SPECIAL COUNCIL AGENDA

Meeting #:	SC-02/2021 Special Meeting of Council
Date:	February 1, 2021, 4:00 pm
Location:	Town of Pelham Municipal Office - Council Chambers 20 Pelham Town Square, Fonthill

During the ongoing global pandemic, Novel Coronavirus COVID-19, the Town of Pelham Council will continue to convene meetings in compliance with Provincial directives. Attendance by most Members of Council will be electronic. Public access to meetings will be provided via Livestream www.youtube.com/townofpelham/live and subsequent publication to the Town's website at www.pelham.ca.

Pages

1. Call to Order and Declaration of Quorum

2. Approval of the Agenda

3. Disclosure of Pecuniary Interest and General Nature Thereof

4. Public Works Review

   4.1. KPMG Review of Town of Pelham Public Works Operations 2

   Jamie Cameron, P. Eng., PMP, MBA, Senior Manager
   Infrastructure Advisor, KPMG LLP

   4.2. Public Works Operational Review , 2021-0023-Public Works 19

5. Confirming By-law 80

6. Adjournment

The Town of Pelham

Public Works Operational Review

Council Presentation

February 1st, 2021

Disclaimer

This report has been prepared by KPMG LLP ("KPMG") for the Town of Pelham ("the Client") pursuant to the terms of our engagement agreement with Client dated September 1, 2020 (the "Engagement Agreement"). KPMG neither warrants nor represents that the information contained in this report is accurate, complete, sufficient or appropriate for use by any person or entity other than Client or for any purpose other than set out in the Engagement Agreement. This report may not be relied upon by any person or entity other than Client, and KPMG hereby expressly disclaims any and all responsibility or liability to any person or entity other than Client in connection with their use of this report.

We had access to information up to January 21, 2021 in order to arrive at our observations but, should additional documentation or other information become available which impacts upon the observations reached in our report, we will reserve the right, if we consider it necessary, to amend our report accordingly. This report and the observations and recommendations expressed herein are valid only in the context of the whole report. Selected observations and recommendations should not be examined outside of the context of the report in its entirety.

Our observations and full report are confidential and are intended for the use of the Client. Our review was limited to, and our recommendations are based on, the procedures conducted. The scope of our engagement was, by design, limited and therefore the observations and recommendations should be considered in the context of the procedures performed. In this capacity, we are not acting as external auditors nor value for money auditors and, accordingly, our work does not constitute an audit, examination, value for money, attestation, or specified procedures engagement in the nature of that conducted by external auditors on financial statements or other information and does not result in the expression of an opinion.

Pursuant to the terms of our engagement, it is understood and agreed that all decisions in connection with the implementation of advice and recommendations as provided by KPMG during the course of this engagement shall be the responsibility of, and made by, the Town of Pelham. KPMG has not and will not perform management functions or make management decisions for the Town of Pelham.

KPMG has no present or contemplated interest in the Town of Pelham, nor are we an insider or associate of the client. Accordingly, we believe we are independent of the Town of Pelham and are acting objectively.

Table of Contents

The contacts at KPMG in connection with this report are:

Bruce Peever
Public Sector Advisory
Partner
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Jamie Cameron
Infrastructure Advisory
Senior Manager
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jcameron@kpmg.ca

Introduction and Context

Introduction

This report was prepared to present observations and evidence to form a potential case for change arising from research, analysis and consultation with staff from the Town of Pelham (the "Town" or "Pelham"). This report will provide the foundation for possible opportunities to ensure the Town has sufficient resources and facilities to efficiently meet service level expectations of the Town's infrastructure both currently and into the future.

Project Objectives

KPMG was engaged by the Town of Pelham ("the Town") to assist in the development of a plan to use the existing Operational Facility and Patrol Yard (Tice Road Facility) to optimally support current and future operational needs for the Town's Public Works Division including the Operational, Engineering and Facility departments. The overall objective of the engagement was to provide a plan to ensure that the Town has sufficient resources and facilities that will efficiently meet service level expectations of the Town's infrastructure both currently and into the future at the lowest life-cycle cost. The project had three secondary objectives:

1. **Conduct Current State Review**

We conducted a review to assess current operations and facilities at each of the division's locations. The objective was to identify what the existing space and amenities can accommodate at current industry standards and what gaps (if any) exist.

2. **Anticipate Projected Future Workload**

We reviewed current workload and support staffing, equipment, supplies, and materials to help us summarize the plan with an anticipation of future resources needed to maintain the Town's infrastructure including, but not limited to, roads, bridges, culverts, water-wastewater infrastructure, facilities and parks and cemeteries.

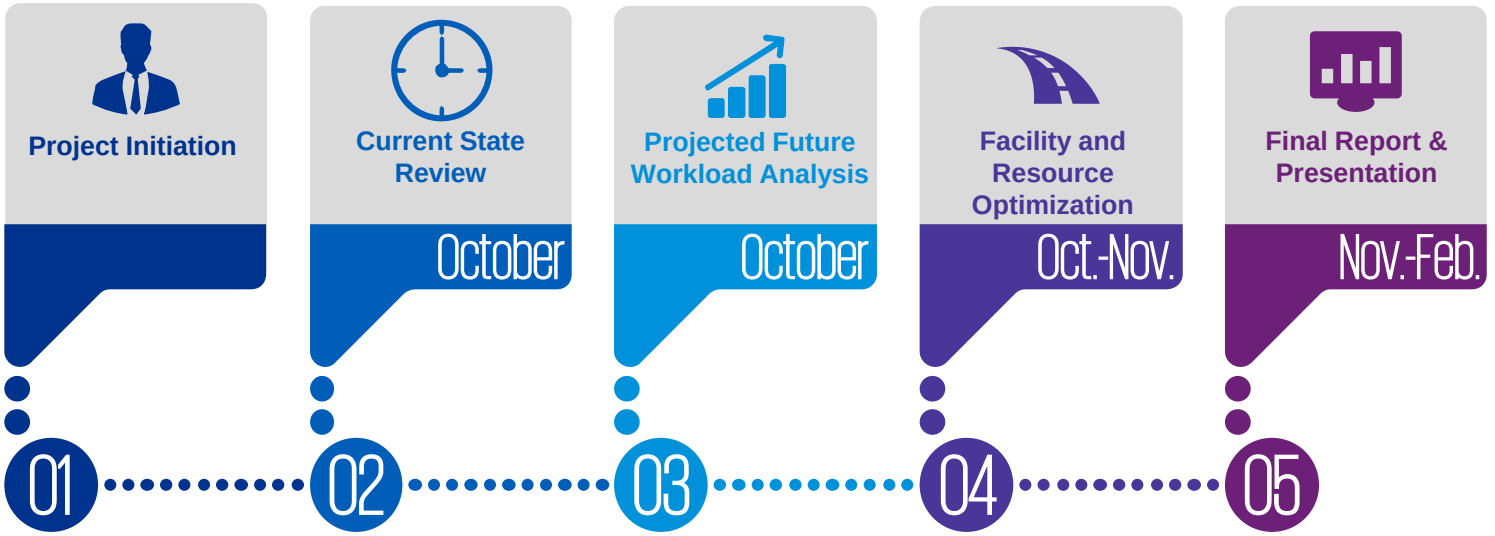
3. **Provide Facility and Resource Optimization Plan**

We prepared a plan that identified current risks (if any) with the current facility and overall operations. It also included recommendations to optimize operations (winter and summer) and associated changes needed at the operations centre and office locations.

Introduction and Context

Work Plan

This engagement commenced in the fall of 2020 and will be completed when the final report is presented to Town Council in February 1, 2021. The diagram below depicts the key phases as outlined in the Project Charter.



01	02	03	04	05
Met with Project Sponsor and Project Manager to clarify expectations, refine lines of inquiry, and develop a subsequent work program for the engagement.	Collected relevant information and captured stakeholder insights through interviews. Analyzed existing facilities and patrol and plow route service levels to identify potential gaps.	Analyzed current workload and support staffing, equipment, supplies and materials for both summer/winter seasons to forecast future workload and resource requirements.	Developed a facility & resource optimization plan, including redevelopment of patrols and cost estimates, with recommendations and a corresponding road map	Developed a draft final report and recommendations for the Town's consideration. Incorporated the Town's feedback and presented the final report to Council.

Current State Public Works

Source: Google Maps (Tice Road Facility)

Pelham Public Works

The Town's Public Works Division is currently responsible to support activities related to Operations, Beautification, Roads, Winter Control, Water/Wastewater, Engineering, Fleet and Facilities. All activities are operated from the Town of Pelham Patrol Yard (Tice Road Facility) except the Engineering Department, located at Town Hall. The Tice Road Facility is approximately 8,130 square metres (2 acres) and contains various heated/unheated indoor storage space, outdoor storage space, and open space. The Town stores approximately 52 pieces of equipment (i.e., trucks, snow plows, mowers, etc.) at the facility with up to 32 employees onsite during the summer months. The Engineering department currently uses 1 pick-up truck and a compact SUV which are parked at Town Hall.

KPMG analyzed the current operations at the facility and completed a facility tour to identify what the existing space and amenities can accommodate at the current service level. KPMG used the following key metrics a part of this analysis:

- Current service levels and inventory of equipment
- Total space (sq.m) per piece of equipment
- Total space (sq.m) per employee
- Required equipment to meet service levels

Based on this analysis, KPMG identified gaps with respect to current facility capacity, equipment and staffing.

The Tice Road Facility

Indoor Unheated Storage 302 sq. m.

Indoor Garage Bay 183 sq. m.

Outdoor Parking Space (Employees) 449 sq. m.

Yellow: Outdoor Covered (Materials) – 313 sq. m.

Outdoor Open Storage (Materials) – 607 sq. m.

Outdoor Open Storage 775 sq. m.

Outdoor Parking Space 106 sq. m.

Employee Space 321 sq. m.

Current State

Challenges with the Current Yard

Limitations and Challenges

KPMG visited the yard at 675 Tice Road in order to assess current space available, the property line, and limitations with the yard. KPMG observed that the yard is 'filled to the brim': vehicles are being parking in laneways; materials and small equipment are being stored behind the facility with limited accessibility; and an old portable trailer, placed immediately beside the property line, is being repurposed for office space. KPMG observed the following key challenges based on observation and discussion with Town staff:

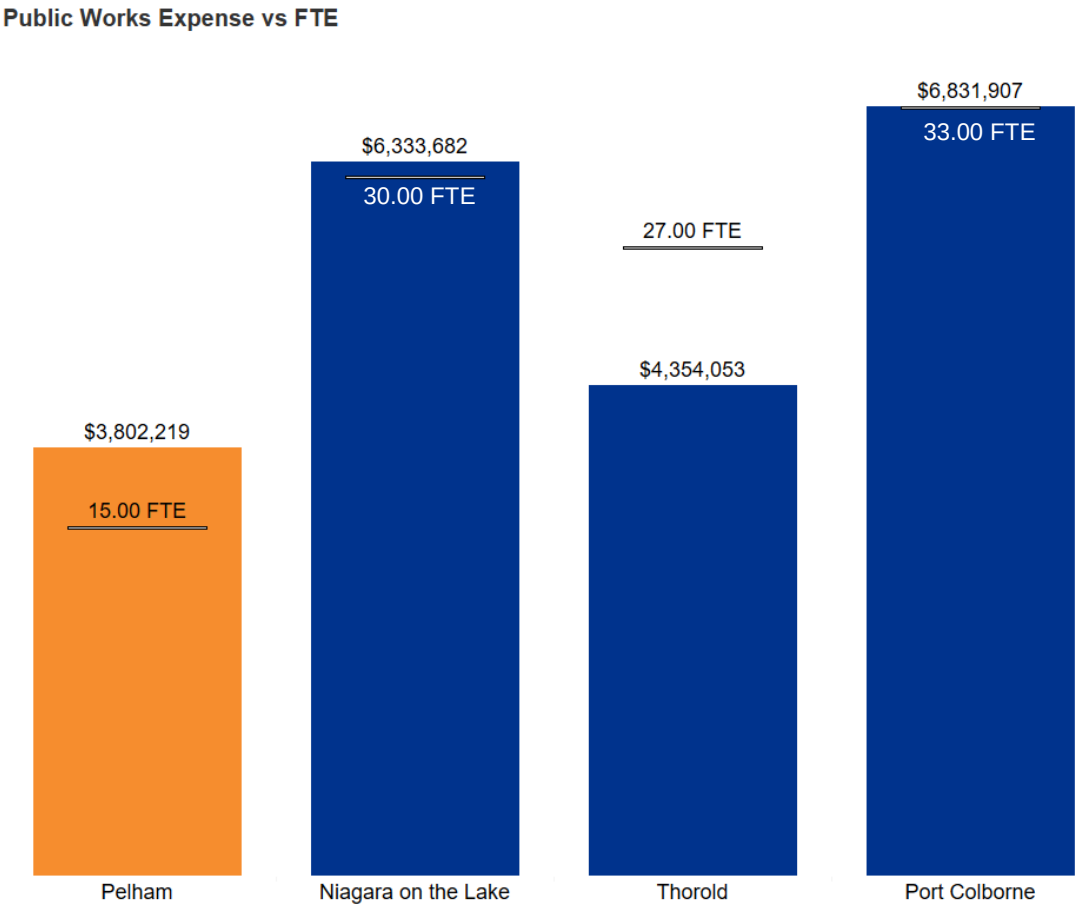
1. No indoor storage for snow plows (tandems and tractors)
2. No locker room space for women (applicable in the summer months only)
3. Lack of parking for work vehicles, e.g. vehicles parked in the middle of laneways
4. Storage of small equipment behind the building with limited accessibility
5. Insufficient employee parking during the summer months (due to the addition of summer students)
6. A second floor which is unusable for additional office space (small ceilings)
7. Additional office space being constructed in an portable trailer shed taken from the arena grounds

Comparator Analysis

Public Works Expense vs. FTE

The Town's Public Works department employs the fewest number of FTEs relative to its budget among the comparator group. The Town employs one (1) FTE for every $253K of budget whereas Niagara-on-the-Lake Thorold and Port Colborne employ 1 FTE for every $211K, $161K,and $207K respectively.

Given the expected growth of the Town over the next 5 years, there is a risk that Public Works will be unable to maintain the required level of service with the current staffing complement.



Source – KPMG analysis of 2019 FIR, Schedule 40, Transportation Services (lines 611-698), Environmental Services (lines 811 -898), and Parks (line 1610) and Schedule 80A line 225. Port Colborne's 2019 FIR was not available for the analysis, therefore data highlighted was sourced from the 2018 FIR.

Comparator Analysis

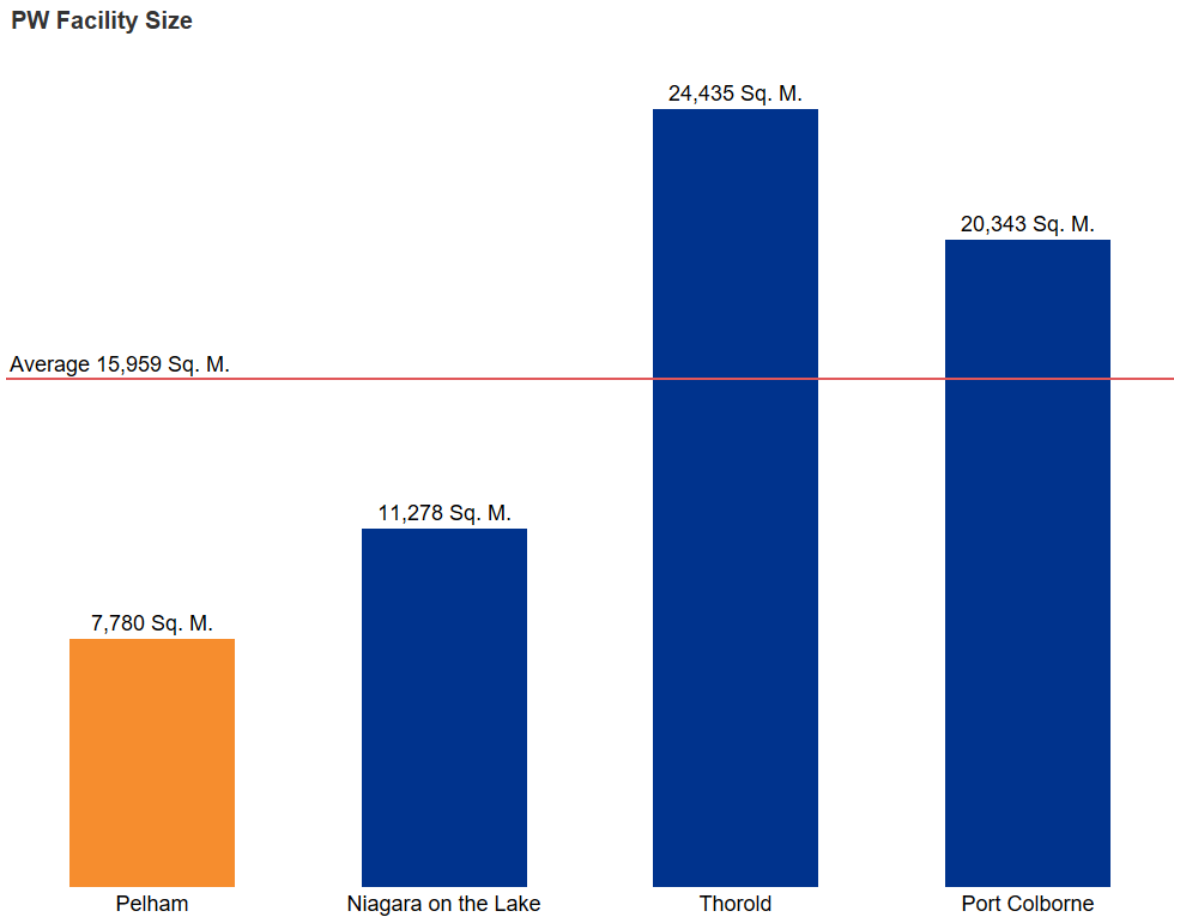
Public Works Facility Size

The Town's Public Works facility (Tice Road) is the smallest Public Works facility among the comparator group. The facility measures 7,780 square metres or 1.9 acres, whereas Niagara-on-the-Lake, Thorold, and Port Colborne facilities are 2.8 acres, 6 acres, and 5 acres respectively.

Based on our current state facility assessment (slide 26), the Town requires an additional 184 sq.m. of space to store its current equipment inventory.

In addition, the Town has the second highest Public Works expense per sq. m .

Mun.	Expense per Sq. M
Pelham	$488.71
NOTL	$561.60
Thorold	$178.19
Port Colborne	$335.84



Source - Facility size via mapdevelopers.com

Data Preparation

KPMG received the Town's Public Works maintenance standards and operations policies, department activity lists, department budgets, inventory register, facility floor plans, and East Fonthill and East Fenwick demonstrative plans in order to gather the following data inputs for entry into the optimization model:

Future State

Overall Growth in Yard Space Requirements

Based on bottoms up modelling and requirements of the Town's services, analysis suggests that the Town will require approximately 1,016 square metres of additional yard space by 2025, an increase of 33%. The projected growth in yard space for the next twenty (20) years is shown below.

Projected Yard Space Requirements by Year (sq. m.)

	Current Space	2025	2030	2035	2041
Summer & Winter Operations	1,672	2,368	2,424	2,458	2,484
Employee Space	1,263	1,365	1,377	1,386	1,393
Space due to Climate Change	-	164	171	171	178
Total	**2,935**	**3,898**	**3,973**	**4,016**	**4,056**
Growth		33%	35%	37%	38%

Notes:
1- Yard space requirements include spacing factors.
2- Growth in summer operations space also includes space for materials and small equipment

Factors Contributing to Growth of the Yard

Factors Contributing to Growth

Our model considers numerous factors that will contribute to the growth of the Public Works department. Based on discussions with management, the key drivers for growth over the next 10 years will be the East Fonthill and East Fenwick residential developments. The following outlines the key expected growth factors:

- The Town's population is expected to increase by 9,120 — +53%
- The Town will add an additional 3,800 dwellings — +58%
- +9% — The Town will add 50 lane KMs of road
- +8% — The Town will add 2.5 trail KMs

Comparison of Scenarios

The Town can consider the following options, along with their respective advantages and challenges, in order to increase space requirements for the Public Works Yard and the Engineering department.

	Advantages	Challenges and Risks
Option 1: Expand Current Site at Tice Road	Expanding the current site has many advantages including: • The Town can conveniently add more storage space beside the current facility with little impact to current operations • Close proximity to Fonthill (8 minute drive) and East Fenwick (5 minute drive) • Close proximity to current sand-salt provider, Lafarge, situated on Tice Road • No need to re-locate all vehicles, equipment, and materials to a new yard	Expanding the current site will: • Require a willing sale from the adjacent property owner to the West of the current facility, or an expropriation of land by the municipality • Force the Town to build around the current indoor facility as opposed to being able to build from scratch should it purchase and develop a parcel of land
Option 2: Purchase Land and Develop a New Facility	Purchasing a developing a parcel of land has numerous advantages such as: • The ability to design a new, purpose-built facility according to long-term plans and forecasts • The storage of snow plows in indoor heated bays • Does not require expropriation of land • Would allow the Engineering and Public Works Operations teams to work in the same facility	There are also challenges and risks with this option including: • Public consultation and buy-in would be required • The challenge of finding a centralized location • High sale price due to rising price inflation in the area • Uncertainty regarding the timing of purchase and sale • Costs and time to examine the site prior to construction and to built the new facility
Other Considerations	• The Town can also consider leasing a portion of the Region's current Public Works yard; however, it would not be able to accommodate the entirety of the Town's operation due to size limitations. The Town would need to consider a 'split-operations' model wherein its operations would be divided between multiple sites. In addition, the Region's current yard is on the border of Pelham and not in a centralized location which would increase travel time and the cost of gas.	

Option 1: Expanding the Current Site at Tice Road

Based on KPMG's forecast, the Town will require an additional 965 square metres (0.23 acres) of space by 2025 and an additional 156 square metres of space between 2026 and 2041 – for a total of 0.28 acres. Compared to the current site, this additional requirements are shown by their relative size in the image at right. Additional space is required for access laneway bringing **total required space to 0.40 acres**.

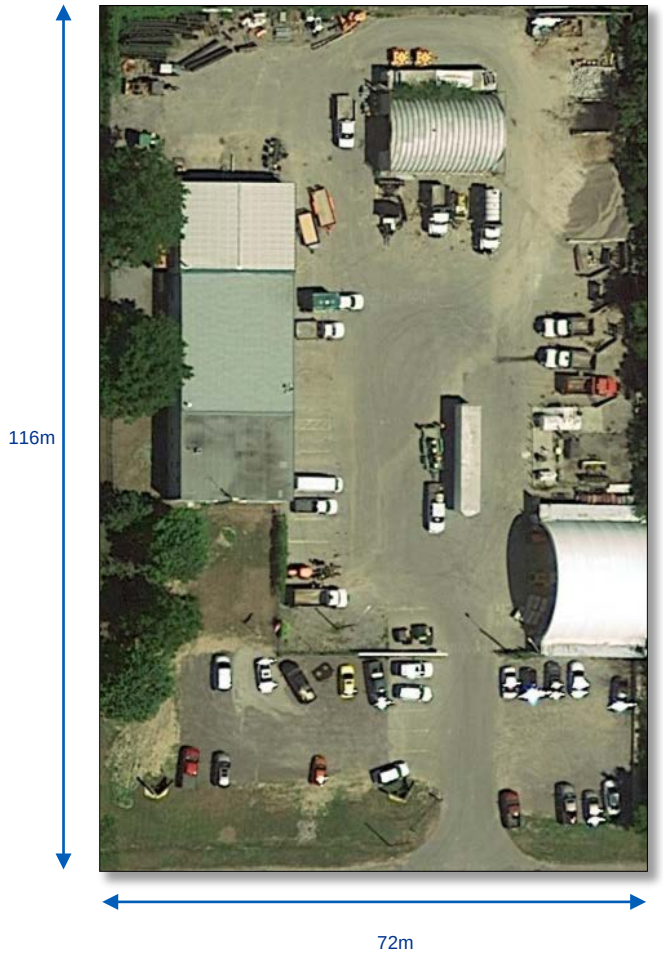
These expansion assumptions rely on storing equipment in the same manner it is stored now, primarily with the snow plows being stored outside. Indoor storage has numerous benefits including increased longevity of the plows, fewer repairs and lower maintenance costs.

In our experience, both across Ontario and in other provinces, it is typical of municipal, county and provincial level public works and transportation departments to aim to store their equipment inside.

The Town of Scugog is a helpful case study. Compared to Pelham, Scugog has a population approximately 25% higher, an area almost 4x higher, but a similar urban/rural mix. Scugog's facilities only allow half of its plow fleet to be stored indoors. Scugog's operations team notes that this results in the outdoor fleet having more maintenance issues, more equipment that won't start, pre-shift safety checks being more difficult outdoors due to snow/ice buildup and dim outdoor light, and the outdoor vehicles leaving the yard upwards of 30 minutes later than the indoor vehicles.

The space requirements for an expanded indoor facility are detailed more on the following slide, but are over and above what it highlighted here.

Growth in Yard Space Requirements relative to the Current Yard



Option 2: Purchase Land and Develop a New Facility

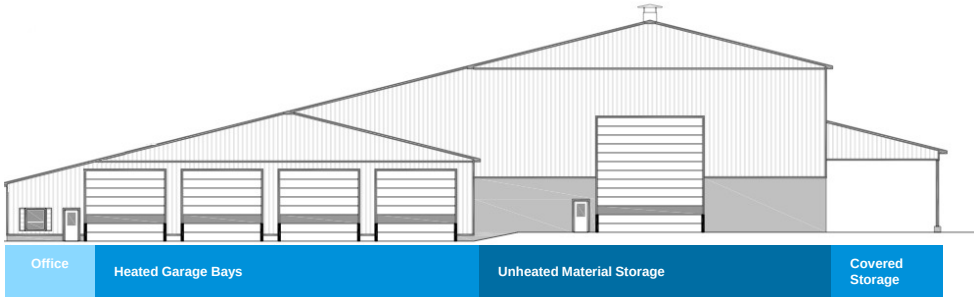
The Town could develop a new yard by purchasing vacant land in Pelham. In addition to the potential need to store more equipment indoors, it is likely that in the 20 year time horizon, a diminished local availability of sand could force the Town to maintain storage for a season's worth of salt and sand.

These two demands would significantly increase the need for a new facility, and new land could furnish sufficient space to construct heated bays, more indoor and covered storage, a large material shed, and employee spaces including offices, a lunch room, and locker rooms for men and women. During the site visit, KPMG noted little indoor storage compared to outdoor storage, and no separate locker rooms for women (relevant during summer months), and a shortage of space for the Engineering department at City Hall.

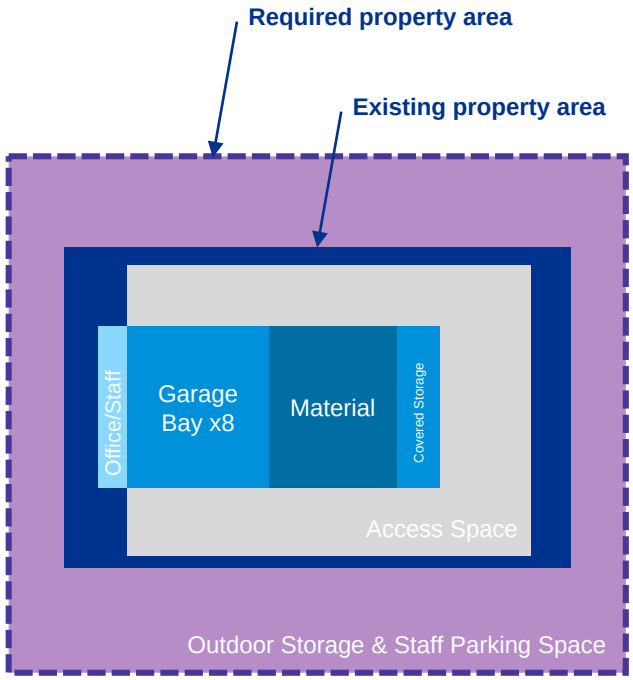
Based on KPMG's analysis and the comparable facilities of other jurisdictions, the Town would require a total of eight (8) indoor heated bays (seven (7) for plows and one (1) for maintenance/spare). The maintenance/spare bay could house a water truck to prevent freezing in the winter, a current practice. The Town could also construct a sand-salt storage which is connected to the bays for convenience. An example of such as facility, with 4 bays, is shown below. As a single structure, its overlay on the existing yard site is shown at right, which would result in a space need close to double the size of the existing property.

The Town's current yard measures 2 acres. Based on KPMG's forecast, the Town will at minimum require a total of 2.40 acres by 2041, or closer to 4 acres if a new facility were to be developed.

Note: The Town could also build this type of facility on its existing site (Option 1) although it would need to demolish or retrofit the existing buildings.



Sample Public Works Facility with Bays attached to Sand-Salt Storage (Front)

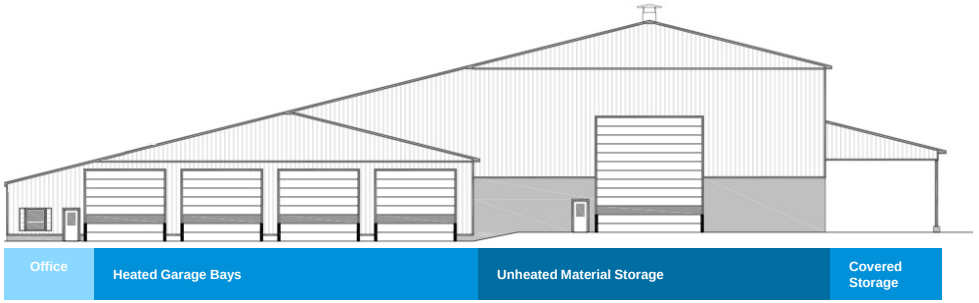


Estimated Construction Costs to Develop a New Facility

Using high-level typical cost/sq ft. estimates from other municipalities for the construction of similar facilities, the total construction cost for a facility as shown at right could be approximately $2.6M[1]. (See Table 1).

These projections assume that Engineering and Operations staff would both have office space in the new facility. Currently, the Engineering department, located at Town Hall, is separate from the Public Works Operations team.

In additional to alleviating space constraints at other Town properties, co-location or hotelling allows greater interaction and collaboration between those that are constantly in the field and those in the office. These interactions would allow more opportunities for engineering staff to understand issues in the field as they are identified and could allow greater collaboration between staff to the benefit of service delivery.



Sample Public Works Facility with Bays attached to Sand-Salt Storage (Front)

Table 1: Construction Costs to Develop the Facility Pictured Above

Space Type	Cost / sq. Foot	Sq. Feet Required	Total Cost[1]
Unheated Space	$65	~9,600	$624,000
Heated Space	$90	12,600	$1,134,000
Office Space	$190	3,300	$627,000
Outdoor Covered Space	$40	3,100	$124,000
Fueling Station & Septic			$100,000
Total		**28,600**	**$2,609,000[1]**

Notes:
1- According to AACE, these numbers are class 5 estimates, assuming 0-2% design. Typically we would expect a 30% design definition to support a business case.

kpmg.ca

PUBLIC WORKS DEPARTMENT
Monday, February 01, 2021

Subject: Public Works Operational Review

Recommendation:

BE IT RESOLVED THAT Council receive Report # 2021-0023 for information.

Background:

In the fall of 2020 Council included the operational review of the Public Works as one of its strategic priorities. Staff initiated an RFP for a consulting firm to undertake this study, which was funded through a provincial grant. The overall objective of the engagement was to provide a plan to ensure that the Town has sufficient resources and facilities that will efficiently meet service level expectations of the Town's infrastructure both currently and into the future at the lowest life-cycle cost. The assignment was awarded to KPMG in the fall of 2020 and was funded through the Municipal Modernization Program Grant issued by the Province of Ontario.

The Town's current population is 17,100 residents (based on the 2019 Financial Information Return FIR) that are located within urban and rural areas encompassing 126.43 square kilometres.

The Town's Public Works department contains four main business units:

1. Roads;
2. Winter Control;
3. Beautification; and
4. Water/Wastewater.

The department is led by the Director, Public Works with a Manager, Public Works. The Public Works department is operated out of the Tice Road Operations Centre where equipment, supplies and materials are stored. In addition, the Director, Public Works manages the Engineering Department, a team comprised of engineers, out of Town Hall. The department is responsible for planning reviews, designing, supervising and maintaining the Town's infrastructure and related capital assets.

Over the next decade, the Town will experience significant growth due to the development of East Fonthill and East Fenwick and the surrounding area(s). Currently, the Town is able to meet its expected level of service given its current resource structure; however, the anticipated growth will strain the Town's resources – particularly during the next five years – including yard space, staffing and capital assets such as vehicles and equipment. The current Public Works yard has been stretched to its limit which only increases the challenge of acquiring and storing new assets to keep up with growing service level expectations. The Town will need a plan to ensure it has sufficient resources and facilities to meet service level expectations of the Town's infrastructure both currently and into the future, efficiently and at the lowest life-cycle cost.

KPMG's scope of work was to assist in the development of a plan to use the existing Operational Facility and Patrol Yard (Tice Road Facility) to optimally support current and future operational needs for the Town's Public Works Division including the Operational, Engineering and Facility departments. The project had three secondary objectives:

1. *Conduct Current State Review* in which a review was conducted to assess current operations and facilities at each of the division's locations. The objective was to identify what the existing space and amenities can accommodate at current industry standards and what gaps (if any) existed.

2. *Anticipate Projected Future Workload* in which a review was completed assessing current workload and support staff, equipment, supplies, and materials while anticipating future resources needed to maintain the Town's infrastructure including, but not limited to, roads, bridges, culverts, water-wastewater infrastructure, facilities and parks and cemeteries.

3. *Provide Facility and Resource Optimization Plan* to identify risks with the current facility and overall operations including recommendations to optimize operations (winter and summer) and associated changes needed at the operations centre and office locations.

Analysis:

Within the Provincial and Regional growth estimates, the Town of Pelham will see a population increase of 9,120 residents, an increase of 53%, and the addition of approximately 3800 dwellings with the completion of the East Fonthill and East Fenwick residential developments. This growth will result in the addition of 50 lane km of roads, 50 km of municipal sidewalks, 2.5 km of pedestrian trails, and approximately 4000 municipal boulevard trees. KPMG has reported that the Town's Public Works department is stretched to meet the current service levels with the current infrastructure it has to maintain, and significant growth will begin to strain the department's resources including yard space, staffing, and capital assets. Notably, the current yard (~2 acres) is exceeding its storage capacity, is smaller relative to municipalities of similar size, and has no indoor storage for snow plows.

KPMG conducted a comparative analysis with other local area municipalities of similar size. The primary purpose of the comparative analysis was to understand the performance of comparator municipalities' Public Works functions in order to identify opportunities to improve the Town's service delivery. Specifically, the comparator analysis analyzed: (1) Public Works operating expenses; (2) Number of Public Works FTE's against total operating expenses; and (3) Public Works facility size against total operating expenses.

The results of the analysis indicated the following in relation to the comparator group: (1) the Town of Pelham has the lowest operating expense; (2) the Town of Pelham employs the fewest number of full time employees (FTE's); and (3) the Town of Pelham's Public Works yard (Tice Road Facility) is the smallest facility with respect to available space.

KPMG created a model to forecast future service levels from 2021-2041. Based on the model, it is expected that the Engineering and Public Works Operations departments will require the following additional resources: (1) Approximately 0.40 acres of space for the Public Works yard and employee space between now and 2041; (2) 5 additional FTEs by 2025 (2 for Engineering; 3 for Public Works Operations); (3) $635K for additional vehicles, equipment and machinery; and (4) $1.1M of additional operating budget between now and 2025.

Near-term site expansion raises the question of what long-term needs also

need to be considered. With this in mind, KPMG also considered the possibility of constructing a new facility that would meet medium and long-term staff needs, allow for optimal indoor equipment storage, and consider the possibility that future material supply may require on-site storage for a year's worth of ice-control material. A new facility of this nature would require approximately 4 acres of space to meet growing service levels, with an estimated building cost of approximately $2.6M (Class 5 estimate, ROM).

KPMG's report entitled "Public Works Operational Review", dated January 11th is included in Appendix A of this report for review and consideration. With this analysis completed, the Town is better equipped to address growing service levels and to make the best choice for the future as it continues to grow.

Financial Considerations:

There are no immediate financial considerations for this report as it is for information purposes only.

Alternatives Reviewed:

There were no alternatives reviewed as this report is being presented to Council for information purposes only.

Strategic Plan Relationship: Strong Organization

Developing a sustainable plan for Public Works to accommodate the expected growth over the next 20 years will ensure that the department is able to provide the expected level of service to the residents of the Town of Pelham.

Other Pertinent Reports/Attachments:

Appendix A – Public Works Operational Review, KPMG, January 11th, 2020

Consultation:

Consultation was completed with KPMG in the preparation of this report.

Legal Consultation, If Applicable:

There was no legal consultation completed in the preparation of this report.

Prepared and Recommended by:

Jason Marr, P. Eng.,
Director of Public Works

Approved and Submitted by:

David Cribbs, BA, MA, JD, MPA
Chief Administrative Officer

The Town of Pelham

Public Works Operational Review

Final Report

January 21st, 2020

Disclaimer

This report has been prepared by KPMG LLP ("KPMG") for the Town of Pelham ("the Client") pursuant to the terms of our engagement agreement with Client dated September 1, 2020 (the "Engagement Agreement"). KPMG neither warrants nor represents that the information contained in this report is accurate, complete, sufficient or appropriate for use by any person or entity other than Client or for any purpose other than set out in the Engagement Agreement. This report may not be relied upon by any person or entity other than Client, and KPMG hereby expressly disclaims any and all responsibility or liability to any person or entity other than Client in connection with their use of this report.

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Pursuant to the terms of our engagement, it is understood and agreed that all decisions in connection with the implementation of advice and recommendations as provided by KPMG during the course of this engagement shall be the responsibility of, and made by, the Town of Pelham. KPMG has not and will not perform management functions or make management decisions for the Town of Pelham.

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Project Overview

Town of Pelham

Public Works Operational Review

Final Report

Introduction and Context

Introduction

This final report was prepared to present observations and evidence to form a potential case for change arising from research, analysis and consultation with staff from the Town of Pelham (the “Town” or “Pelham”). This report will provide the foundation for possible opportunities to ensure the Town has sufficient resources and facilities to efficiently meet service level expectations of the Town’s infrastructure both currently and into the future.

Setting the Stage

The Town of Pelham is located at the centre of the Niagara Region boarding St. Catharine's (north), Thorold and Welland (east), Wainfleet (south) and West Lincoln (west). The Town’s population is currently 17,100 residents that are located within urban and rural areas encompassing 126.43 square kilometres.

The Town’s Public Works department contains four main business units: 1. Roads, 2. Winter Control, 3. Beautification, and 4. Water/Wastewater. The department is led by the Director, Public Works with a Manager, Public Works. The Public Works department is operated out of the Tice Road Operations Centre where equipment, supplies and materials are stored. In addition, the Director, Public Works manages the Operations department, a team comprised of engineers, out of Town Hall. The department is responsible for planning, designing, supervising and maintaining the Town’s infrastructure and related capital assets.

Over the next decade, the Town will experience significant growth due to the development of East Fonthill and East Fenwick and the surrounding area. Currently, the Town is able to meet its expected level of service given its current resource structure; however, the anticipated growth will strain the Town’s resources – particularly during the next five years – including yard space, staffing and capital assets such as vehicles and equipment. The current Public Works yard has been stretched to its limit which only increases the challenge of acquiring and storing new assets to keep up with growing service level expectations. The Town desires a plan to ensure it has sufficient resources and facilities to meet service level expectations of the Town’s infrastructure both currently and into the future, efficiently and at the lowest life-cycle cost.

Executive Summary

Executive Summary

Over the next decade, the Town of Pelham's population will increase by 9,120 residents, an increase of 58%, with the completion of the East Fonthill and East Fenwick residential developments. This is significant growth for a town with a population of 17,110[1]. Based on interviews, the Town's Public Works department is stretched to meet service levels, and significant population growth will begin to strain the department's resources including yard space, staffing, and capital assets. Notably, the current yard (~2 acres) is exceeding its storage capacity, is smaller relative to municipalities of similar size, and has no indoor storage for snow plows.

The Public Works department engaged KPMG to address this challenge. KPMG created a model to forecast future service levels from 2021-2041. Based on the model, it is expected that the Engineering and Public Works Operations departments will require the following additional resources:

- Approximately 0.40 acres of space for the Public Works yard and employee space between now and 2041;
- 5 additional FTEs by 2025 (2 for Engineering; 3 for Public Works Operations);
- $635K for additional vehicles, equipment and machinery; and
- $1.1M of additional operating budget between now and 2025

Near-term site expansion raises the question of what long-term needs also need to be considered. With this in mind, KPMG also considered the possibility of constructing a new facility (Option #2) that would meet medium and long-term staff needs, allow for optimal indoor equipment storage, and consider the possibility that future material supply may require on-site storage for a year's worth of ice-control material. A new facility of this nature would require approximately 4 acres of space to meet growing service levels, with an estimated building cost of ~$2.6M (Class 5 estimate, ROM).

KPMG considered the risks, challenges and benefits of Options #1 and #2. With this analysis, the Town is better equipped to address growing service levels and to make the best choice for the future as it continues to grow.

Source: 2016 Canadian Census

Introduction and Context

Project Objectives

KPMG was engaged by the Town of Pelham ("the Town") to assist in the development of a plan to use the existing Operational Facility and Patrol Yard (Tice Road Facility) to optimally support current and future operational needs for the Town's Public Works Division including the Operational, Engineering and Facility departments. The overall objective of the engagement was to provide a plan to ensure that the Town has sufficient resources and facilities that will efficiently meet service level expectations of the Town's infrastructure both currently and into the future at the lowest life-cycle cost. The project had three secondary objectives:

1. Conduct Current State Review

We conducted a review to assess current operations and facilities at each of the division's locations. The objective was to identify what the existing space and amenities can accommodate at current industry standards and what gaps (if any) exist.

2. Anticipate Projected Future Workload

We reviewed current workload and support staffing, equipment, supplies, and materials to help us summarize the plan with an anticipation of future resources needed to maintain the Town's infrastructure including, but not limited to, roads, bridges, culverts, water-wastewater infrastructure, facilities and parks and cemeteries.

3. Provide Facility and Resource Optimization Plan

We prepared a plan that identified current risks (if any) with the current facility and overall operations. It also included recommendations to optimize operations (winter and summer) and associated changes needed at the operations centre and office locations.

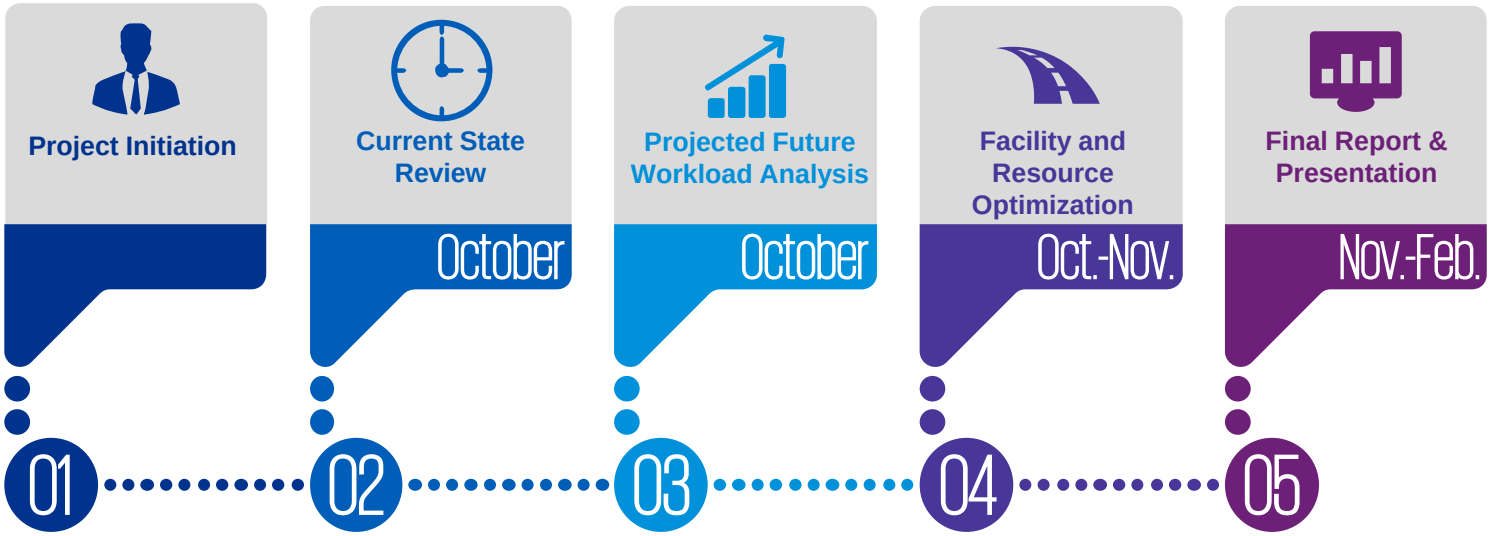
Project Principles

- The knowledge and expertise of Town staff was fully engaged and built upon, to arrive at recommended actions through a transparent, participative and inclusive process facilitated by KPMG.
- The operational review process was conducted in a way that engages Town employees.
- The aim was to, wherever possible, transfer knowledge and necessary "tools" to Town staff to enable them to better develop their own solutions to operational and process issues and challenges over time.
- The framework and approach was based on leading practices from municipal or other levels of government experience and/or private sector.
- Lastly, this was not an audit. This was a review to develop a plan that will position the Town's Public Works department for success today and well into the future.

Introduction and Context

Work Plan

This engagement commenced in the fall of 2020 and will be completed when the draft final report is presented to Town Council in February 1, 2021. The diagram below depicts the key phases as outlined in the Project Charter.



Met with Project Sponsor and Project Manager to clarify expectations, refine lines of inquiry, and develop a subsequent work program for the engagement.

Collected relevant information and captured stakeholder insights through interviews. Analyzed existing facilities and patrol and plow route service levels to identify potential gaps.

Analyzed current workload and support staffing, equipment, supplies and materials for both summer/winter seasons to forecast future workload and resource requirements.

Developed a facility & resource optimization plan, including redevelopment of patrols and cost estimates, with recommendations and a corresponding road map

Developed a draft final report and recommendations for the Town's consideration. Incorporated the Town's feedback and presented the final report to Council.

KPMG

Environmental Scan

Town of Pelham

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Current State Public Works

Source: Google Maps (Tice Road Facility)

Pelham Public Works

The Town's Public Works Division is currently responsible to support activities related to Operations, Beautification, Roads, Winter Control, Water/Wastewater, Engineering, Fleet and Facilities. All activities are operated from the Town of Pelham Patrol Yard (Tice Road Facility) except the Engineering Department, located at Town Hall. The Tice Road Facility is approximately 8,130 square metres (2 acres) and contains various heated/unheated indoor storage space, outdoor storage space, and open space. The Town stores approximately 52 pieces of equipment (i.e., trucks, snow plows, mowers, etc.) at the facility with up to 32 employees onsite during the summer months. The Engineering department currently uses 1 pick-up truck and a compact SUV which are parked at Town Hall.

KPMG analyzed the current operations at the facility and completed a facility tour to identify what the existing space and amenities can accommodate at the current service level. KPMG used the following key metrics a part of this analysis:

- Current service levels and inventory of equipment
- Total space (sq.m) per piece of equipment
- Total space (sq.m) per employee
- Required equipment to meet service levels

Based on this analysis, KPMG identified gaps with respect to current facility capacity, equipment and staffing.

The Tice Road Facility

Indoor Unheated Storage 302 sq. m.

Indoor Garage Bay 183 sq. m.

Outdoor Parking Space (Employees) 449 sq. m.

Yellow: Outdoor Covered (Materials) – 313 sq. m.

Outdoor Open Storage (Materials) – 607 sq. m.

Outdoor Open Storage 775 sq. m.

Outdoor Parking Space 106 sq. m.

Employee Space 321 sq. m.

Challenges with the Current Yard

Limitations and Challenges

KPMG visited the yard at 675 Tice Road in order to assess current space available, the property line, and limitations with the yard. KPMG observed that the yard is 'filled to the brim': vehicles are being parking in laneways; materials and small equipment are being stored behind the facility with limited accessibility; and an old portable trailer, placed immediately beside the property line, is being repurposed for office space. KPMG observed the following key challenges based on observation and discussion with Town staff:

1. No indoor storage for snow plows (tandems and tractors)
2. No locker room space for women (applicable in the summer months only)
3. Lack of parking for work vehicles, e.g. vehicles parked in the middle of laneways
4. Storage of small equipment behind the building with limited accessibility
5. Insufficient employee parking during the summer months (due to the addition of summer students)
6. A second floor which is unusable for additional office space (small ceilings)
7. Additional office space being constructed in an portable trailer shed taken from the arena grounds

Current State Public Works

Departmental Breakdown

The Town also provided KPMG with its Operating Budget, activity working days and number of staff for each Public Works department. The below summarizes the current state for each department:

	Roads	Winter Control	Beautification	Water / Wastewater	Engineering
2020 Operating Budget	$3.0M	$595K	$867K	$5.1M	$1.3M
Total Equipment Working Days	810 Working Days	Approximately 20 Winter Events	4,208 Working Days[1]	418 Working Days	1,040 Working Days (labour hours)
Staffing	1 Supervisor + 5 FTEs	3 Supervisors + 12 FTEs	1 Supervisor + 5 FTEs	1 Supervisor + 3 FTEs	1 Manager + 3[2] FTEs

Source – Multiple Departments (CC) Summary Report – 2020-21 Budgets
1-- hours include seasonal/student staff
2 – one contract position will end in Q1 2021

Comparator Analysis

Town of Pelham

Public Works Operational Review

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Comparator Analysis - Community Details

For the purposes of the project, KPMG selected three communities to compare with the Town of Pelham based on the size of municipality.

Municipality	Population[1]	Households[1]	Area in Square KMs [2]
1. Town of Pelham	17,110	7,104	126.43
2. City of Thorold	18,801	8,498	82.99
3. Niagara-on-the-lake	17,511	7,026	132.81
4. Port Colborne	18,306	10,304	121.96

[1] Source - Financial Information Returns, Schedule 2 (2019)
[2] Source - Statistics Canada census profile, 2016 census data

The primary purpose of the comparative analysis is to understand the performance of comparator municipalities' Public Works functions in order to identify opportunities to improve the Town's service delivery. Specifically, the comparator analysis analyzed:

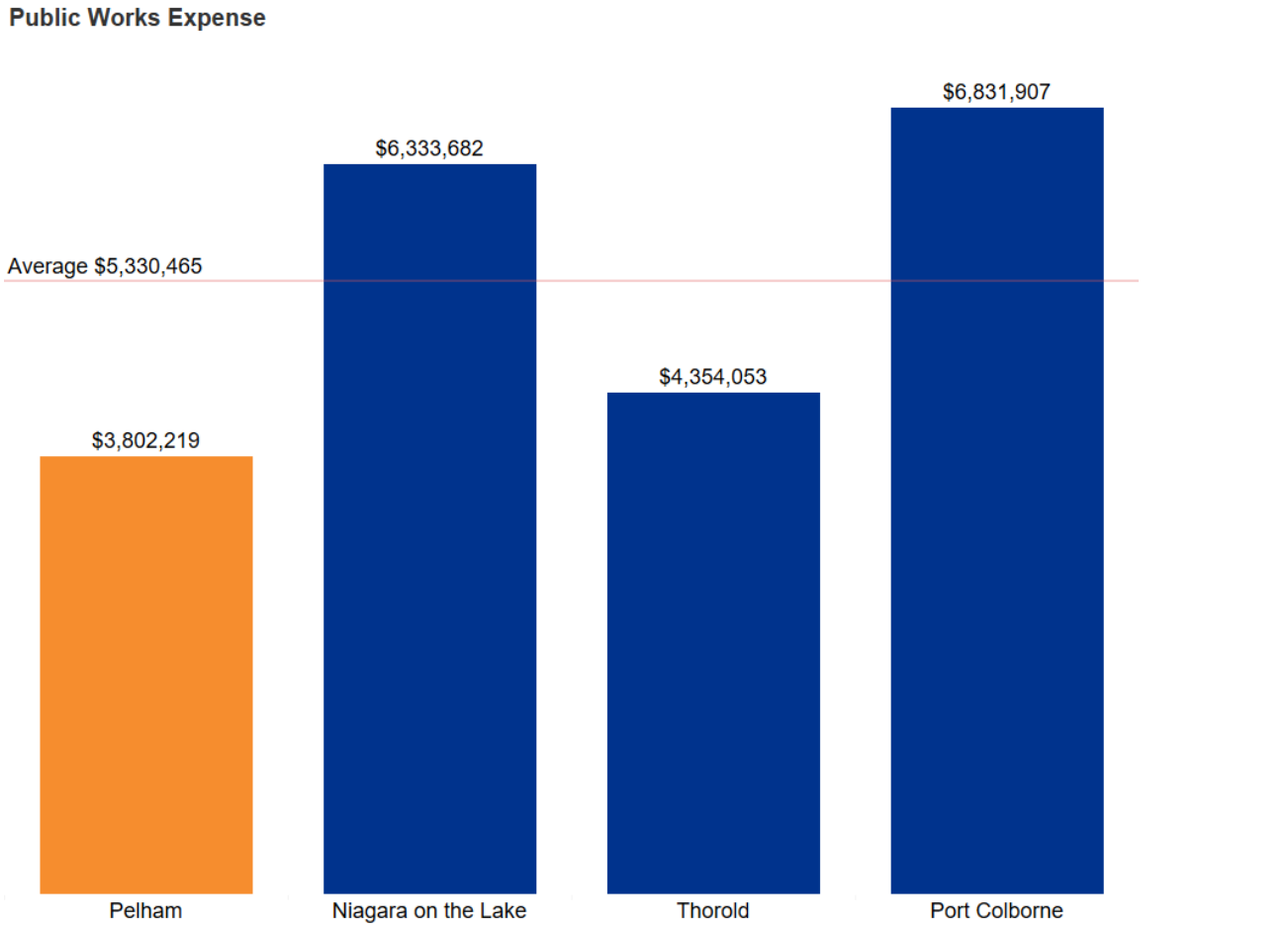
- Public Works operating expenses
- Number of Public Works FTE's against total operating expenses
- Public Works facility size against total operating expenses.

Note: We obtained the information summarized in the following pages from financial information returns (FIRs) submitted to the Province of Ontario. We have not reviewed a draft of this data summary with the benchmarked comparators for the purpose of confirming the factual accuracy of the information presented.

Comparator Analysis

2019 Public Works Expense

The Town of Pelham has the lowest Public Works operating expense among the comparator group. Its total expenditures are $1.5M less than the average among the comparator group.



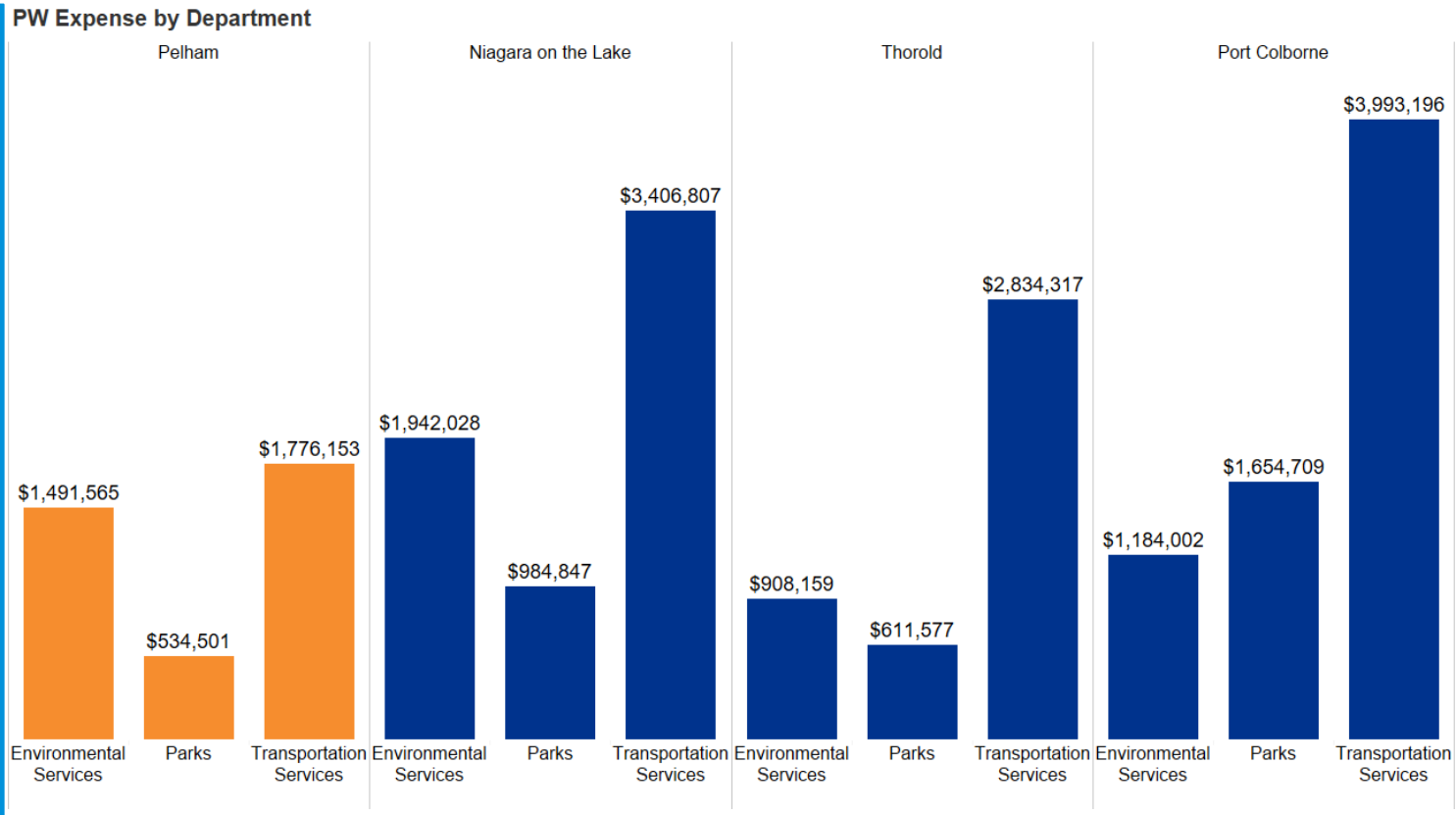
Source – KPMG analysis of 2019 FIR, Schedule 40, Transportation Services (lines 611-698), Environmental Services (lines 811 -898), and Parks (line 1610). Port Colborne's 2019 FIR was not available for the analysis, therefore data highlighted was sourced from the 2018 FIR.

Comparator Analysis

Public Works Expense by Department

The Town of Pelham has the lowest expense in all Public Works departments with the exception of Environmental Services.

It should be noted that the identified departments are displayed as per the FIR and may not reflect actual departments within the Public Works function.



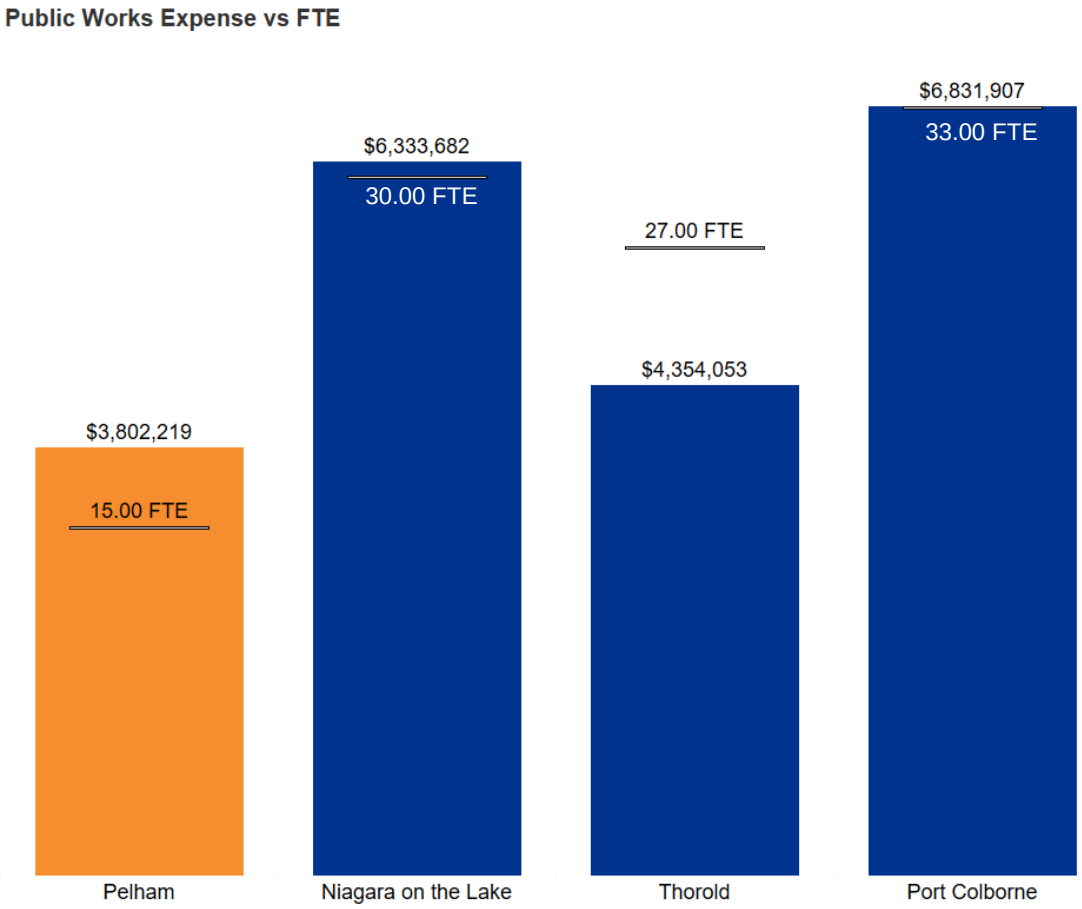
Source – KPMG analysis of 2019 FIR, Schedule 40, Transportation Services (lines 611-698), Environmental Services (lines 811 -898), and Parks (line 1610). Port Colborne's 2019 FIR was not available for the analysis, therefore data highlighted was sourced from the 2018 FIR.

Comparator Analysis

Public Works Expense vs. FTE

The Town's Public Works department employs the fewest number of FTEs relative to its budget among the comparator group. The Town employs one (1) FTE for every $253K of budget whereas Niagara-on-the-Lake Thorold and Port Colborne employ 1 FTE for every $211K, $161K,and $207K respectively.

Given the expected growth of the Town over the next 5 years, there is a risk that Public Works will be unable to maintain the required level of service with the current staffing complement.



Source – KPMG analysis of 2019 FIR, Schedule 40, Transportation Services (lines 611-698), Environmental Services (lines 811 -898), and Parks (line 1610) and Schedule 80A line 225. Port Colborne's 2019 FIR was not available for the analysis, therefore data highlighted was sourced from the 2018 FIR.

Comparator Analysis

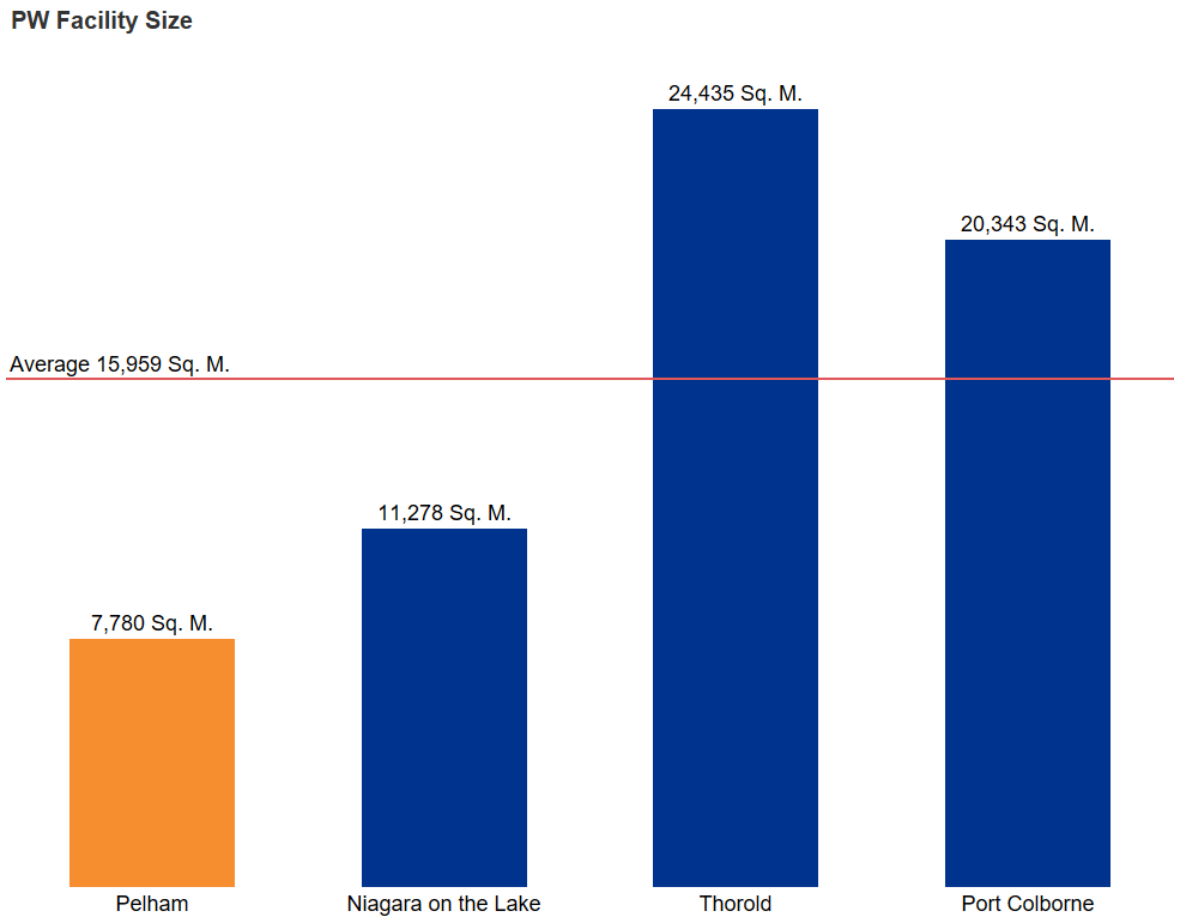
Public Works Facility Size

The Town's Public Works facility (Tice Road) is the smallest Public Works facility among the comparator group. The facility measures 7,780 square metres or 1.9 acres, whereas Niagara-on-the-Lake, Thorold, and Port Colborne facilities are 2.8 acres, 6 acres, and 5 acres respectively.

Based on our current state facility assessment (slide 26), the Town requires an additional 184 sq.m. of space to store its current equipment inventory.

In addition, the Town has the second highest Public Works expense per sq. m .

Mun.	Expense per Sq. M
Pelham	$488.71
NOTL	$561.60
Thorold	$178.19
Port Colborne	$335.84



Source - Facility size via mapdevelopers.com

Public Works Optimization: The Methodology

Town of Pelham

Public Works Operational Review

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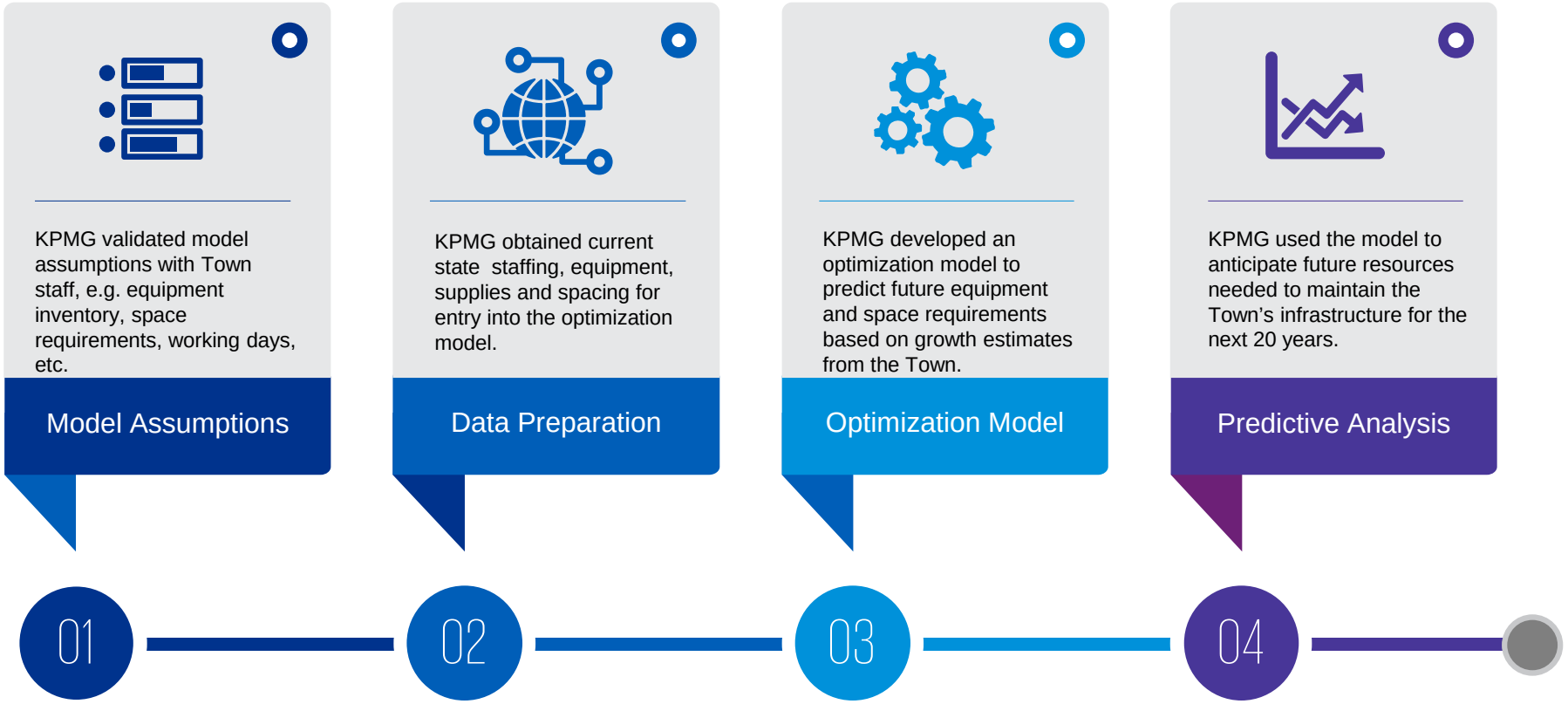
Public Works Optimization

Methodology

KPMG developed a operations optimization model using a 4-phased methodology in order help the Town anticipate future resources needed to maintain the Town's infrastructure and service levels.



Model Assumptions

KPMG validated the following model assumptions with staff before proceeding to build the optimization model.

Model Assumptions for Activities and Yard Spacing

	Current	Future
Standard work hours per day	8	8
Annual summer maintenance days	130	130
Indoor spacing factor	30%	30%
Outdoor spacing factor	40%	40%
Indoor spacing factor for lunch room, and employee spaces	15%	15%
Parking spacing factor	62%	62%
Population	17,110	27,280 (2041)
Materials to Equipment Factor[1]	N/A	5%

1- Where space is required for additional equipment, KPMG budgeted additional space of 5% for corresponding materials.

Spacing Factors

KPMG forecast the Town's space requirements based on adding up the individual areas required to store each piece of equipment. What is not included in this step is accounting for the accessibility of the equipment once stored. This requires the addition of an additional factor - the 'spacing factor' – thereby increasing the space requirements.

Without a spacing factor, the modelling would assume that every piece of equipment is packed tightly together. In reality, space is required between pieces of equipment, for access passageways for people and equipment (e.g. a forklift), to prevent damage, and for safety. A spacing factor of 40% therefore means an additional 40% of space is required for access above the footprint of the piece of equipment.

Data Preparation

KPMG received the Town's Public Works maintenance standards and operations policies, department activity lists, department budgets, inventory register, facility floor plans, and East Fonthill and East Fenwick demonstrative plans in order to gather the following data inputs for entry into the optimization model:

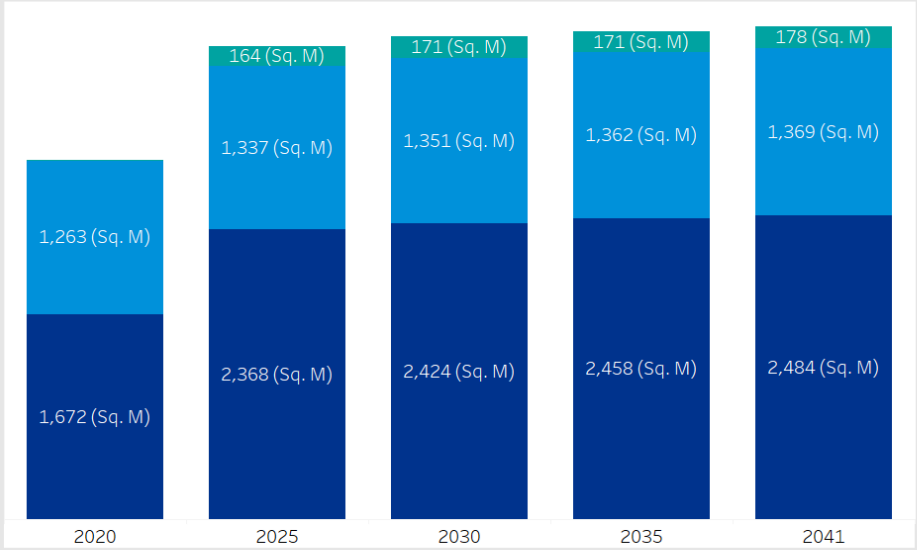
Optimization Model

KPMG developed an optimization model in MS Excel in order to forecast yard space, FTEs and budget required to meet anticipated growth in the Town. The model is both versatile and user-friendly. Assumptions are stored in a central location and can be easily adjusted, as necessary, to re-calculate the impact on yard space, FTEs, and budget required. The Township will take ownership of the model as part of the final deliverable, and can use it to perform further optimization as required. The below visualizes the excel model outputs using Tableau:

Pelham Public Works Optimization Model

Current Space Requirements	Overall Growth (Sq.M) from Current State			
2020	2025	2030	2035	2041
2,935 (Sq. M)	32%	34%	36%	37%

Overall Yard Requirements



Requirements by Storage Type

	2020	2025	2030	2035	2041
Indoor Heated Storage	182	324	324	324	324
Indoor Unheated Storage	120	234	234	248	248
Materials and Small Equipment	0	112	115	116	118
Outdoor Open Storage	581	810	864	883	907
Outdoor Parking Space	789	888	888	888	888

Requirements by Employee Space

	2020	2025	2030	2035	2041
Locker Space	40	47	48	49	50
Lunch Room	50	53	54	54	55
Office Space	141	145	145	146	146
Outdoor Parking	1,032	1,093	1,104	1,112	1,118

Requirements by Climate Change

	2020	2025	2030	2035	2041
Indoor Heated Storage	0	147	153	153	160
Indoor Unheated Storage	0	3	3	3	3
Materials and Small Equipment	0	8	8	8	8
Outdoor Open Storage	0	5	5	5	5
Outdoor Parking Space	0	2	2	2	2

Note: The visualization above is dashboard view of the outputs derived from the MS Excel model. The final MS Excel model will be provided to the Town at the end of the project. KPMG does not take responsibility for the quality of the outputs should the Town make changes to the final model. Quality control on a go-forward basis would be the responsibility of the municipality.

Predictive Analysis

KPMG used the following growth data, based on the Town's planning documents, to forecast growth in infrastructure and service levels for the East Fenwick and East Fonthill residential developments between 2021 and 2031. Growth in assets and service levels thereafter was modelled using a growth rate of 0.8% where applicable. The following two slides show growth data broken down by each residential development.

Growth Data (2021 to 2031)

	Growth
Population	9,120
Dwellings	3,800
Road Lane KMs	49.4
Sidewalk KMs	49.4
Park Area (sq. KM)	0.15
Garden Beds	12
Sports Fields	1
Playgrounds and Hard Courts	6
Trail KMs	2.5
Intersection	100
Signs	51

	Growth
Street Lights	312
Catch Basins	664
Hydrants	166
Lot Trees	4,028
Watermain Pipe KMs	25
Watermain Valves	366
Manholes	249
Storm Water Ponds	6
Storm Water Pipe KMs	25
Mortality	53
Wastewater Pipe KMs	25

Predictive Analysis: East Fonthill

KPMG held consultations with the Town's Planning department to understand growth in the East Fonthill residential neighbourhood, and analyzed the *East Fonthill Secondary Plan* to obtain growth data, presented below. KPMG used this data to predict growth in Public Works service levels between 2020 and 2025 (construction will be complete in 2025). Growth in assets and service levels after 2025 was modelled using a growth rate of 0.8% where applicable.

East Fonthill Growth Data (2021 to 2025)

	Growth
Population	7,200
Dwellings	3,000
Road Lane KMs	36
Sidewalk KMs	36
Park Area (sq. KM)	0.1
Garden Beds	8
Sports Fields	1
Playgrounds and Hard Courts	4
Trail KMs	2.5
Intersections	67
Signs	34

	Growth
Street Lights	228
Catch Basins	485
Hydrants	121
Lot Trees	3,180
Watermain Pipe KMs	18
Watermain Valves	255
Manholes	182
Storm Water Ponds	6
Storm Water Pipe KMs	18
Mortality	42
Wastewater Pipe KMs	18

Predictive Analysis: East Fenwick

KPMG also the following growth data, contained within the Town's draft development plan, to forecast growth in infrastructure and service levels for the East Fenwick residential development between 2022 and 2031 (the construction period). Growth in assets and service levels thereafter was modelled using a growth rate of 0.8% where applicable.

East Fenwick Growth Data (2022 to 2031)

	Growth
Population	1,920
Dwellings	800
Road Lane KMs	13.4
Sidewalk KMs	13.4
Park Area (sq. KM)	0.05
Garden Beds	4
Sports Fields	-
Playgrounds and Hard Courts	2
Trail KMs	0
Intersection	33
Signs	17

	Growth
Street Lights	84
Catch Basins	179
Hydrants	45
Lot Trees	848
Watermain Pipe KMs	7
Watermain Valves	111
Manholes	67
Storm Water Ponds	-
Storm Water Pipe KMs	7
Mortality	11
Wastewater Pipe KMs	7

Current State Results

Town of Pelham

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Calculating Space Requirements – An Illustrative Example

Estimating Yard Space

In order to calculate yard space requirements, KPMG hosted workshops with Town staff in order to determine the number of working days per service, the equipment required to provide it, and the number of working days per summer season. KPMG used these inputs, along with standard storage specifications for each piece of equipment, to calculate total space requirements. A theoretical example is provided below. This example calculates both current and future space requirements assuming a 40% increase in service (working days).

An Example: Current/Forecasted Yard Space Requirements

	Ref.	Current	Growth	Forecast
Working Days	(A)	130	40%	182
Working Days per Summer Season	(B)	130	-	130
Pieces of Equipment Required	(C) = A / B	1	-	1.4
Space per Equipment (sq. m.)	(D)	15	-	15
Total Space Required	(E) = C x D	15	-	21

Current Public Works Operations

Current State Results

During Phase II of the Operational Review, KPMG analyzed the current state of the Pelham Public Works department in order to identify gaps with respect to current facility capacity and equipment. The current gaps reflect the short-term needs of the Public Works department prior to factoring in the anticipated growth. The below summarizes the current Public Works operational gaps:

	Current State	Gap Analysis

Equipment	• The Town's current summer equipment inventory is 55 pieces of equipment stored at the Public Works Facility (Tice Road).	• Based on the current required working days for each Public Works activity, the Town is short the following pieces of equipment:
		  • One pick-up truck
		  • One tractor
		  • Two mowers
		• Our interviews and analysis suggest that additional equipment will make the crews more efficient.

Facility Capabilities	• The Town's current Public Works Facility has 443 sq. m. of storage capacity.	• Based on leading practice for equipment storage, the Town requires 639 sq. m. to store its current equipment inventory.

Short **4** pieces of equipment

Short **184 sq. m.** of facility space

Anticipated Projected Future Workload

Anticipated Projected Future Workload

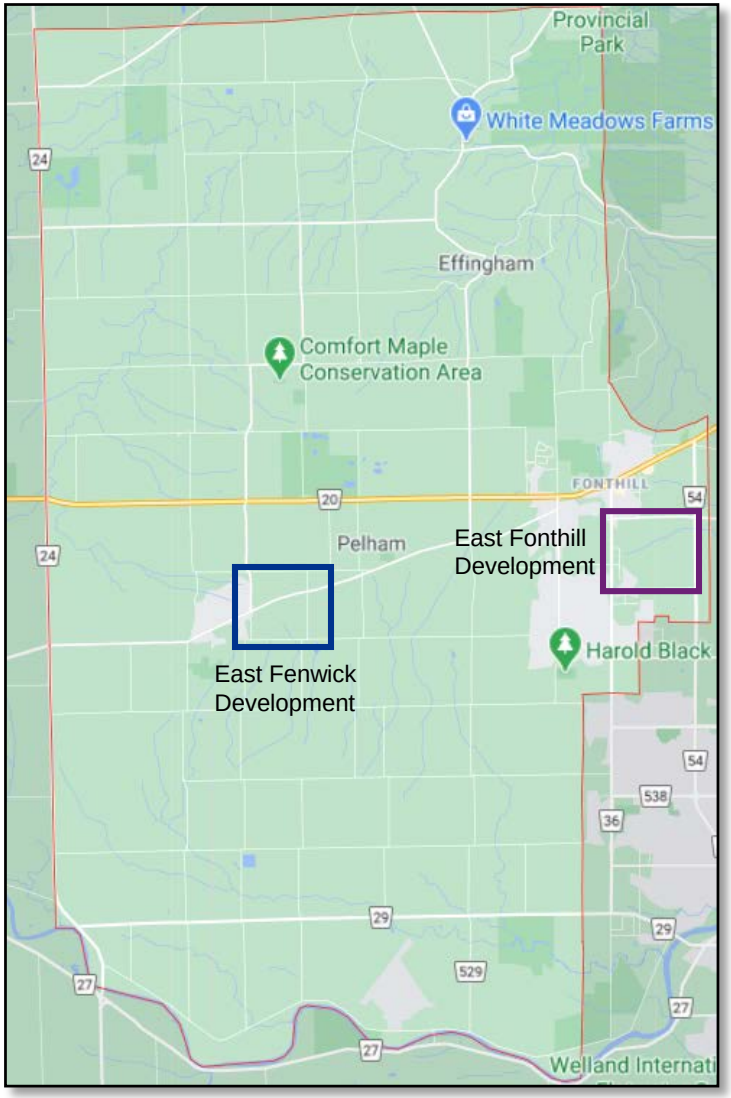
Based on our current state review, KPMG applied anticipated future growth rates to Public Works activities to anticipate workload according to the following categories:

- 1-5 year needs and opportunities
- 6-10 year needs and opportunities
- 11-20 year needs and opportunities
- 21+ year projections

To predict future growth, KPMG identified key drivers that will impact the service level requirements of the Public Works Division. Specifically, KPMG analyzed major on-going and planned development within the Town:

1. East Fonthill development plan
2. East Fenwick development plan

The development plans indicate that the Town will see a combined population increase of 9,500 residents, 3,800 dwellings, 50 lane KMs, 50 sidewalk KMs, 2.5 trail KMs, 4,028 trees and other growth. The Town estimates that both developments will be complete in the next 10 years. It was noted that growth beyond the 10 year period remains skeptical due to boundary limitations, and as such KPMG applied a historical growth rate of 0.8%[1] to periods beyond 10 years.

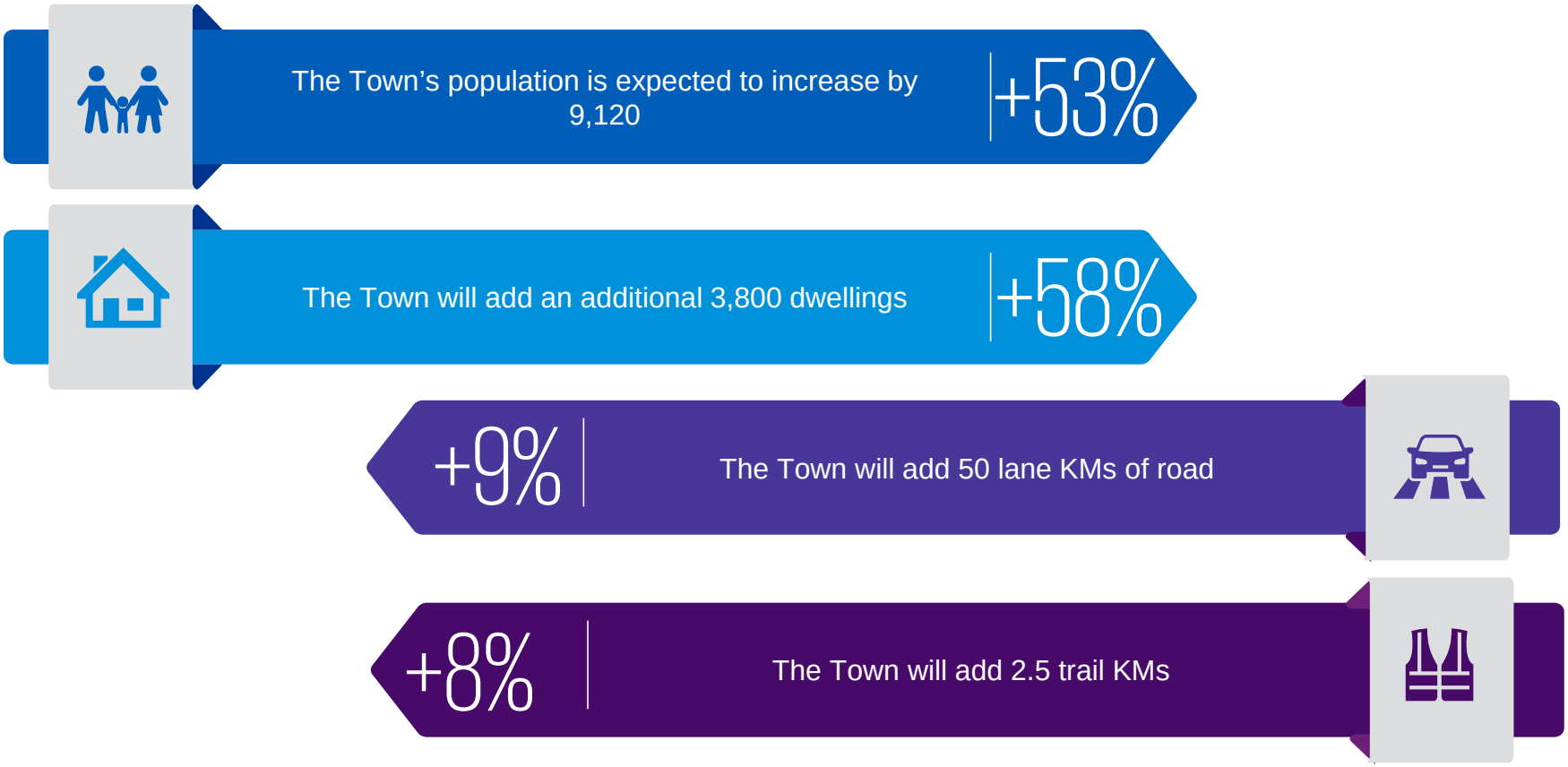


Source:
Google Maps

Factors Contributing to Growth of the Yard

Factors Contributing to Growth

Our model considers numerous factors that will contribute to the growth of the Public Works department. Based on discussions with management, the key drivers for growth over the next 10 years will be the East Fonthill and East Fenwick residential developments. The following outlines the key expected growth factors:



Future State: An Overview

Town of Pelham

Public Works Operational Review

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Overall Growth in Yard Space Requirements

Based on bottoms up modelling and requirements of the Town's services, analysis suggests that the Town will require approximately 1,016 square metres of additional yard space by 2025, an increase of 33%. The projected growth in yard space for the next twenty (20) years is shown below.

Projected Yard Space Requirements by Year (sq. m.)

	Current Space	2025	2030	2035	2041
Summer & Winter Operations	1,672	2,368	2,424	2,458	2,484
Employee Space	1,263	1,365	1,377	1,386	1,393
Space due to Climate Change	-	164	171	171	178
Total	**2,935**	**3,898**	**3,973**	**4,016**	**4,056**
Growth		33%	35%	37%	38%

Notes:
1- Yard space requirements include spacing factors.
2- Growth in summer operations space also includes space for materials and small equipment

Overall Growth in Yard Space Requirements

There are two potential drivers for increased yard space. The first is Town growth and corresponding increase in service levels (detailed below).

The second stems from the potential need for a new facility, both to address staff accommodation shortages and to improve operational efficiency by storing more equipment indoors. This second driver is addressed on slide 45.

According to the forecast, growth in yard space[1] storage is expected to increase by approximately:

- +33% from 2020 to 2025
- +2% each 5 years from 2025 to 2035
- +1% from 2035 to 2040

Overall, the Town will require an additional 0.40 acres. The diagram at right shows this growth in space relative to the current public works yard, which measures 8,093 square metres (approximately 2 acres). The majority of this growth in required space is expected between 2020 and 2025 due to substantial growth in East Fonthill. Growth rates for all services are listed in Appendix A.

Additional yard space will not only provide adequate storage for all vehicles and equipment but reduce Health & Safety Risk at the yard. As can be seen in the aerial image, work vehicles and trailers are being parked in undesirable locations such as laneways which increase this risk.

Additional space will also be required should the Town follow the path of other jurisdictions in storing snow plows in indoor heated bays, or if future material availability requires the Town to store a season's worth of ice management material on site.

Growth in Yard Space Requirements relative to the Current Yard

Notes:
1- includes equipment storage, employee space and additional space due to climate change

Top Drivers of Foreasted Growth

Our model indicates that the Town of Pelham's population will increase by 47% between 2020 and 2025 (~8,000 new residents). The table below highlights the corresponding growth in inventory, yard space and services for the period of 2020 to 2025.

Forecasted Growth in Inventory, Yard Space and Service by Vehicle Type (2020 to 2025)

	Current Inventory	Forecasted Inventory	Forecasted Growth in Space	Forecasted Growth in Service	Related Activities
Pickup Trucks and Trailers	• 5 owned trucks • 4 rental trucks • 4 trailers	• 7 owned trucks • 5 rental trucks • 7 trailers	177 sq. m.	• 6 playgrounds & hard courts • 1 sports field • 2.5 trail kms	• Brush cutting • Line trimming • Mowing sports fields • Turf maintenance
1 Ton Dumps and Chipper Boxes	• 4 1-ton dumps • 1 chipper	• 5 1-ton dumps • 2 chippers	55 sq. m.	• 4,028 additional trees • Increased block pruning with maturing trees • 50 lane kms	• Tree Planting • Tree Inventory & Inspections • Service responses • Road inspection and maintenance
Water Vans and Trucks	• 1 water truck • 1 water vans	• 2 water trucks • 2 water vans	107 sq. m.	• 366 watermain valves • 166 fire hydrants • 12 residential gardens	• Watermain valve inspections • Fire Hydrant painting, inspections & repairs • Planting, weeding, trimming, & watering of gardens and hedges
Tractors and Mowers	• 4 tractors • 5 mowers	• 5 tractors • 7 mowers	52 sq. m.	• 6 playgrounds & hard courts • 1 sports field • 2.5 trail kms	• Brush cutting • Line trimming • Mowing sports fields • Turf maintenance

Future State: Detailed Projections

Town of Pelham

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Future State: Projections

Forecasted Yard Space Requirements

KPMG forecasted the growth in yard space from 2021 to 2041. Based on KPMG's modelling, the facility will require approximately 696 square metres of additional yard space by 2025 in order to meet increased service levels associated with the East Fonthill and East Fenwick[1] developments. This increase pertains only to service equipment (trucks, trailers, chippers, tractors etc.) with a 5% allowance for materials and small equipment. Additional space is required for employee space including parking, lunch rooms and other related spaces (see next slide).

Forecasted Yard Space Requirements (sq. m.)

	Current Space	2025	2030	2035	2041
Indoor Heated Storage	182	324	324	324	324
Indoor Unheated Storage	120	234	234	248	248
Outdoor Open Storage	581	810	864	883	907
Outdoor Parking Space	789	888	888	888	888
Materials and Equipment	-	112	115	116	118
Total	**1,672**	**2,368**	**2,424**	**2,458**	**2,484**

1- Growth from 2020 to 2025 includes only a portion of the East Fenwick development, which spans 2022 to 2031.

Forecasted Employee Space Requirements

KPMG also forecasted the growth in employee space from 2021 to 2041. The model anticipates approximately 155 square metres of additional employee space by 2025. This figure is dependent upon an increase of 5.0 FTEs during the same period.

Forecasted Employee Space Requirements (sq. m.)

	Current Space	2025	2030	2035	2041
Outdoor Parking	1,032	1,159	1,173	1,183	1,191
Lunch Room	50	57	58	58	59
Locker Room	40	54	56	57	58
Office Space	141	149	149	150	151
Total	**1,263**	**1,418**	**1,436**	**1,448**	**1,458**

Notes:
1- Additional space would be required if the FTEs were split between multiple summer student positions.

Forecasting Methodology

In order to forecast employee space requirements, KPMG made the following assumptions:

- Each parking space requires 16.72 square metres of space
- Only 61% parking lot space is used for parking; the remaining 39% is used for laneways
- Each additional employee requires 1 square metre of space in the lunch room and in his or her work space
- Each additional Public Works Operations employee requires 2 square metres of space in the locker room

Future State: Projections

Forecasted Budget Requirements for Public Works

KPMG forecasted budget growth for the Public Works department from 2021 to 2041. The model indicates that the department will require approximately $1.1M in additional budget to provide the same service level to the Town in 2025 (current dollars). These calculations are based on the Town's 2020 budgets, and include estimates for capital expenditures (based upon depreciation). Of note, the department will need to create an additional snow plow route with the addition of 50 road lane KMs, predominantly located in the East Fonthill development.

Public Works: Forecasted Budget Requirements from 2025-2041 (millions, current dollars)

	Operating Budget[1,2,3]	2025	2030	2035	2041
Beautification	0.9	1.1	1.2	1.2	1.2
Roads	3.2	3.3	3.3	3.3	3.3
Water / Wastewater	5.1	5.3	5.3	5.3	5.3
Facilities	1.4	1.6	1.7	1.7	1.7
Fleet	0.6	0.8	0.8	0.8	0.8
Engineering	1.3	1.5	1.5	1.6	1.6
Winter Control	0.6	0.6	0.6	0.7	0.7
Total	**13.2**	**14.3**	**14.4**	**14.5**	**14.6**

Forecasting Methodology

In order to forecast budget requirements, KPMG applied the growth in working days to the current 2020 operating budget plus depreciation for related capital equipment[1].

The growth in working days was calculated using the Town's demonstration plans.

For example, the 2025 budget for fire hydrant inspections will increase by 24% compared to 2020 (the East Fonthill development will add 139 fire hydrants to the Town's existing 588, an increase of 24%).

Notes:
1- Budget figures include operating and capital expenditures
2- Capital expenditures are based on 2019 depreciation figures, not anticipated cash outlays
3- Figures exclude revenues, transfers and third-party contracts
4- Budget growth is commensurate with growth in service level by activity (working days)

Future State: Projections

Forecasted Capital Outlays

KPMG also forecasted capital outlays to purchase additional vehicles and equipment from 2021 to 2041. The model indicates that Public Works will require approximately $636K to provide the same level of service for the Town between 2021 and 2025.

Forecasted Capital Outlays (2020-2041)[1]

	2021-2025	2026-2030	2031-2035	2036-2041
Pickup Trucks	248,360	-	-	-
Mowers	15,338	-	7,669	-
Trailers	15,600	-	-	-
Chippers	26,500	-	-	26,500
Tractors	19,100	-	19,100	-
Water Trucks	101,800	-	-	-
Landscape Trucks	80,970	80,970	-	-
Chipper Boxes	63,090	-	-	-
Asphalt Trailers	64,935	-	-	-
Total	**635,693**	**80,970**	**26,769**	**26,500**

Notes:
1- Prices exclude sales taxes.

Future State: Projections

Forecasted Staffing Requirements

KPMG also forecasted the growth in FTEs from 2021 to 2041. The forecast anticipates 5.0 additional FTEs by 2025 (or roughly 10 summer students). This figure is broken down by department in the table below. This growth is mainly attributable to the increase in park space, sports fields, playgrounds, hard courts, trail kilometres, hydrants, watermains and road kilometres within the new residential developments. The forecast also includes additional Engineering staff for modelling, design and other operational activities.

Forecasted Staffing Requirements (FTEs)

	Current FTEs	2025	2030	2035	2041
Beautification	4	5	5	5	6
Roads	5	6	6	6	6
Water / Wastewater	3	4	5	5	5
Engineering	3	5	5	5	5
Total	**15**	**20**	**20**	**21**	**21**

Forecasting Methodology

In order to forecast FTE requirements, KPMG made the following assumptions:

- 95% of all budget growth pertained to operating expenditures
- 70% of operating budget growth was attributable to salaries, wages and benefits
- The average salary and benefits per FTE was $103,000

Future State: Climate Change Impacts

Town of Pelham

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Future State: Climate Change Impacts

Forecasted Yard Space Requirements

KPMG also forecasted the growth in service levels attributable to climate change. In collaboration with staff, KPMG identified that increased rainfall and higher summer temperatures would lead to increased winter events, ice damage to trees, road washouts and watering/irrigation during the summer months. Climate change assumptions for this analysis are listed in Appendix A. The model also indicates that the Town will incur an additional $13K in sand-salt per year to address the increase in winter ice events (assuming an increase from 1 to 3 winter ice events per year).

Climate Change: Projected Yard Space Requirements (sq. m.)[1]

	Current Space	2025	2030	2035	2041
Indoor Heated Storage	-	147	153	153	160
Indoor Unheated Storage	-	3	3	3	3
Outdoor Open Storage	-	5	5	5	5
Outdoor Parking Space	-	2	2	2	2
Materials and Equipment		8	8	8	8
Total	**-**	**165**	**171**	**171**	**178**

Incremental sand-salt budget per year	**$13,000[2]**

Notes:
1- spacing factors have been applied for these figures
2- [current sand-salt budget ($130K) / the number of winter events per year (20)] * 2 additional winter events

Risks and Challenges

Town of Pelham

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Comparison of Scenarios

The Town can consider the following options, along with their respective advantages and challenges, in order to increase space requirements for the Public Works Yard and the Engineering department.

	Advantages	Challenges and Risks
Option 1: Expand Current Site at Tice Road	Expanding the current site has many advantages including: • The Town can conveniently add more storage space beside the current facility with little impact to current operations • Close proximity to Fonthill (8 minute drive) and East Fenwick (5 minute drive) • Close proximity to current sand-salt provider, Lafarge, situated on Tice Road • No need to re-locate all vehicles, equipment, and materials to a new yard	Expanding the current site will: • Require a willing sale from the adjacent property owner to the West of the current facility, or an expropriation of land by the municipality • Force the Town to build around the current indoor facility as opposed to being able to build from scratch should it purchase and develop a parcel of land
Option 2: Purchase Land and Develop a New Facility	Purchasing a developing a parcel of land has numerous advantages such as: • The ability to design a new, purpose-built facility according to long-term plans and forecasts • The storage of snow plows in indoor heated bays • Does not require expropriation of land • Would allow the Engineering and Public Works Operations teams to work in the same facility	There are also challenges and risks with this option including: • Public consultation and buy-in would be required • The challenge of finding a centralized location • High sale price due to rising price inflation in the area • Uncertainty regarding the timing of purchase and sale • Costs and time to examine the site prior to construction and to built the new facility
Other Considerations	• The Town can also consider leasing a portion of the Region's current Public Works yard; however, it would not be able to accommodate the entirety of the Town's operation due to size limitations. The Town would need to consider a 'split-operations' model wherein its operations would be divided between multiple sites. In addition, the Region's current yard is on the border of Pelham and not in a centralized location which would increase travel time and the cost of gas.	

Option 1: Expanding the Current Site at Tice Road

Based on KPMG's forecast, the Town will require an additional 965 square metres (0.23 acres) of space by 2025 and an additional 156 square metres of space between 2026 and 2041 – for a total of 0.28 acres. Compared to the current site, this additional requirements are shown by their relative size in the image at right. Additional space is required for access laneway bringing **total required space to 0.40 acres**.

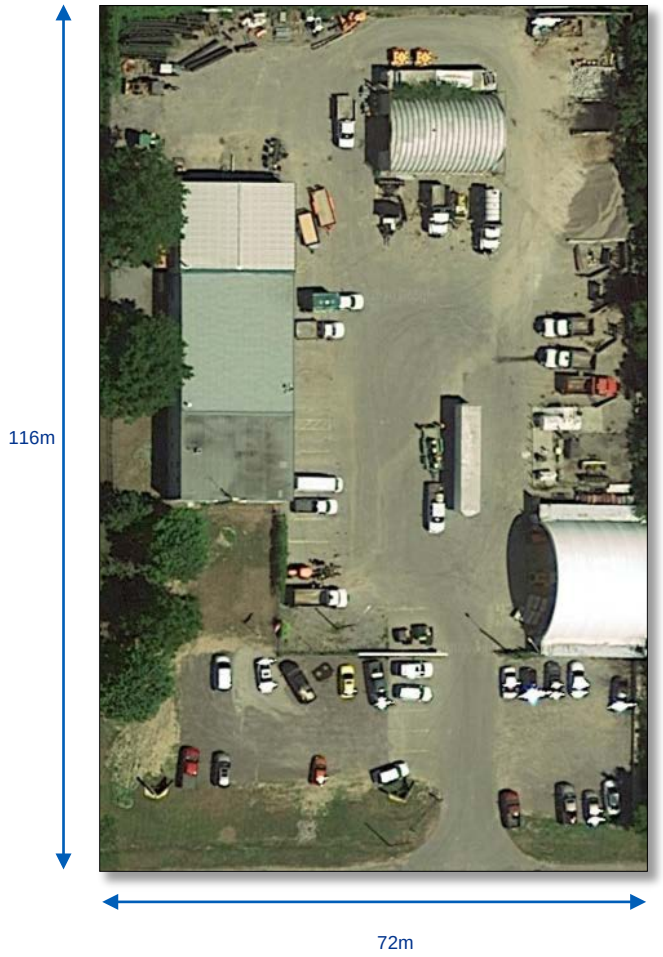
These expansion assumptions rely on storing equipment in the same manner it is stored now, primarily with the snow plows being stored outside. Indoor storage has numerous benefits including increased longevity of the plows, fewer repairs and lower maintenance costs.

In our experience, both across Ontario and in other provinces, it is typical of municipal, county and provincial level public works and transportation departments to aim to store their equipment inside.

The Town of Scugog is a helpful case study. Compared to Pelham, Scugog has a population approximately 25% higher, an area almost 4x higher, but a similar urban/rural mix. Scugog's facilities only allow half of its plow fleet to be stored indoors. Scugog's operations team notes that this results in the outdoor fleet having more maintenance issues, more equipment that won't start, pre-shift safety checks being more difficult outdoors due to snow/ice buildup and dim outdoor light, and the outdoor vehicles leaving the yard upwards of 30 minutes later than the indoor vehicles.

The space requirements for an expanded indoor facility are detailed more on the following slide, but are over and above what it highlighted here.

Growth in Yard Space Requirements relative to the Current Yard



Option 2: Purchase Land and Develop a New Facility

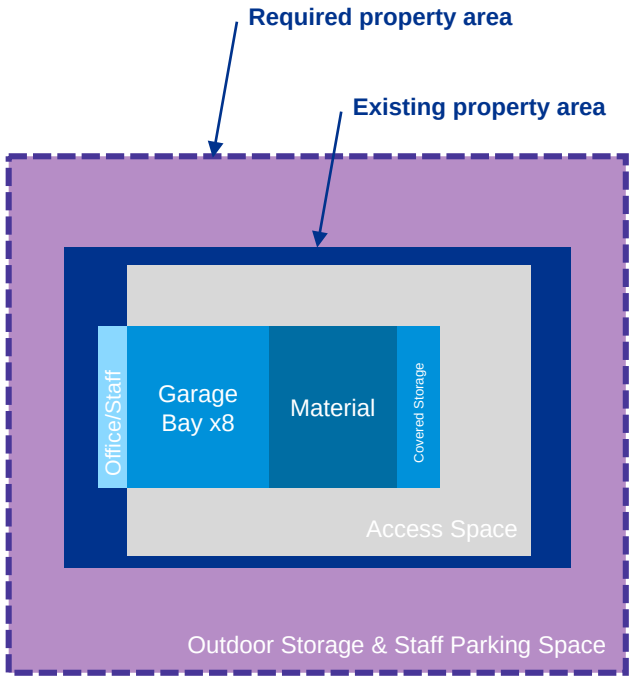
The Town could develop a new yard by purchasing vacant land in Pelham. In addition to the potential need to store more equipment indoors, it is likely that in the 20 year time horizon, a diminished local availability of sand could force the Town to maintain storage for a season's worth of salt and sand.

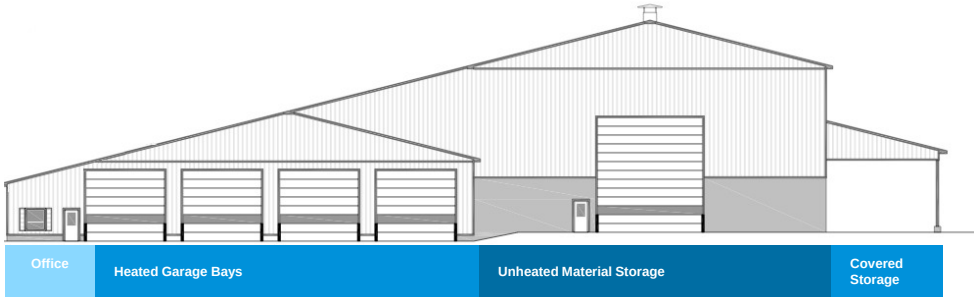
These two demands would significantly increase the need for a new facility, and new land could furnish sufficient space to construct heated bays, more indoor and covered storage, a large material shed, and employee spaces including offices, a lunch room, and locker rooms for men and women. During the site visit, KPMG noted little indoor storage compared to outdoor storage, and no separate locker rooms for women (relevant during summer months), and a shortage of space for the Engineering department at City Hall.

Based on KPMG's analysis and the comparable facilities of other jurisdictions, the Town would require a total of eight (8) indoor heated bays (seven (7) for plows and one (1) for maintenance/spare). The maintenance/spare bay could house a water truck to prevent freezing in the winter, a current practice. The Town could also construct a sand-salt storage which is connected to the bays for convenience. An example of such as facility, with 4 bays, is shown below. As a single structure, its overlay on the existing yard site is shown at right, which would result in a space need close to double the size of the existing property.

The Town's current yard measures 2 acres. Based on KPMG's forecast, the Town will at minimum require a total of 2.40 acres by 2041, or closer to 4 acres if a new facility were to be developed.

Note: The Town could also build this type of facility on its existing site (Option 1) although it would need to demolish or retrofit the existing buildings.





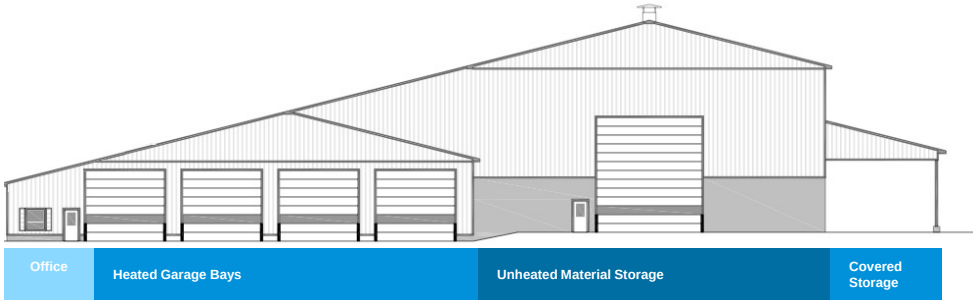
Sample Public Works Facility with Bays attached to Sand-Salt Storage (Front)

Estimated Construction Costs to Develop a New Facility

Using high-level typical cost/sq ft. estimates from other municipalities for the construction of similar facilities, the total construction cost for a facility as shown at right could be approximately $2.6M[1]. (See Table 1).

These projections assume that Engineering and Operations staff would both have office space in the new facility. Currently, the Engineering department, located at Town Hall, is separate from the Public Works Operations team.

In additional to alleviating space constraints at other Town properties, co-location or hotelling allows greater interaction and collaboration between those that are constantly in the field and those in the office. These interactions would allow more opportunities for engineering staff to understand issues in the field as they are identified and could allow greater collaboration between staff to the benefit of service delivery.



Sample Public Works Facility with Bays attached to Sand-Salt Storage (Front)

Table 1: Construction Costs to Develop the Facility Pictured Above

Space Type	Cost / sq. Foot	Sq. Feet Required	Total Cost[1]
Unheated Space	$65	~9,600	$624,000
Heated Space	$90	12,600	$1,134,000
Office Space	$190	3,300	$627,000
Outdoor Covered Space	$40	3,100	$124,000
Fueling Station & Septic			$100,000
Total		**28,600**	**$2,609,000[1]**

Notes:
1- According to AACE, these numbers are class 5 estimates, assuming 0-2% design. Typically we would expect a 30% design definition to support a business case.

Appendix A

Town of Pelham

Public Works Operational Review

Final Report

Appendix A

Climate Change Assumptions

KPMG made the following assumptions to forecast growth in space and budget attributable to climate change. \

Forecast Assumptions for Climate Change

	Current	Future
Tree Service Request due to Ice Damage	700	3% increase every year
Road Washouts		1 washout every 5 years
Summer Watering / Irrigation	2 days per week	3 days per week

Appendix A

Forecast Assumptions by Sub-Service

	Sub-Activity	2025	2030	2035	2041
Bush Cutting Trail Sides	All Brush Cutting Trail Sides / Right of Ways	8%	8%	8%	8%
Cemetery	Burials / Creamations	46%	52%	55%	59%
Cemetery	Turf Mowing	27%	36%	36%	36%
Contracted Grass Cutting	All Forestry	0%	0%	0%	0%
Forestry	All Forestry	15%	17%	18%	19%
General Maintenance	Litter / Recepticale Service	0%	0%	0%	0%
General Maintenance	Repairs to Benches, Picnic Tables, Fencing, Graffiti, Litter	0%	0%	0%	0%
General Maintenance	Winter Turf Damage	2%	3%	3%	3%
General System Maintenance	Hydrant Inspection	24%	28%	30%	32%
General System Maintenance	Hydrant Painting	6%	8%	10%	12%
General System Maintenance	Hydrant Repairs	1%	2%	2%	2%
General System Maintenance	Metre Reading	47%	52%	56%	60%

Appendix A

Forecast Assumptions by Sub-Service

	Sub-Activity	2025	2030	2035	2041
General System Maintenance	Metre Repair	1%	2%	2%	2%
General System Maintenance	Water Shut-off Repair	1%	2%	2%	2%
General System Maintenance	Watermain Valve Exercise	6%	7%	8%	9%
General System Maintenance	Watermain Valve Repair	1%	2%	2%	2%
Horticulture	All Horticulture Activities	17%	19%	20%	21%
Line Trimming	All Line Trimming	8%	8%	8%	8%
Playgrounds & Hard Courts	Equipment Inspections (CSA)	14%	14%	15%	15%
Playgrounds & Hard Courts	Equipment Repair	1%	2%	2%	2%
Road Maintenance	Catch basin / Maintenance Hole Repair	1%	2%	2%	2%
Road Maintenance	Catch Basin Clearing	47%	54%	58%	62%
Road Maintenance	Culvert Flushing	2%	3%	3%	3%
Road Maintenance[1]	New Driveway Culvert Installation[1]	0%	0%	0%	0%

1- installations would only be required for rural lot developments, not urban development such as East Fonthill and East Fenwick, according to interviews with Town staff.

Appendix A

Forecast Assumptions by Sub-Service

	Sub-Activity	2025	2030	2035	2041
Road Maintenance	Pothole Repair	7%	8%	9%	10%
Road Maintenance[1]	Road Crossing Culvert Inspection/ Replacement[1]	0%	0%	0%	0%
Road Maintenance	Road Patrolling	7%	8%	9%	10%
Road Maintenance	Shoulder Drop-offs / Washouts	0%	0%	0%	0%
Road Maintenance	Sign Repair	1%	2%	2%	2%
Road Maintenance	Street Light Inspections	2%	3%	3%	3%
Road Maintenance	Winter Damage Repairs	7%	8%	9%	10%
Sidewalk Maintenance	Sidewalk Inspections	2%	3%	3%	3%
Sidewalk Maintenance	Sidewalk Repairs / Grinding	2%	3%	3%	3%
Sports fields (Soccer / Baseball)	Inspection	14%	14%	15%	15%
Sports fields (Soccer / Baseball)	Sports Fields - Grass	14%	14%	15%	15%

1- installations would only be required for rural lot developments, not urban development such as East Fonthill and East Fenwick, according to interviews with Town staff.

Appendix A

Forecast Assumptions by Sub-Service

	Sub-Activity	2025	2030	2035	2041
Trails	Trail Washout	2%	3%	3%	3%
Turf Maintenance	All Turf Maintenance	27%	36%	46%	49%
Turf Maintenance	All Turf Maintenance	27%	36%	46%	49%
Wastewater System Maintenance	Sanitary Sewer CCTV/Flushing	0%	0%	0%	0%
Wastewater System Maintenance	Sanitary Sewer Flushing	2%	3%	3%	3%
Wastewater System Maintenance	Sanitary Sewer Repair	2%	3%	3%	3%
Wastewate System Maintenance	Sewer Lateral Clearing / Cameraing	0%	0%	0%	0%
Water Quality	Sampling, Monitoring, Flushing, Complaints	0%	0%	0%	0%

1- additional sampling and monitoring would not be required according to interviews with Town staff.

Appendix A

Forecast Assumptions by Sub-Service

	Sub-Activity	2025	2030	2035	2041
Winter Control	Winter Maintenance	7%	8%	9%	10%
Operations	Engineering	47%	52%	56%	59%

kpmg.ca

THE CORPORATION OF THE
T O W N O F P E L H A M
BY-LAW #4315(2021)

Being a by-law to adopt, ratify and confirm the actions of the Council at its special meeting held on the 01st day of February 2021.

WHEREAS Section 5 (3) of the Municipal Act, S.O. 2001, Chapter M.25, as amended, provides that, except if otherwise authorized, the powers of Council shall be exercised by by-law;

AND WHEREAS it is deemed desirable and expedient that the actions of the Council as herein set forth be adopted, ratified and confirmed by by-law;

NOW THEREFORE COUNCIL OF THE CORPORATION OF THE TOWN OF PELHAM ENACTS AS FOLLOWS:

(1) (a) The actions of the Council at its meeting held on the 01st day of February, 2021, including all resolutions or motions approved, are hereby adopted, ratified and confirmed as if they were expressly embodied in this by-law.

(b) The above-mentioned actions shall not include:

(I) any actions required by law to be taken by resolution, or

(II) any actions for which prior Ontario Municipal Board approval is required, until such approval is obtained.

(2) The Mayor and proper officials of the Corporation of the Town of Pelham are hereby authorized and directed to do all things necessary to give effect to the above-mentioned actions and to obtain approvals where required.

(3) Unless otherwise provided, the Mayor and Clerk are hereby authorized and directed to execute and the Clerk to affix the seal of the Corporation of the Town of Pelham to all documents necessary to give effect to the above-mentioned actions.

(4) THAT this by-law shall come into force on the day upon which it is passed.

READ, ENACTED, SIGNED AND SEALED
THIS 01ST DAY OF FEBRUARY 2021 A.D.

_____
MAYOR MARVIN JUNKIN

_____
TOWN CLERK, NANCY J. BOZZATO