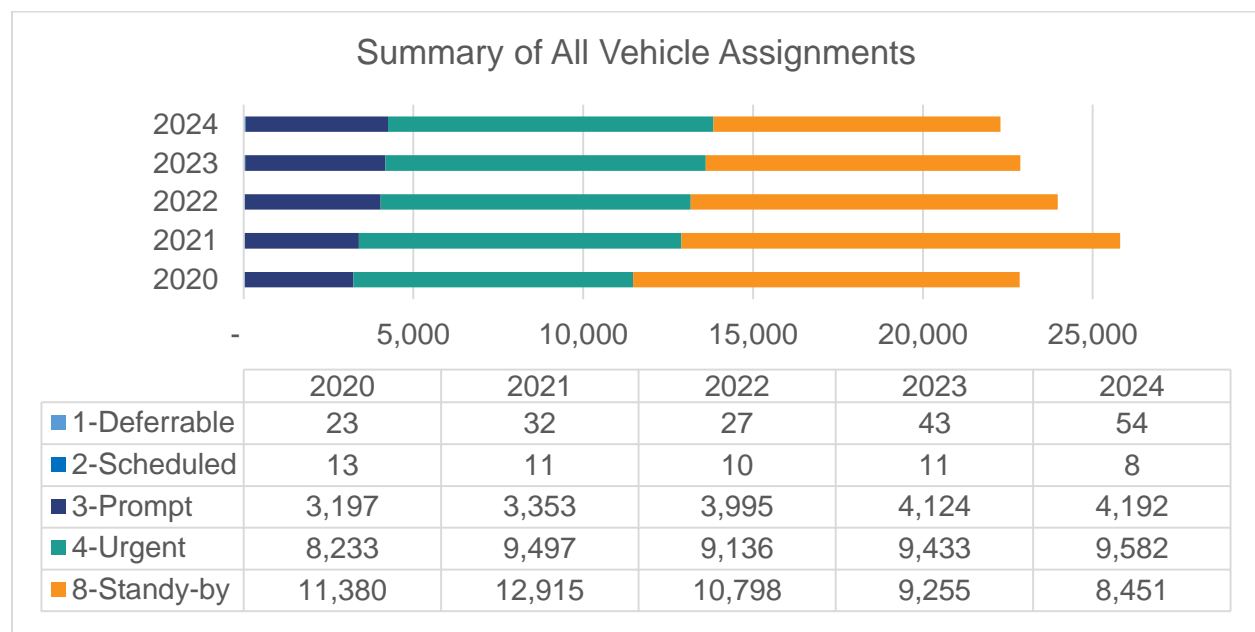
This report provides a broad overview of the O-KPIs for the Paramedic Service. For more details, you can refer to the full O-KPI 2024 Summary Sheet (Appendix A) and O-KPI 2024 Infographic (Appendix B) attached to this report.

Kawartha Lakes Paramedic Service keeps track of every time a vehicle is assigned to a call through the dispatch system. We call these events “call volumes,” and they help us understand how much demand there is for our service.

In the past, call volume included all vehicle assignments, but this can be somewhat misleading. For example, it counts stand-by coverage in other areas (called Code 8s) and situations where more than one vehicle is sent to the same call. To show demand trends more accurately, this report looks at call volume in two ways: **vehicle assignments** (Figure 1) and **patient-related calls** (Figure 2).

Figure 1 shows that in 2021, the service had a considerable increase in requests for service and vehicle assignments. This was likely caused by the COVID-19 pandemic, which also impacted other Paramedic Services and hospital emergency departments across Ontario.

In response to the 12.45% increase in 2021, we adjusted our approach by reducing stand-by coverage (Code 8s) in other areas to help manage the growth. As a result, in 2024, the overall number of vehicle assignments went down by 2.65%, with fewer Code 8 assignments contributing to this decrease.



|   |               |               |               |               |               |
|---|---------------|---------------|---------------|---------------|---------------|
| <b>Total Vehicle Assignments (Code 1-8)</b> | <b>22,846</b> | <b>25,808</b> | <b>23,966</b> | <b>22,866</b> | <b>22,287</b> |
|---|---------------|---------------|---------------|---------------|---------------|

Figure 1

### Call Volume – Patient-Related Calls

Figure 2 shows the number of patient-related calls, which provides a more meaningful representation of demand for service.

In 2023 and 2024, demand returned to a steady and predictable increase, growing by 3.36% in 2023 and 1.52% in 2024. Over the past five years, the average yearly increase in patient calls has been 3.43%.

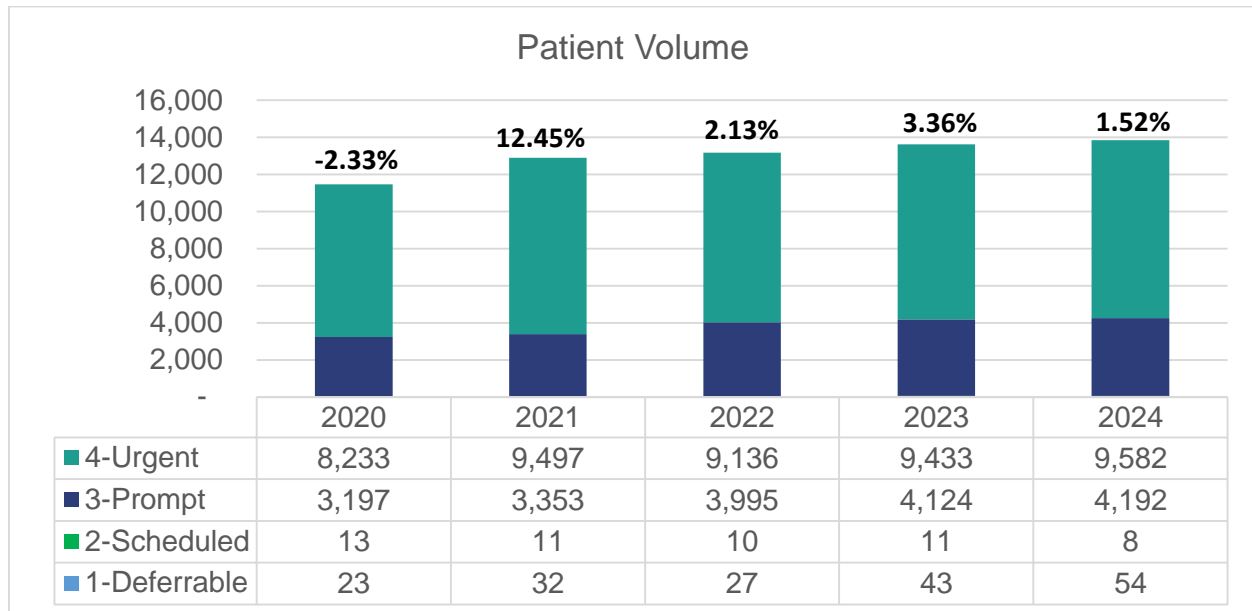


Figure 2

### Response Time Performance

Under Regulation 257/00 of the *Ambulance Act*, upper-tier municipalities must set and report on response time targets for 911 calls. These targets are based on patient urgency, measured using the Canadian Triage and Acuity Scale (CTAS). CTAS prioritizes patient needs from 1 (most urgent) to 5 (least urgent).

By October 31 each year, Paramedic Service must submit their response time targets for the upcoming year to the Ministry of Health. By March 31, they must also report on

how they performed in the previous year, including the percentage of time they met those response time targets to Sudden Cardiac Arrests and each CTAS level (1 through 5).

Figure 3 below shows how Paramedic Services performed in 2024 compared to the targets set in the Council-approved Response Time Performance Plan (RTPP). For instance, the service set a target of arriving within 8 minutes, 50% of the time to CTAS 1 patients. In 2024 the service exceeded that target, arriving within 8 minutes 54.03% of the time. The service met or exceeded all other response time targets.

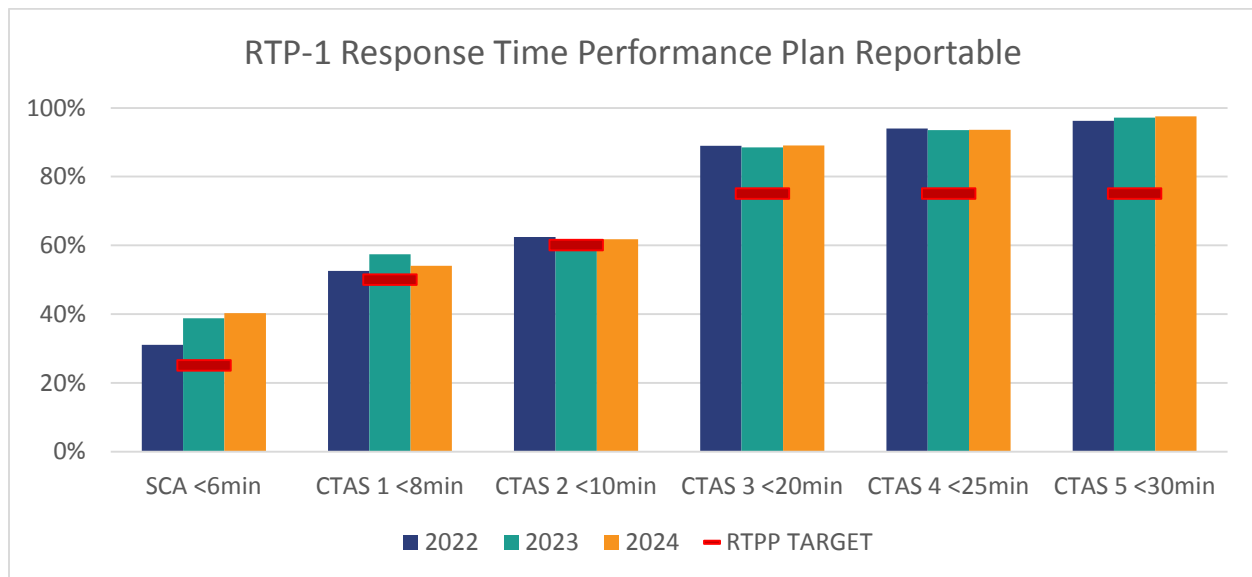


Figure 3

### Volume Measures – Per Capita

Figures 4 and 5 below show the number of emergency (Code 3 and 4) and non-emergency (Code 1 and 2) calls per 1,000 residents respectively.

In 2024, emergency calls increased, with 174 calls per 1,000 people. This is much higher than the average reported by the Municipal Benchmarking Network (MBN), which is 127 calls per 1,000 people.

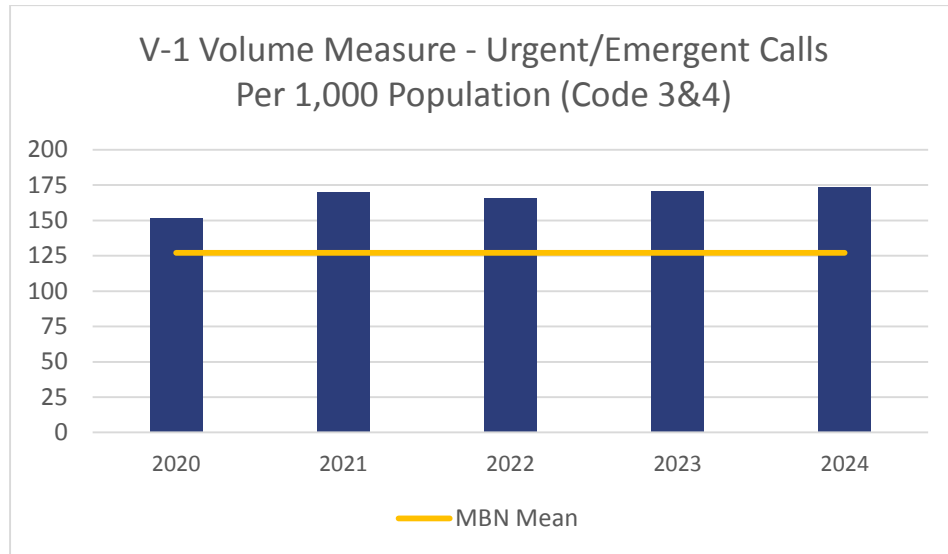


Figure 4

Non-urgent calls (Figure 5) are very low in the City of Kawartha Lakes, with less than 1 call per 1,000 people (0.78/1,000) annually. This is due to deployment plan strategies and the high number of patient transfers handled by Community Care.

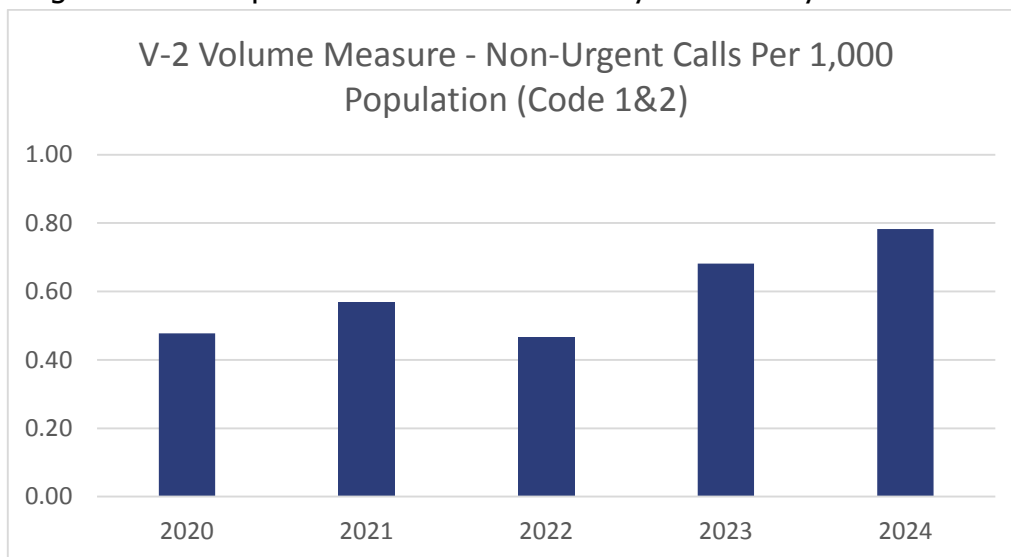


Figure 5

## System Utilization / System Performance

### **Unit Hour Utilization (UHU)**

Unit Hour Utilization (UHU) measures both how busy ambulances are and how much time they remain available for emergency responses. A higher UHU percentage indicates that ambulances spend more time on calls, leaving less time to respond to new emergencies.

To maintain a reliable EMS system, it is essential to balance ambulance usage with response times, employee well-being, costs, and quality of care. Ideally, utilization rates should remain below 35% to ensure ambulances are readily available for emergencies. When UHU rises too high, fewer ambulances are available for new calls, potentially delaying response times and impacting patient care.

Recognizing these challenges, the service implemented key improvements in 2024, including adding a daytime ambulance in Lindsay and introducing a dedicated offload nurse program at the local hospital. These initiatives led to a significant reduction in UHU and improved system reliability. As a result, the System Utilization Rate dropped from 33.27% in 2023 to 29.92% in 2024 (Figure 6), meaning ambulances were more available for new emergencies.

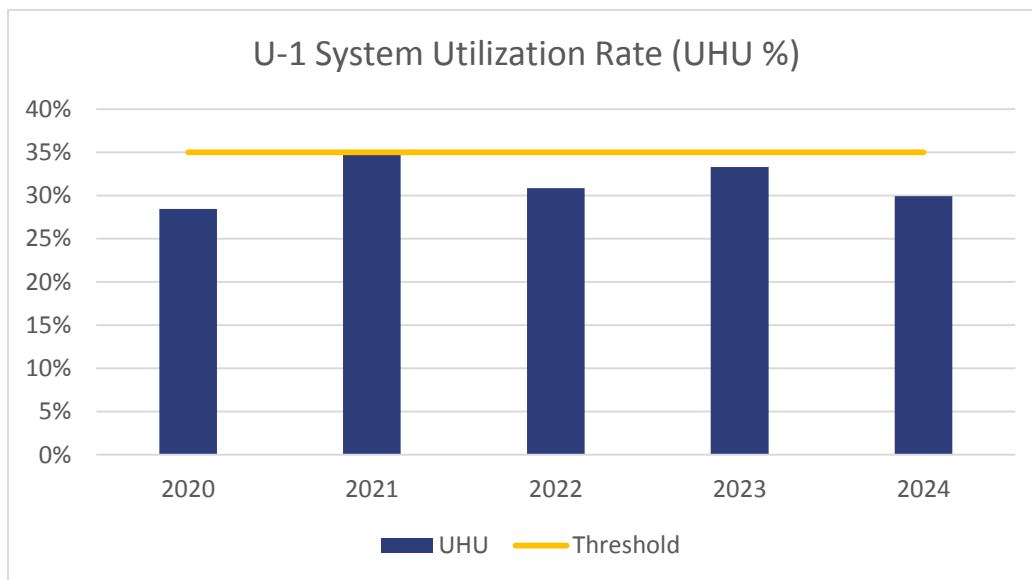


Figure 6

## Code Zero Incidents and Their Reduction

A critical concern occurs when all ambulances are busy, triggering a “Code Zero” situation, where no City of Kawartha Lakes ambulances are available for new emergencies. This can delay response times and increase patient risk.

As shown in Figure 7, Code Zero incidents had been rising at an alarming rate. However, the 2024 service enhancements led to a measurable decline. The average time per day without an available ambulance dropped by 47.53% compared to 2023. While emergency calls were never left unanswered during Code Zero incidents, some experienced delays until an ambulance became available, or a neighboring service responded.

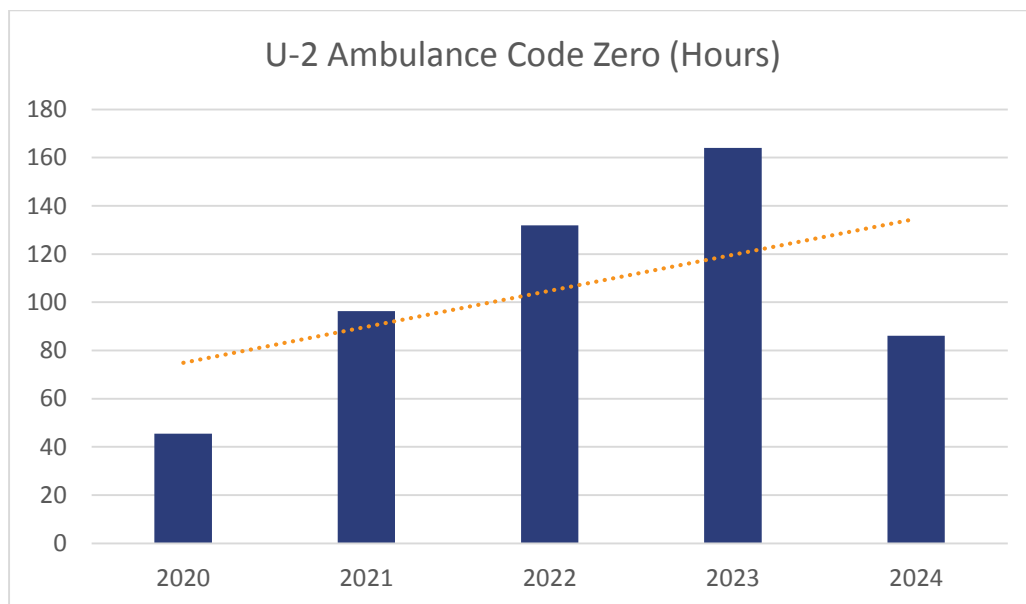


Figure 7

## Understanding UHU Variability

UHU rates vary widely between EMS systems due to differences in system design, call density, and geographic challenges. There is no universally agreed-upon "ideal" UHU rate, as each system's needs differ. However, as a general guideline, it is suggested that in order to keep the system reliable, utilization rates should stay below 35%. Additionally, UHU does not account for other essential tasks like paperwork, cleaning, or restocking ambulances.



By continuously monitoring and analyzing key performance metrics, the service has demonstrated that proactive strategies can lead to meaningful improvements in ambulance availability and emergency response times.

## Cross Border

Figure 8 compares how often ambulances from other municipalities respond to calls in the City of Kawartha Lakes compared to how often Kawartha Lakes ambulances respond in neighboring areas. In 2024, ambulances from other municipalities serviced 1,527 calls within Kawartha Lakes, while Kawartha Lakes ambulances responded to 887 calls outside the region. This indicates a greater reliance on mutual aid from neighboring services than is provided in return.

This information helps evaluate how well current service levels meet community needs. To reduce dependence on outside services, Kawartha Lakes Paramedic Service has focused on improving deployment strategies, minimizing response delays, and lowering costs associated with cross-border billing.

Currently, Kawartha Lakes has one formal cross-border billing agreement with Haliburton, despite also bordering Peterborough and Durham. In 2024, the City paid \$105,935 to Haliburton for responding to calls within Kawartha Lakes, a decrease from \$118,300 in 2023.

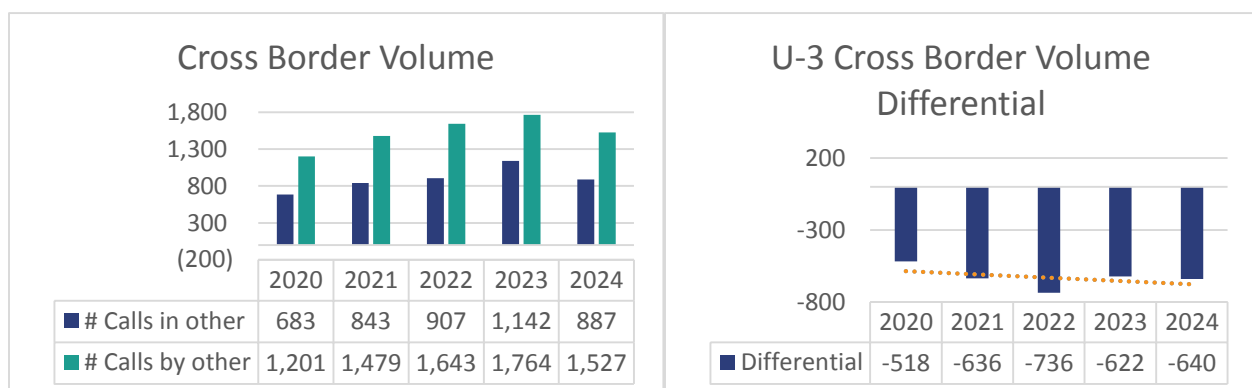


Figure 8

### System Design / Deployment Measures

Figure 9 below shows the System Design and Deployment Measures. The first category represents the average time paramedics spend at the hospital (*Average at Hospital Time*), while the second shows the average time it takes to transfer a patient to hospital staff (*Average Offload Time*).

The last two categories show the time it takes for 90% of calls to be completed at the hospital (*90th Percentile at Hospital Time*) and for 90% of patients to be transferred (*90th Percentile Offload Time*). This means that for 90% of all calls, the times fall within these ranges.

Improvements have been observed in all areas, largely due to strong collaboration with the local hospital to expedite patient offloading through initiatives like the dedicated offload nurse program and fit-to-sit initiatives.

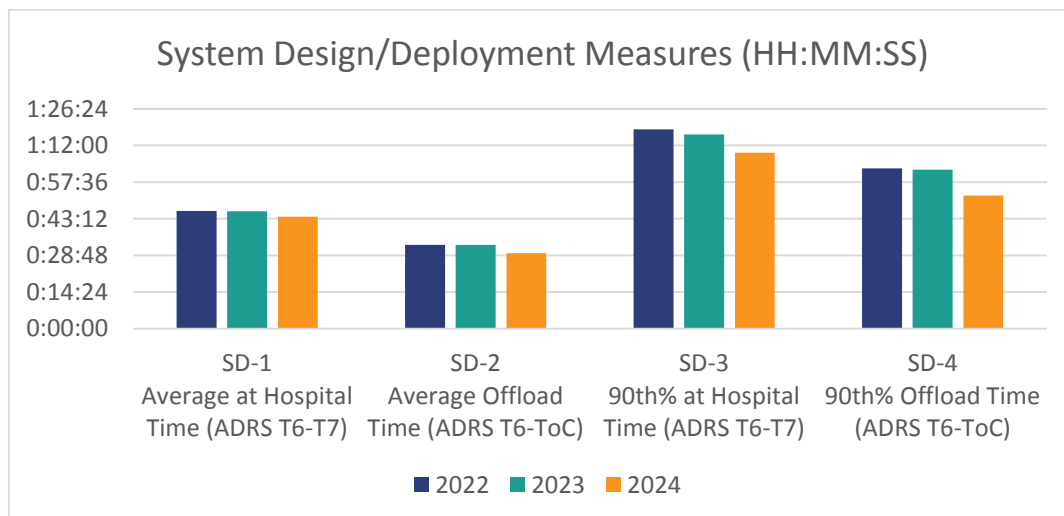


Figure 9

Figure 10 on the left, shows the percentage of emergency calls that received an Advanced Care Paramedic (ACP) compared to Primary Care Paramedic (PCP) response. Figure 10 on the right, compares ACP and PCP responses specifically for the most

serious emergencies (CTAS 1 patients). The City of Kawartha Lakes' approach of maintaining a 50% ACP to PCP ratio has led to superior performance in these areas.



Figure 10

### Finance/Funding Measures

Figure 11 compares 2024 data to previous years for three cost measures: operating cost per capita, operating cost per event, and operating cost per unit hour. Overall operating expenses increased from the previous year due to fluctuations in call volumes, inflation, rising equipment costs, and the addition of a daytime ambulance in Lindsay.

The cost per unit hour rose to \$246 in 2024, up from \$238 in 2023 - a 3.22% increase. While this places us slightly above the 2021 MBN mean of \$241 per unit hour, the increase has contributed to improved coverage and a more balanced workload for paramedics.

Additionally, the cost per event increased, primarily due to a decrease in the number of standbys. With fewer standby events spreading costs over a smaller number of calls, the average cost per response rose, reflecting shifts in service utilization and resource allocation.

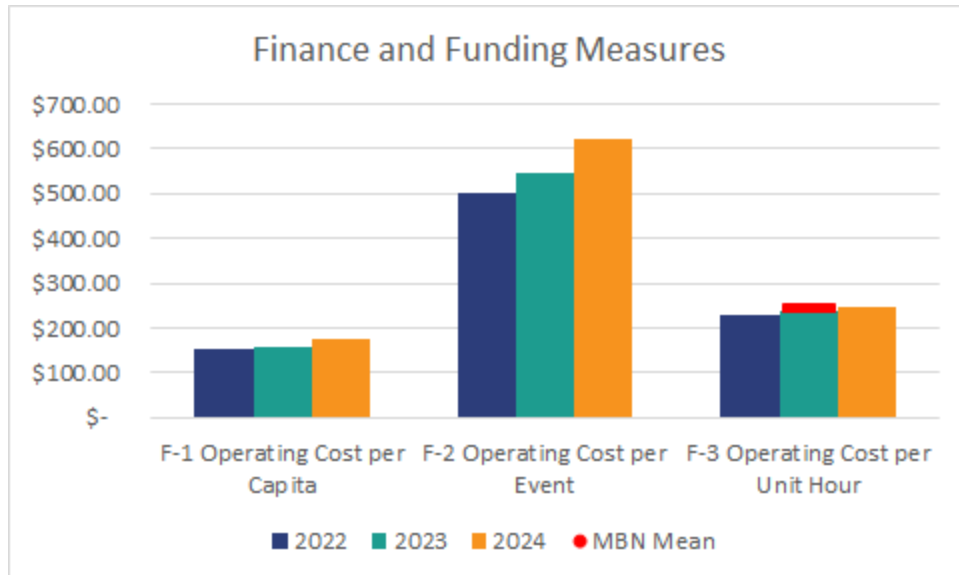


Figure 11

### Fleet Measures

Figure 12 shows the cost per kilometer for maintaining the ambulance fleet (Fleet Maintenance) and the total cost of running the fleet, including maintenance and fuel (Fleet Operating Costs).

In 2024, the total cost to operate each kilometer decreased by \$0.04 compared to 2023, dropping from \$0.70/km to \$0.66/km. This reduction was primarily due to stabilizing fuel prices and fewer major vehicle repairs.

Despite these savings, the department exceeded the 2024 fleet maintenance budget by 113% (\$115,500) and is working closely with the vehicle vendor to replace aging ambulances as soon as possible.

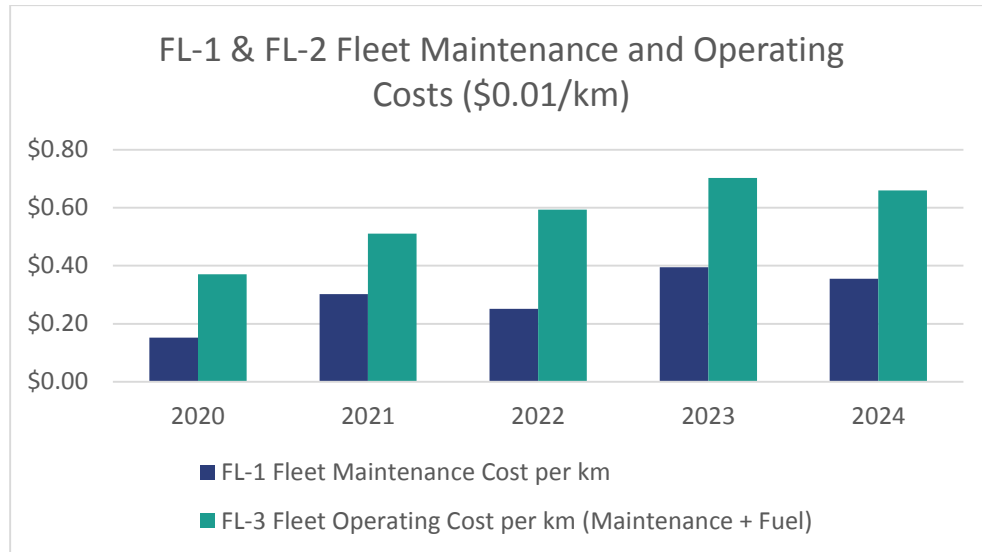


Figure 12

Figure 13 shows that the number of vehicle incidents and collisions per 100,000 km continues to increase. In 2024, there were 2.73 incidents per 100,000 km driven.

With a significant influx of new staff, the service introduced driver training as part of new hire and regular training in 2024 and continues to explore ways to enhance safety.

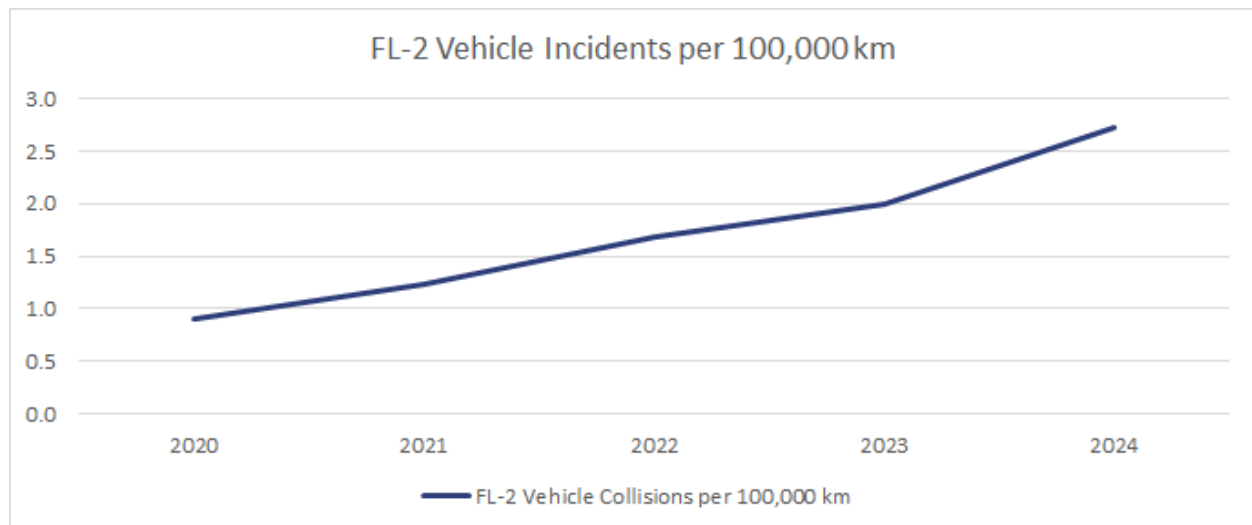


Figure 13

### Carbon Emissions Measures

Total Annual Fleet Carbon Emissions and Carbon Emissions per Capita decreased slightly in 2024 compared to 2023. This decrease is mainly due to fewer standbys (Code 8s) and fewer kilometers travelled (66,206km). Kawartha Lakes needs to be aware of its carbon emissions, particularly since the fleet is aging and the vehicles are large.

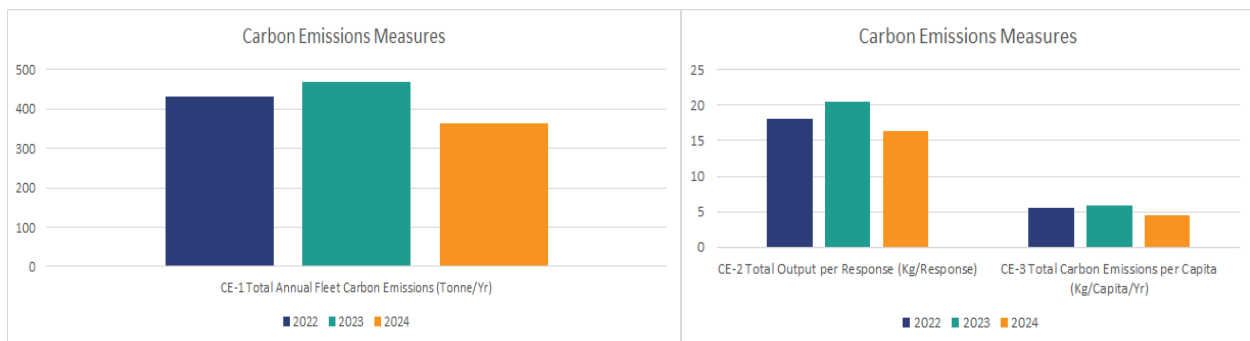


Figure 14

### Satisfaction Measures

Paramedic Service Stakeholder Satisfaction measurement is a performance metric under development for the Paramedic Service. Current methodology is limited to the passive approach of a comparison of commendations versus complaints received as a result of service provided. A measurement of time for complaint investigation has been added in KPI reporting.

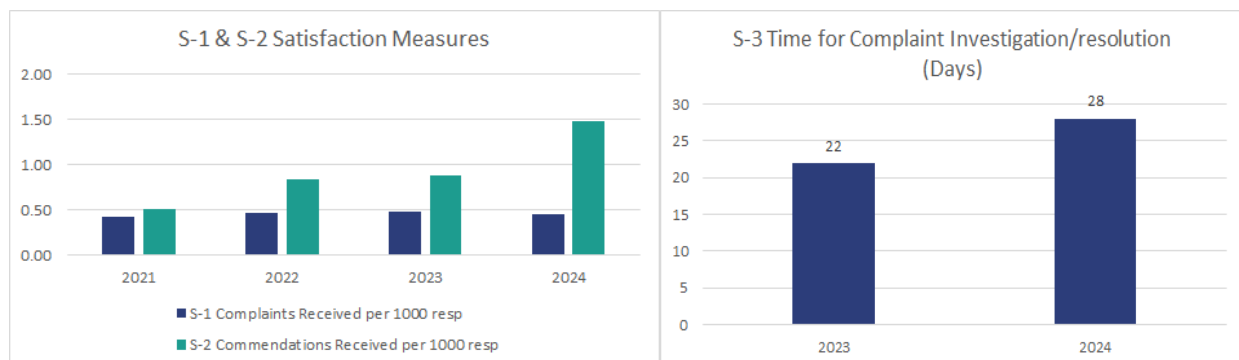


Figure 15

## Occupational Health & Safety

Figures 16 and 17 show Occupational Health and Safety (OHS) measures, including injury rates and lost time claims. The number of incidents is low compared to other areas, but the average amount of lost time per claim is very high at 2,064 hours, or 170 12-hour shifts. Further analysis is needed to better understand the reasons behind this trend and identify opportunities to support employees more effectively while reducing lost time.

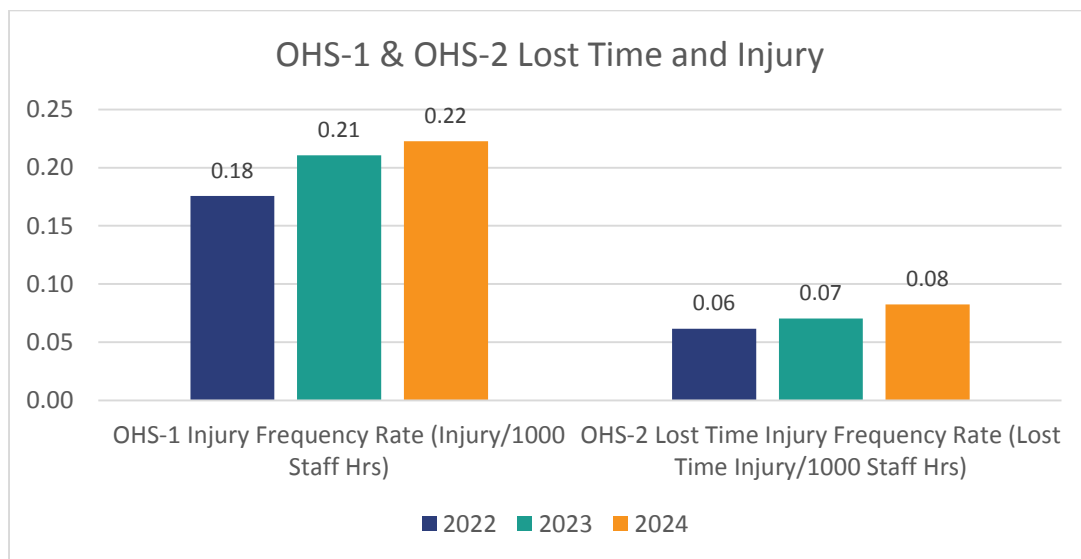


Figure 16

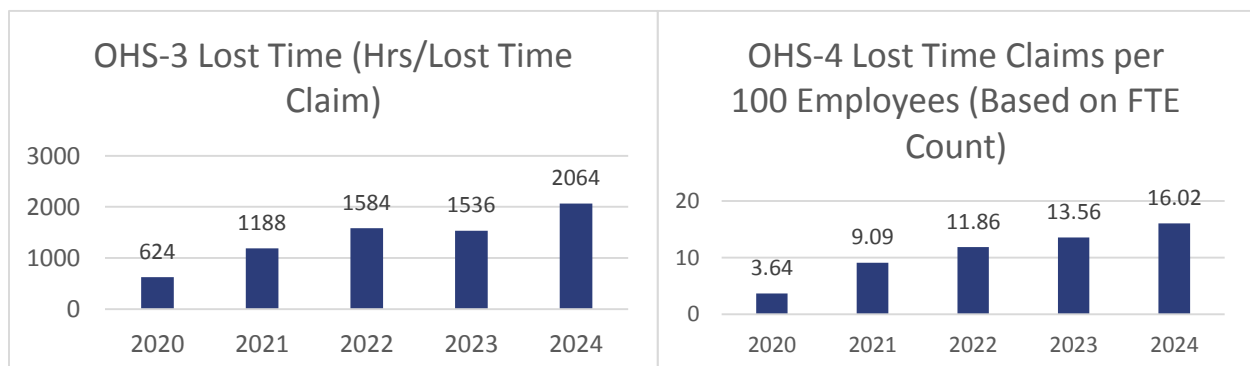


Figure 17

## Human Resource Measures

In 2024, the service added four full-time paramedics, as shown in HR-1 (Figure 18), which helped reduce workload (UHU) and improve ambulance availability for emergency calls compared to 2023, as illustrated in Figures 6 and 7. To maintain and exceed required training and certification standards, paramedics complete 36 hours of mandatory/legislated, and service training each year (Figure 18).

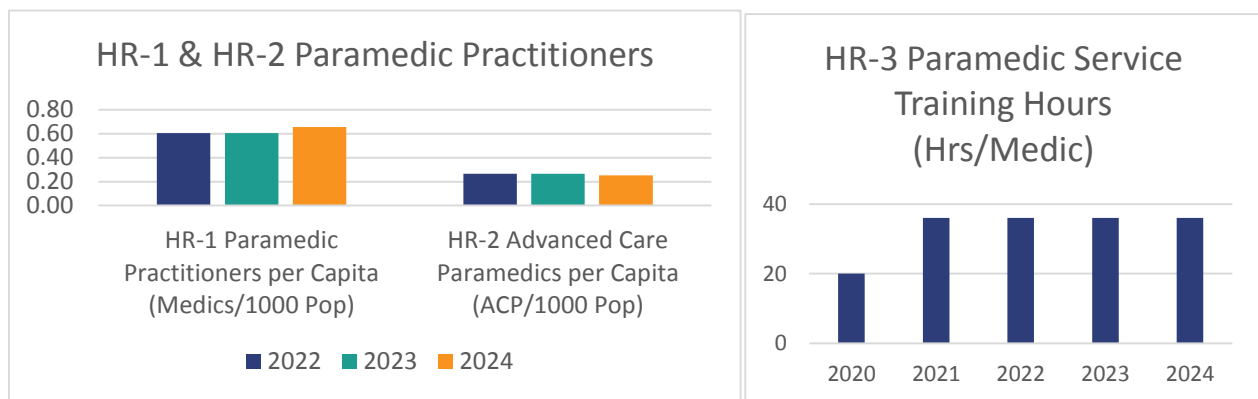


Figure 18

## Key Findings:

1. Demand for Service & Resource Level
  - a. Has stabilized to a consistent rate of increase
  - b. Code Zero rates decreased
  - c. Increasing System Utilization Rates/system busyness has decreased to acceptable levels
  - d. Validate Paramedic Service Master Plan roadmap and recommendation
2. Financial Performance
  - a. The operating cost per unit hour has increased and is slightly above the 2021 Municipal Benchmarking Network comparator mean
  - b. Excerpt from Paramedic Service Master Plan "Evidence-driven Transformation will be key in meeting upcoming patient care challenges with finite local \$ resources."



3. Human Resources
  - a. Lost time injury rates require attention
  - b. High quality level of care is consistently provided to the community
4. Fleet
  - a. Fleet costs decreased but maintenance costs still exceed annual budget given aging fleet and supply chain challenges
  - b. Safety measures need to be considered to decrease vehicle incident frequency
  - c. Strategies are required to reduce emissions
5. Stakeholder Satisfaction
  - a. The department developed a Patient Experience Survey to qualify service delivery expectations and provide a meaningful measure of performance by the public. Survey under review – not giving high quality information.

### **Other Alternatives Considered**

N/A

### **Alignment to Strategic Priorities**

The Paramedic Service Key Performance Indicator Report aligns with the following strategic priorities:

#### **Good Government**

Development of Performance Metrics supports departmental strategies that ensure municipal assets and operations are managed efficiently and effectively. A continuous review of operational efficiencies ensures that best municipal practices are adopted.

#### **A Vibrant and Growing Economy**

Evaluation of Performance Metrics will support effective Paramedic Service response operations and service delivery.

#### **An Excellent Quality of Life and Service Excellence**

Implementation of service delivery guided by Performance Metrics will help support efficient delivery of Paramedic Service response operations and assists the general well-being and overall health and safety of residents.

### Financial/Operation Impacts:

Performance Metric analysis will be used as a guiding document for the Paramedic Service in supporting and enabling future strategic planning and departmental work plan objectives. Financial impacts either through efficiencies or investment deemed appropriate through O-KPI analysis would be included in future budget deliberation.

### Attachments:

#### Appendix A – O-KPI 2024 Summary Sheet



Appendix A - O-KPI  
2024 Summary Sheet

#### Appendix B - O-KPI 2024 Infographic



Appendix B - O-KPI  
2024 Infographic pdf.

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**Department Head:** Sara Johnston, Paramedic Chief