

The Regional Municipality of York

Committee of the Whole
Community and Health Services
June 16, 2022

Report of the Commissioner of Community and Health Services

Paramedic Services Master Plan 2021- 2031

1. Recommendations

1. Council approve the Paramedic Services Master Plan 2021 – 2031, included as Attachment 1 to this report.
2. The Regional Chair write to the Provincial Minister of Health advocating for expedited rollout of the following: dispatch modernization, new models of care (such as treat and release) and sustainable funding for community paramedicine programs.
3. The Regional Clerk circulate this report for information to local municipalities, local hospitals, three Ontario Health Teams in York Region and the Minister of Health.

2. Summary

This report provides an update on the Paramedic Services Master Plan and requests Council approval of the final 2021 – 2031 Master Plan.

Key Points:

- The foundational Demand and Capacity Study reported to Council in [November 2020](#) concluded that service demand will continue to grow substantially with a projected increase in demand of 119% by 2031, an increase from 91,625 incidents in 2021 to 163,606 incidents by 2031
- Following the results of the Demand and Capacity Study, the 2021 - 2031 Master Plan identifies the need for an additional 305 front-line staff, 39 support staff and 53 new vehicles (includes 50 ambulances, two special response units and one logistics vehicle) to address the 119% increase in demand, meet legislated and Council approved response time targets and ensure response times that are equitable across all nine local municipalities
- This work also concluded that the locations of existing and planned Paramedic stations are well positioned to meet future demands, although an additional station will be needed in South Keswick

- Following Council approval of the Master Plan (Attachment 1), staff will develop capital and operating budget plans, with implementation of the Master Plan targeted to begin in February 2023
- Implementation of the 2021 – 2031 Master Plan will involve annual evaluation of 911 call demand and resource capacity to validate ongoing staff needs where appropriate. This includes reviewing population projections against actual population growth and forecasts in the Regional Official Plan to assess appropriate resource needs

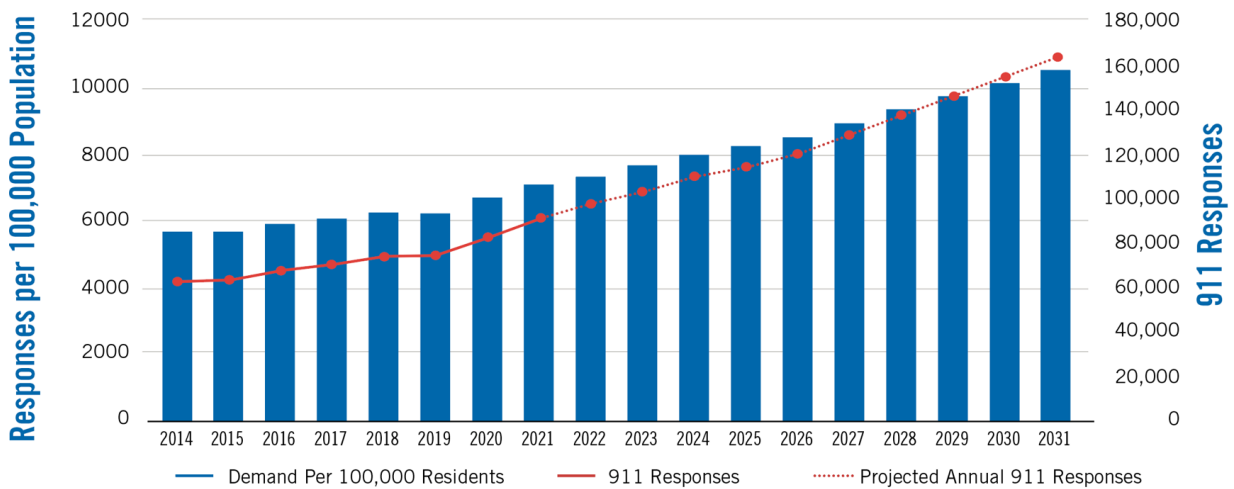
3. Background

The 2021 - 2031 Master Plan, developed with experts in emergency services, is a process that began in 2020 with the Demand and Capacity Study

Since [2011](#), Paramedic Services has been working with experts in emergency services to develop and update its 2021 – 2031 Master Plan. In [September 2012](#), Council approved the York Region Emergency Medical Services 10-Year Resources and Facilities Master Plan and ongoing updates have been occurring regularly as more data becomes available and to re-evaluate demand projections.

In [November 2020](#), Council approved the Demand and Capacity Study for the 2021-2031 Master Plan. The Study included detailed data analysis to identify future demands and resource needs (such as station locations and infrastructure) required to meet service demands resulting from population growth and aging demographics. As previously reported to Council, the study concluded demand will continue to grow substantially with a projected increase in demand of 119% over the next 10 years from 91,625 incidents in 2021 to 163,606 incidents by 2031. Figure 1 shows actual and projected 911 demand from 2014 to 2031. It demonstrates that demand per 10,000 people is rapidly rising, driven mainly by the Region's aging demographic. Attachment 1 provides additional details on factors impacting 911 demand.

Figure 1
911 Response Demand 2014 – 2031, York Region Paramedic Services



Source: 2020 Demand and Capacity Study

The goal of the 2021 - 2031 Master Plan is to increase capacity to meet increasing 911 demand and achieve more equitable response times in each local municipality

As previously reported to Council in [November 2020](#), the new Master Plan aims to achieve more equitable response time performance in each local municipality. The Region is maintaining average response time targets for the whole Region, however, there are disparities in response times across the Region due to geographic conditions (such as urban versus rural, station locations, road locations, traffic conditions), location of incidents, and resources (such as staffing levels and ambulance availability due to call volumes and hospital offload times). For example, higher call volumes in urban areas typically mean resources in the system are constantly shifted to provide ambulance coverage to those areas, resulting in reduced coverage and capacity to respond in other areas of the Region.

The methodology used to develop the 2021 – 2031 Master Plan is aimed at achieving equitable response times Region-wide and in each local municipality. The new Master Plan sets a target of responding to Priority 4 (life threatening) patients in eight minutes or less 70% of the time Region-wide, including in each local municipality. This standard was selected as it continues to provide the same level of response time performance at the Regional level and provides resources that allow local municipalities to receive equity in response time. In practice, this means resources will be added to ensure system capacity keeps pace with growing demand to provide balanced emergency coverage. The goal is to reduce the amount of time that ambulances located in more rural areas are needed to assist in urban areas. This scenario will maintain response time performance.

The target used in the current Master Plan is a response time of 11 minutes and 29 seconds, 90% of the time. Using this target to determine paramedic resources would not allow for

adequate resources to meet demand and achieve equitable response times. See Attachment 1 for details on Current Levels of Service and Risks.

Extensive and comprehensive engagement was used to develop this 2021 – 2031 Master Plan

A new approach to the master planning process was used to make this Plan more robust and to ensure resources and partnerships needed to meet the future demand and efficiency opportunities were considered. Development of the new Master Plan was supported by a Regional Advisory group, consisting of multiple Regional departments (such as Public Works Finance and Corporate Services), and allied agencies (such as first responders, York Region’s hospitals and Ontario Health Teams).

The Region’s 2021 Annual Community Opinion Report found nearly 58% of residents are willing to spend the same and 40% are willing to spend more on paramedic services

The master planning process also considered the Region’s 2021 Annual Community Opinion Report. In 2021, Forum Research Inc. conducted the Region’s community opinion poll of York Region residents. Using random computer-assisted telephone interviewing, 1,120 residents aged 18 or older responded to York Region’s survey questions. To ensure its methodology was reflective of York Region’s general population, including the most recent Census data, Forum Research weighted all results within its report by municipality, age, gender, education, income, years lived in the Region, and ethnic background. Results are repeatable 19 times out of 20.

Residents were surveyed to understand their level of satisfaction with how tax dollars are being spent to provide York Region’s core services, such as paramedic services. In 2021, among all core services, paramedic services received the highest satisfaction score of 84%. This aligns with the results from the 2019 Annual Community Opinion Report, when nearly all (98%) residents agreed that paramedic services were an important core service for York Region to deliver.

In addition, residents surveyed were asked “how much should York Region spend on its core services, including paramedic services: more, less or the same?” In response, 58% said they would spend the same and 40% said they would spend more.

4. Analysis

The 2021 - 2031 Master Plan provides an overview of evolving demands in emergency services as a foundation for Paramedic Services to build capacity to ensure effective and efficient emergency responses

The Master Plan (Attachment 1) outlines the evolving landscape of emergency services and describes the forecasting and scenario modelling work completed to prepare for future demand in York Region. The following sections provide highlights from the new Master Plan

including the Demand and Capacity Study, resource needs, budgetary requirements and mitigation opportunities, and future considerations beyond 2031.

The 2021 - 2031 Master Plan foundational work considered factors beyond emergency response, such as mitigating 911 demand and changes in emergency services since the previous Master Plan was developed

This updated Master Plan considers:

- Historical 911 demand, population trends including demographic changes such as York Region's growing aging population, and intensification occurring or planned in areas of the Region such as transit-oriented communities
- Service delivery supports needed both in Paramedic Services and in the rest of the corporation to support the growing demands on the Service
- Factors that did not exist or have changed since 2012 when the previous Master Plan was developed, such as creation of Ontario Health Teams, greater integration of paramedics in the health care system and in the community (particularly evident since onset of the COVID-19 pandemic), the growing number of calls related to opioid drug use, increasing numbers of people in mental health crisis and continued challenges underlying issues impacting the social determinants of health (such as gaps in access to social and community supports)
- Mitigations that could help manage 911 demand subject to Provincial approval and investment, such as out-of-hospital programs like community paramedicine and Provincial plans to modernize dispatch, to ensure service quality while managing costs
- The need to add capacity in the system to mitigate workload challenges, support the well-being needs of paramedics and maintain a healthy, present, and vibrant workforce

Key paramedic resources needed to meet the projected demand have been identified in the 2021 – 2031 Master Plan

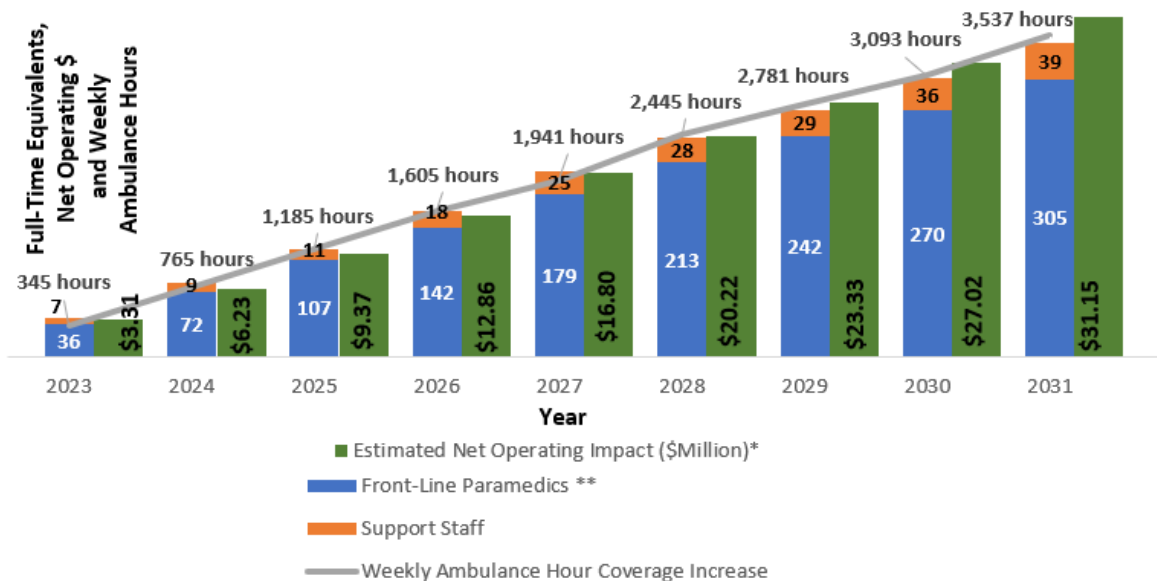
To meet the projected demand increase of 119% from 2021 to 2031 and achieve equitable response times across the Region, the following resource needs have been identified:

- **Stations:** One new station is needed in South Keswick to meet increasing demand, in addition to the five new stations already included in the capital budget to open between 2023 to 2031 for a total of 32 stations (including headquarters) by 2031. Based on the prior Master Plan up to 2021, York Region has 26 existing stations and five stations in planning stages. The review considered the location of the current and planned stations, concluding that they are well placed. An additional station is needed in South Keswick to meet population growth in the area, to ideally be operational by 2031. With the additional station, there would be a total of 32 stations (including Headquarters at 80 Bales Drive East, Sharon, Town of East Gwillimbury) by 2031.
- **Staffing:** Currently Paramedic Services has 6,552 weekly ambulance hours of service available (478 permanent front-line paramedics) and 78 permanent full-time

equivalent staff providing program supports (such as professional development, administration, scheduling). The review concluded 3,950 additional weekly hours of ambulance coverage would be required by 2031, which equates to 305 front line paramedics. An additional 39 support positions would also be required, including professional practice, scheduling, and administration, as well as technology and human resources support positions that the previous Master Plan did not consider. These new full-time equivalent staff would be added over the course of this Master Plan. Figure 2 below shows the relationship between the resources identified, relative to the expected weekly ambulance hours.

- Ambulances:** Currently Paramedic Services has 74 ambulances. The review concluded 50 additional ambulances are needed by 2031, bringing the total fleet count to 124. In addition to addressing demand, the additional ambulances will provide a spare ratio to 39% to ensure the Service has sufficient surge capacity to support frontline operations while maintaining compliance with Provincially mandated ambulance standards. An ambulance requires a significant amount of maintenance and inspection to meet legislative compliance, therefore a 39% spare ratio is required to provide frontline ambulances while maintenance and inspections occur, and this is consistent with industry standards. Two special response units and one logistics vehicle were also identified to meet future demand.

Figure 2
Staff Resources Relative to Expected Weekly Ambulance Hours



Note: Resources for 2021 and 2022 are already accounted for in the current budget cycle

Details are provided in Attachment 1, including an overview of ambulance hours and net new ambulances that will be added, subject to budget approvals, to each municipality on a yearly basis up to 2031. Costing data and information about possible cost mitigation is provided in the Financial section of this report.

Council approval of the 2021 - 2031 Master Plan will enable Paramedic Services to adequately plan for and respond to future demand for emergency services while maintaining efficient response time performance

Adopting the 2021 - 2031 Master Plan confirms Council's approach to move forward with the required amount of staffing, station, and ambulance resources needed to meet legislated and Council approved response times and to achieve equitable response times in each local municipality and Region-wide up to 2031.

If not properly addressed, population growth and aging population will lead to compromised emergency response times. Not adding the required resources identified in this Master Plan will lead to reduced system capacity, increased staff workload, the potential to increase staff leaves due to illness or injury and an inability to meet legislated response times, which would impact the ability to provide quality lifesaving services in the community. The addition of paramedics and resources is key to optimizing response times. Attachment 1 provides further details on the risks if there are no corresponding operational changes.

Staff will review the Plan regularly through annual evaluation of 911 call demand and resource capacity to validate ongoing staff needs and to adjust where appropriate to optimize response time performance (such as unexpected 911 and population growth or decline in an area). This includes evaluation of resource needs against population projections as forecasts are updated in the Regional Official Plan. Throughout the life of the Master Plan, staff will continue to assess opportunities for partnerships with our allied agency partners to co-locate stations and our Regional partners to make use of existing Regionally owned land, or cooperatively purchase land to facilitate station builds and develop greening initiatives to align with capital planning and the Region's long-term [Vision](#) to protect and sustain the natural and built environment.

Staff will also continue to partner with health system partners and the Ministry of Health to collaborate on programs that help to improve patient care while optimizing resource needs. Over the past two years we have seen new Provincial investment in models of patient care (including one-time funding for community paramedicine) and staff will continue to seek funding outside of traditional Land Ambulance Service Grant to support innovation that improves care and creates efficiencies in the 911 system.

Council will be updated through the Services' annual response time performance reports.

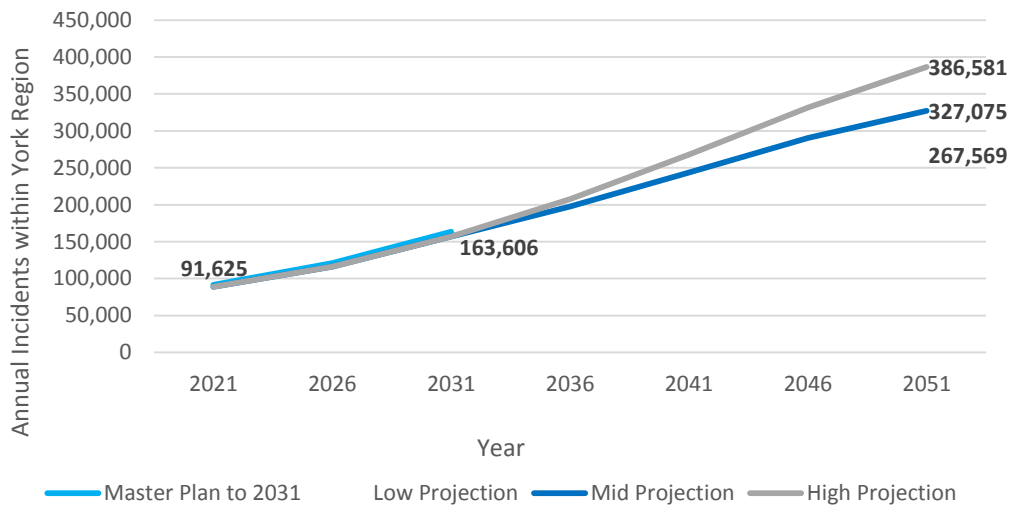
Continued growth of the Region's population beyond 2031 will require further planning and the consideration of hub models for service delivery

Figure 3 below provides modelling projections of 911 call demand up to 2051. These projections demonstrate that with steadily increasing 911 demand over the next 20 years, the resources identified in this new Master Plan need to be re-evaluated to ensure we have sufficient resources beyond 2031. For example, it is anticipated that by 2031 all garage space in existing paramedic stations will be at capacity.

Using the Region's updated population forecasts up to 2051, several long-range scenarios were modelled to understand 911 demand over the next 20 years. Each scenario

demonstrated a significant increase in demand on emergency services, resulting from population growth, intensification, and the building of transit-oriented communities along York Region’s subway stations. The transit-oriented communities in York Region will bring new housing, parkland, commercial, retail and community spaces to high-density communities. This future expansion in the Region signals the need for continued planning for capital and staffing resources to prepare for the expected growth beyond this Plan.

Figure 3
911 Demand Projections 2019-2051, York Region Paramedic Services



Source: Demand Projections, April 2022

Looking beyond 2031 and to maintain the appropriate number of ambulances available within the community, the benefits of a dynamic hub station model will be evaluated to determine how this model could help support future growth. The hub model is where paramedics report to a larger central station and are then deployed to the network of satellite stations. Paramedic response stations in the community have been used by some services to build station capacity. These potential hubs could be located on existing Regionally owned land. Paramedic Station Heat Maps (see Appendix 1 in Attachment 1) demonstrate this future hub station strategy may align well with the Service’s existing stations as the existing stations are appropriately placed to meet 911 response demand.

While this long-term forecast is dependent on many unknown factors, it demonstrates a clear picture that 911 demand will continue to increase. The 2051 projections provide the Service with a forecast of the required capital resourcing requirements and the need for additional resource planning beyond this Plan. Paramedic Services will continue to consider system innovations beyond 2031, including the evolving role of community paramedicine in the health care system, innovations to medicine, and broader modernization in the healthcare system that could impact demand for emergency services.

Paramedic Services is working with Public Works to implement emission reduction initiatives in support of the Region's Energy Conservation Demand Management Plan

In partnership with Public Works, Paramedic Services is investigating and implementing opportunities to advance long-term energy and greenhouse gas emission reduction initiatives under its fleet and buildings portfolios to align with the the Region's long-term [Vision](#) to protect and sustain the natural and built environment. Currently, the Service has 16 hybrid ambulances which have saved an estimated \$70,100 in fuel costs and reduced greenhouse emissions by about 140 tonnes each year. All 74 ambulances have been equipped with anti-idle technologies since 2020 that continue to significantly reduce fuel consumption and greenhouse gas emissions, in the range of about \$102,647 in savings and 226 tonnes in greenhouse gas emissions annually.

To meet long-term greenhouse gas emission targets and identify further cost savings, Paramedic Services and Public Works are looking for opportunities to pilot electric ambulances, accessing Federal and Provincial funding programs. Each electric ambulance would potentially reduce annual emissions by 36 tonnes. They would also lower operating, repair, and maintenance costs, and offer a longer asset life cycle of approximately eight to ten years compared to five to seven years for conventional vehicles.

Use of electric ambulances could result in significant savings of approximately \$124,724 per electric ambulance over its 10-year lifecycle. With 74 ambulances currently, and 50 more to be added by 2031, ultimately average annual cost avoidance could be in the range of \$1.5 million annually. Further analysis will be conducted to assess the full cost implications related to electric ambulances and the related infrastructure to maintain them (such as charging stations and batteries).

5. Financial

The 2021 – 2031 Master Plan will align with the Region's Operating and Capital Budgets to accurately plan for growth-related infrastructure

Development of the Master Plan was managed within the 2021 and 2022 Council approved operating budget. Resource needs for 2021 and 2022 are already accounted for in the current budget cycle.

Resource needs to respond to future service demands will be significant. The Master Plan identifies the need for an additional \$62.3 million in gross, and an estimated \$31.15 million net operating investment (assuming the Province will continue to provide 50% land ambulance grant funding) over the period 2023 to 2031 (approximately \$3.46 million annual net operating budget increase) to fund 305 additional frontline paramedics, 39 program support positions (total 343 full-time equivalent staff) and other program operating costs. Table 1 below provides an overview of the operating costs identified to meet demand between 2023 to 2031. The Master Plan also identifies the need for additional capital expenditures in the amount of \$27.2 million to fund the additional stations, ambulances, special response units and logistics vehicle.

In addition to the five stations already included in the capital budget, the Master Plan identifies the need for one new station in South Keswick and an increase to the ambulance fleet capacity by 50. Opening of the new station is planned for 2024 to 2025. Ambulances would be added over the course of this Master Plan.

Table 1
Resources Identified to Meet Demand, 2023 to 2031*

	Master Plan Relevant Period									
	Next Budget Cycle				Future Budget Cycles					2023-2031 Total
	2023	2024	2025	2026	2027	2028	2029	2030	2031	
Operating Needs to Address Demand										
Full-time Front-line Paramedics	36	36	35	35	37	34	29	28	35	305
Support Staff**	7	2	2	7	7	3	1	7	3	39
Total FTE's	43.0	38.0	37.0	42.0	44.0	37.0	30.0	35.0	38.0	344
Estimated Net Operating Impact (Million)***	\$3.31	\$2.92	\$3.14	\$3.49	\$3.95	\$3.42	\$3.11	\$3.69	\$4.13	\$31.15
Incremental Call Volume	5,828	6,177	6,547	5,100	7,850	8,361	8,904	9,482	8,236	66,485
Estimated Net Operating Impact Per Emergency Call	\$568	\$472	\$480	\$684	\$503	\$409	\$349	\$389	\$502	\$4,355

* Resources for 2021 and 2022 are already accounted for in the current budget cycle

** Support Staff includes paramedic support staff such as professional practice, scheduling and administration; Integrated Business Services staff, such as technology/data and integrity and education; and Human Resources

*** Assumes 50% funding through Land Ambulance Service grant for all incremental costs

*** Measure only of resources identified in the Master Plan. Does not account for increases to base service (e.g., COLA on existing staff and inflation on existing materials/supplies)

Upon Council approval of the 2021 – 2031 Master Plan, staff will develop the 2023 to 2026 Operating Budget and 10-year capital budget to reflect the resource requirements identified in this Master Plan. Requests for these additional resources will be brought forward to Council for consideration as part of the 2023 to 2026 budget process.

In addition, the resource needs identified for the Master Plan are reflected in the 2022 Development Charges Bylaw and Background Study that was brought forward Council in [May 2022](#). Capital expenses have been considered through the Study.

Paramedic Services and Public Works are currently exploring funding opportunities to support an electric ambulance pilot, such as the Federation of Canadian Municipalities' Feasibility Studies and Pilot Projects funding stream, to better understand the implications for this technology and improve our readiness.

To mitigate budget costs, staff implemented internal efficiencies to optimize staffing resources requirements

Examples of service innovations the Region has already implemented or are planned that reduce service demand (and costs) are described in the [November 2020](#) report. Additional opportunities and updates are provided below.

Staff evaluated all operational areas for options to improve efficiencies and mitigate future costs while protecting staff resilience, optimizing resources, and reducing 911 call demand. For example, the Rapid Response Program and Multi-Patient Unit Program were reviewed to identify resources that could be used to offset needs in the 2021 – 2031 Master Plan. As a result, 336 weekly ambulance hours were added to the system thereby reducing future ambulance hour increases that would be needed. This resulted in reducing the number full-time equivalent positions that would otherwise have been identified as required in the Master Plan by 16 full-time equivalent positions.

Staff will continue to seek opportunities to optimize savings by partnering with internal and external stakeholders on cooperative land purchases and funding opportunities. To continue to build staff resilience, partnership opportunities with agencies, such as Wounded Warrior Canada, will be explored to provide health and wellness services to support first responders. See Attachment 1 for details on Resource Optimization.

System innovations could also mitigate resource requirements and future 911 service demands, and Regional Council support is needed to advocate to the Minister of Health

System improvements in the health care system are an important component for addressing increasing 911 call volumes and increasing transfer of care times at hospital, which impact staff resources as system demand grows. To address these challenges, the most significant savings would come from changes that only the Province can make through legislative reform and/or additional investments. Three examples that could drive efficiencies but require Provincial action to implement are: dispatch modernization, new models of care, and community paramedicine. See Attachment 1, Alternative Scenarios – Impact Modelling for details on these alternative models that could help to meet response time targets while optimizing the number of resources required in the future.

Since [February 2020](#), the Region has been advocating for the modernization of emergency services to address these issues. Additionally, sector leaders, such as the Association of Municipalities of Ontario, Paramedic Chiefs of Canada, and the Ontario Association of Paramedic Chiefs, have been advocating for better integration of paramedics in the health care system.

In each of these alternative models, more efficient use of staff resources could be achieved, however, these changes are beyond the Region's direct control and depend on Provincial change and investment. This report recommends Regional Council advocate to the Minister of Health to expedite dispatch modernization and enhance new models of care, and to make legislative reforms and financial investments that will build the capacity of community paramedicine programs. See Attachment 1, Resource Optimization for more details.

Additionally, as demand grows, increased paramedic time spent at hospitals offloading patients is a growing concern that impacts the availability of appropriate paramedic resources in the community. As previously reported to Council in [February 2022](#), the Ministry of Health funds the Dedicated Offload Nurse Program to help reduce time spent at hospitals by paramedics, enabling ambulance crews to transfer care of patients to the hospital and return to covering 911 calls faster. Provincial funding has not kept pace with the increased hours of coverage needed at the Region's hospitals due to increased demand. While Regional Council advocated to the Province in [February 2022](#) to increase funding of the program to cover the cost of increased nursing hours needed at all hospitals due to growth in transports, the Ministry of Health has not provided any further details to York Region to date.

6. Local Impact

The new Master Plan identifies the required resources to ensure system capacity keeps pace with growing demand to meet a targeted response of eight minutes or less for Priority 4 (life threatening) calls 70% of the time, in each municipality, and thereby achieving equitable response time performance at both the local municipal and regional levels.

Paramedic Services will continue to work with municipal partners to co-locate stations and leverage resources to provide equitable response times across the Region. The new Master Plan will effectively maintain response time performance to meet future service demand needs to address increasing population growth and aging demographics up to 2031.

7. Conclusion

By 2031, demand on the 911 system is projected to increase by 119% due to forecasted population growth and an increasing aging population. The 2021 - 2031 Master Plan accurately plans for these growth trends with a focus on increasing response performance and equity across the Region's local municipalities. This includes identification of appropriate station locations, staffing resources, ambulance resources, and key Provincial reforms needed to respond to future demands to ensure the right resources are available in Paramedic Services and across the corporation to provide timely services to the community and meet legislative and Council approved response time targets.

It is recommended that Council approve the Paramedic Services Master Plan 2021 - 2031. With Council approval, the 2021 - 2031 Master Plan will inform future Paramedic Services planning, Regional development charge background studies, and future business plans and budgets. Following Council approval of the Master Plan, the 2023 to 2026 operating and capital budgets and business cases will be developed and submitted in accordance with the Region's budget process.

For more information on this report, please contact Lisa Gonsalves, General Manager at 1-877-464-9675 ext. 72090. Accessible formats or communication supports are available upon request.



Recommended by:

Katherine Chislett
Commissioner of Community and Health Services



Approved for Submission:

Bruce Macgregor
Chief Administrative Officer

May 25, 2022
Attachment (1)
eDOCS # 13828879