

Peel Regional Paramedic Services Long Term Facilities Capital Plan

Summary of forecasting methods and results

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Presentation Overview

This presentation is intended to provide a summary of the forecasting methodology and highlight key findings to support the development of Peel Regional Paramedic Services' (PRPS) Long Term Facilities Capital Plan:

1. How and where call volume is expected to grow over time
2. What resources (e.g., ambulances, reporting and satellite stations) will be required to service the expected demand
3. Recommendations

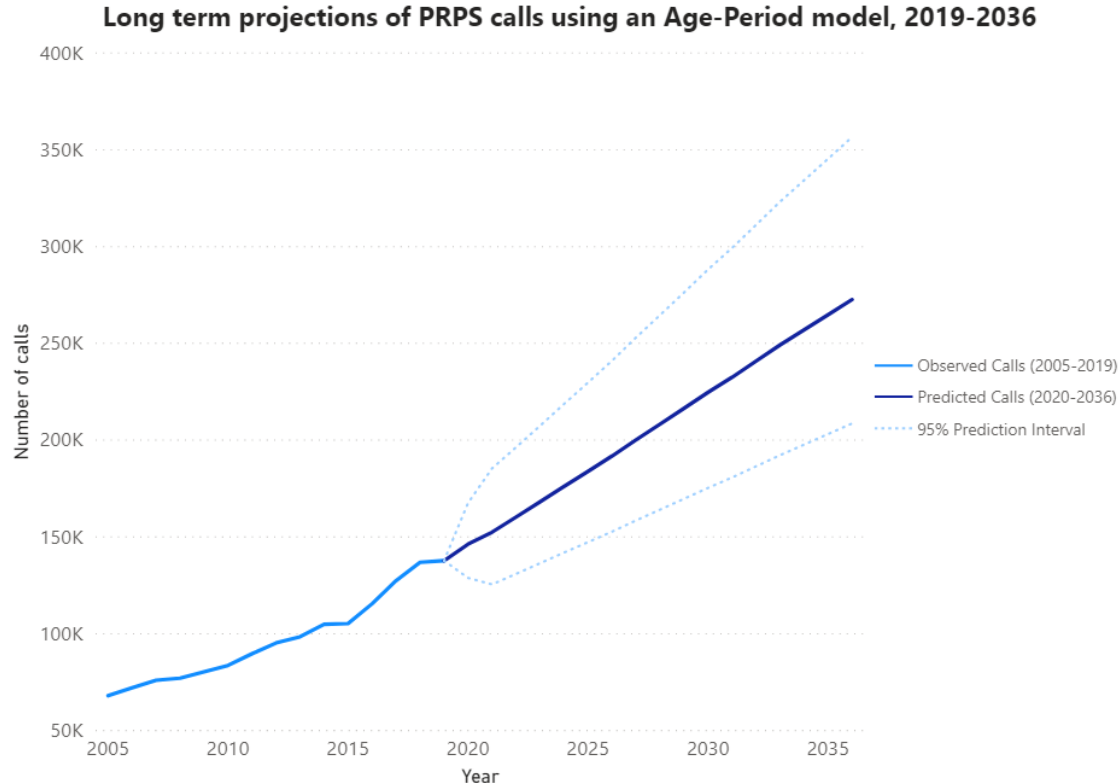
1. How and where call volume is expected to grow over time



Overall Call Volume Predictions

- Using 15 years (2005-2019) of historic call volume data, an **Age-Period Model** was used to forecast future call volumes
- The model considers the main drivers of call volume, which are *age* and *population growth*.
- It is a robust model that outperformed other models tested.

Long Term Projections of Call Volumes



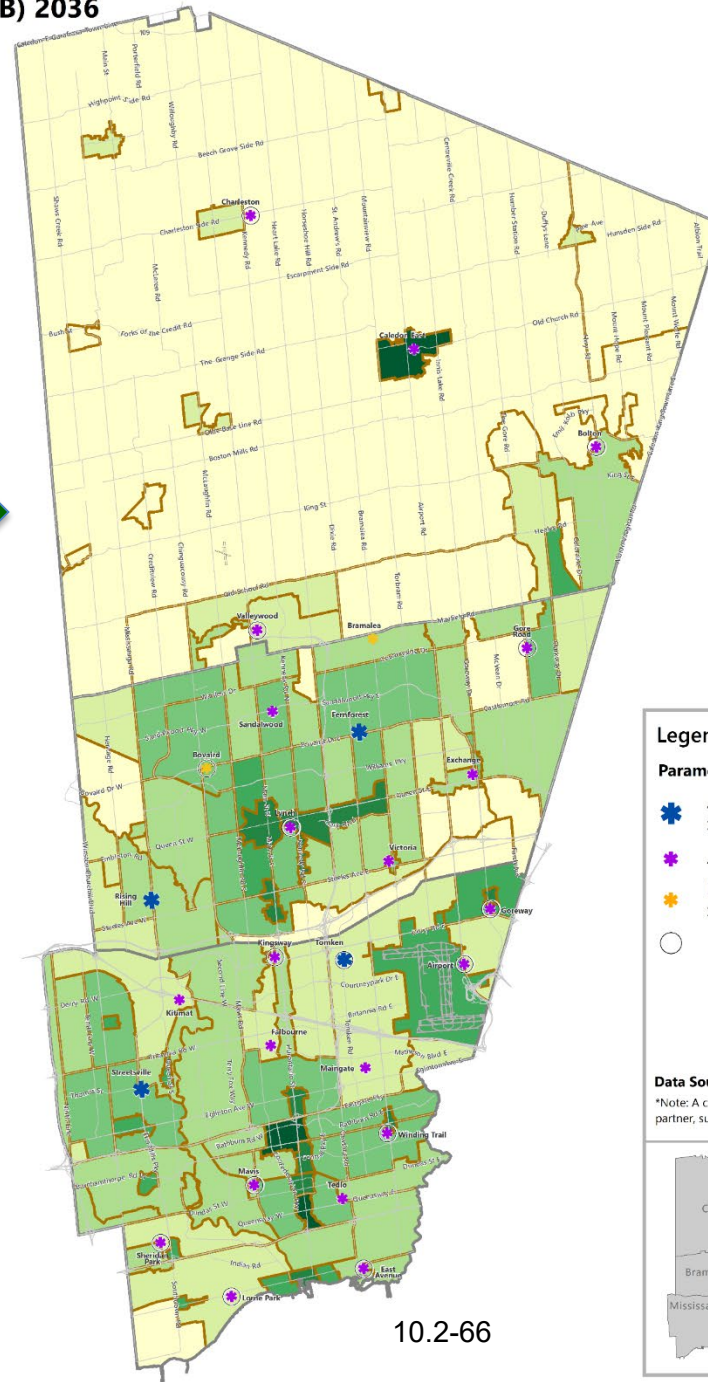
- By **2036, 272,661** calls are expected, which is almost **double** the number of calls in 2019.
- As the call volume grows more resources will be needed to service this demand.
- The resource predictions are based on the predicted number of calls (dark blue line).

Where call volume is expected to grow over time

- **Geographically weighted regression** was used to study the relationship between call volume and its origin by Secondary Plan areas to determine call volume densities for these areas over time.
- This model considers where people live and/or work and make emergency calls.

A) 2019

B) 2036



Call Volume Density by Secondary Plan Areas, Peel

Legend

Paramedic Station

- Active, Reporting Station
- Active, Satellite Station
- In Design, Satellite Station
- Co-located Station*

Call Density

- ≤ 50
- 51 - 150
- 151 - 300
- 301 - 500
- 501 - 1,000
- 1,001 - 2,000
- > 2,000

Data Source: 2019 ADRS Data, provided by PRPS.
 *Note: A co-located station is one that shares space with an external partner, such as a fire station or a Region of Peel Service/Office.

Region of Peel
working with you

The information displayed on this map has been compiled from various sources. While every effort has been made to accurately depict the information, this map should not be relied on as being a precise indicator of locations.

Prepared by Health Intelligence and Analytics.
Map template courtesy of Peel Data Centre
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Caledon

Actual and Predicted Call Volume Densities by Secondary Plan Areas, Caledon

A) 2019 Call Volume Density

B) 2036 Predicted Call Volume Density

Legend

- Fire Station
- Paramedic Station
 - Active, Reporting Station
 - Active, Satellite Station
 - In Design, Satellite Station
 - Co-located Station*

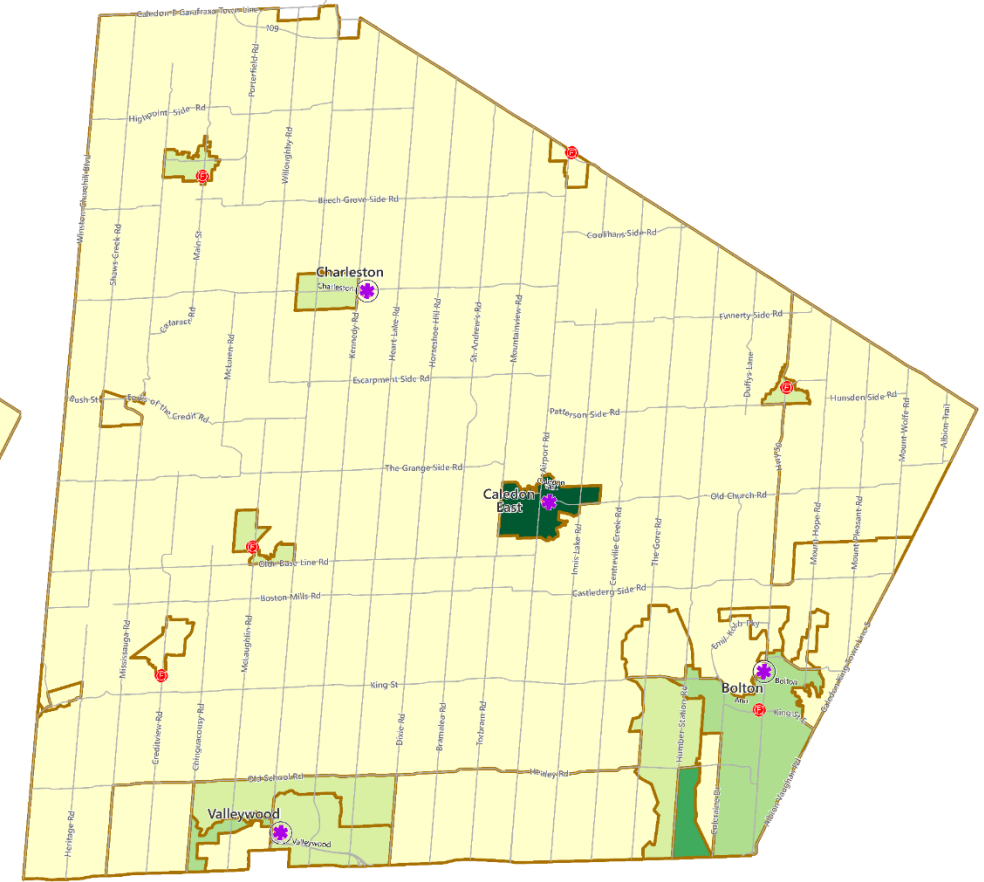
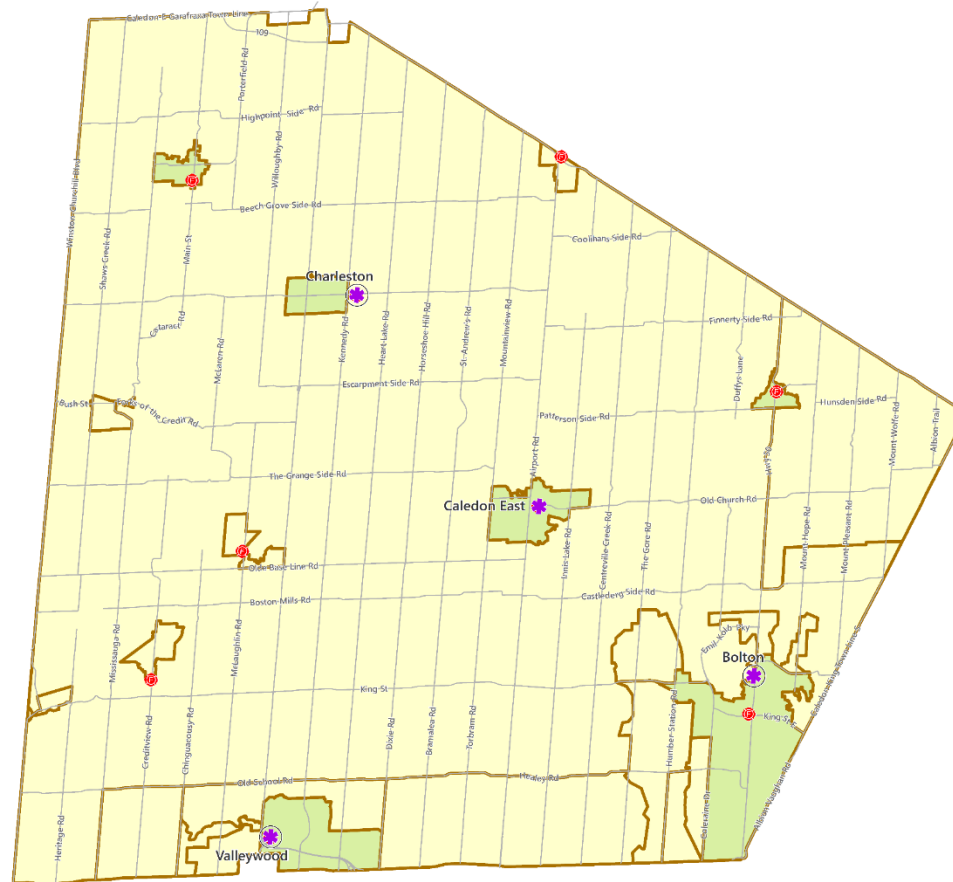
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The Region of Peel working with you logo is displayed at the bottom of the legend section.

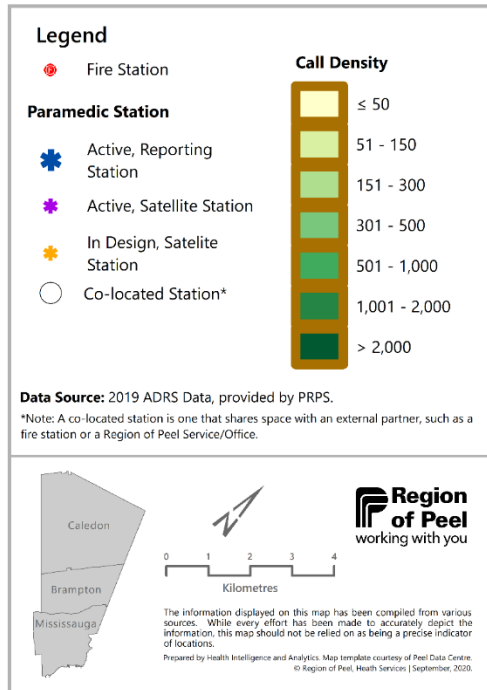


- Bolton, Caledon East and Mayfield West are areas in Caledon with the most anticipated growth in call volume density by 2036.

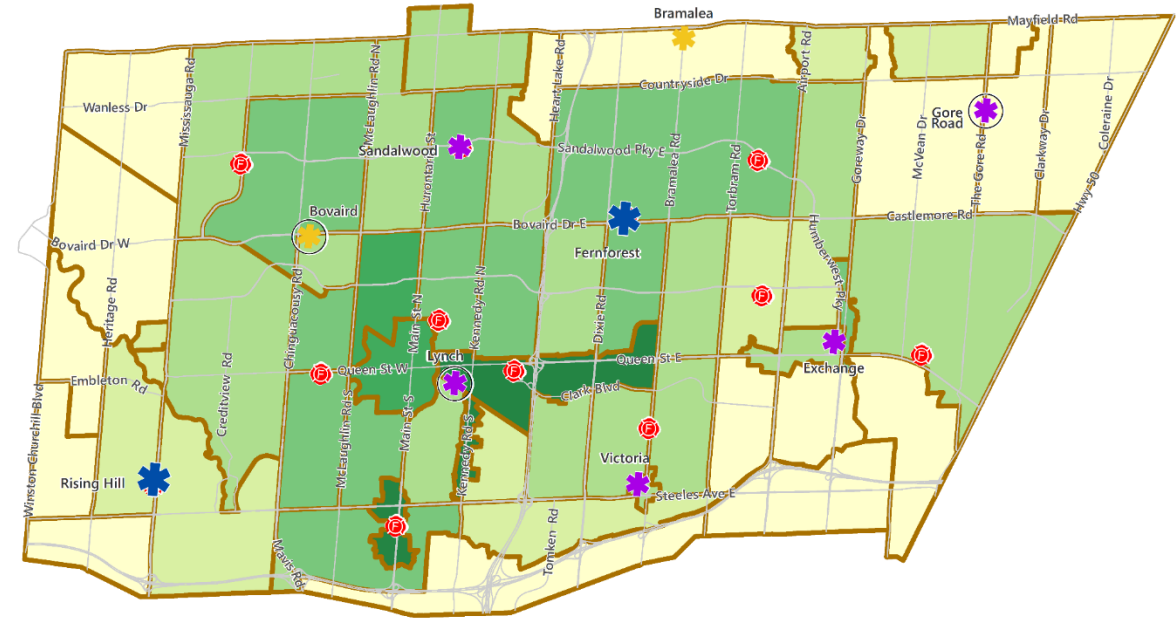
Brampton

- City core (Queen Street Corridor) is expected to intensify in call volume density.
- Other areas of high or moderate growth include the north east and west corners of Brampton, capturing:
 - Vales of Humber, Gore Rural Estates, Huttonville, and Mount Pleasant area.

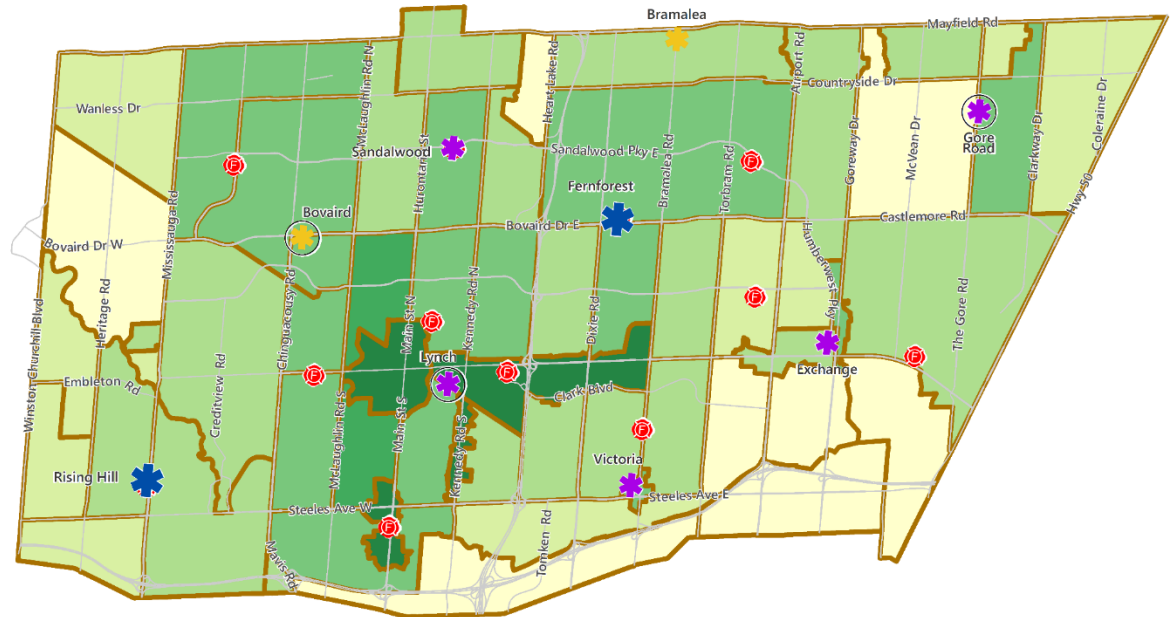
Actual and Predicted Call Volume Densities by Secondary Plan Areas, Brampton



A) 2019 Call Volume Density



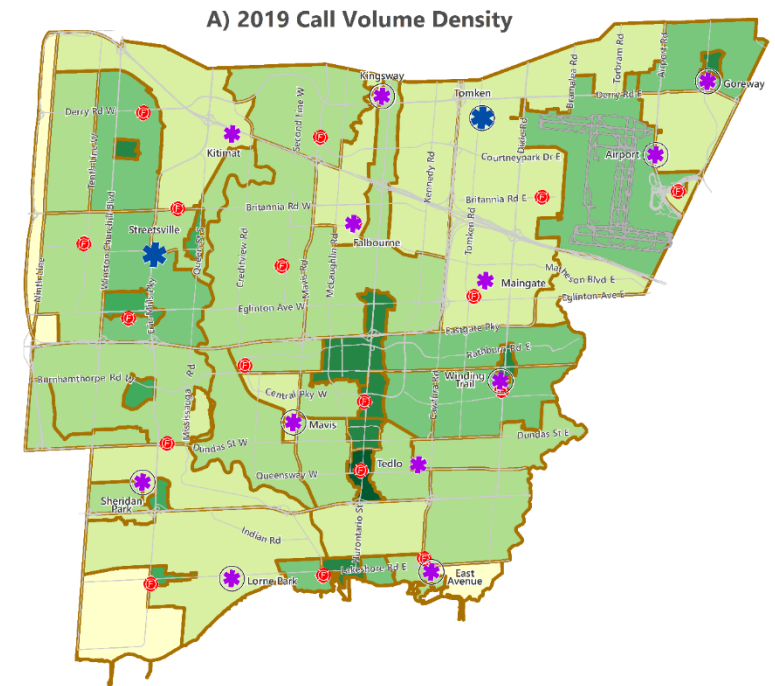
B) 2036 Predicted Call Volume Density



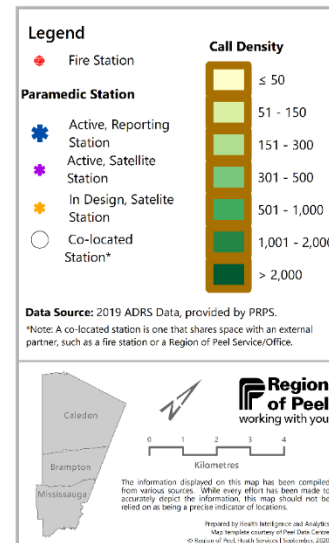
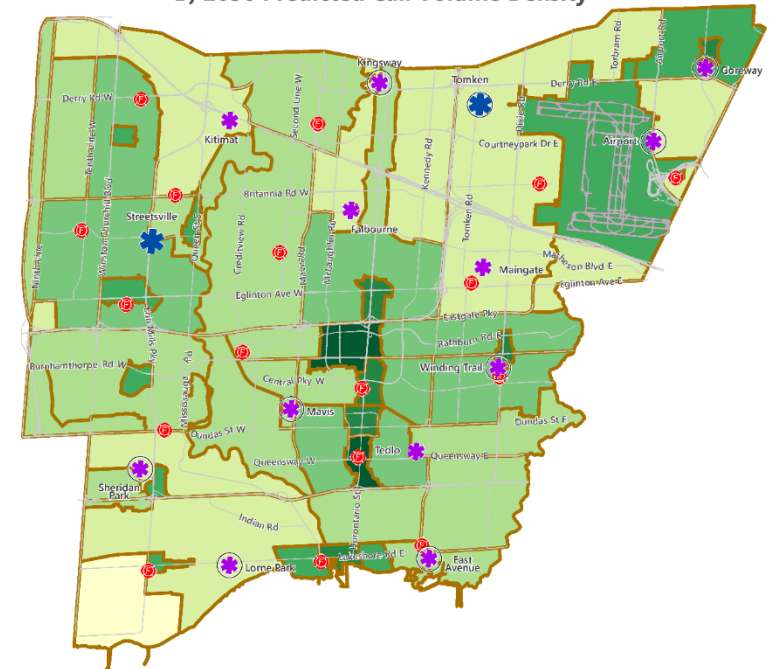
Mississauga

- City core (Square One area and south Hurontario Street) expected to intensify in call volume density.
- Other areas of high or moderate growth include the north east and west corners of Mississauga, capturing:
 - Port Credit, Toronto Pearson Airport, Malton, Lakeview waterfront, Clarkson, Lorne Park, Streetsville and Cooksville.

Actual and Predicted Call Volume Densities by Secondary Plan Areas, Mississauga



B) 2036 Predicted Call Volume Density

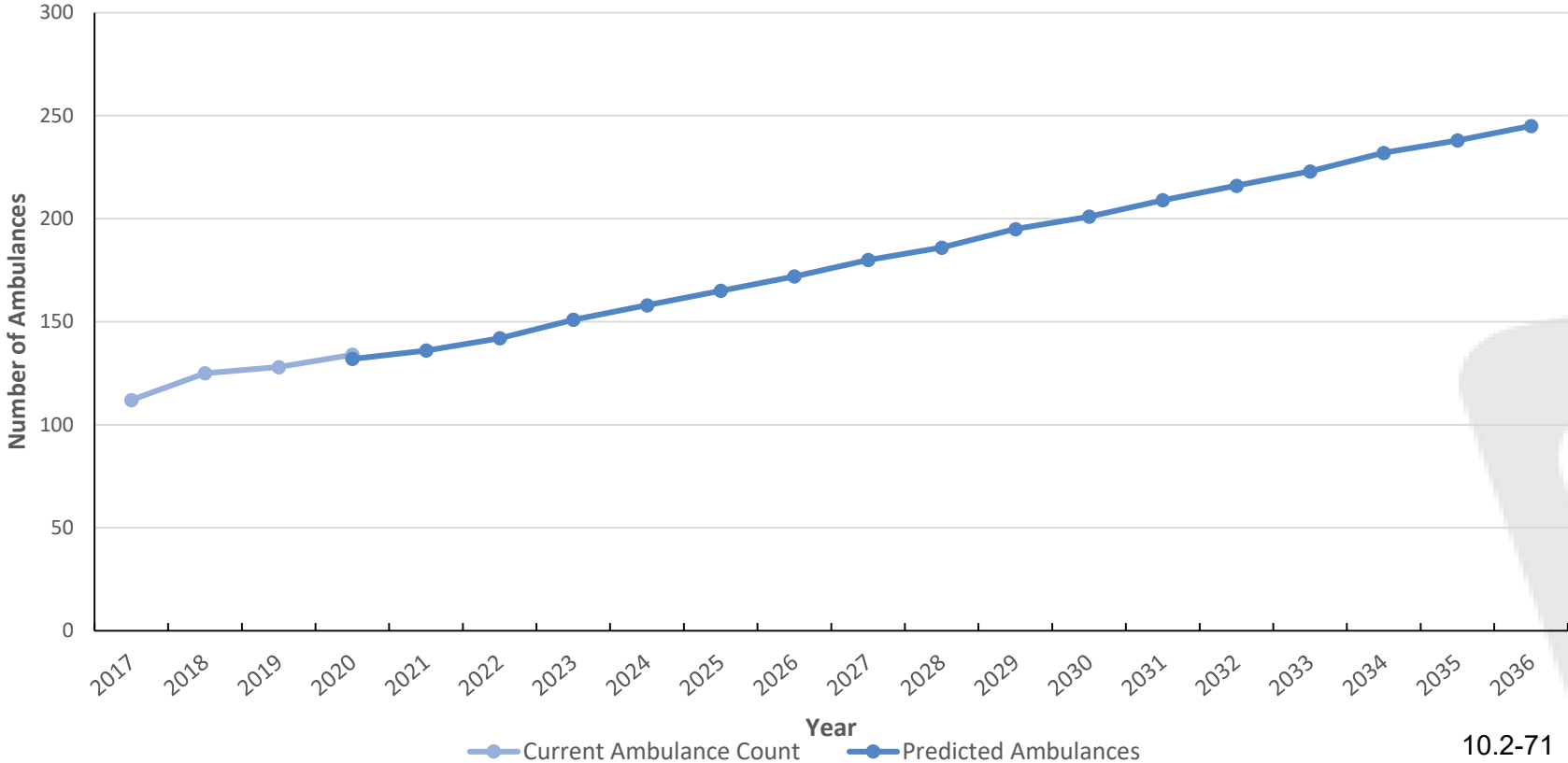


2. What resources (e.g., ambulances, reporting and satellite stations) will be required to service the expected demand



Predicted Ambulance Requirements Over Time

- **201** ambulances will be needed by 2030, this is an increase of **67 ambulances or 50%** in fleet size compared to 2020.
- As the ambulance needs appears to continue to grow in the foreseeable future, an evaluation of the effectiveness of fleet size and type should be considered by PRPS.

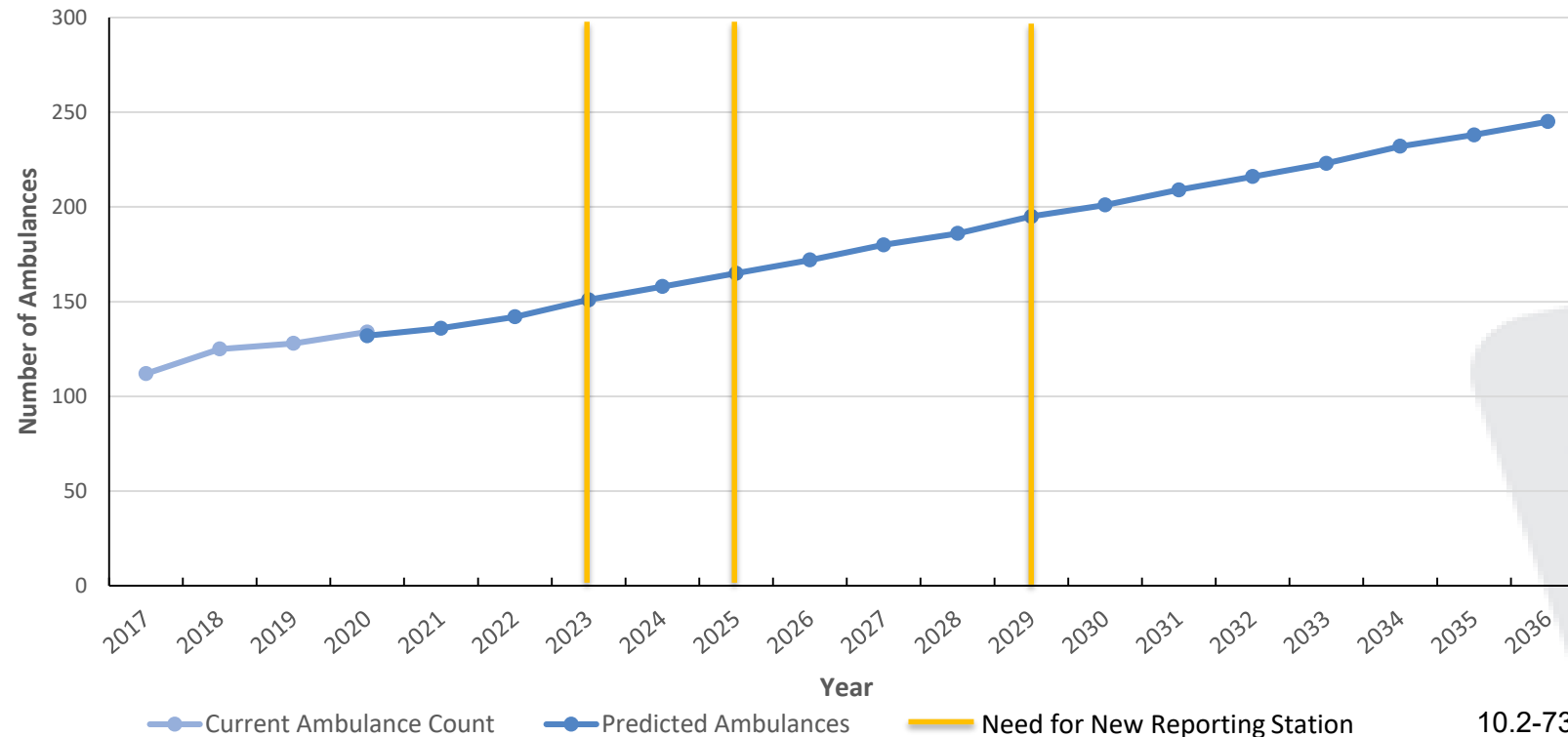


Defining Capacity

- Maximum capacity refers to when the demand for paramedic services exceeds the resources available to meet those demands.
- Resources are defined as:
 - Ambulances
 - Reporting stations
- Since reporting stations have limited spaces to hold ambulances, PRPS will reach capacity when those spaces are no longer available.

Reporting Stations

- As of January 2020, **PRPS has reached maximum capacity.**
- Based on the predicted number of ambulances needed, PRPS will require **three Reporting Stations** over the next 10 years, to be *in operation* by 2023, 2025 and 2029.



Satellite station requirement

- Satellite station demand is based on call volume density and coverage to manage response time.
- Currently, PRPS has three satellite stations that are attached to a reporting station, 21 separate satellite stations, and two satellite stations in design.
- PRPS will require an additional **five satellite stations** over the next 10 years.

Proposed Year of Operation	Number of new satellite station(s)
2023	3
2025	1
2029	1
Total number between 2021 - 2030	5

3. Recommendations

- Using population demographics and predictive modelling, an illustration of future demand for Paramedic Services has been presented.
- It is recommended that these principles and methodology be applied as input for the development of the Long Term Facilities Capital Plan.
- The modelling should be re-examined annually to ensure the projected trends still hold into the future.

Thank You

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