

Paramedic Service Update

Committee of the Whole

September 12th, 2023

General Updates

- 2023 Provincial Funding Updates
 - Increase Land Ambulance Service Grant for 2023 - \$370,000
 - Dedicated Offload Nurse Program Funding FY2023/24 - \$195,000
 - Community Paramedic – previously HISH base funding - \$365,000
- Land Ambulance Service Review Scheduled October 3-4, 2023
- Exemplary Service Medals
 - 7 staff will receive 20-year medals
 - 2 staff will receive 30-year bars (Greg Murphy, Mark Oliver)

Lindsay Ambulance and Administrative Headquarters Update

KLPS - Headquarters Project Timeline												
Phase of Work	Duration											
	Q3 2023	Q4 2023	Q1 2024	Q2 2024	Q3 2024	Q4 2024	Q1 2025	Q2 2025	Q3 2025	Q4 2025	Q1 2026	Q2 2026
Schematic Design	█	█										
Design Development		█	█									
Construction Documents			█	█	█							
Site Plan Approval			█	█	█							
Building Permit					█	█						
Construction Tender						█	█					
Construction							█	█	█	█	█	█

Master Plan Refresh

- 10-year Resources and Facilities Master Plan for Paramedic Service was completed by Performance Concepts Consulting in 2021

Key Recommendations

1. Restructure Coverage and Improve System Performance:

- a. Negotiate cross border service agreements where required/common deployment strategies with bordering services
- b. Sequence transition of Pontypool coverage to Oakwood
- c. Conduct analytic reassessment during first quarter of 2022 to determine appropriate hours of service/timing of a 12-hour resource to be added to Lindsay
- d. Master Plan refresh/progress assessment upon dispatch modernization

Master Plan Refresh

Key Recommendations

2. Facility Modernization

- a. Lindsay Facility Consolidation
- b. Acquire Oakwood, Build New Post & Transfer Pontypool
- c. Rebuild Fenelon Falls Base

3. Flattening the Call Volume Demand Curve

- a. Design and execute 911 Public Awareness Campaign
- b. Develop and execute business case re Provincial CPP funding allocations
- c. Engage with Province to rollout AMPDS dispatch model/alternative pathways

Master Plan Refresh

Key Recommendations

- 4. Annual Report Card & Business Plan Performance Targets**
 - a. Expand KLPS system performance targets
 - b. Expand performance targets to monitor/address down-staffing
 - c. Integrate KLPS performance targets with City's annual budget process

Master Plan Refresh

- Consultants enlisted for 2023 updates/supplementary analysis regarding the Council endorsed Paramedic Service Master plan
- Validate original assumptions and recommendations post pandemic and with significant future growth and development within CKL
 - 2021 Master Plan analytics package upgrade incorporating 2020-2022 data set;
 - Demand forecast and Vehicle Hours of Service analysis reflecting substantial and revised population forecasts emerging for the City; and
 - Evaluation of Community Paramedic Program call volume diversion impacts and expanding programming.
- **ORH**; Hannah Mayes-Frenett
- **Performance Concepts Consulting**; Todd MacDonald & John Prno



Analysis Update and Location Modelling

Report to Committee of the Whole

September 12, 2023

Agenda

- Introduction
- Analysis Highlights
- Modelling Future Scenarios
- Summary

Introduction

Background

- 10-year Resources and Facilities **Master Plan for PCCP** completed by ORH in **2016**
- Steps made by PCCP to progress down the **recommended development path** (for example, opening Clonsilla and making resource enhancements to mitigate increasing demand)
- **Master Plan for KLPS** completed by Performance Concepts in **2021** – findings built into ORH's future modelling
- Opportunities for **shared deployment strategies** between PCCP and KLPS, particularly in Cavan-Monaghan where significant development anticipated

Objective

Analyze how Peterborough County/City Paramedics (PCCP) operations and drivers have changed since the previous review and **identify optimal locations** across both **PCCP** and Kawartha Lakes Paramedic Services (**KLPS**).

Key Deliverables

Operational
Analysis

Updated Demand
Projections

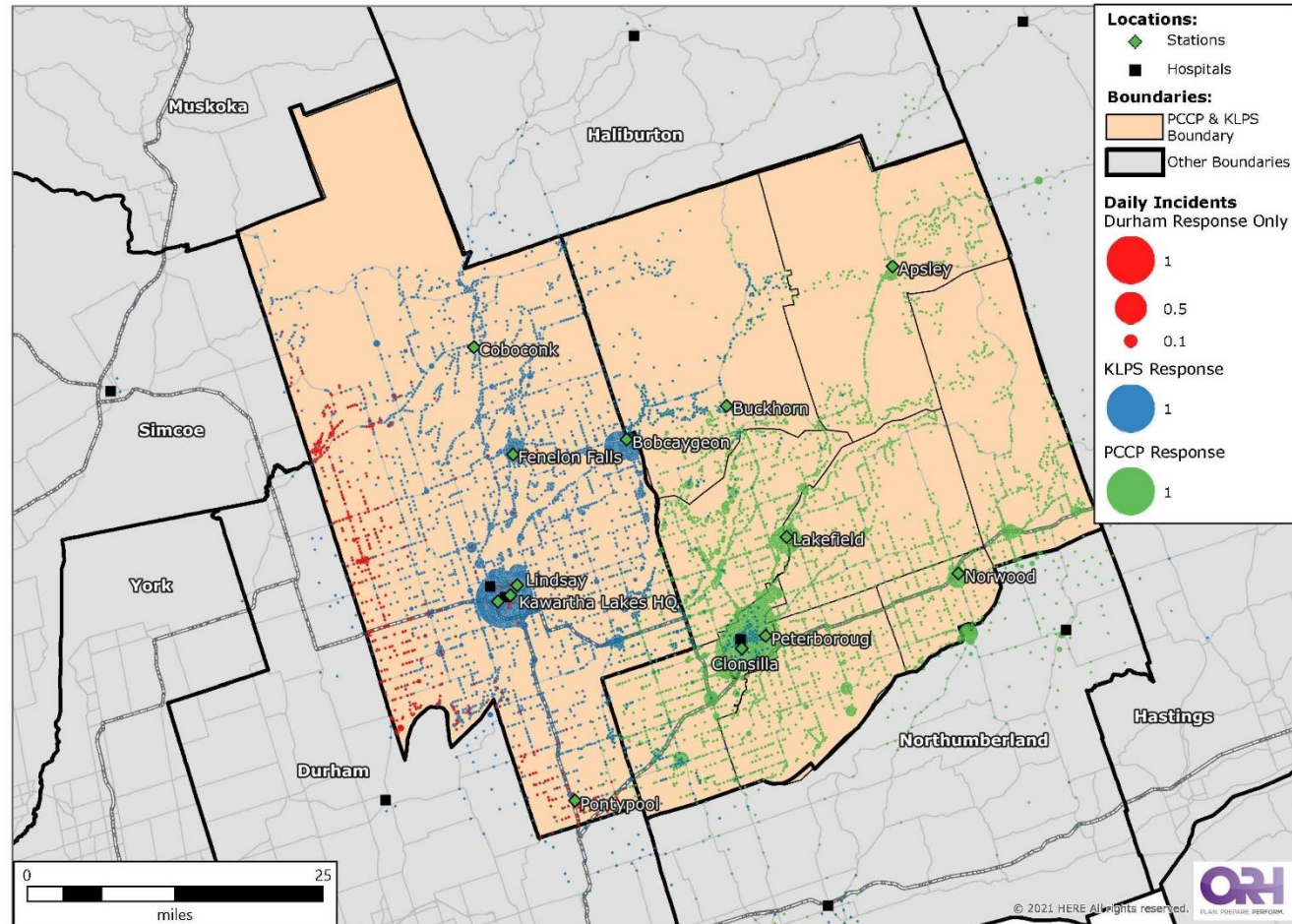
Optimal Locations

Vehicle
Requirements

Analysis Highlights

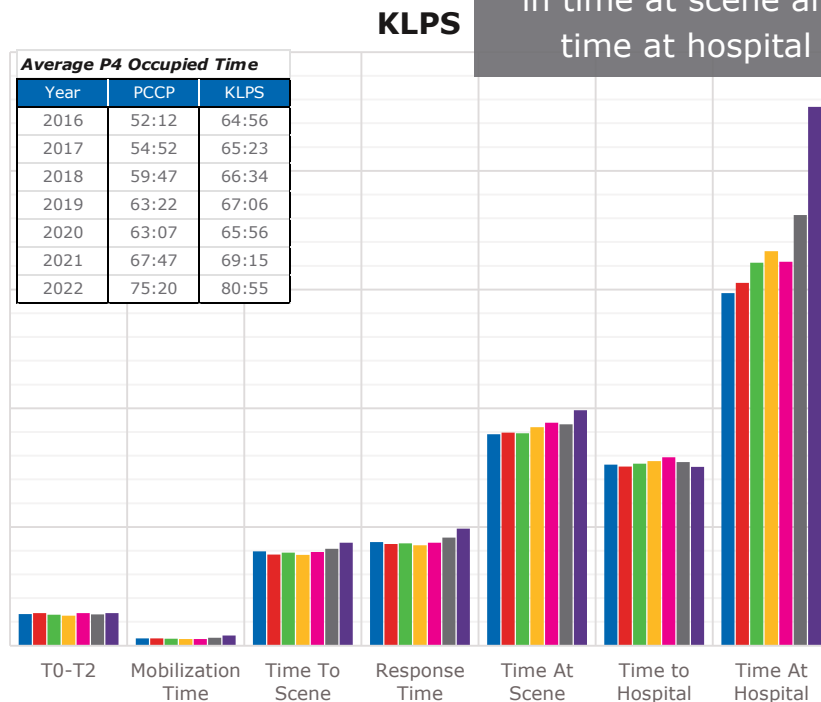
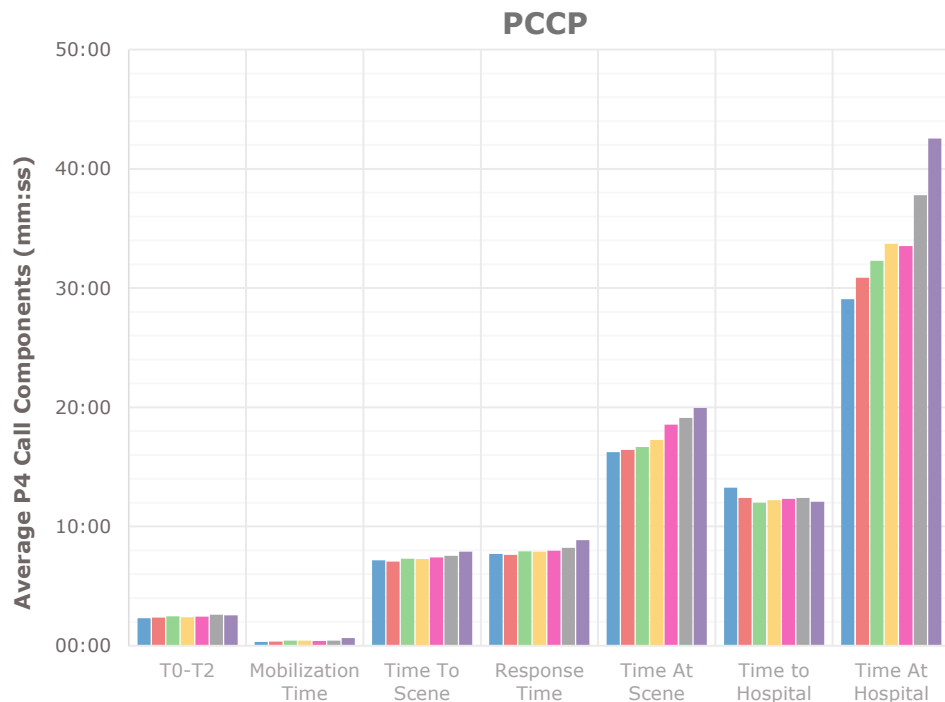
Responded Incidents Map

Overlap in PCCP and KLPS responses in south Kawartha Lakes, Durham supporting response in west Kawartha Lakes



Call Components

■ 2016 ■ 2017 ■ 2018 ■ 2019 ■ 2020 ■ 2021 ■ 2022

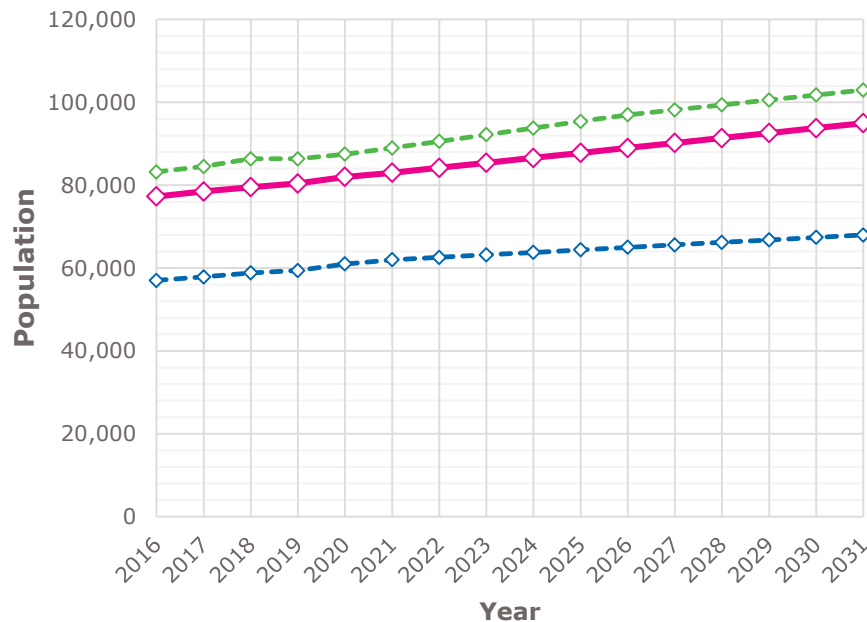


Average occupied time increased between 2016 and 2022, largely driven by an increase in time at scene and time at hospital

Population and Demand Projections

—◆— Peterborough County
 - -◆- - Peterborough City
 —◆— Kawartha Lakes

Area	2021 vs 2031	
	Demand	Population
Kawartha Lakes	47%	14%
Peterborough	40%	13%

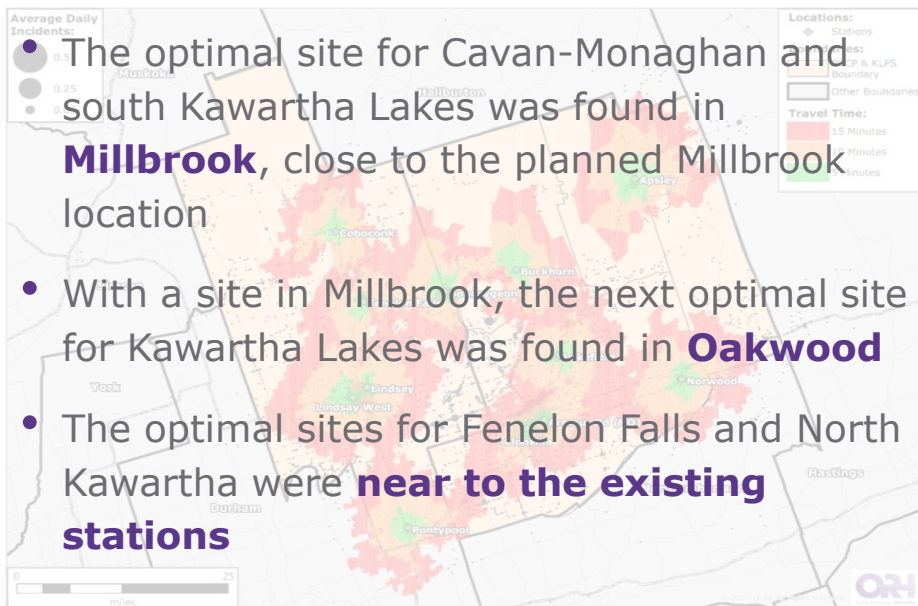


Modelling Future Scenarios

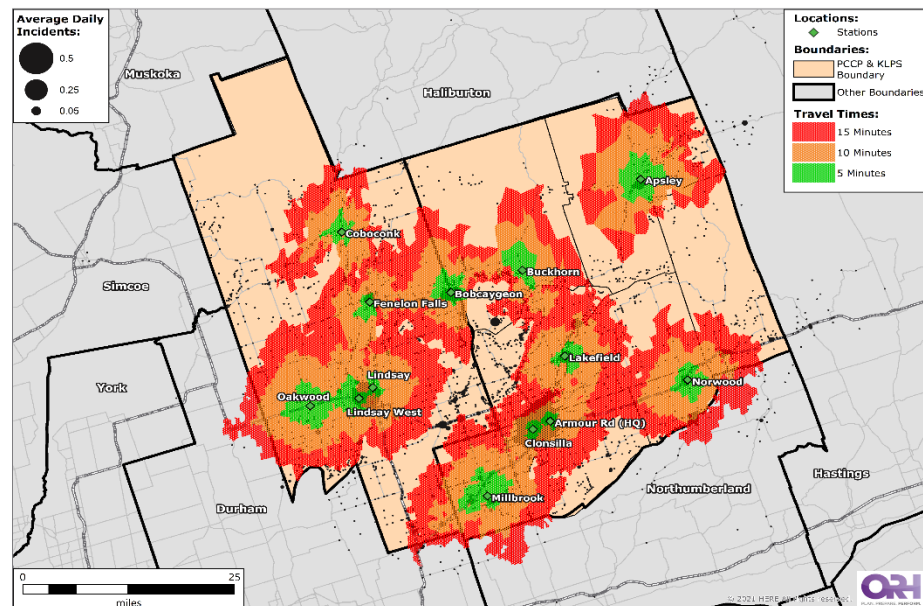


Location Optimization Results

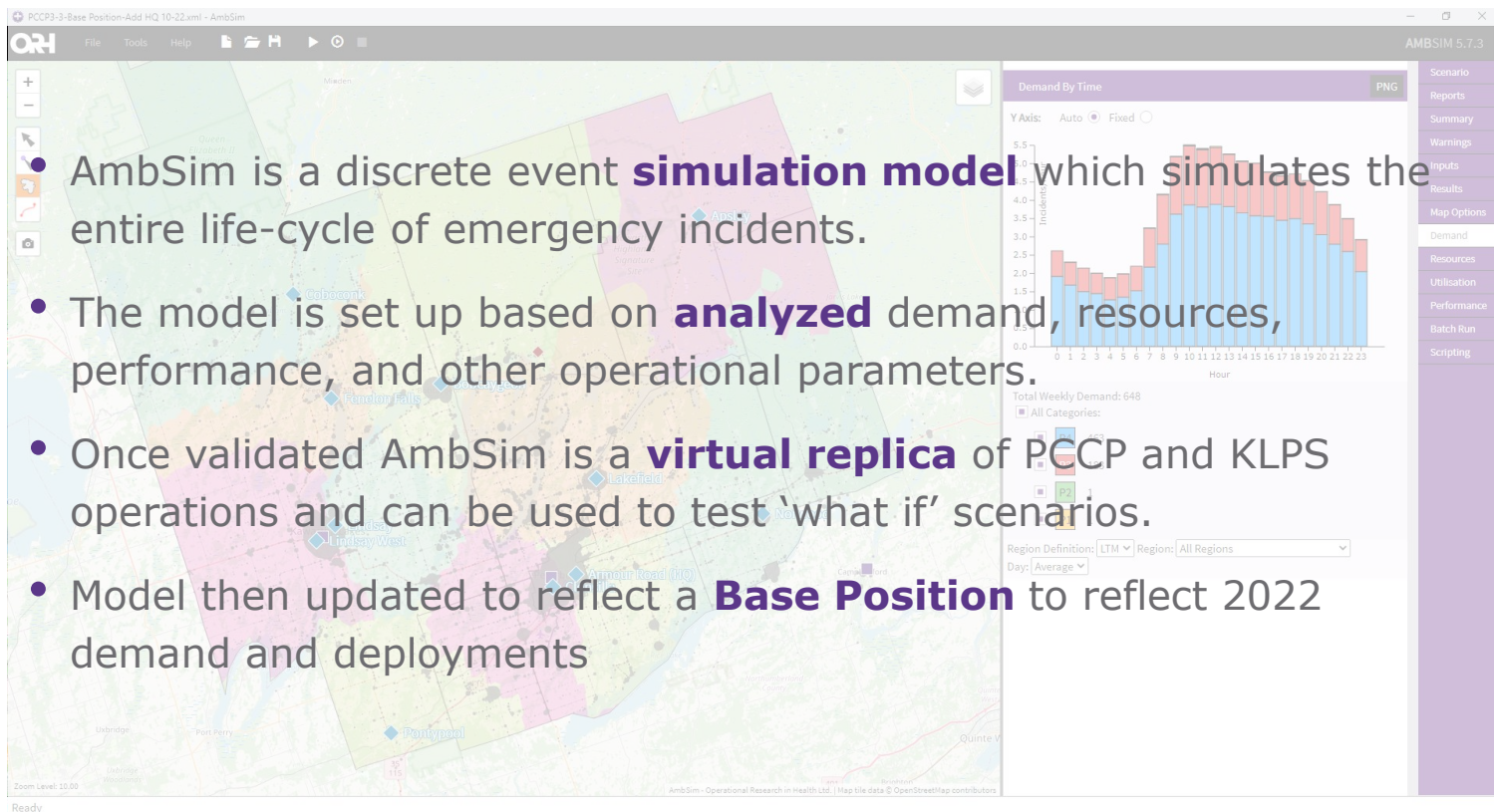
Current Response Locations



Recommended Response Locations



AmbSim: The Model Base Position



- AmbSim is a discrete event **simulation model** which simulates the entire life-cycle of emergency incidents.
- The model is set up based on **analyzed** demand, resources, performance, and other operational parameters.
- Once validated AmbSim is a **virtual replica** of PCCP and KLPS operations and can be used to test 'what if' scenarios.
- Model then updated to reflect a **Base Position** to reflect 2022 demand and deployments

'Do Nothing' Scenario (2031)

- Demand projections modelled with **no other operational changes**

Base Position

Model Outputs

- P4 8-minute performance **degrades by 7.7%** compared to Base Position
- Base Position resources/locations **insufficient to offset demand increases**

Area	P4 Performance From Time Notified			
	8-Minute	10-Minute	20-Minute	Average (mm:ss)
Kawartha Lakes	52.6%	61.4%	90.4%	10:02
Peterborough	68.1%	76.9%	94.6%	07:59

'Do Nothing' Scenario (2031)

Model Outputs

Area	P4 Performance From Time Notified			
	8-Minute	10-Minute	20-Minute	Average (mm:ss)
Kawartha Lakes	44.9%	53.4%	84.7%	11:45
Peterborough	61.9%	71.1%	91.1%	09:17

Difference to 2022 Base Position

Area	P4 Performance From Time Notified			
	8-Minute	10-Minute	20-Minute	Average (mm:ss)
Kawartha Lakes	-7.7%	-8.0%	-5.8%	01:43
Peterborough	-6.2%	-5.8%	-3.5%	01:18

Impact of New Locations and Resources (2031)

- Optimal KLPS **sites introduced**: Pontypool to Oakwood, Lindsay consolidated to single location, Coboconk upgraded to base, Fenelon Falls moved to 13 John St

Base Position

Model Outputs

- PCCP location and resource changes also made (including 24/7 at Millbrook)

- P4 8-minute performance **improves significantly when compared to the 'Do Nothing' scenario**

Area	P4 Performance From Time Notified			
	8-Minute	10-Minute	20-Minute	Average (mm:ss)
Kawartha Lakes	52.6%	61.4%	90.4%	10:02
Peterborough	68.1%	76.9%	94.6%	07:59

Impact of New Locations and Resources (2031)

Model Outputs

Area	P4 Performance From Time Notified			
	8-Minute	10-Minute	20-Minute	Average (mm:ss)
Kawartha Lakes	51.8%	58.9%	88.5%	10:17
Peterborough	70.5%	78.6%	94.8%	07:40

Difference to 2022 Base Position

Area	P4 Performance From Time Notified			
	8-Minute	10-Minute	20-Minute	Average (mm:ss)
Kawartha Lakes	-0.8%	-2.6%	-1.9%	00:15
Peterborough	1.7%	0.6%	-0.4%	-00:12

Summary

Summary

- Base Position (current) resources and locations are insufficient to offset demand
- Location optimization identified optimal site at Millbrook, close to planned location, and confirmed original Performance Concepts recommendations (for example, Pontypool moved to Oakwood)
- If KLPS implement the Performance Concepts location recommendations, along with the PCCP location and resource additions, this will allow the majority of the demand increases to be offset

Questions?

Find Out More

- You can find out more about our range of services at:

www.orhltd.com

- If you would like to talk to one of our consultants please call:

+44(0)118 959 6623

- Or click:



enquiries@orhltd.com



[@ORH_Ltd](https://twitter.com/ORH_Ltd)



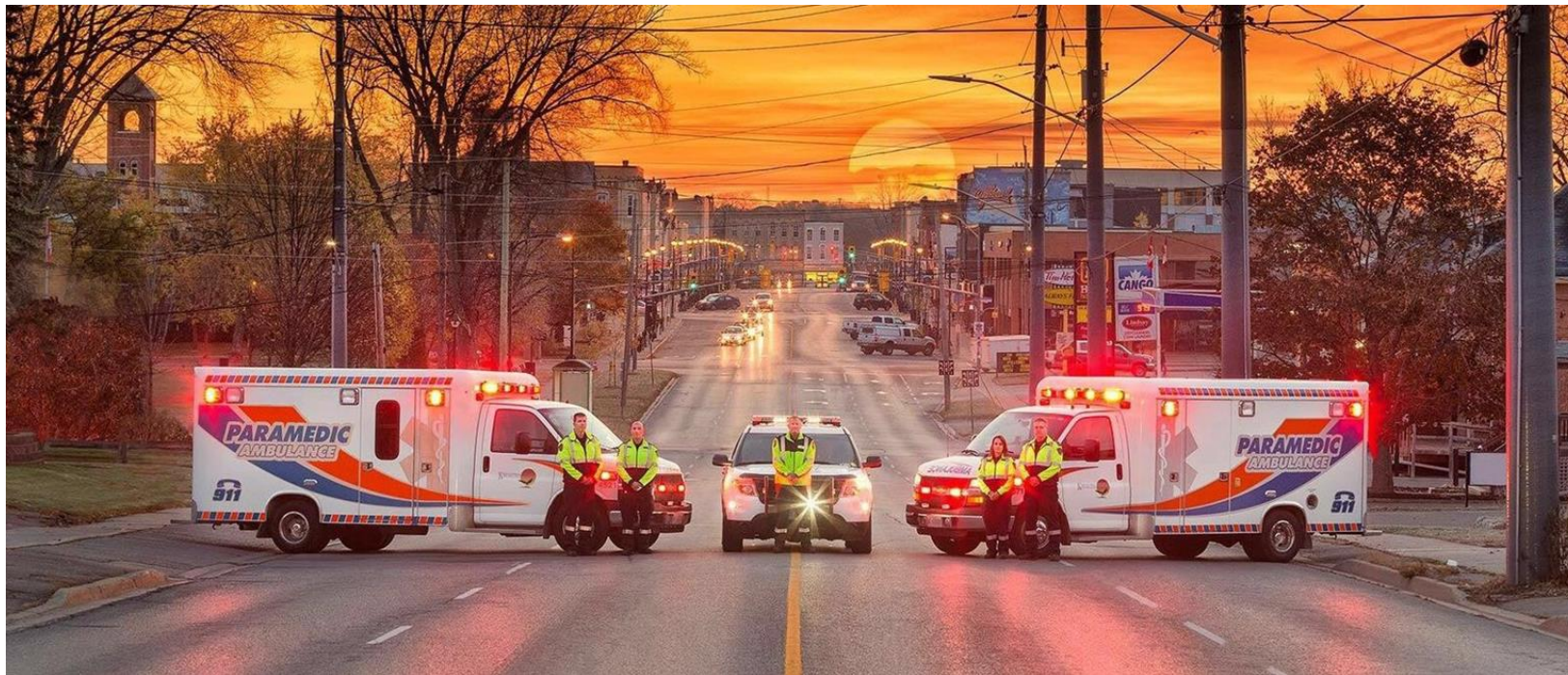
[company/orh](https://www.linkedin.com/company/orh)



Kawartha Lakes Paramedic Service

Updated Performance Analytics + Demand Forecast

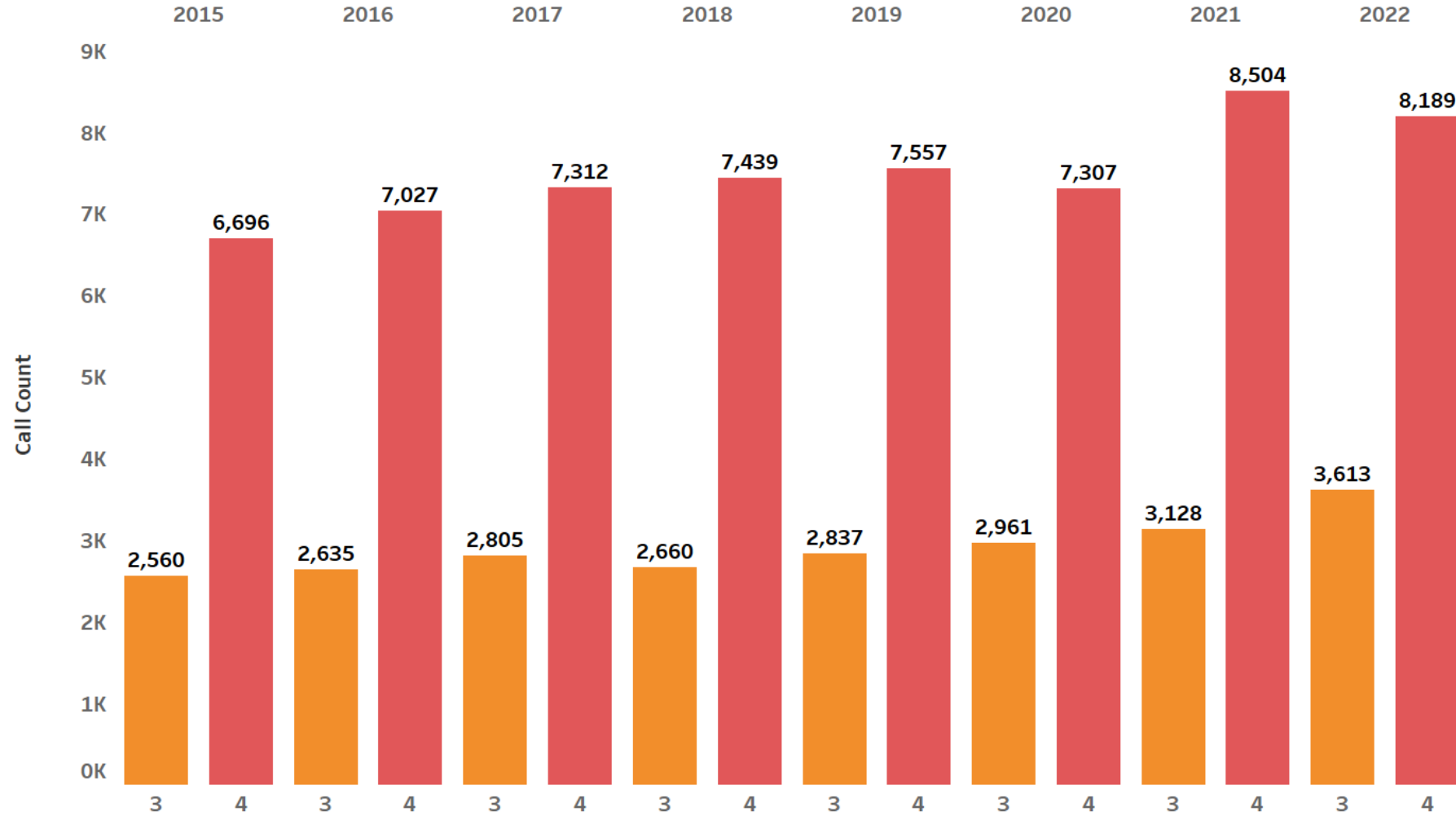
September 2023



System Performance Analytics

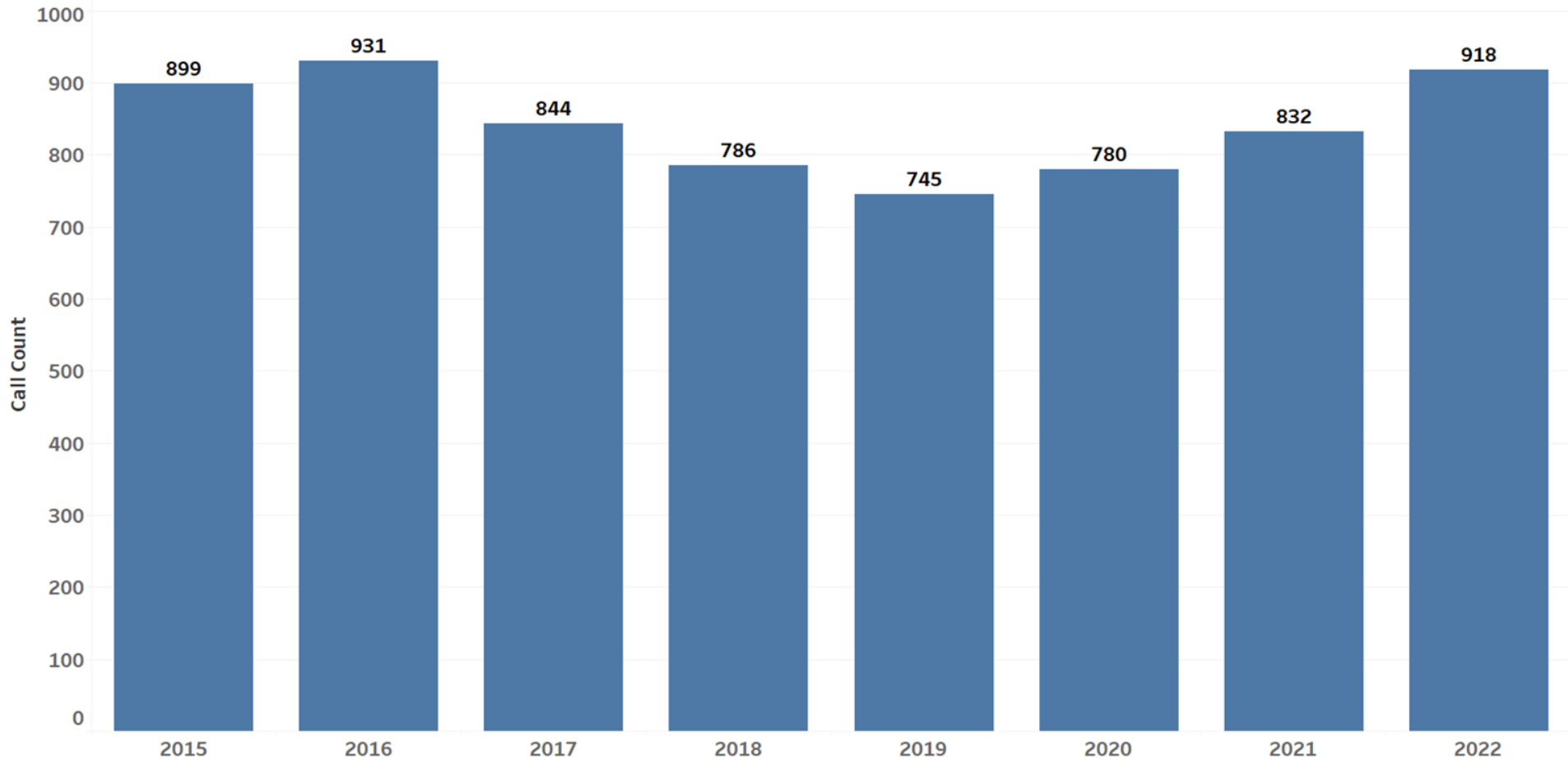
Annual Code 3 & 4 calls

Kawartha Lakes

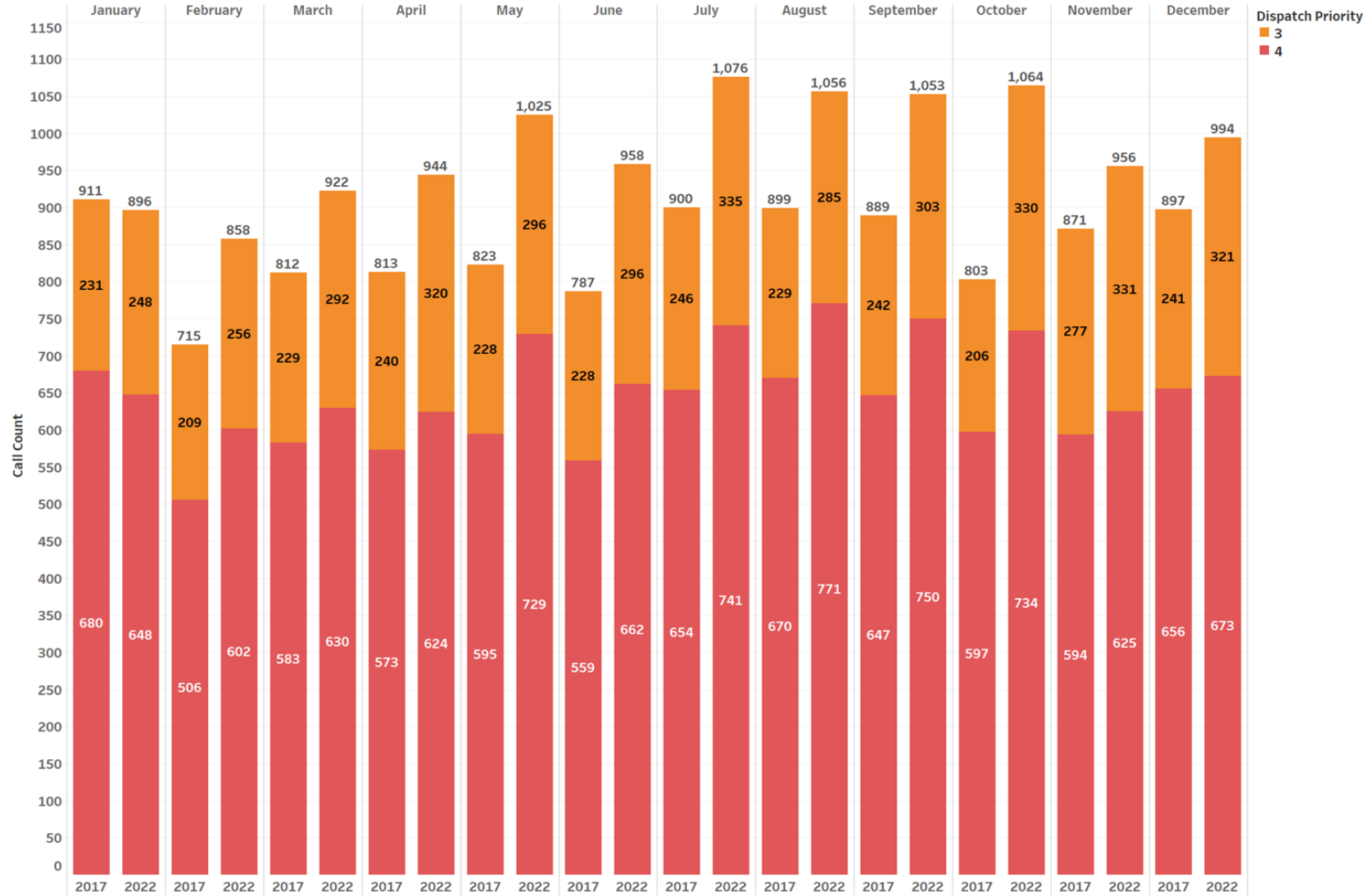


Code 4 Returns

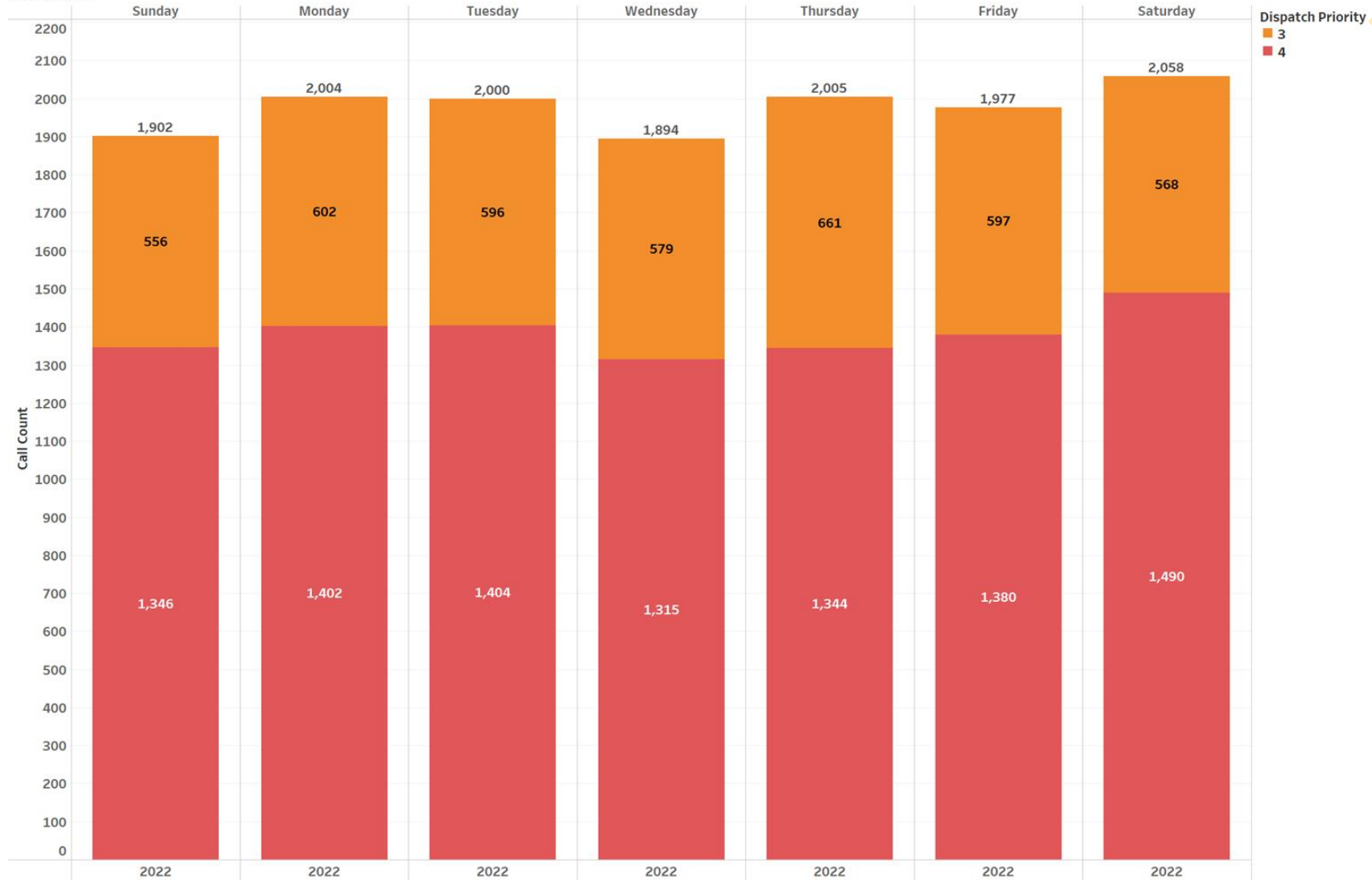
(Kawartha Lakes)



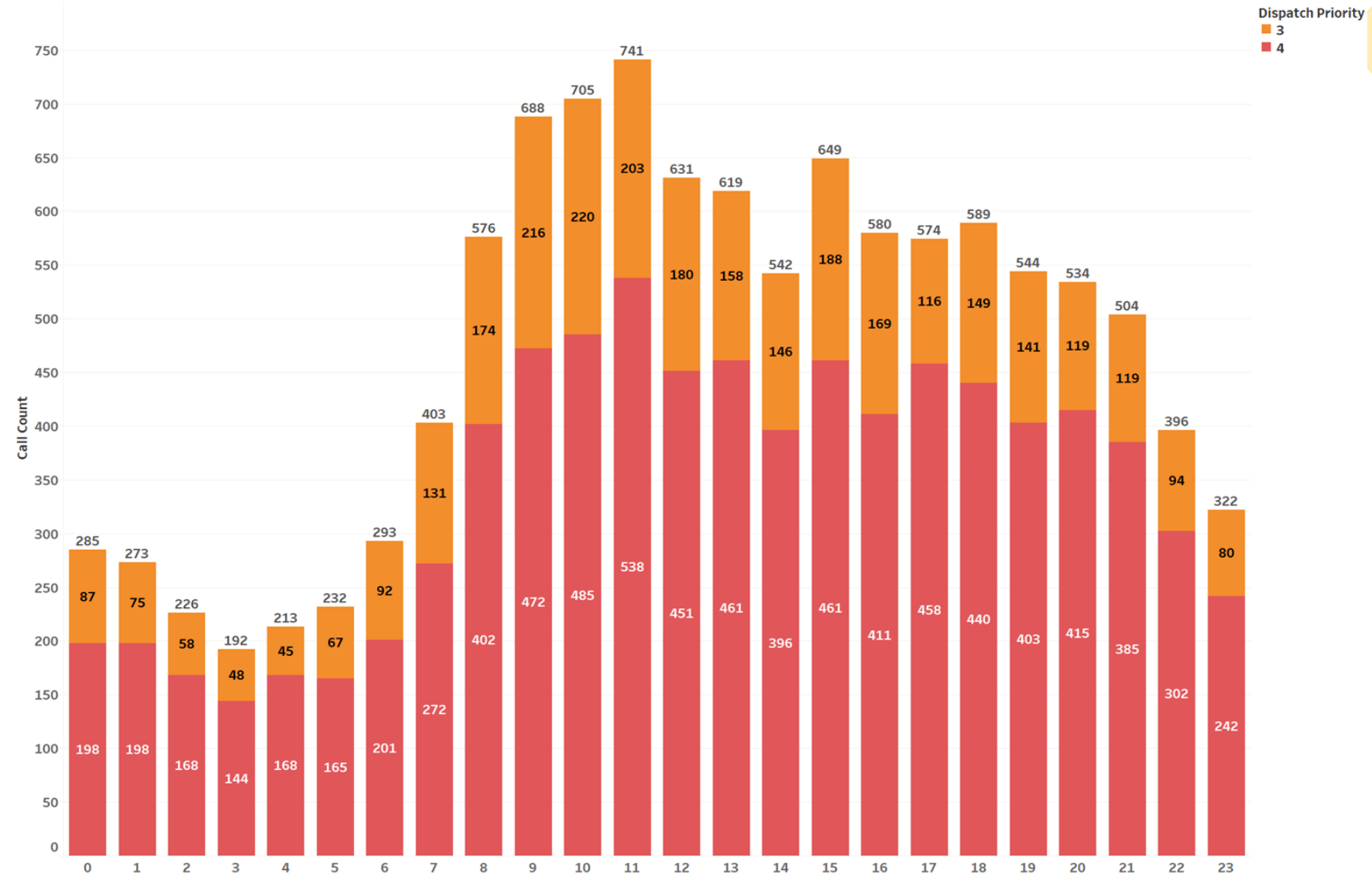
Calls by Month Code 384 (Kawartha Lakes)



Calls By Day of Week Code 3&4 (Kawartha Lakes)

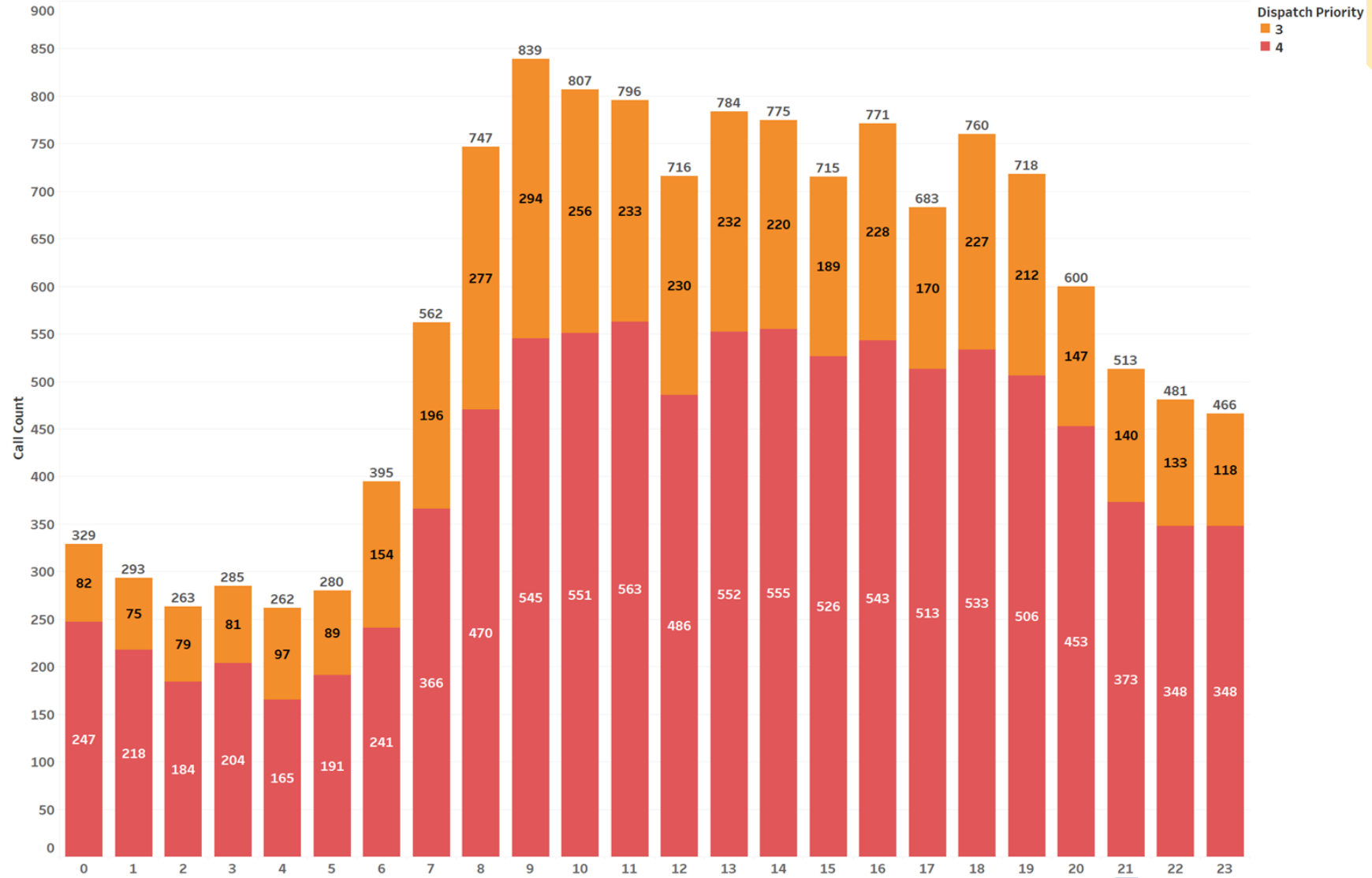


Calls by Hour Code 3 & 4 Year:2017 (Kawartha Lakes)



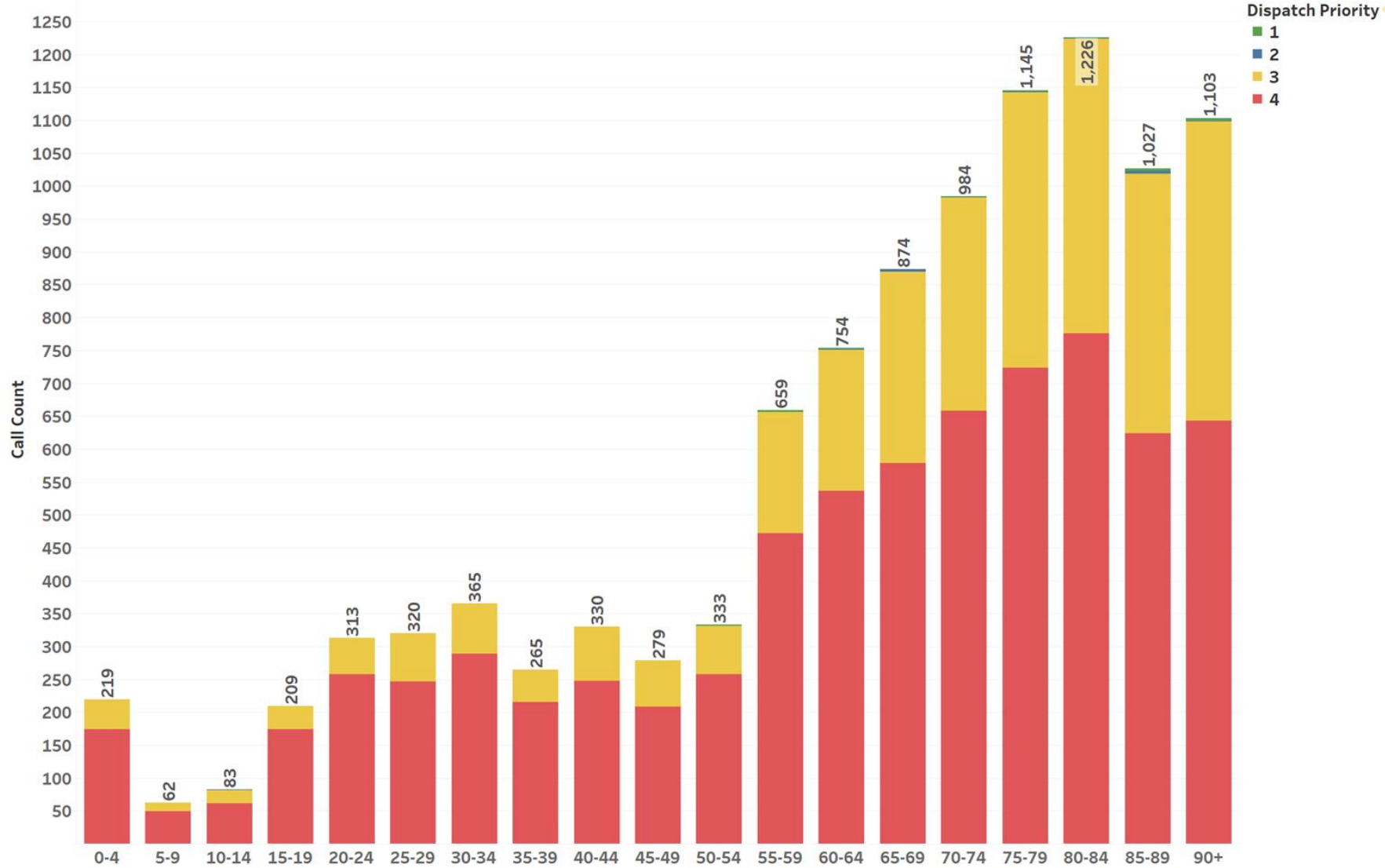
Calls by Hour Code 3 & 4 Year:2022

(Kawartha Lakes)

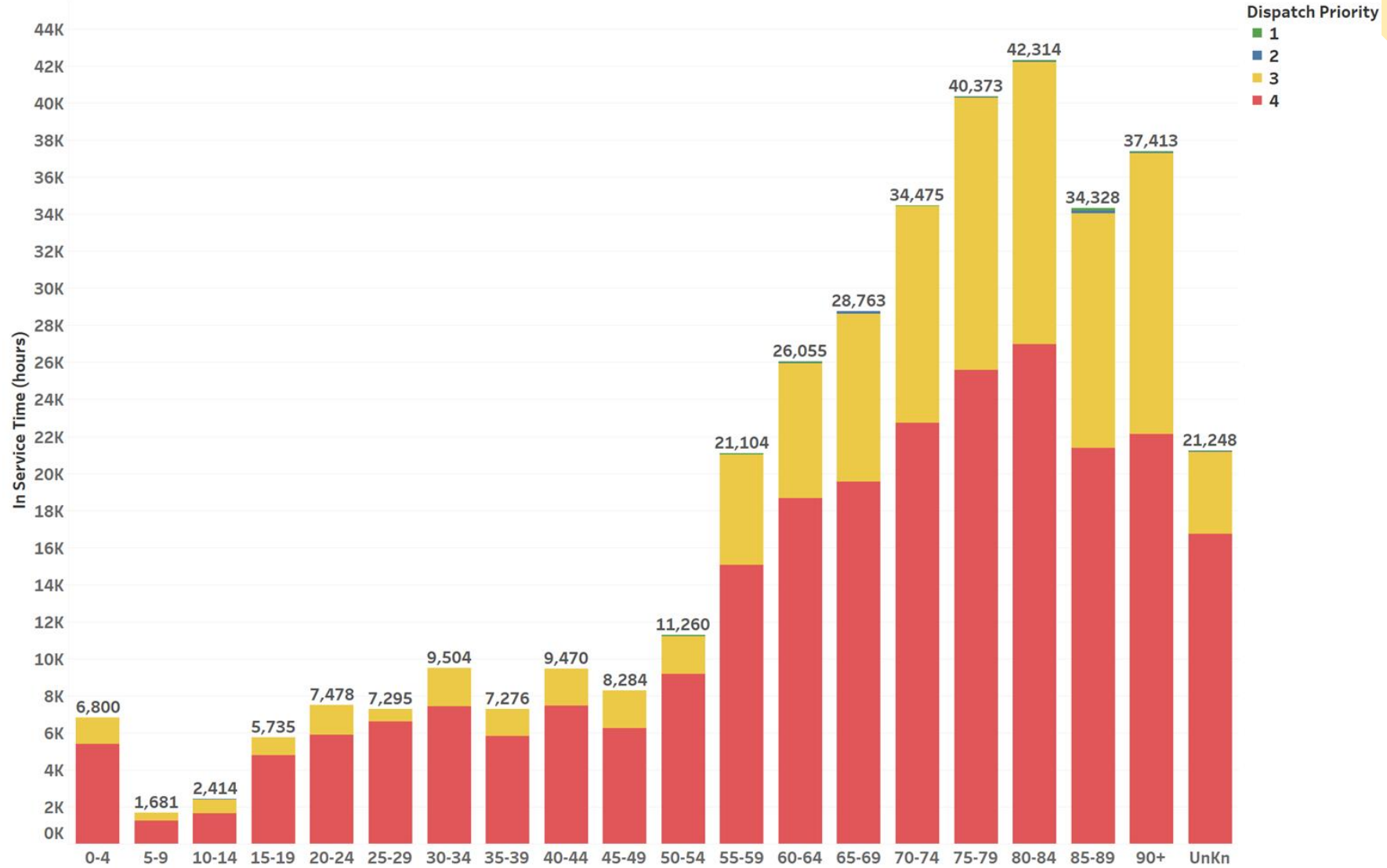


Calls By Age Group Year:2022

Kawartha Lakes

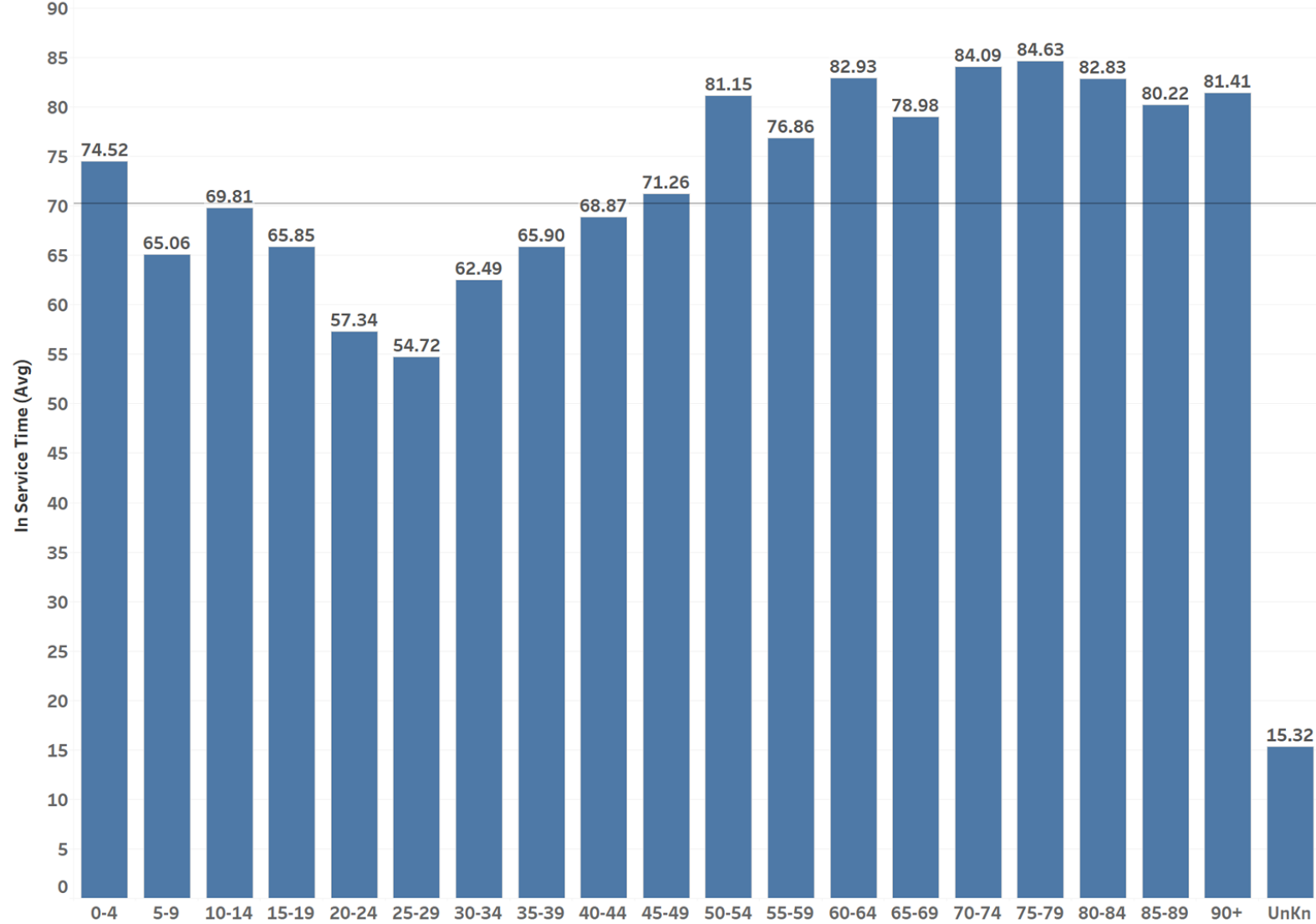


In Service Time By Age Group Year:2022
Kawartha Lakes



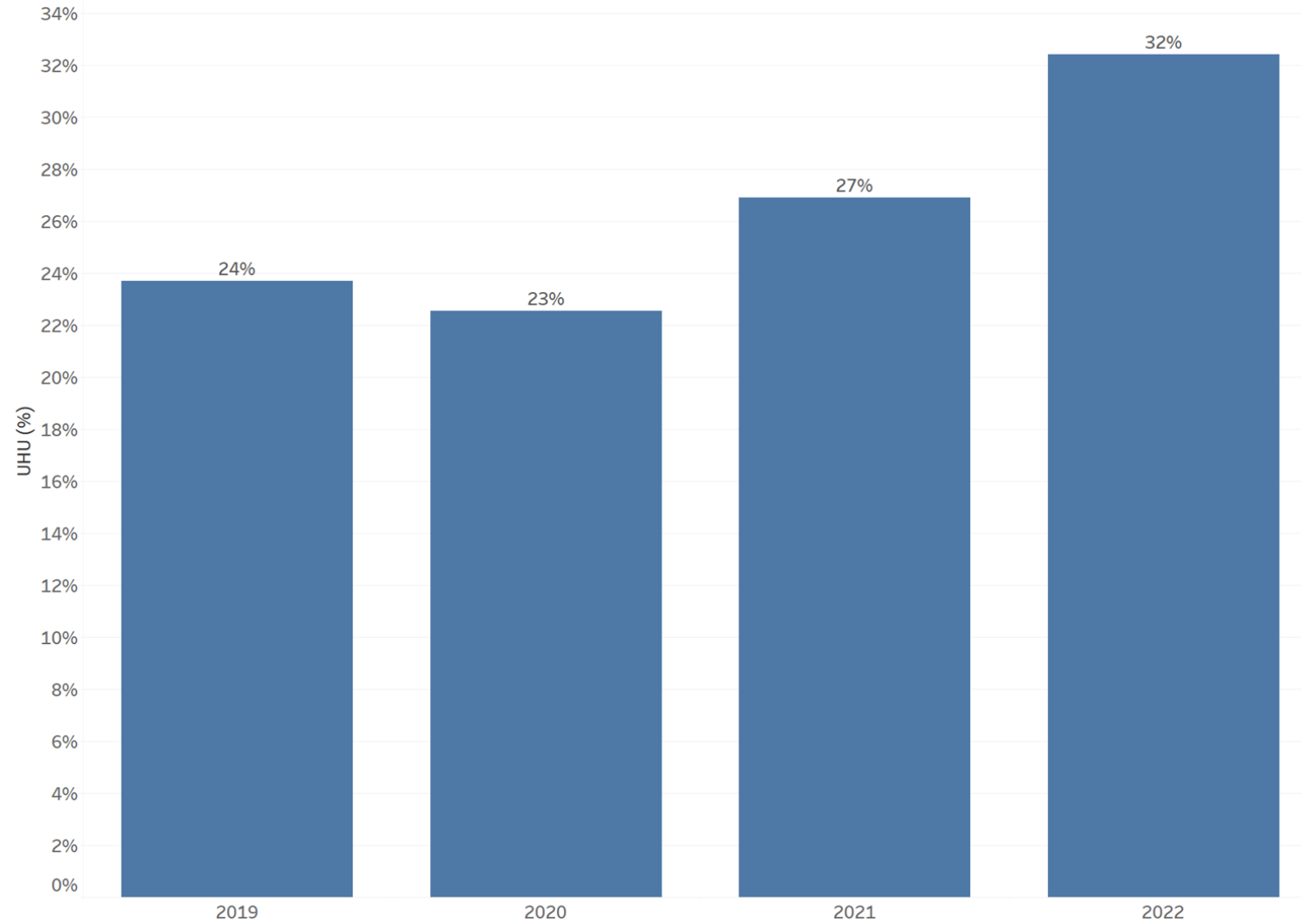
Avg. In Service Time By Age Group Year:2022

Kawartha Lakes



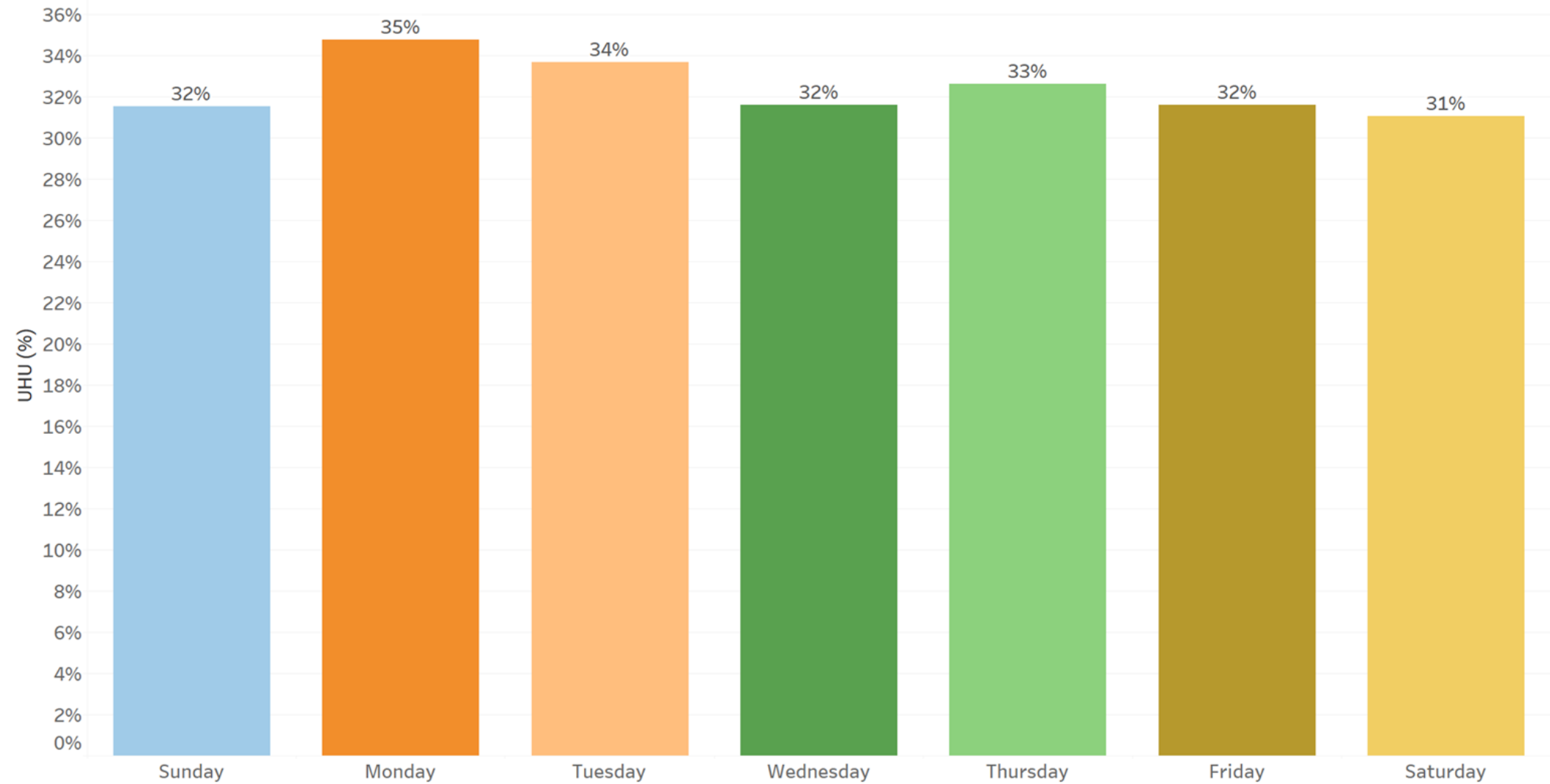
UHA By Year

Kawartha EMS



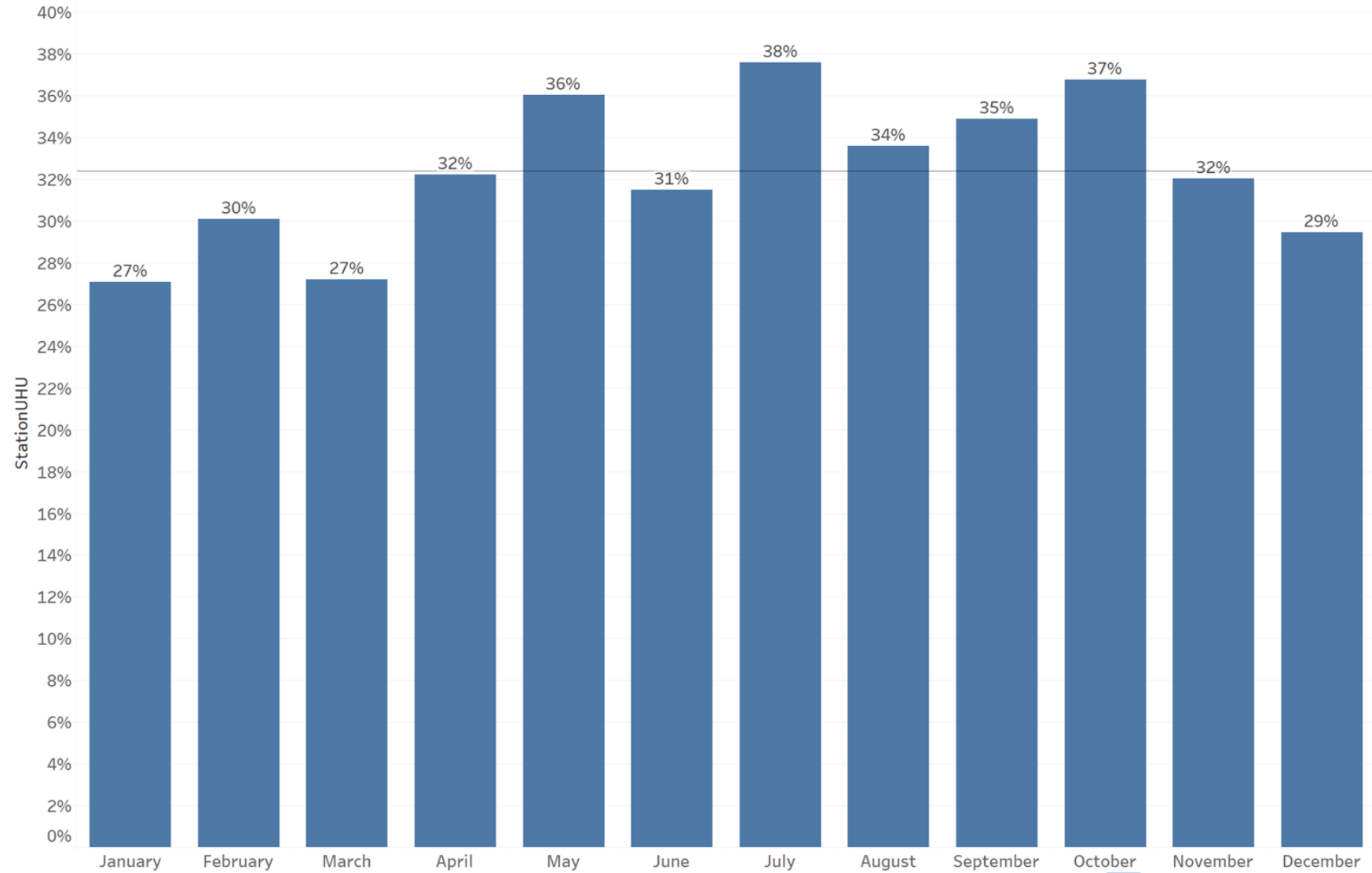
UHA By Day of Week Year: 2022 Stations:0, 1, 2 and 3 more

Kawartha EMS



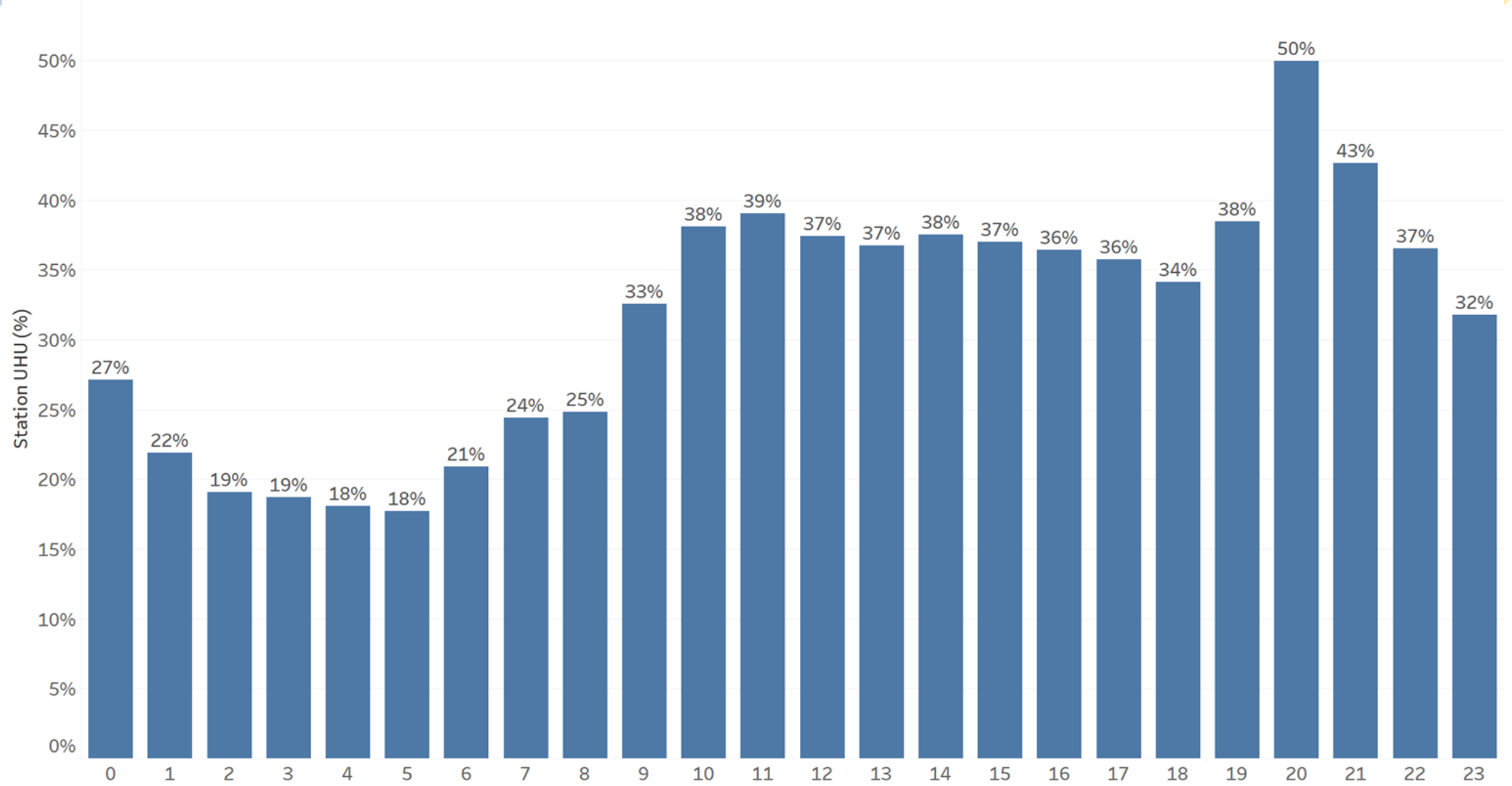
UHA By Month Year: 2022

Kawartha EMS

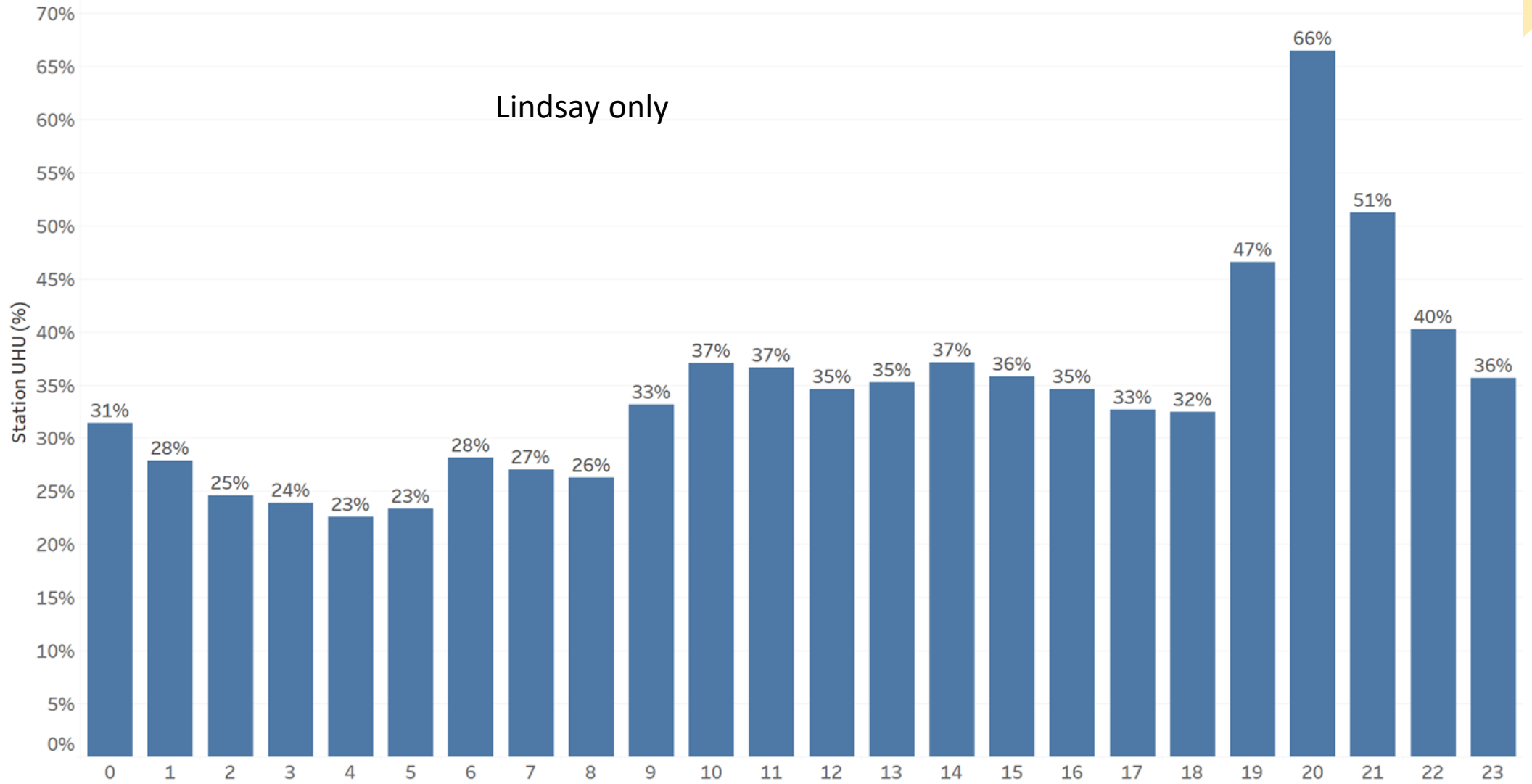


UHA By Hour and Station Year: 2022 Station:All

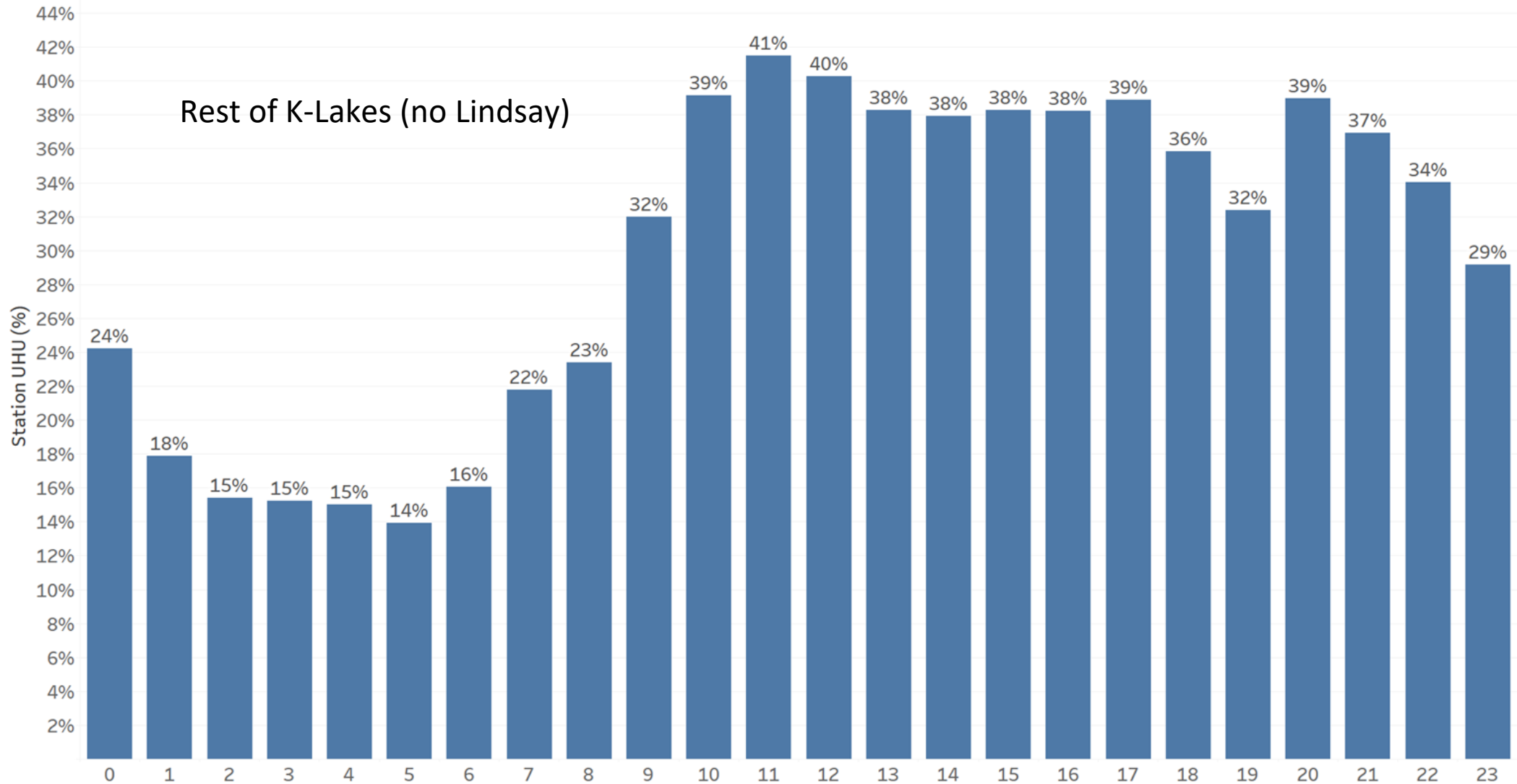
Kawartha EMS



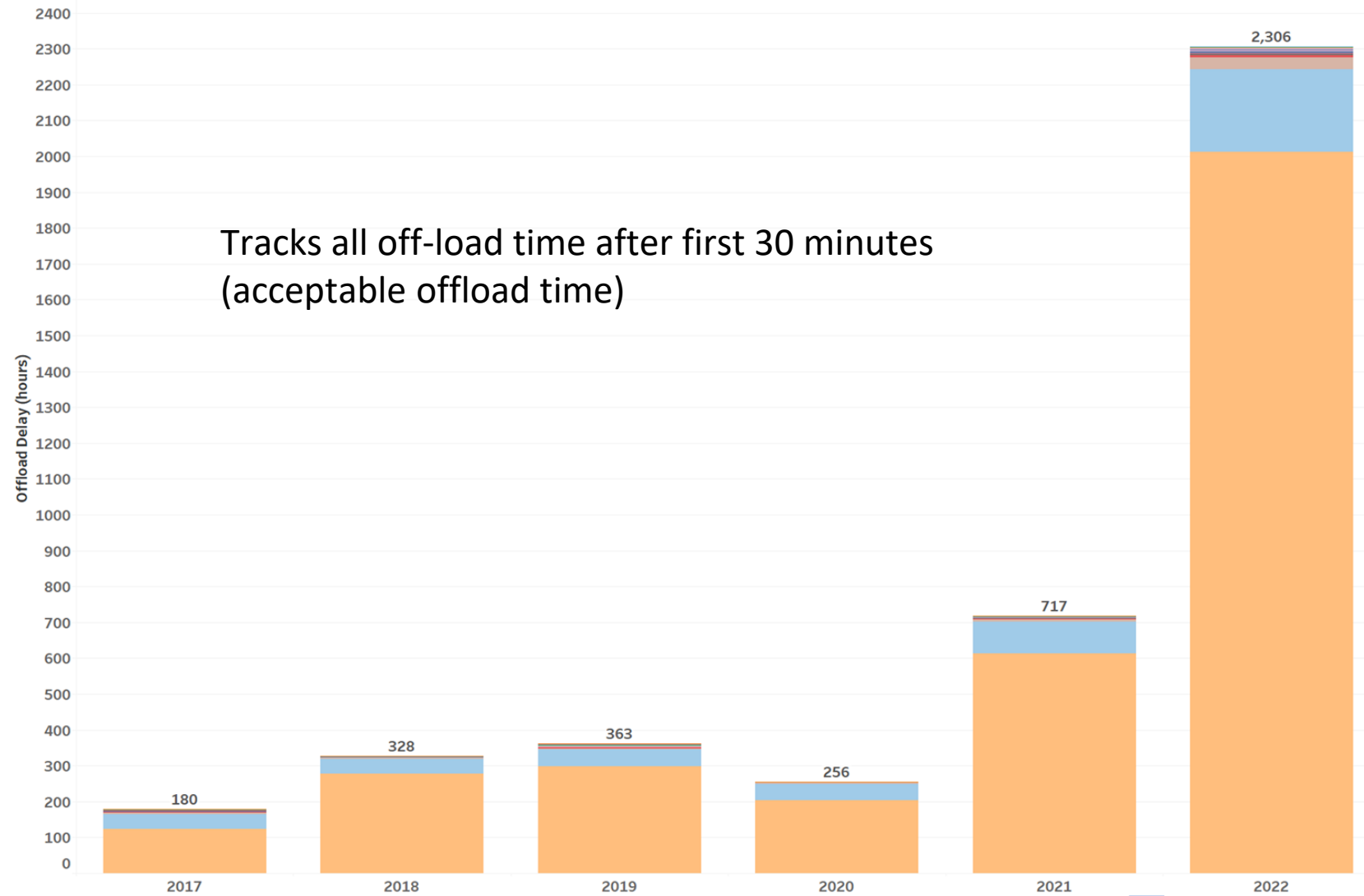
UHA By Hour and Station Year: 2022 Station:0 & 1
Kawartha EMS



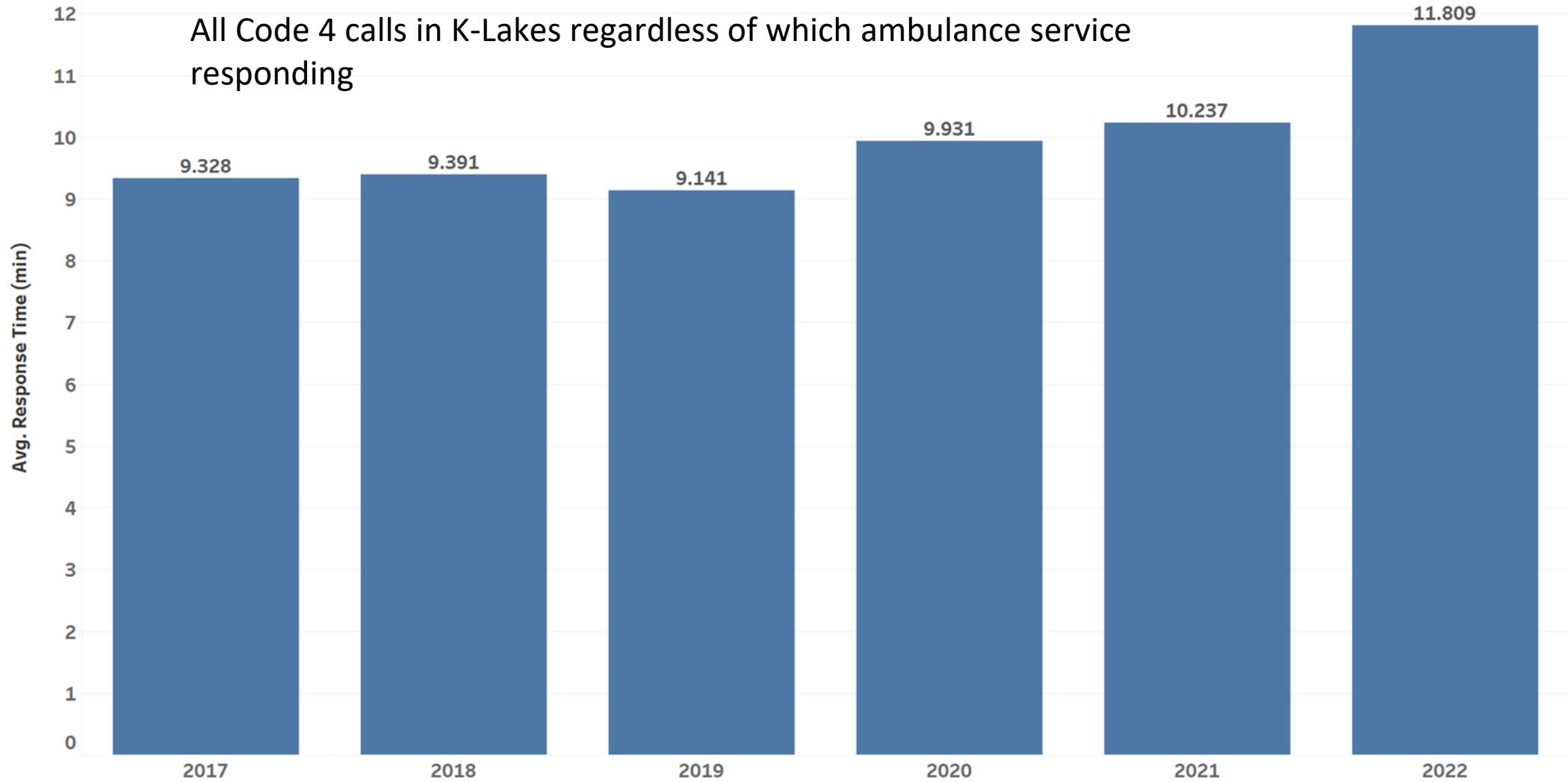
UHA By Hour and Station Year: 2022 Station:2, 3, 4 and 1 more
Kawartha EMS



Offload Delay by Year
(Kawartha Lakes)



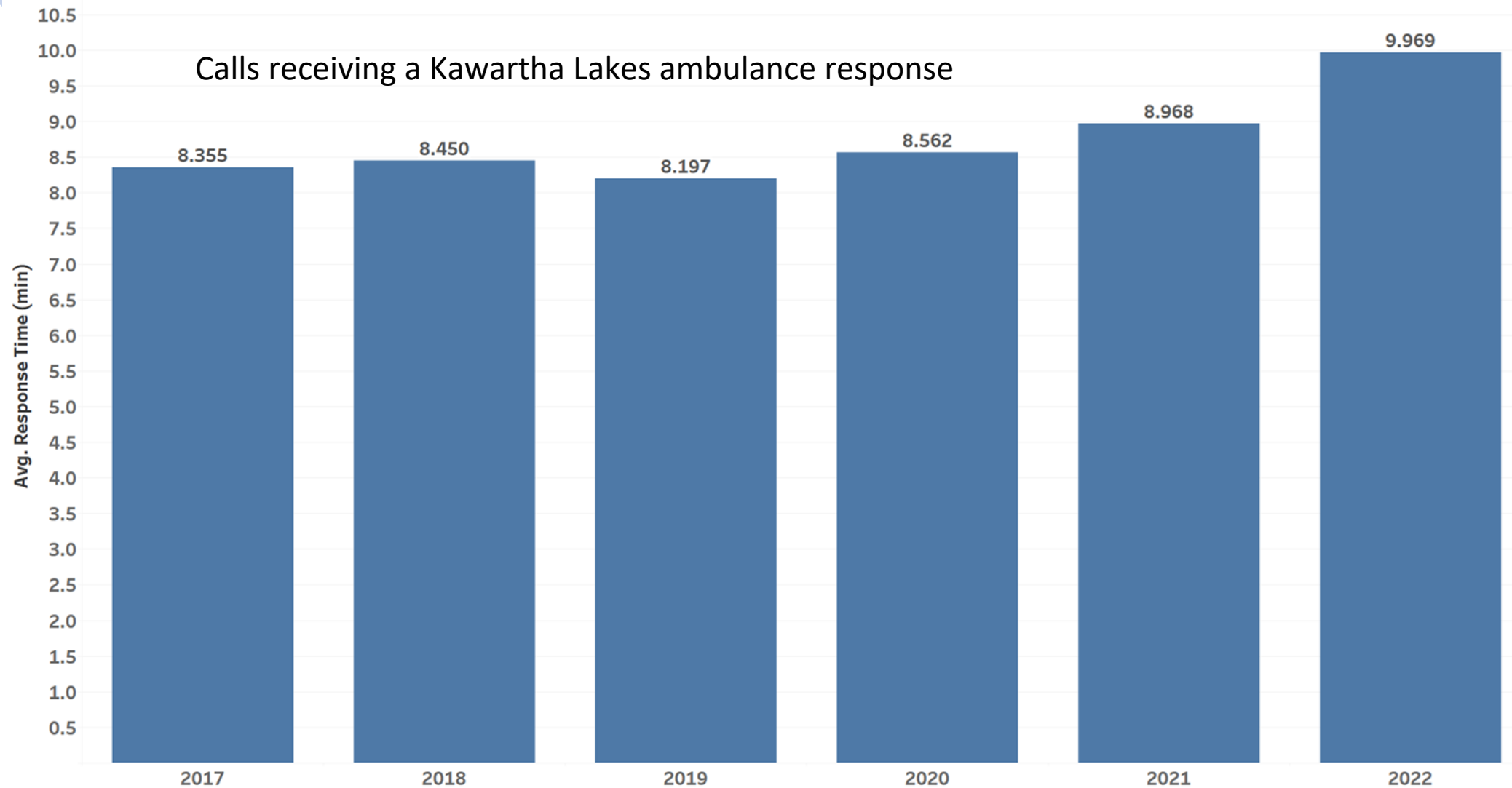
Code 4 Avg. Response Time Service:All
Kawartha Lakes



Code 4 Avg. Response Time Service:735

Kawartha Lakes

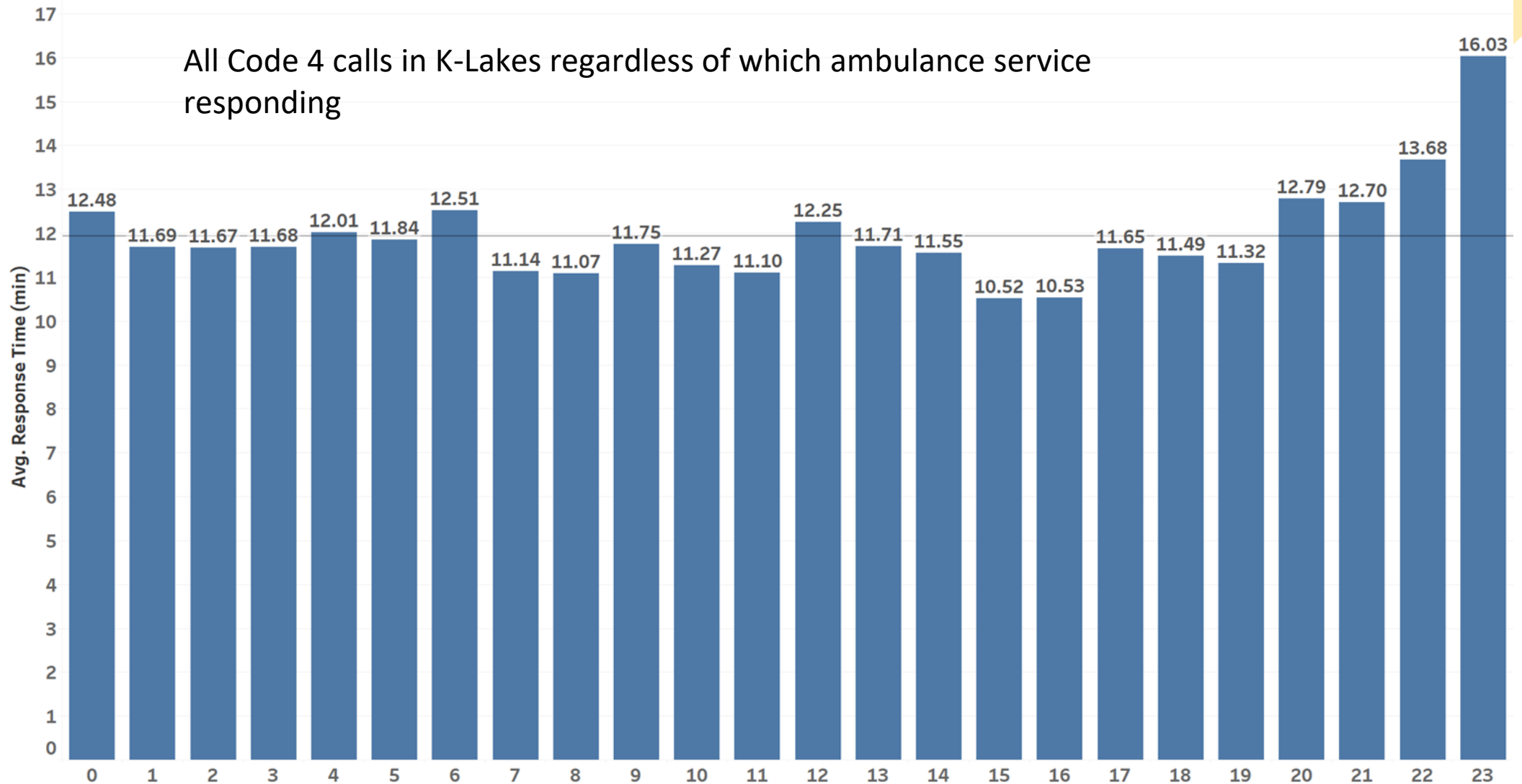
Calls receiving a Kawartha Lakes ambulance response



Code 4 Avg. Response Time by Hour Service:All Year: 2022

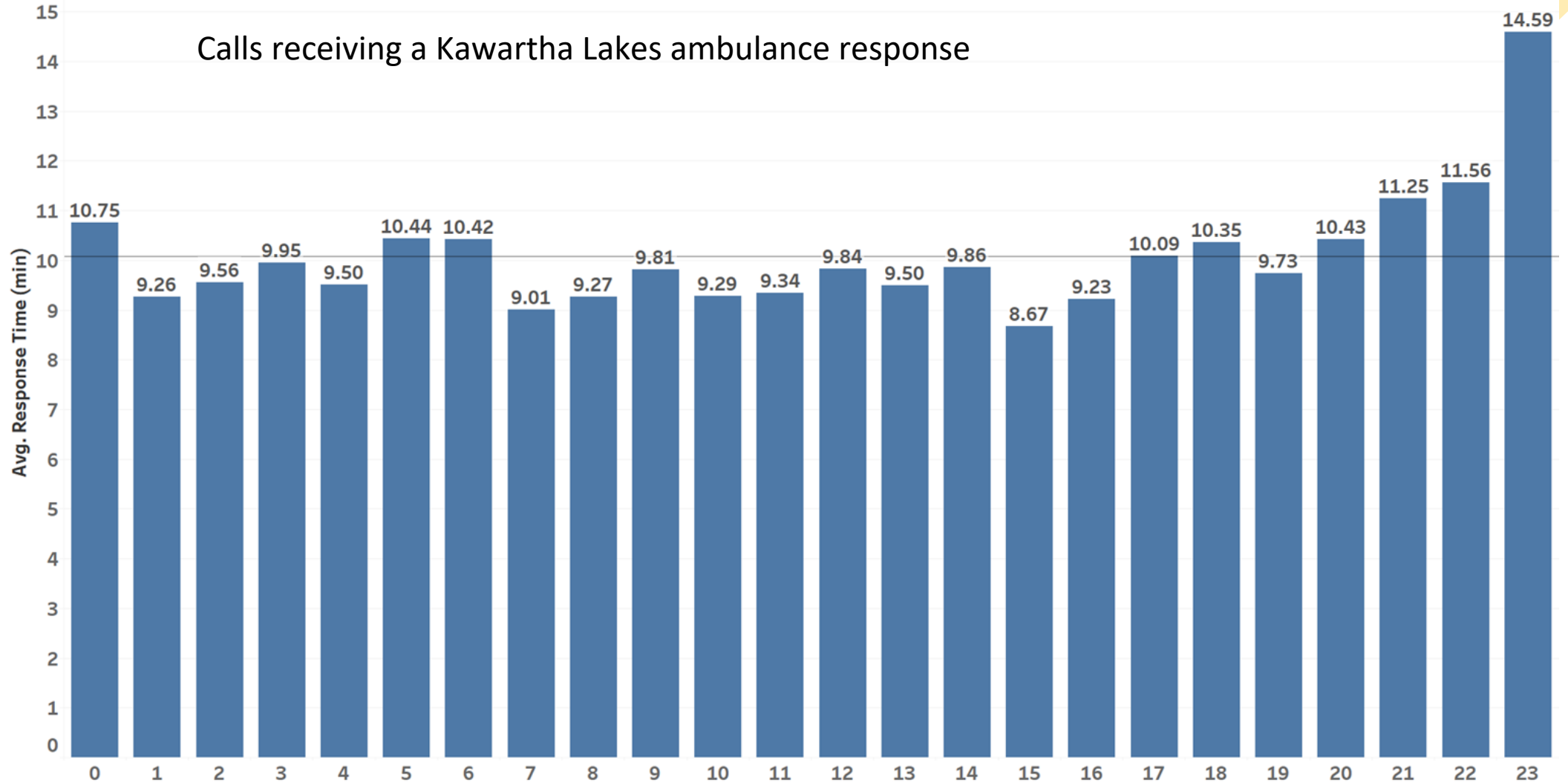
Kawartha Lakes

All Code 4 calls in K-Lakes regardless of which ambulance service responding

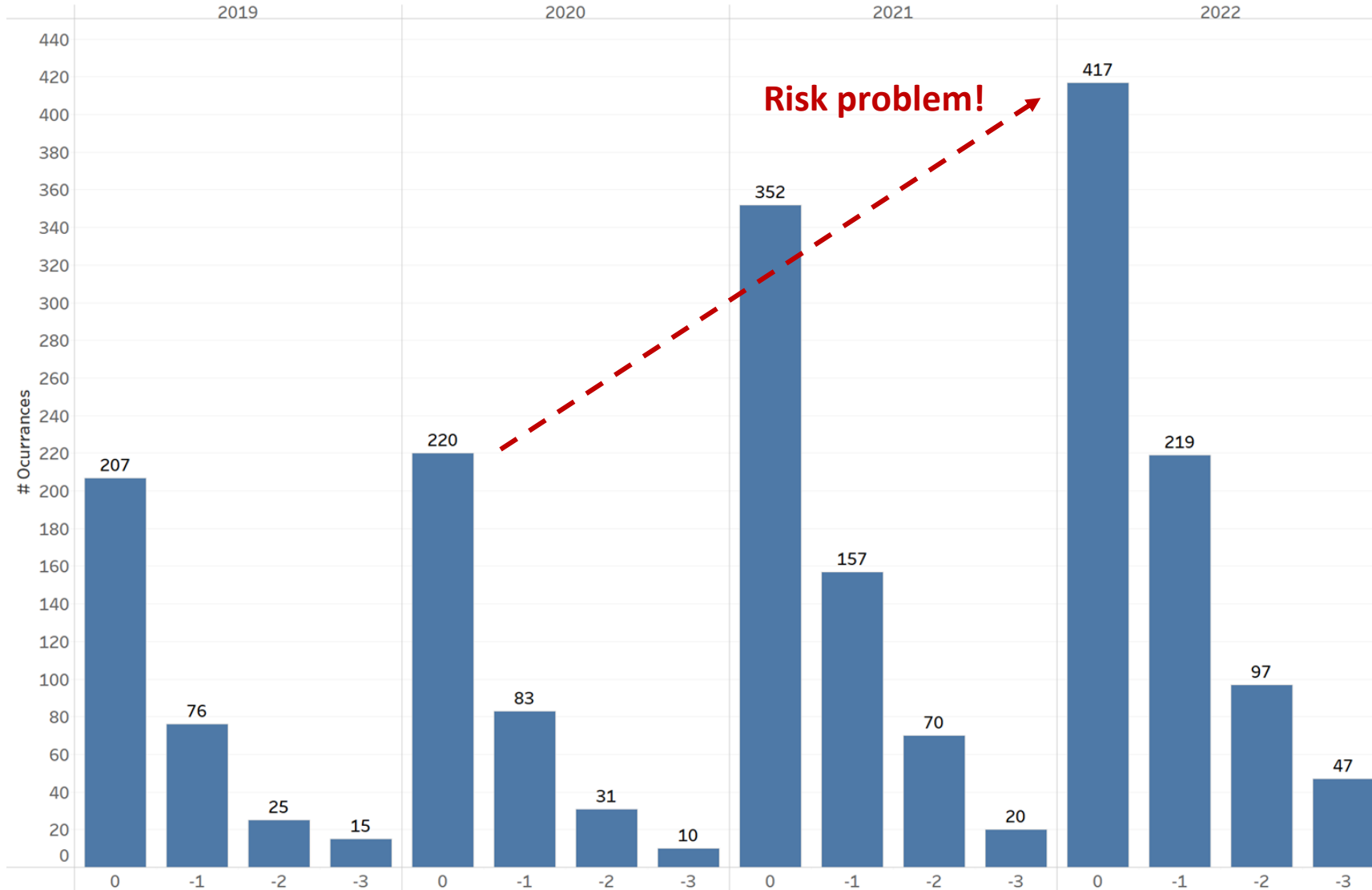


Code 4 Avg. Response Time by Hour Service:735 Year: 2022
Kawartha Lakes

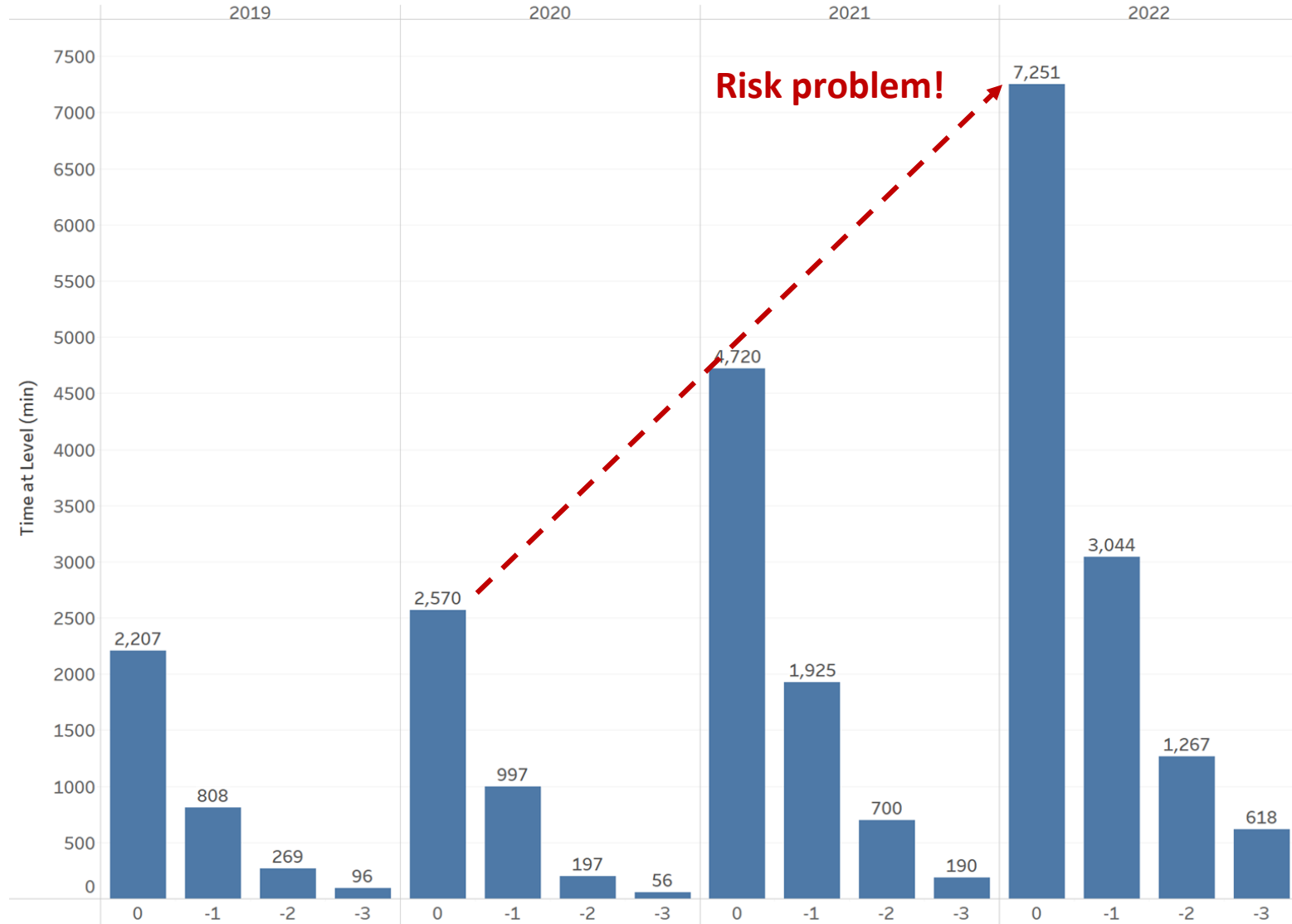
Calls receiving a Kawartha Lakes ambulance response



Zero Unit Occurrences
Kawartha EMS

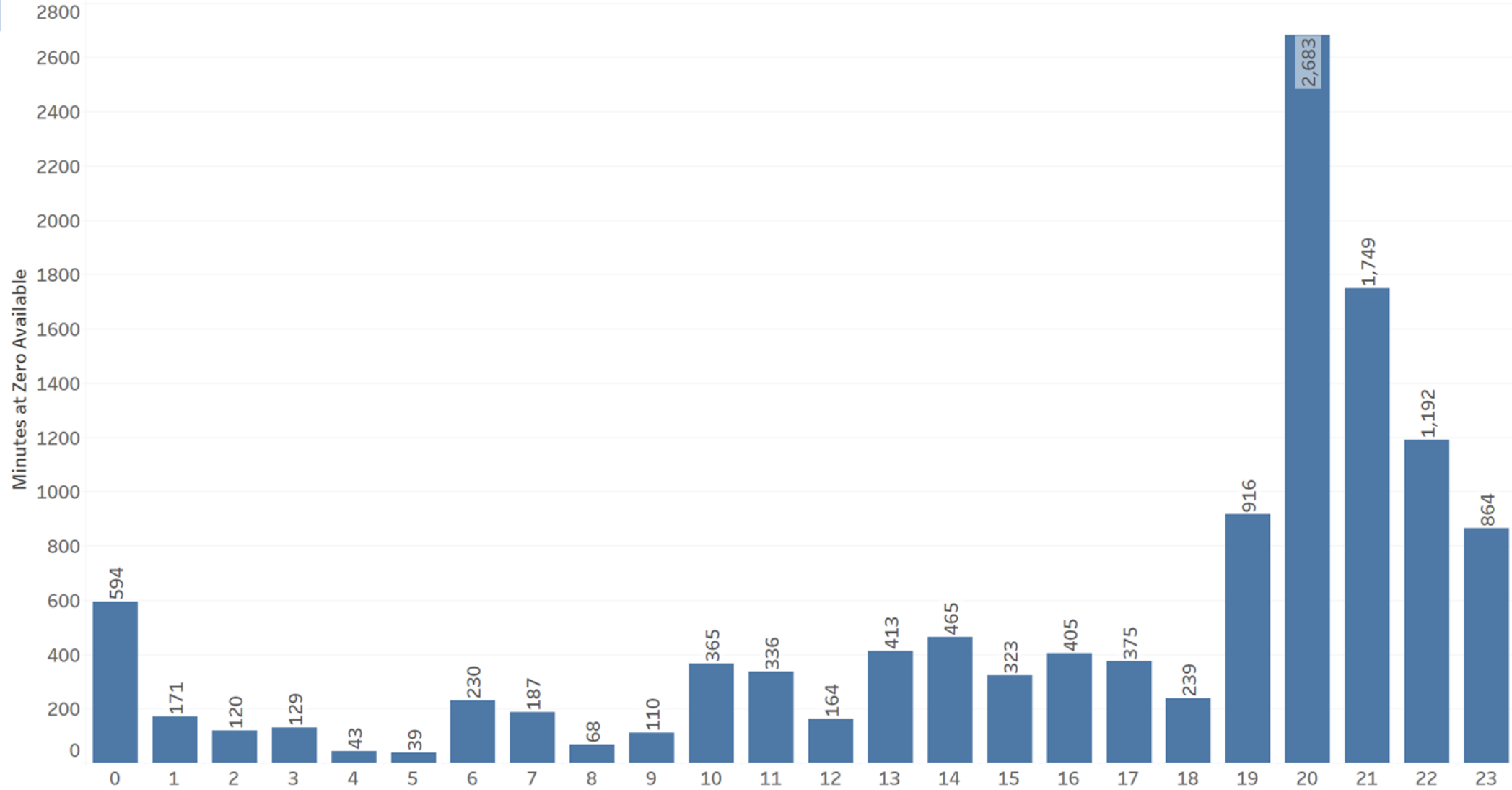


Time Spent at Zero Units
Kawartha EMS

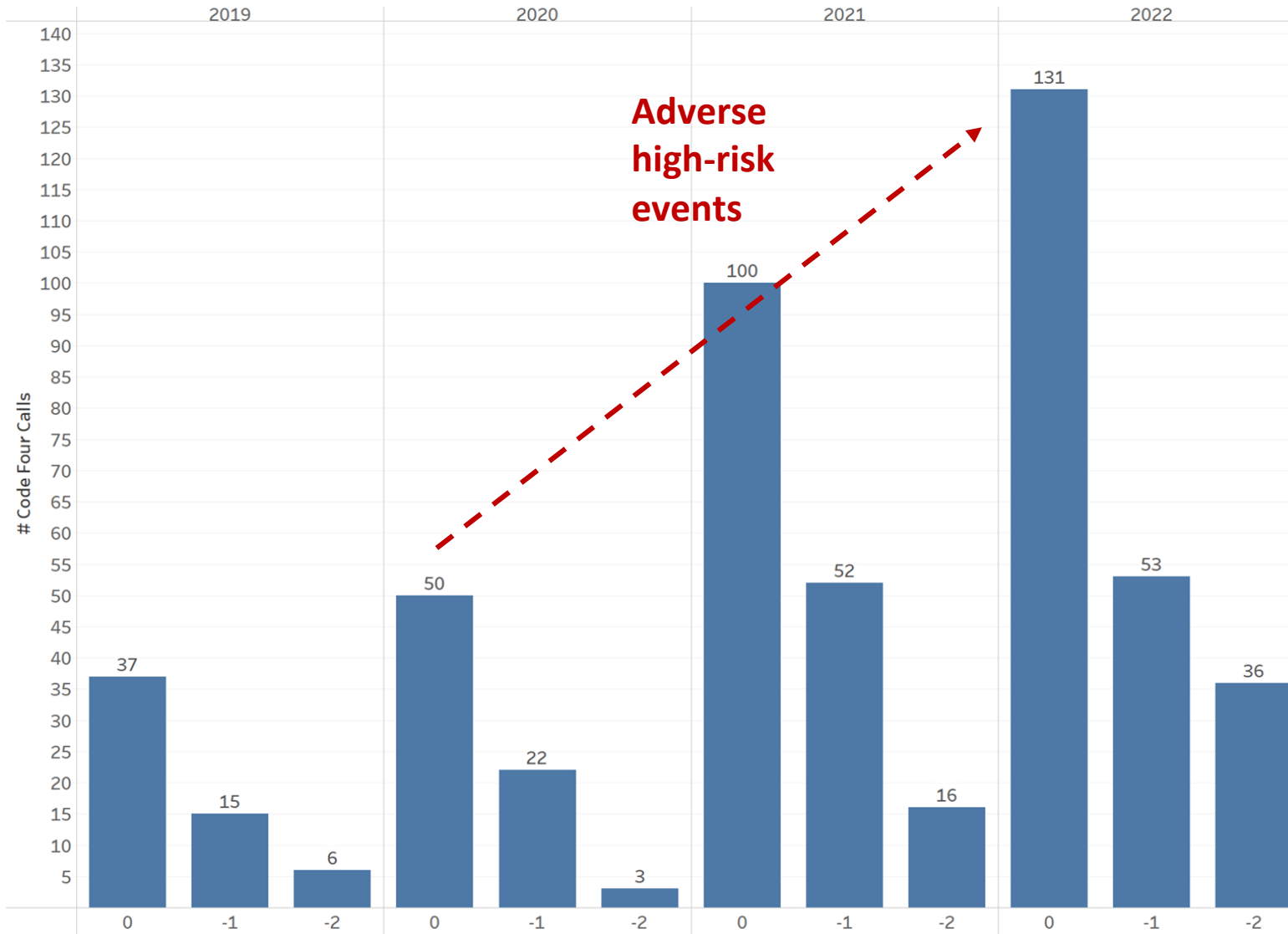


Zero Available by Hour Year: 2022

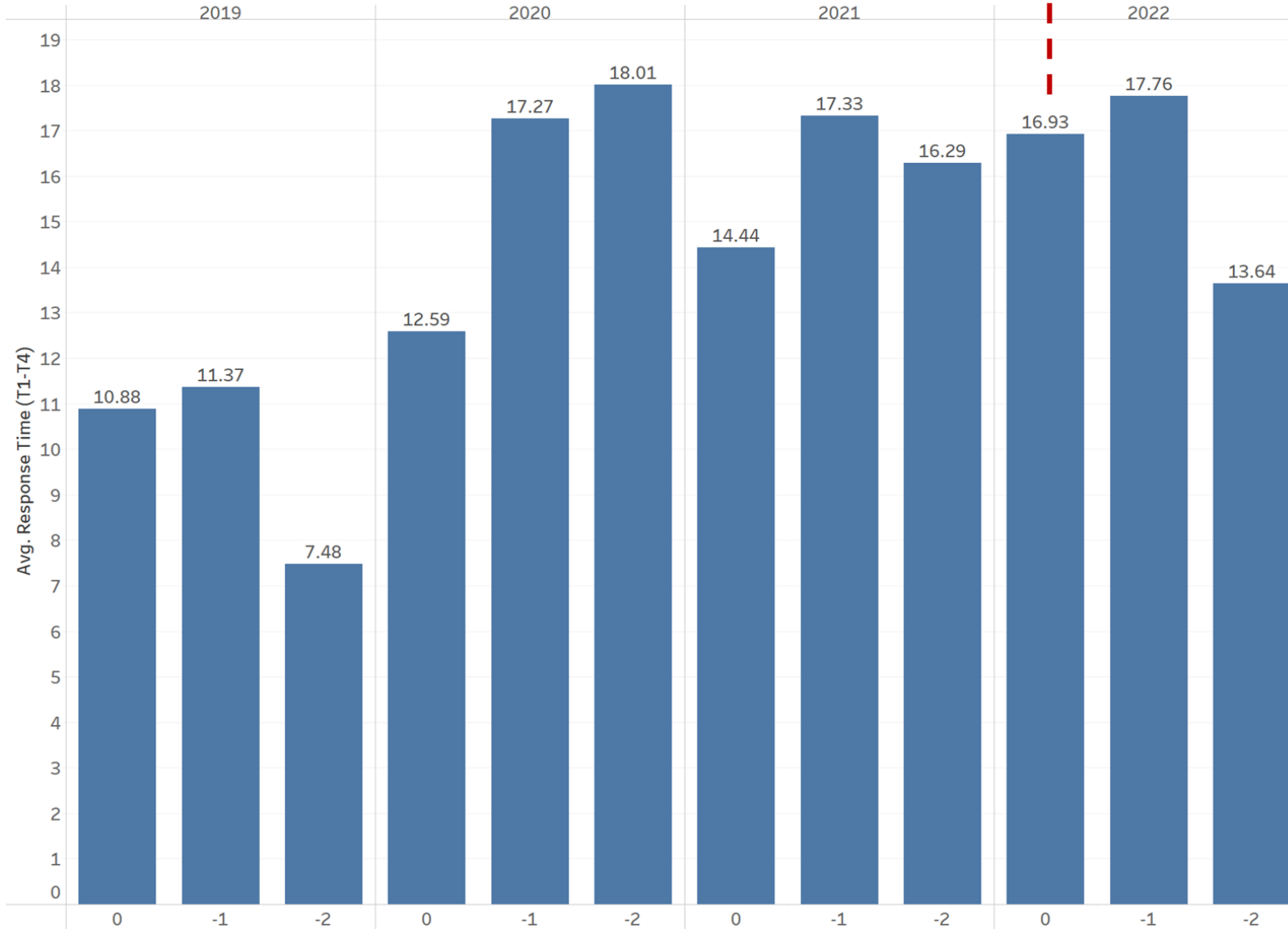
Kawartha EMS



Code 4 Calls While at Zero
Kawartha EMS



Response Time Code 4 Calls at Zero
Kawartha EMS



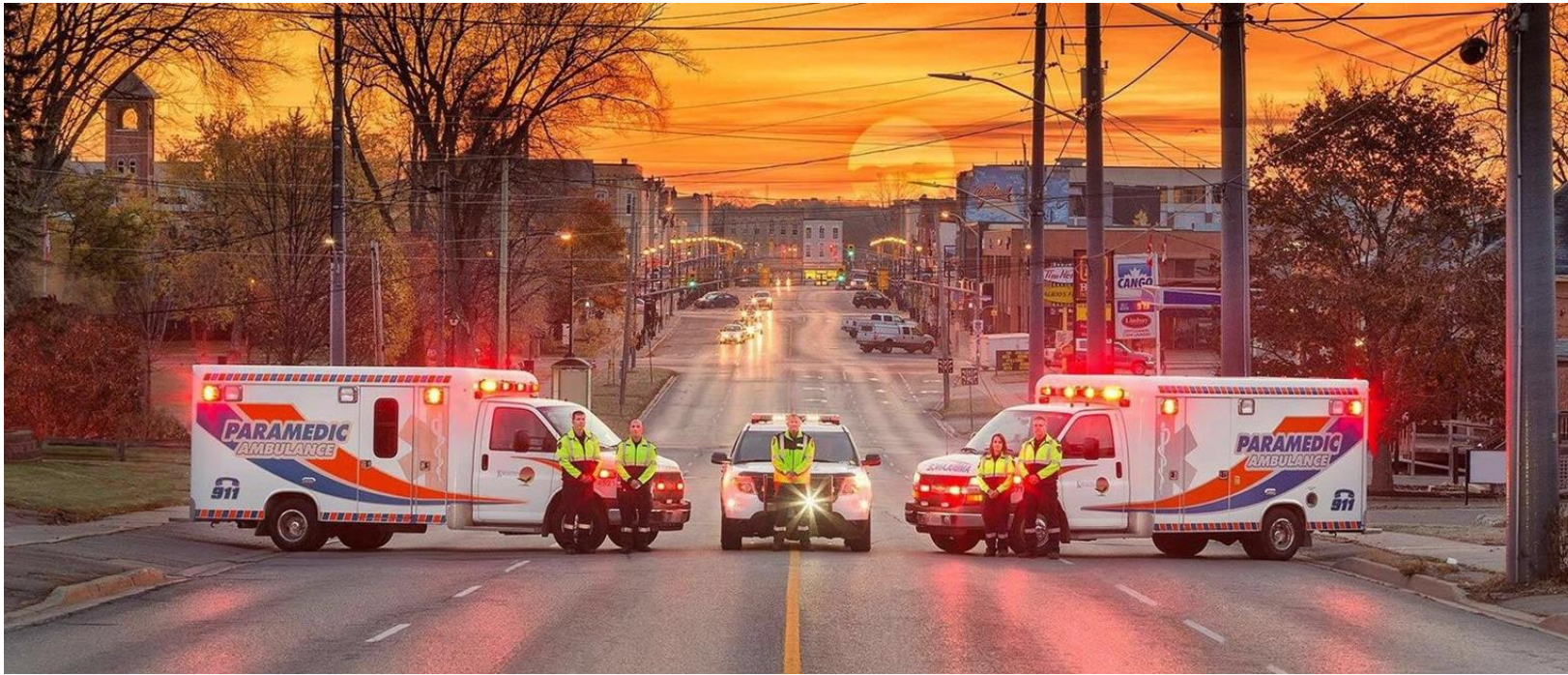
131 times a Code 4 call had unacceptable/unsafe response times of 17 minutes (70% higher than the Code 4 average of 10 minutes)

Analytics Observations

1. Post COVID system activity on up-swing
2. Peak hours-of-day “system busyness” trending upwards towards maximum acceptable levels
3. Offload delay problems are escalating significantly
4. Code Black 2022 metrics very concerning; public safety risk

Resourcing add (i.e., 12-hour car transitioning to 24-hour car) is essential just to push back at concerning post-COVID analytics trends



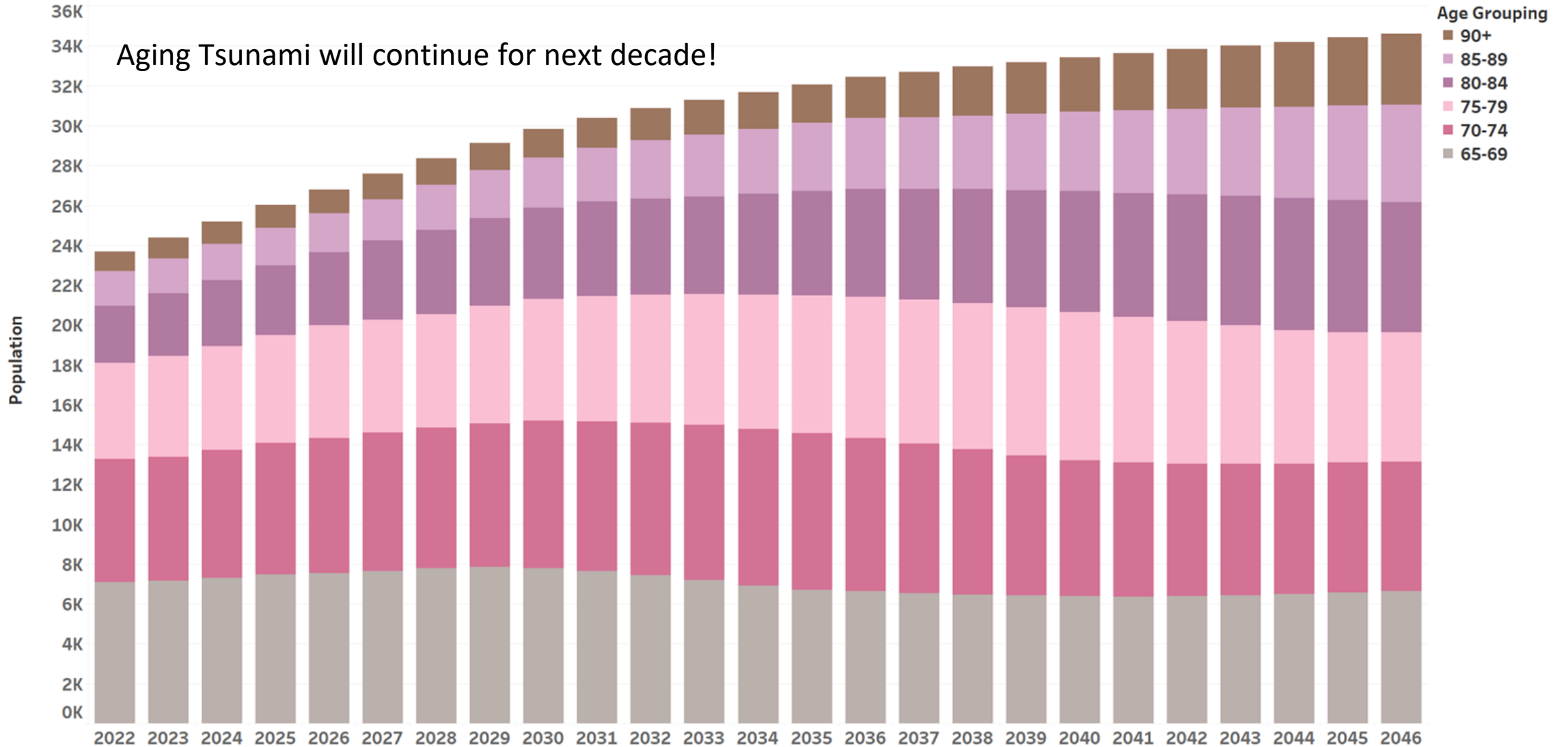


Forecast Demand for Service

Population By Age Group Age > 65

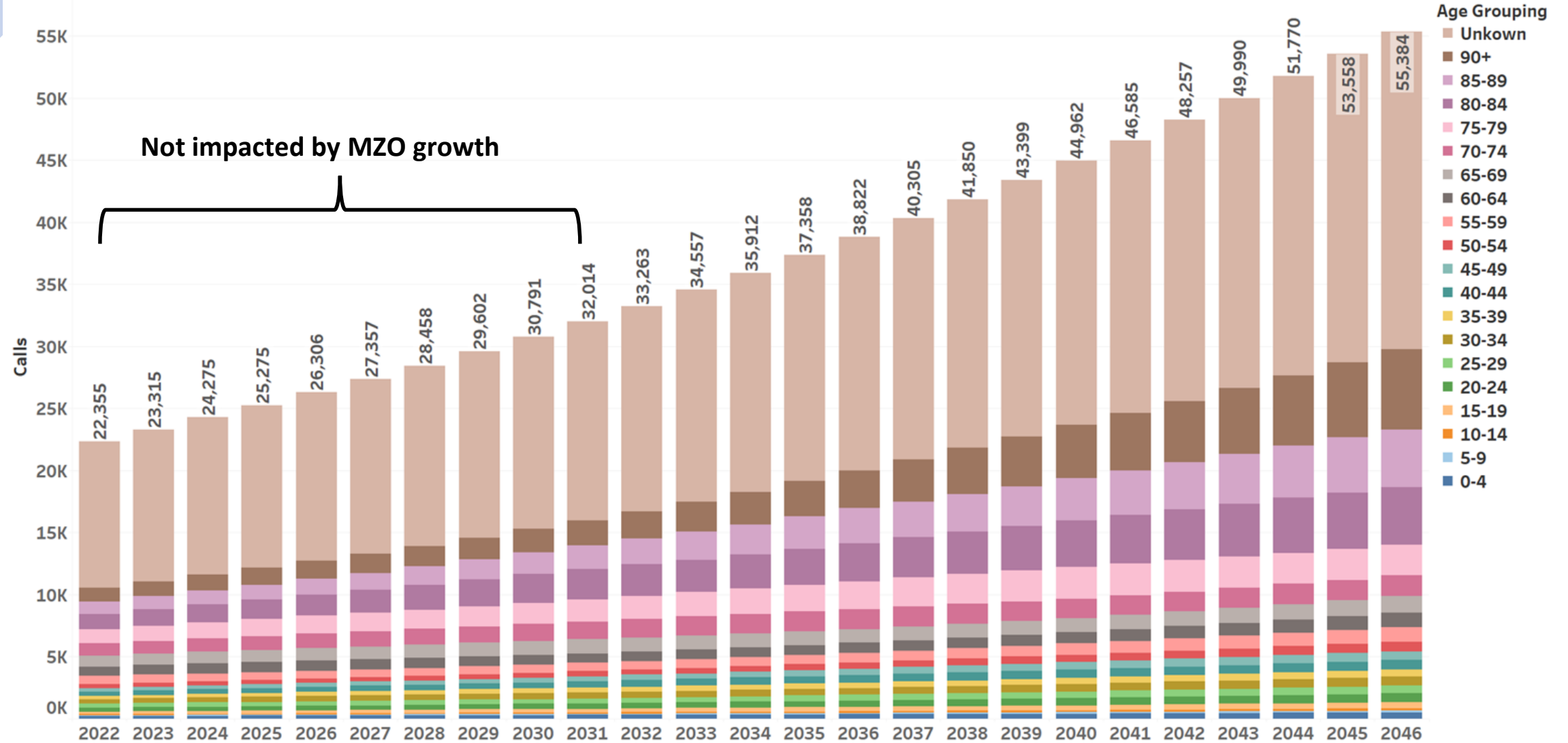
Kawartha Lakes

Aging Tsunami will continue for next decade!



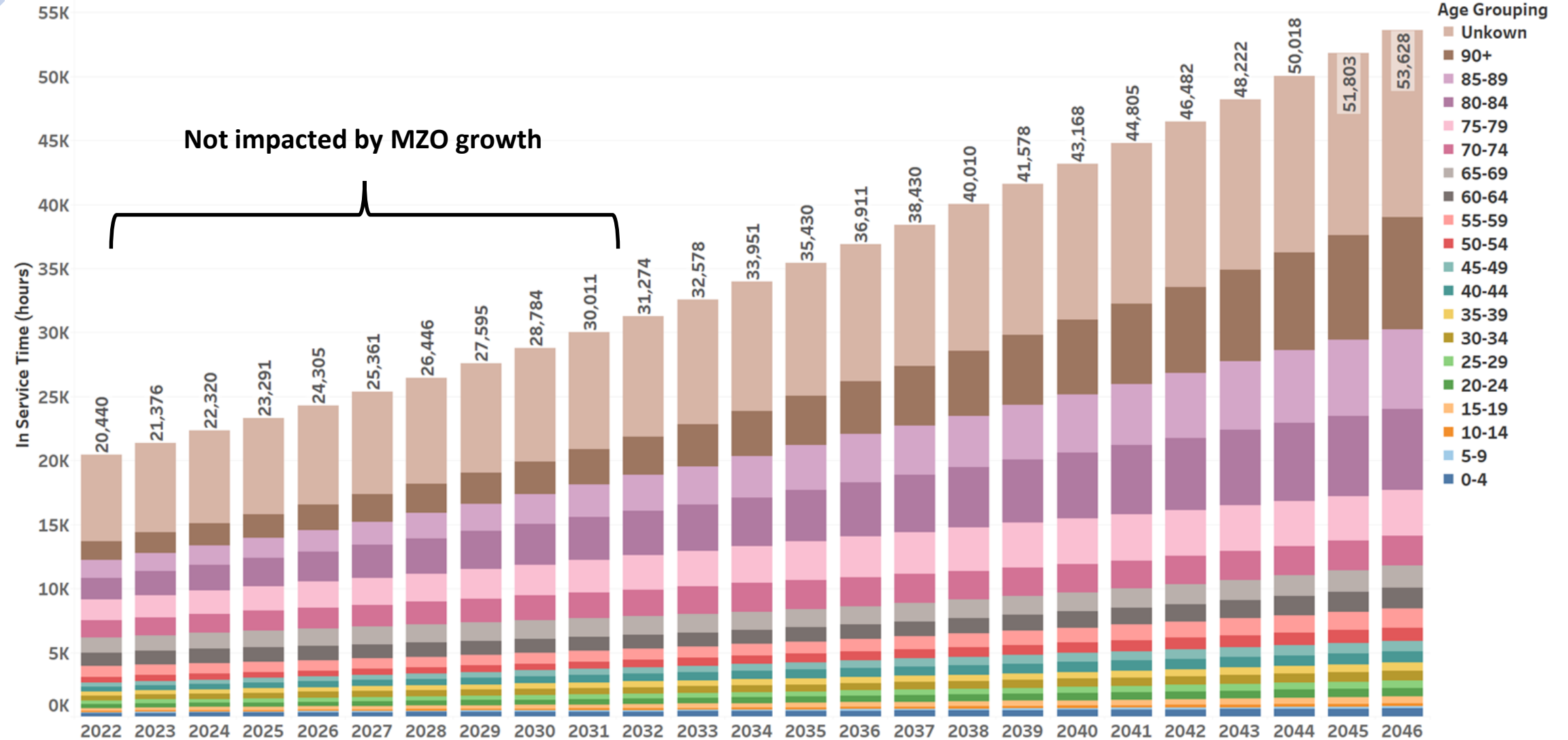
Proj. Calls By Year ALL FACTORS

Kawartha Lakes



Proj. InService Time By Year ALL FACTORS

Kawartha Lakes



Demand Forecast Observations

- Workload demand escalating due to population growth, Aging Tsunami, and public propensity to call 911
 - Call volumes will continue to rise over decade
 - In-service time will rise marginally faster than call volume due to Aging Tsunami (this is the actual forecast of in-service workload)
- Additional resourcing adds will be required in K. Lakes before MZO growth materializes
- MZO growth game changer will require an entirely new Master Plan circa 2026-27



Paramedic Service Operational Key Performance Indicators 2022

Committee of the Whole

September 12th, 2023

Background

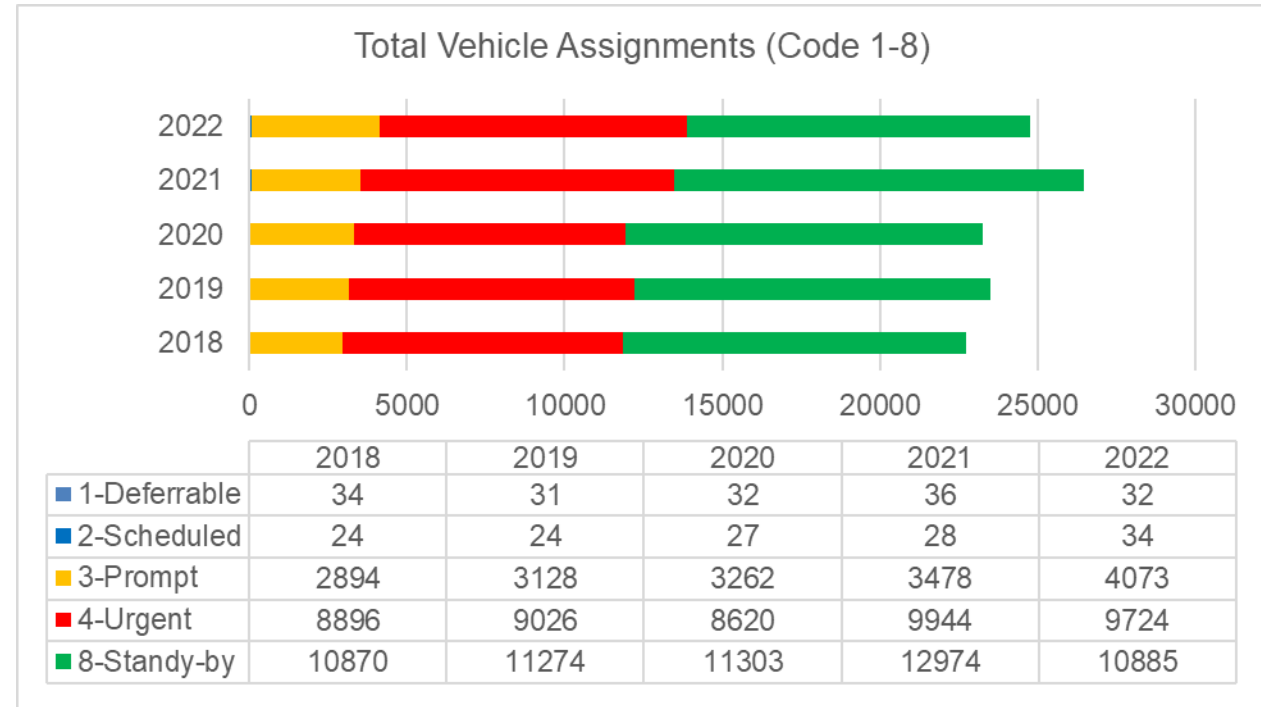
- The purpose of this report is to provide an overview of a suite of operational key performance indicators (O-KPIs) collected by Kawartha Lakes Paramedic Service for the purpose of performance reporting to Council and the public.
- Including legislated (O. Reg 257) Response Time Performance Plan reporting
- The intent of O-KPIs is to provide the City and public a detailed view of the paramedic service operational efficiency and to provide benchmarking that will form the basis of ongoing evaluation and performance strategy.

Background

- The Operational Key Performance Indicators described within this report consist of a combination of tradition and legislated measures (response time and call volumes) combined with a suite of performance metrics developed by the Paramedic Chiefs of Canada (PCC).
- In Ontario, there are very few sources of comparators data for paramedic service performance and benchmarking. The Municipal Benchmarking Network (MBN – www.mbncanada.ca) does include six Emergency Medical Services measurements and where applicable this data is included for comparison.

Call Volume – Vehicle Assignments

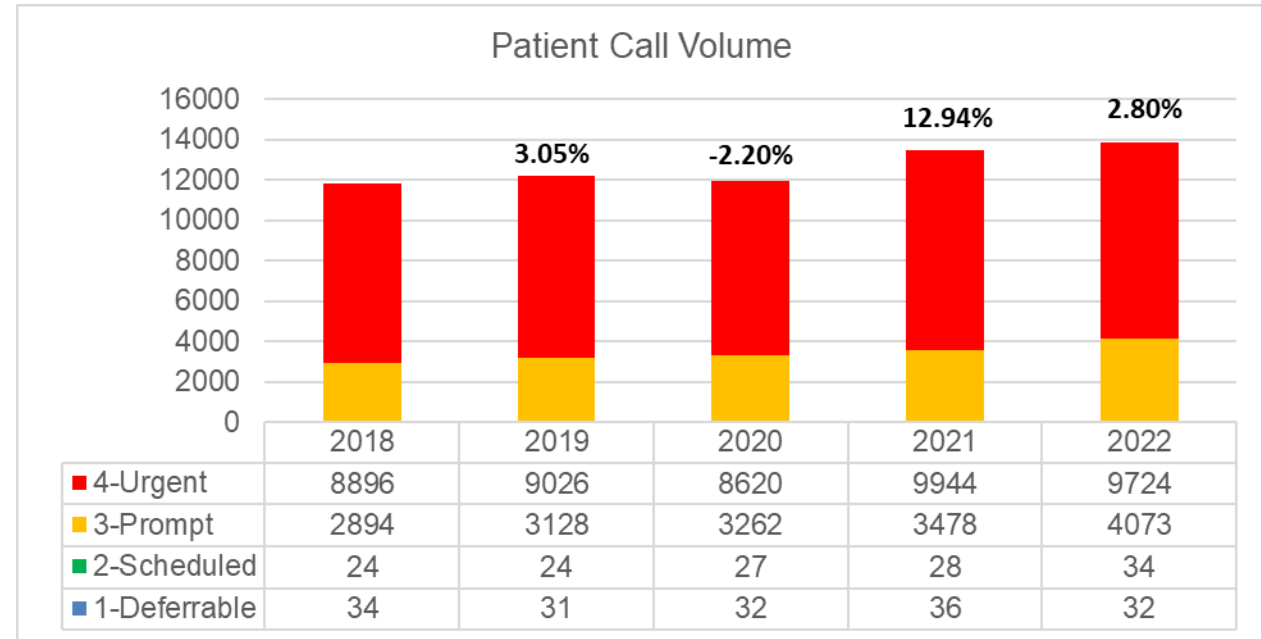
- Code 4 – Urgent/life threatening calls increase of 12.81%
- Code 3 – Prompt/Serious calls increase of 24.86%
- **The Service responded to patient volume by decreasing standbys, leading to an overall decrease in vehicle assignments by 6.47%**
- The average year over year increase for the reporting period 2.43%



	2018	2019	2020	2021	2022
Total Vehicle Assignments (Code 1-8)	22,718	23,483	23,244	26,460	24,748

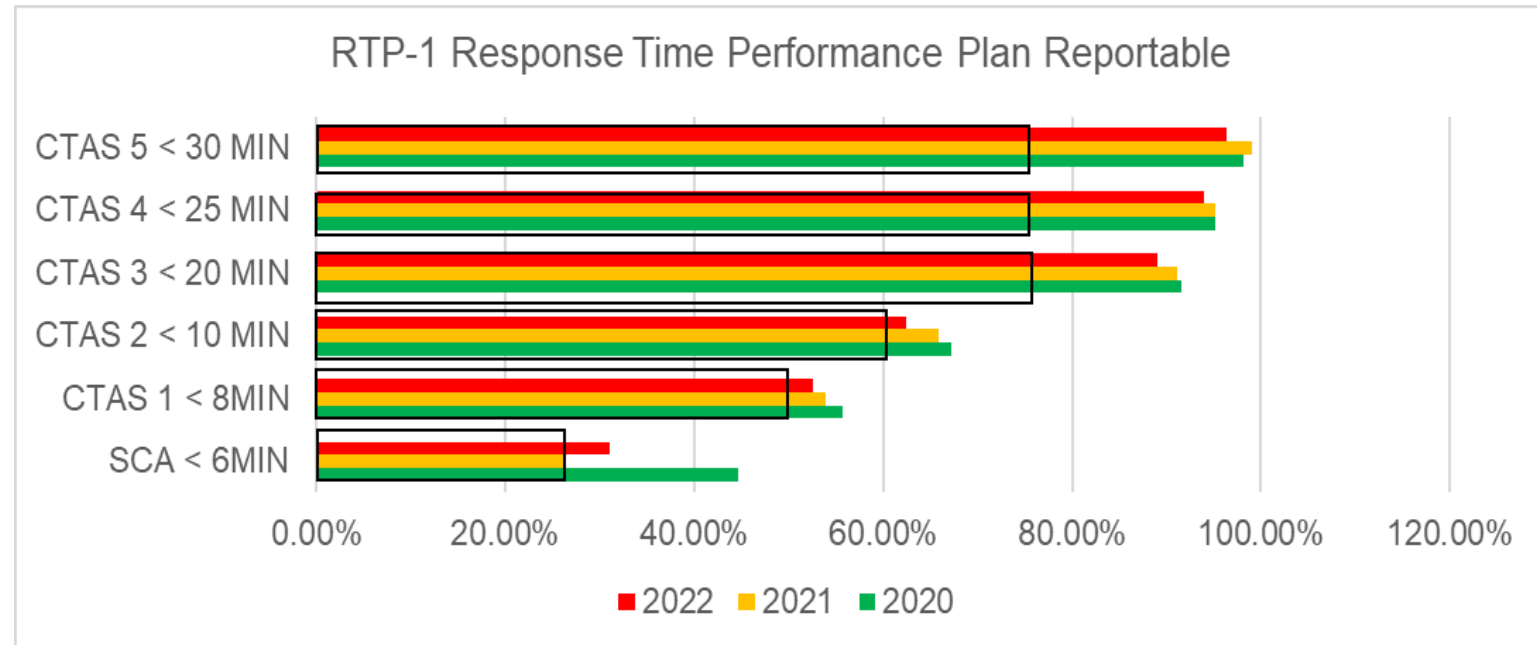
Patient Call Volume

- 2022 increase in service demand with an rate of 2.80%.
- The five-year average rate of increase is 4.15%.



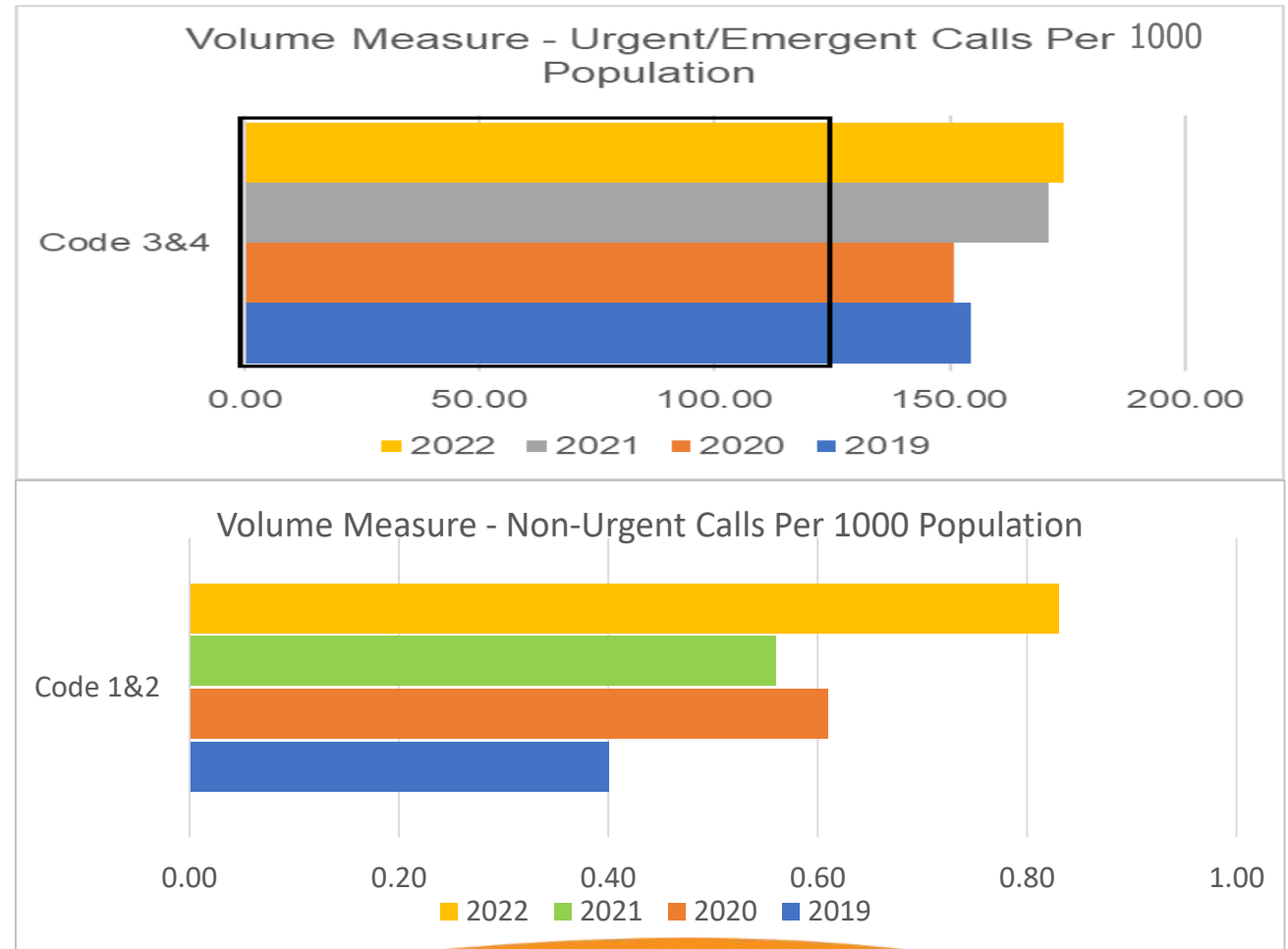
Response Time Performance

- Council approved Response Time Performance Plan
- Reviewed and reported annually as mandated by the Reg. 257
- Performance continues to exceed all targets although with some deterioration of performance over the previous year.



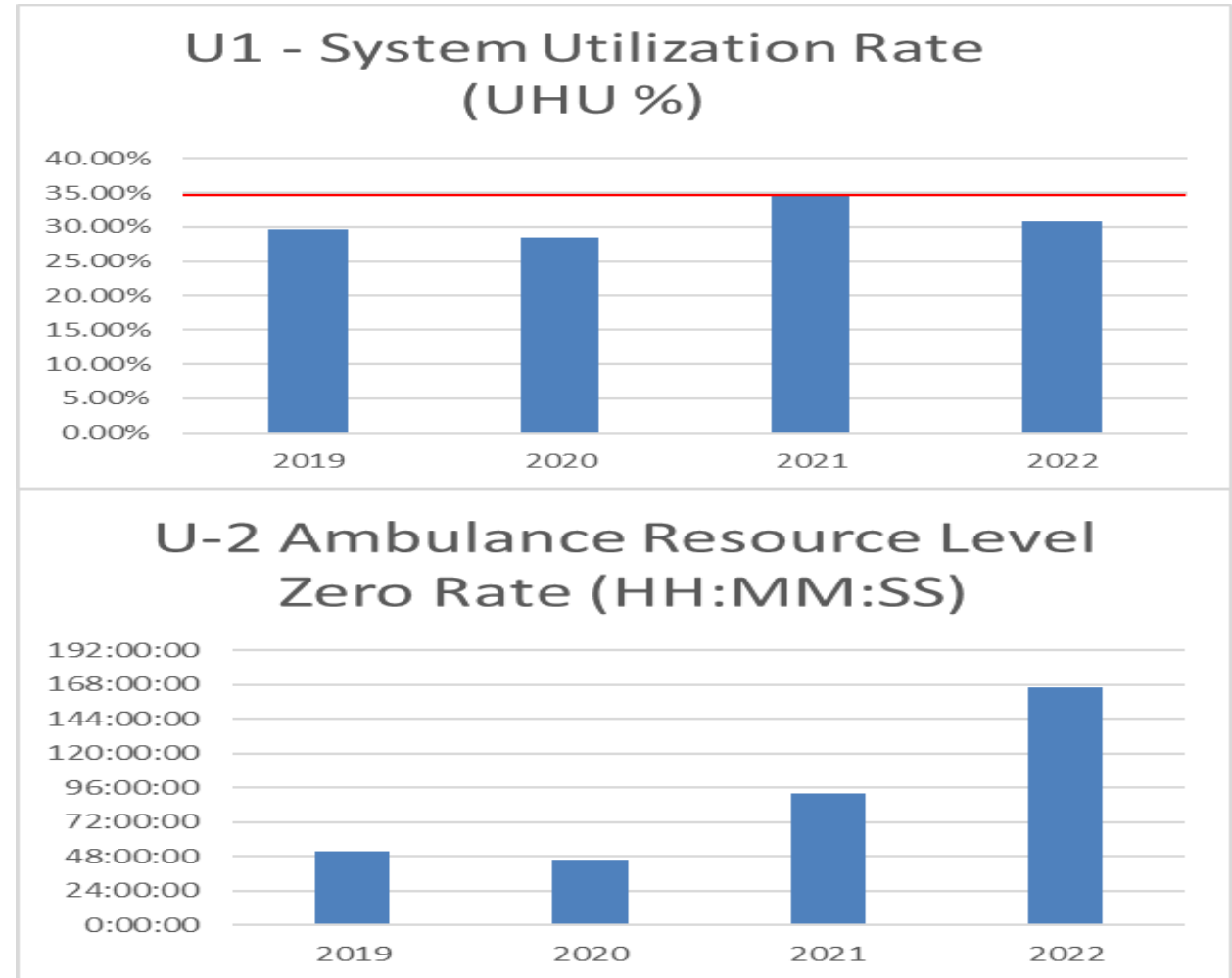
Volume Measures – Per Capita

- Emergency responses per capita increased in 2022 at 174/1000 population.
- MBN mean EMS demand for service at 127/1000 population.
- Non-urgent call volume remains very low.



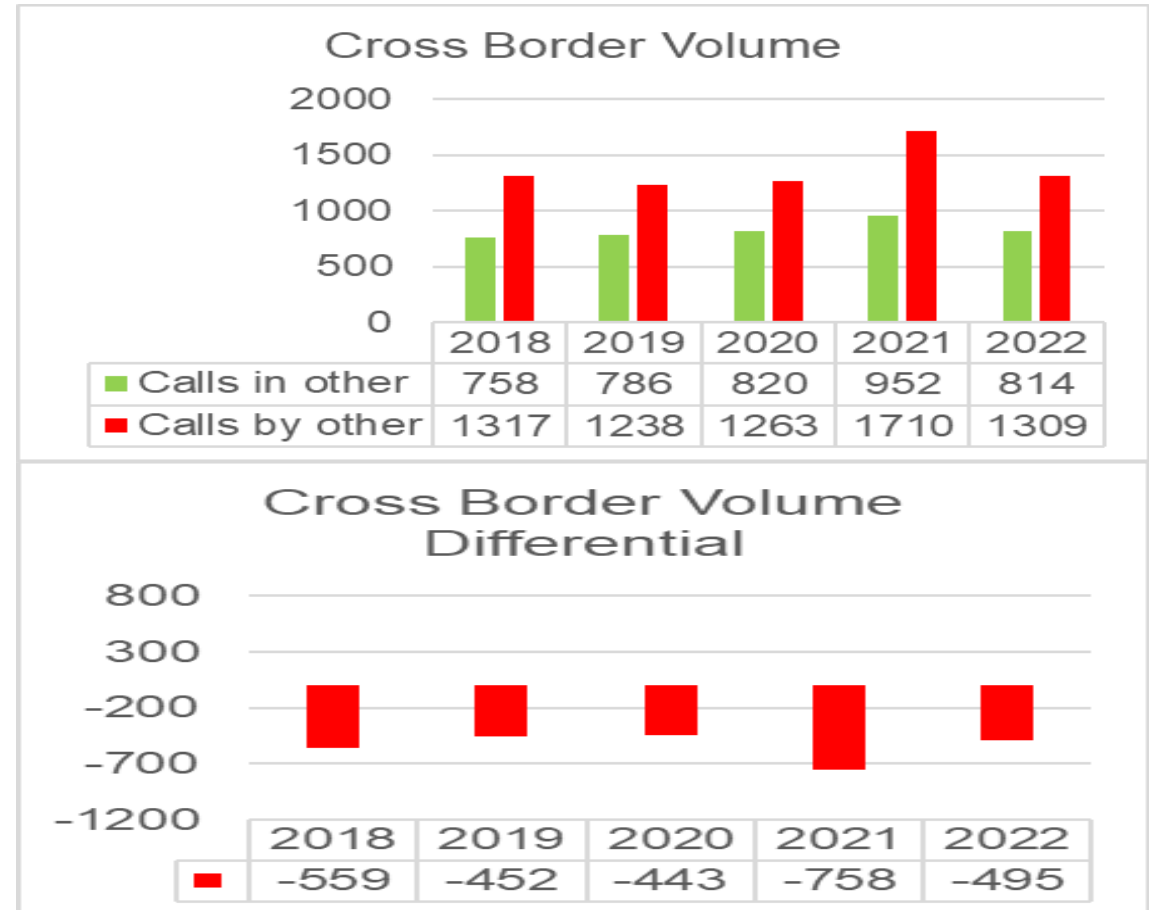
Utilization Measures

- Unit hour utilization rate at 30.84%.
- Does not capture productivity outside of responding to emergency calls, such as the completion of required documentation cleaning, restocking, etc.
- Resource Level Zero (calls for service exceeding deployed resources) 168 hours - approx. 27 min/day.



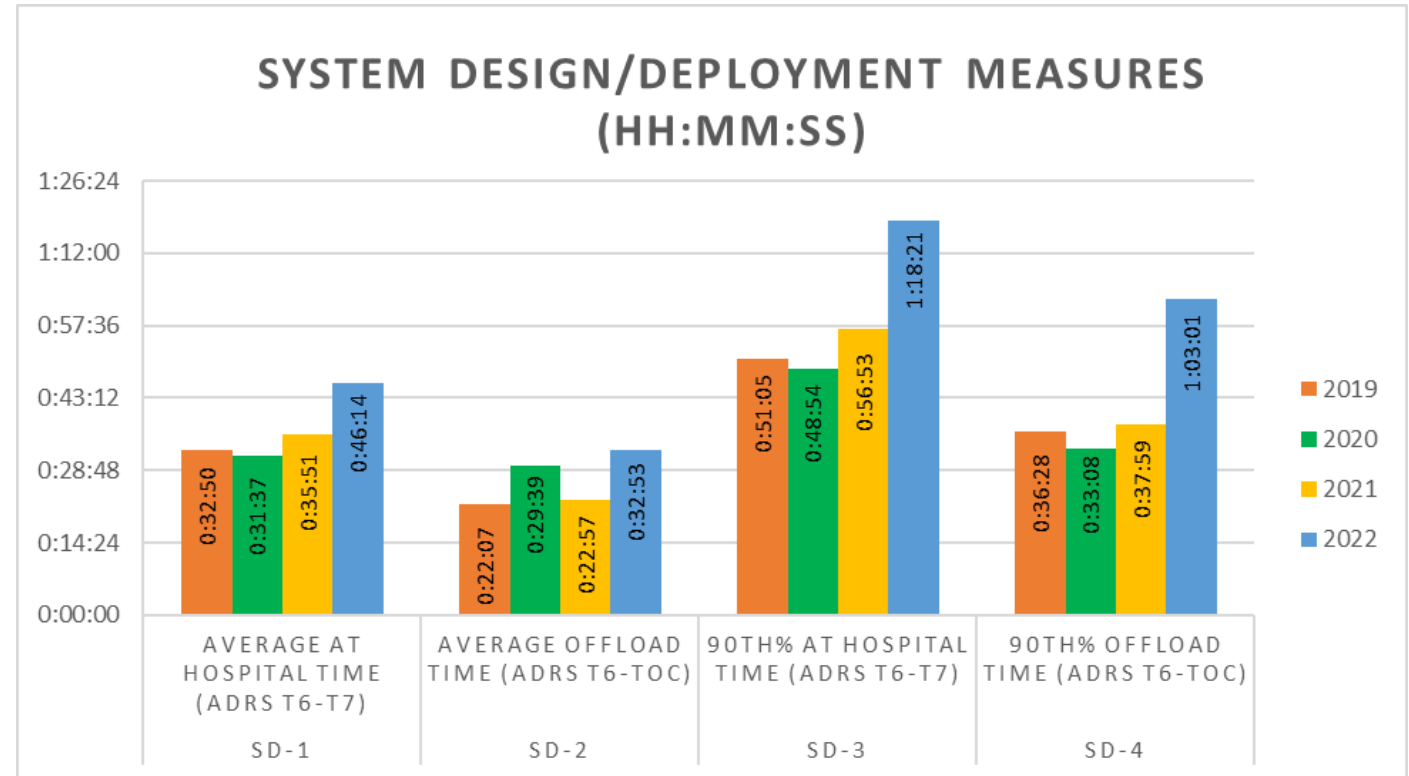
Cross Border Volumes

- Volume of paramedic service responses within the City of Kawartha Lakes completed by other Municipality's ambulances against the volume of response by Kawartha Lakes Paramedics into external municipalities.
- Reliance on neighboring services has been increasing



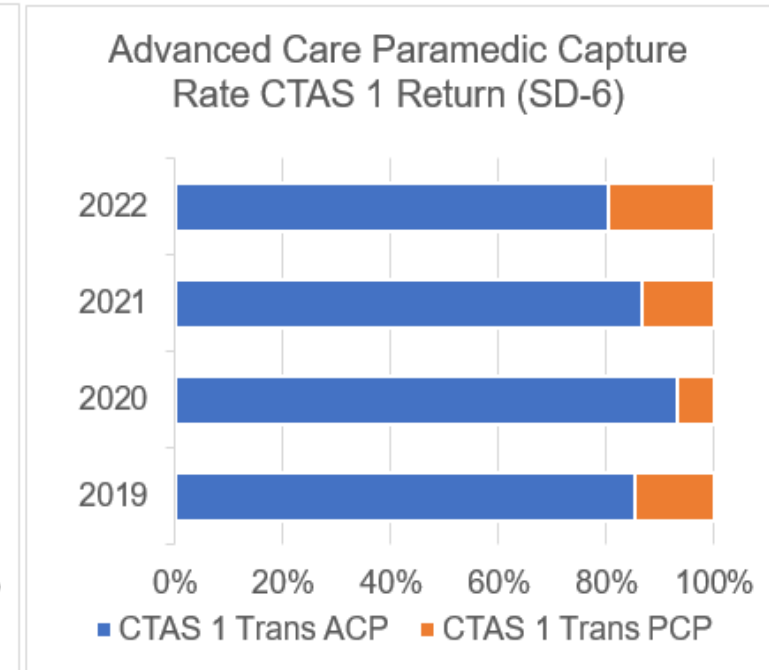
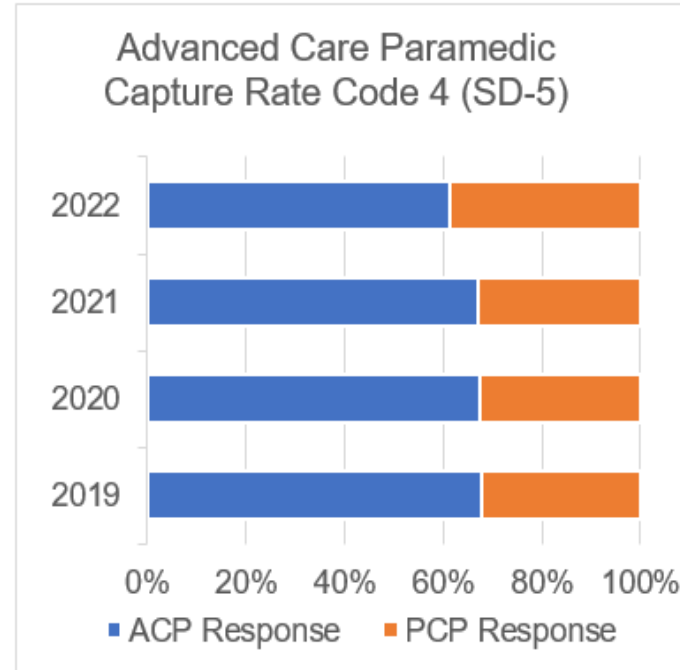
Ambulance Hours Lost In-Hospital

- Paramedic in-hospital times increasing in 2022
- Frequency of ambulance offload delay increasing (time of arrival to transfer of care > 30 minutes)
- Total offload time (>30 Min) more than doubled in 2022 to 1628hrs / 68days / **\$373,500**



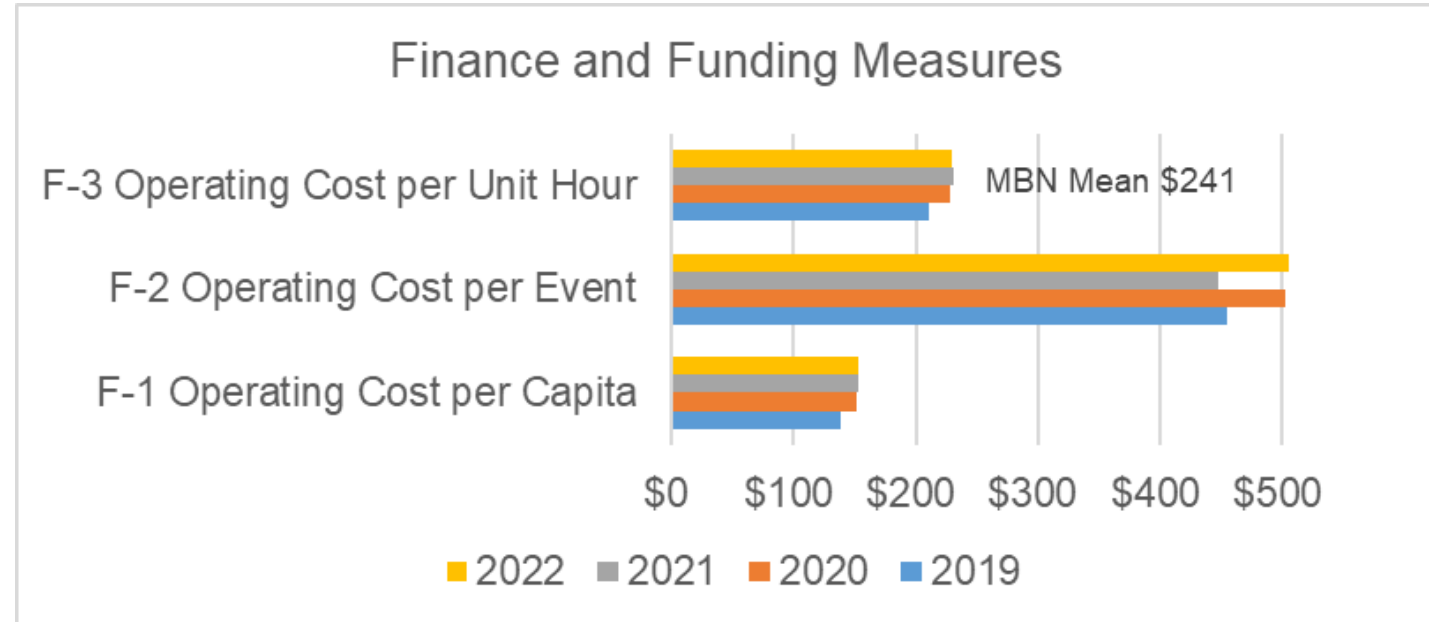
Advanced Level of Care Capture Rate

- Percentage of emergency responses that received Advanced Care Paramedic response vs Primary Care Paramedic (PCP).
- The strategy of the City of Kawartha Lakes to maintain a 50% ACP:PCP ratio has resulted in superior performance in this measurement.



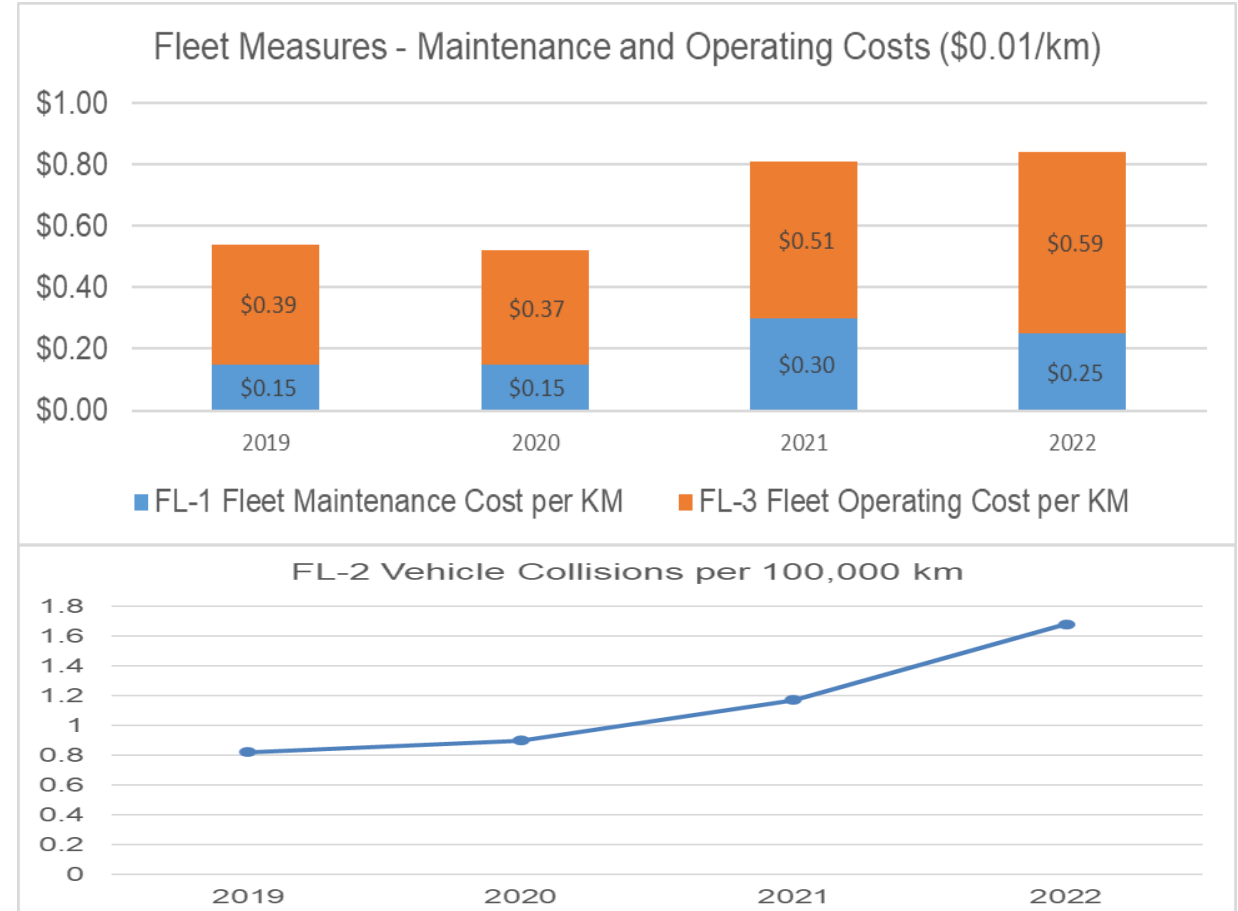
Finance/Funding Measures

- Increasing call volumes, inflation and equipment costs resulting in increased costs per unit hour and per capita over the previous year rates.
- The unit hour cost was static at \$229.34/uh which remains lower than the MBN comparator (\$241.00) and at a rate of increase well below the 2022 annual average CPI increase (6.8%).



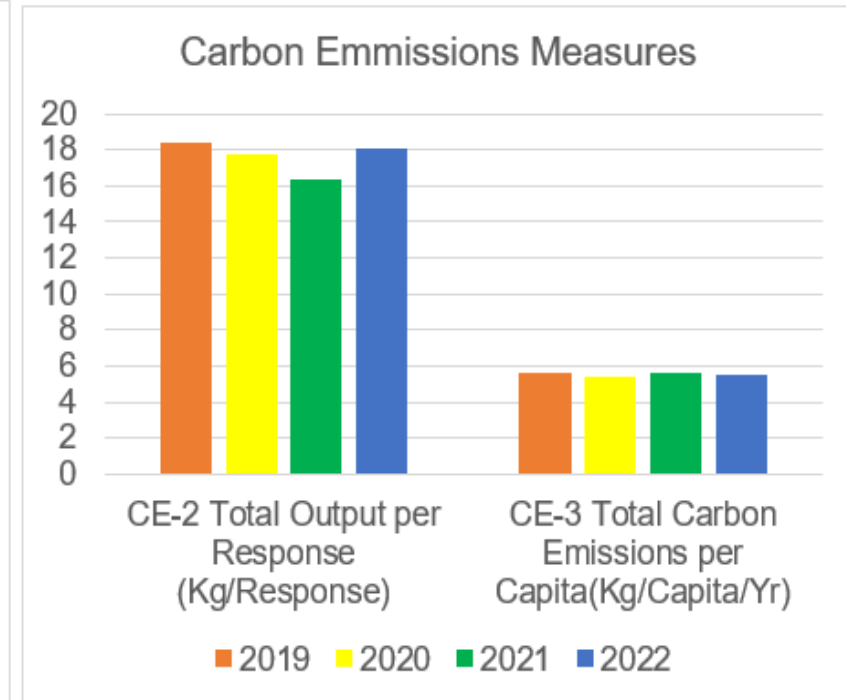
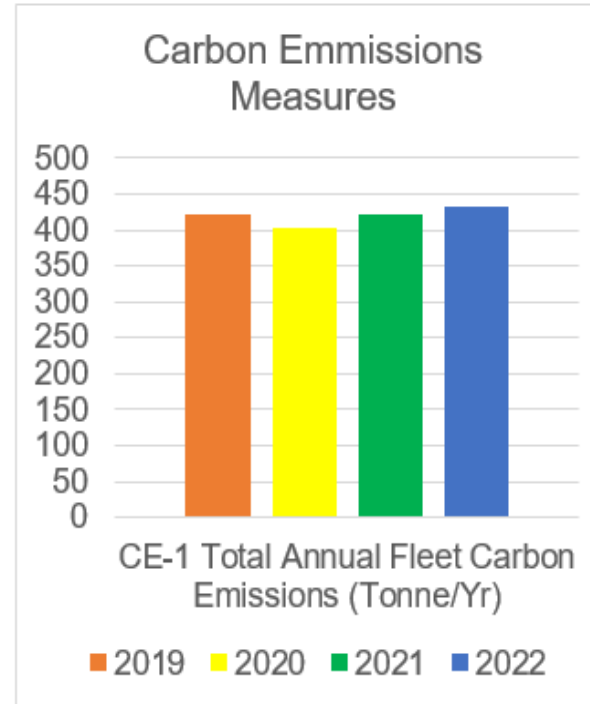
Finance/Funding Measures

- Total fleet operating costs increased by \$0.08 per kilometer in 2022 over 2021 with total per kilometer operating cost at \$0.59/km in 2022 over 2021 at \$0.51/km.
- Influencing factors related to this performance measure include significant fuel cost increases and several significant vehicle repairs, given aging fleet.
- Incidents/collision instance rate of 1.68 per 100,000 kms. The department will be examining this trend to seek opportunities to improve.



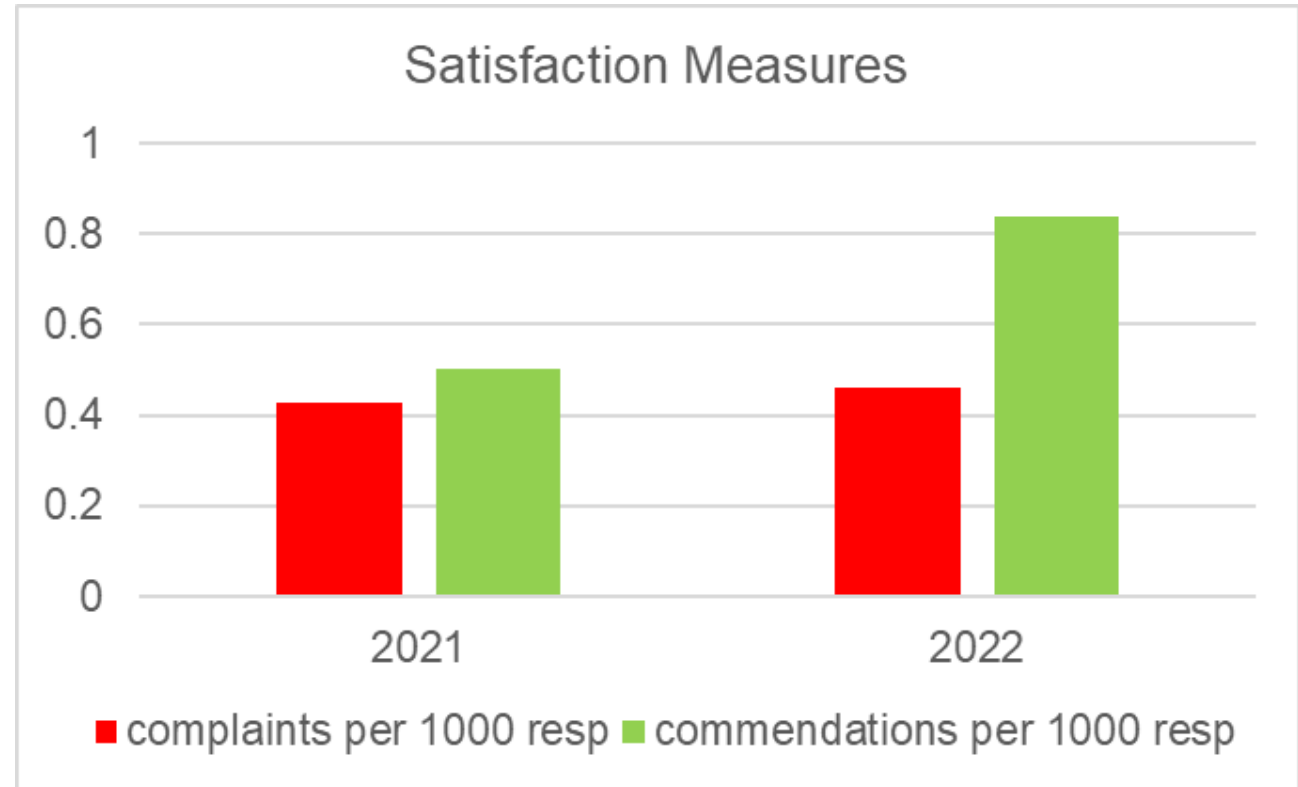
Carbon Emissions Measures

- Annual Fleet Carbon Emissions and Carbon Emissions per Capita measures increased in 2022 over 2021. (increased mileage travelled by the fleet as call volume increases).
- Additional influencing factors include fleet age/fuel efficiency, vehicle model and size.



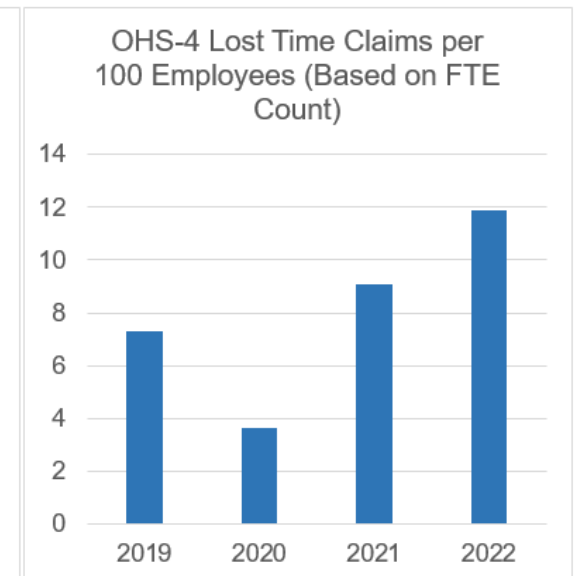
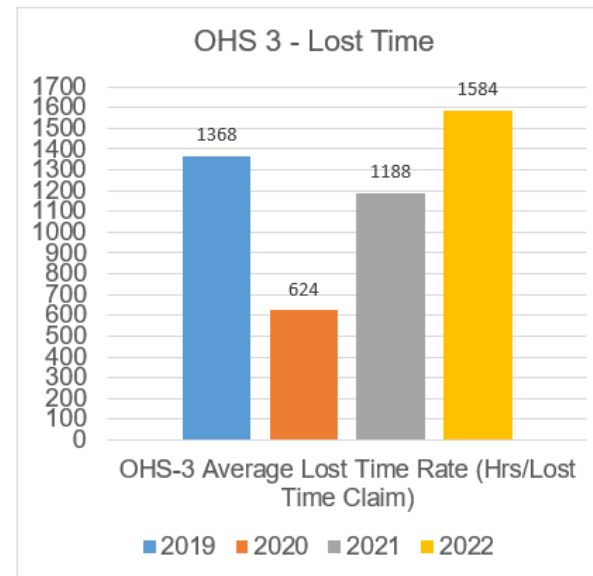
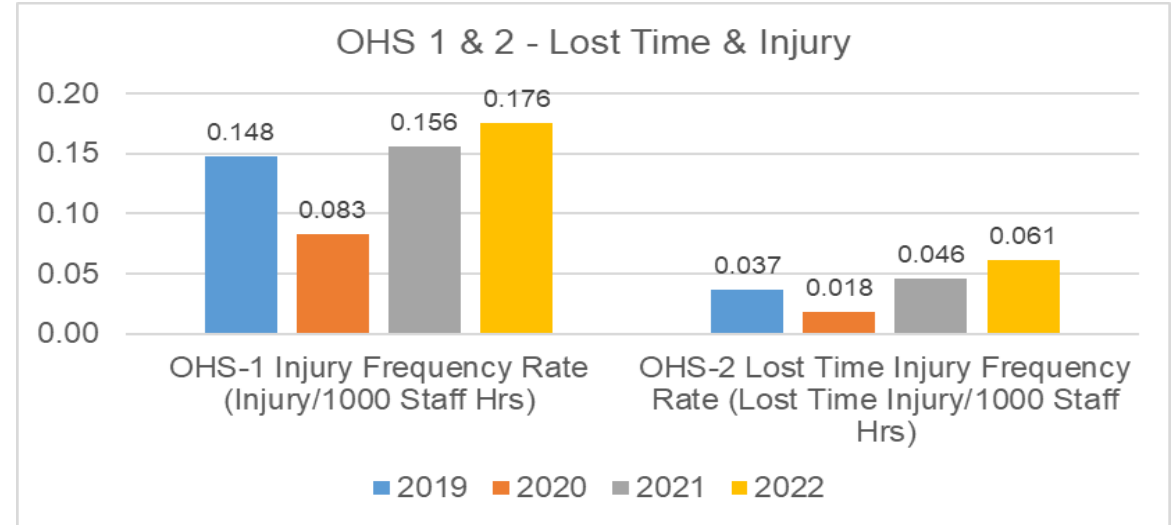
Satisfaction Measures

- Passive approach of a comparison of commendations vs complaints received as a result of service provided.
- Additional measures to qualify service delivery expectation and performance will be added in 2023.



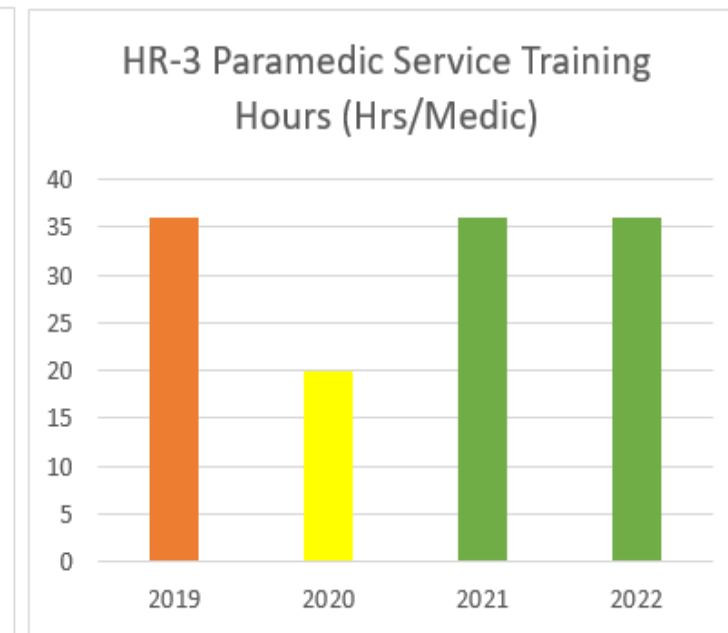
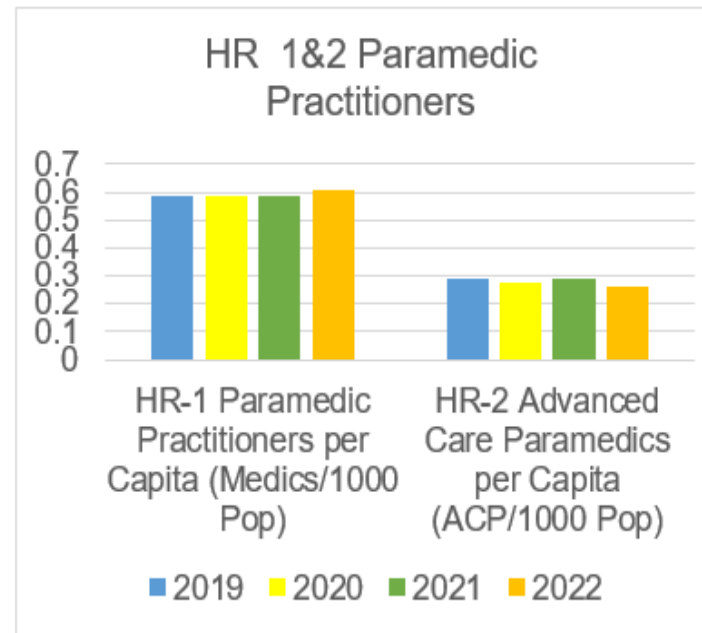
Occupational Health & Safety

- Frequency Rate for Injury and Lost Time Incidents remains lower than many comparators, however the average lost time hours per claim is very high.
- This metric warrants further analysis to identify causes and opportunities for improvement and mitigation.



Human Resource Measures

- Service staffing levels were increased by 4 Paramedics over the KPI reporting period.
- Call volumes have continued to rise, staffing enhancement has had positive impact on utilization rates, however Resource Level Zero Rates continue to surge.
- Paramedic Continued Education hours restored to pre-pandemic levels.



Key Findings

1. Demand for Service & Resource Level
 - a. Increasing at unprecedented rate
 - b. Increase to frontline staffing levels and deployment strategies have had positive impact on Resource Utilization Rates/system busyness and reliance on cross border service
 - c. Resource Level Zero Rates increased, concerning impact on response times
2. Financial Performance
 - a. Per capita cost increase below annual CPI and remains below Municipal Benchmarking Network comparator mean.
 - b. Fleet costs increasing concurrent with service demand and increasing fuel costs.
3. Human Resources
 - a. Loss time injury rates require attention
 - b. High quality level of care is consistently provided to the community

Key Findings

4. Fleet

- a. Fleet operational cost likely to exceed current budget expectations due to high fuel and maintenance costs
- b. Safety measures need to be considered to decrease vehicle incident frequency
- c. Strategies are required to reduce emissions

5. Stakeholder Satisfaction

- a. Meaningful measures should be developed to qualify service delivery expectation and performance

Paramedic Service Operational Key Performance Indicators 2022

Questions?

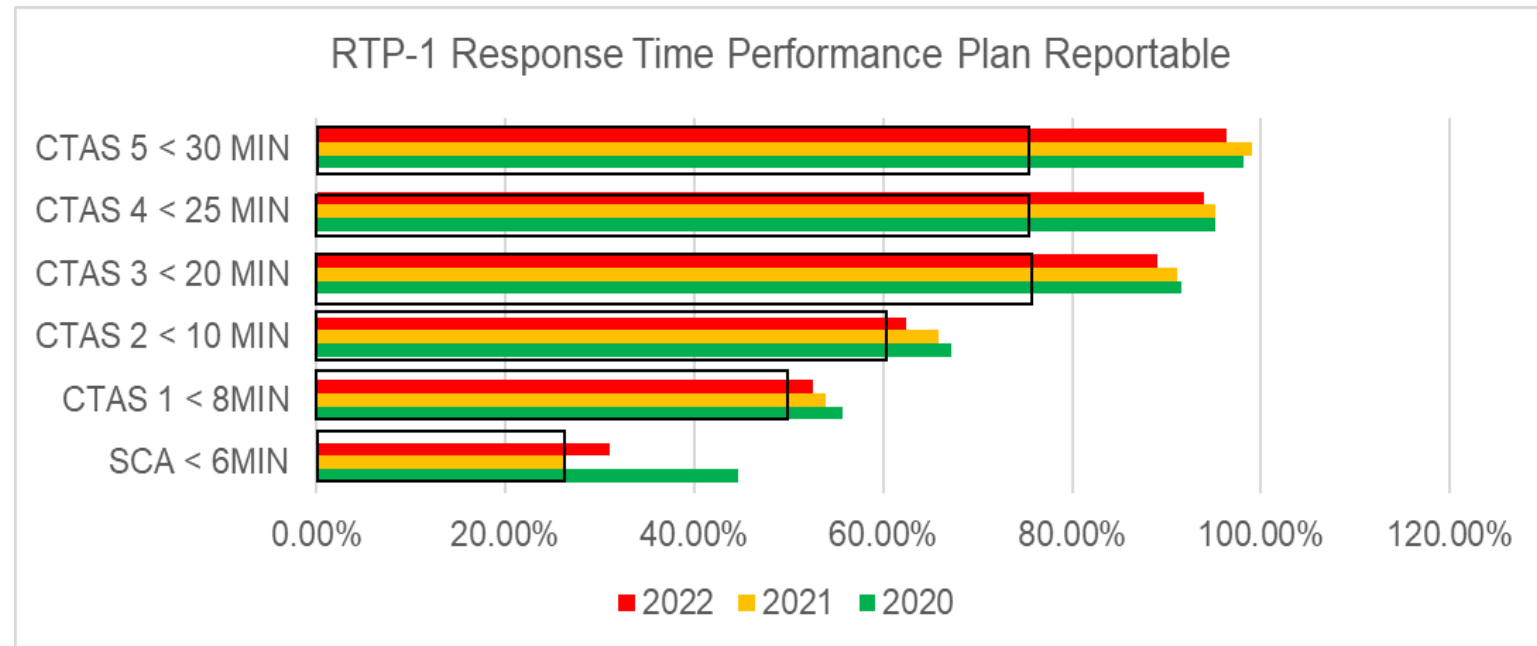
Paramedic Service Response Time Performance Plan 2024

Committee of the Whole

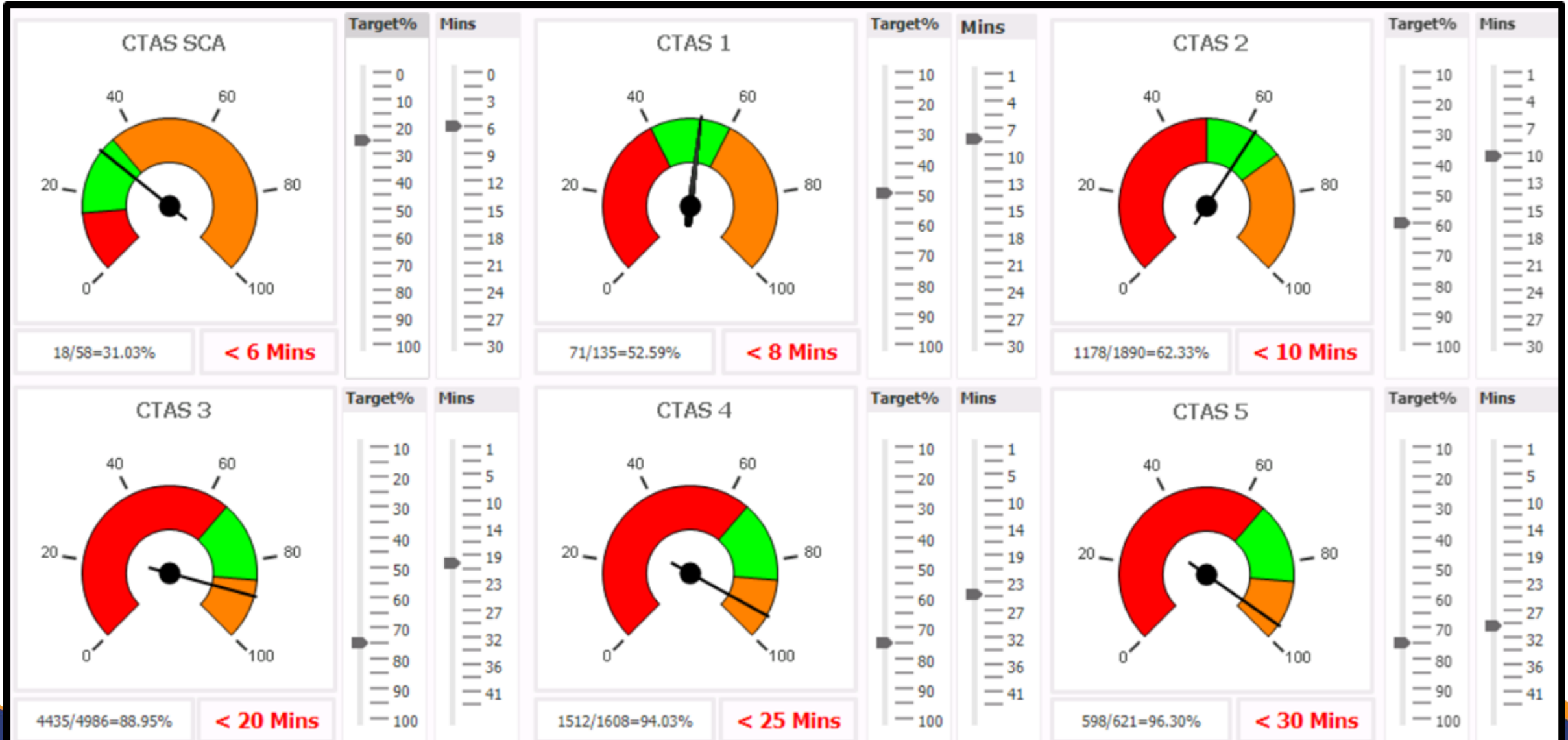
September 12th, 2023

Response Time Performance

- Council approved Response Time Performance Plan
- Reviewed and reported annually as mandated by the Reg. 257
- Performance continues to exceed all targets although with some deterioration of performance over the previous year.



RTPP for 2022



Paramedic Service Response Time Performance Plan 2024

Questions?