County of Huron

Public Works Service Review

Final Report

December 4, 2020

Final Report

Disclaimer

This report is subject to the terms and conditions in our engagement letter dated March 1, 2020. This report is intended solely to assist the County of Huron ("Huron County" or, the "County") with a service review. The comments and observations in our report are not intended, nor should they be interpreted, to be legal advice or legal opinion. This report is based on information and documentation that was made available to KPMG at the date of this report. KPMG has not audited nor otherwise attempted to independently verify the information provided unless otherwise indicated.

We had access to information up to October 28, 2020 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 expressed herein are valid only in the context of the whole report. Selected observations 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 County. Our review was limited to the procedures conducted. The scope of our engagement was, by design, limited and therefore the observations 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 County. KPMG has not and will not perform management functions or make management decisions for the County.

KPMG has no present or contemplated interest in the County. Accordingly, we believe we are independent of the County and are acting objectively.

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KPMG

Project Overview

Introduction and Context

Introduction

This summary of findings was prepared to present observations and evidence to form a potential case for change arising from research, analysis and consultation with the staff of the County of Huron (the "County" or "Huron County"). This summary of findings and the model developed to underpin them, will provide the foundation for examining the equipment, staffing and facility requirements of the Public Works into the future as service levels change.

Setting the Stage

Huron County is a county in Ontario located on the southeast shore of its namesake, Lake Huron. Huron County, often called, "Ontario's West Coast" includes over 80km of coastline. The County is comprised of nine municipalities. The vibrant, rural community is among the most agriculturally productive in Ontario.

Huron County has experienced limited population growth in recent years. Between 2011 and 2016 the County experienced population growth of just 0.3%. The County's major industry categories are: agriculture, mining, manufacturing, health care, retail, and construction.

The County is governed by County Council, made up of 15 members from Huron County's nine area municipalities. The Senior Management Team is comprised of the Chief Administrative Officer, eight Directors and the County Clerk. The County oversees a gross operating budget of approximately $110 million and employs over 700 staff. The County offers a wide range of civic services includes transportation, planning and development, economic development, engineering, museum and archives, libraries, and emergency services. The County also offers a number of social services including public housing, long term care, Ontario Works and children's services.

As with all municipalities and other levels of government, the County is balancing community and stakeholder expectations and financial constraints. The current fiscal reality of municipal government in Ontario means the County is facing two distinct pressures that impact the delivery of services: capacity limitations and the threat of Provincial funding reductions as part of the larger cost reduction and modernization initiative. County Council has determined that it is necessary for Huron County to consider how municipal services will be delivered sustainably over the long term. Accordingly, the County has engaged KPMG to assist with a review of its current service delivery model and identify opportunities for greater efficiency and effectiveness and ensure value for money for its residents. In parallel to the core review, KPMG has been engaged to review the Public Works department to understand the link between services, labour, equipment and facilities requirements. In the short-term, this will support investment decisions in Public Works' facilities. In the long-term, this will support ongoing efforts to move to an activity-based costing and planning of Public Works services.

Introduction and Context

Project Objectives

As part of KPMG's ongoing Service Delivery Review for Huron County, KPMG performed a review of the County's four (4) patrol yards to identify resource requirements, as well as, review inter-related winter plowing and patrolling operations. KPMG's efforts were focused on validating the service level requirements of each patrol yard and the associated equipment and facilities required to support that service level both now and in the future. The goal was to provide a roadmap for the County to have the necessary resources and facilities to meet the future service level requirements of the County's transportation infrastructure at the lowest life-cycle cost. This work supported and follows KPMG's corporate service delivery review with the County, the focus of which was on the alignment between corporate internal services and citizen-facing operating departments.

The engagement for Public Works included the following:

- High-level review of current facilities at each of the four patrol yards analyzing staffing, equipment, and materials for each location in the summer and winter seasons, per the requirements of service levels.
- High-level identification of what the existing facilities can accommodate at current industry standards and possible gaps e.g. physical space, and general functionality.
- A model of existing patrol and plow routes and service level expectations (as per Minimum Maintenance Standards and CVOR requirements), including material loads and driving time needed for each. The model will be constructed to allow for scenario analysis at each yard location.
- The fleet, staff and facility requirements will be categorized according to current and long term needs and opportunities.
- A high-level facility and resource optimization plan that details possible risks with current operations and patrol yard facilities.
- Recommendations to optimize winter and summer operations including possible scenarios for each patrol yard, with consideration for additional plow routes, the re-allocation of resources between patrols, the reallocation of winter routes between County and contracted operators, the possible consolidation of patrol yards and the future requirements of the Wingham patrol yard.

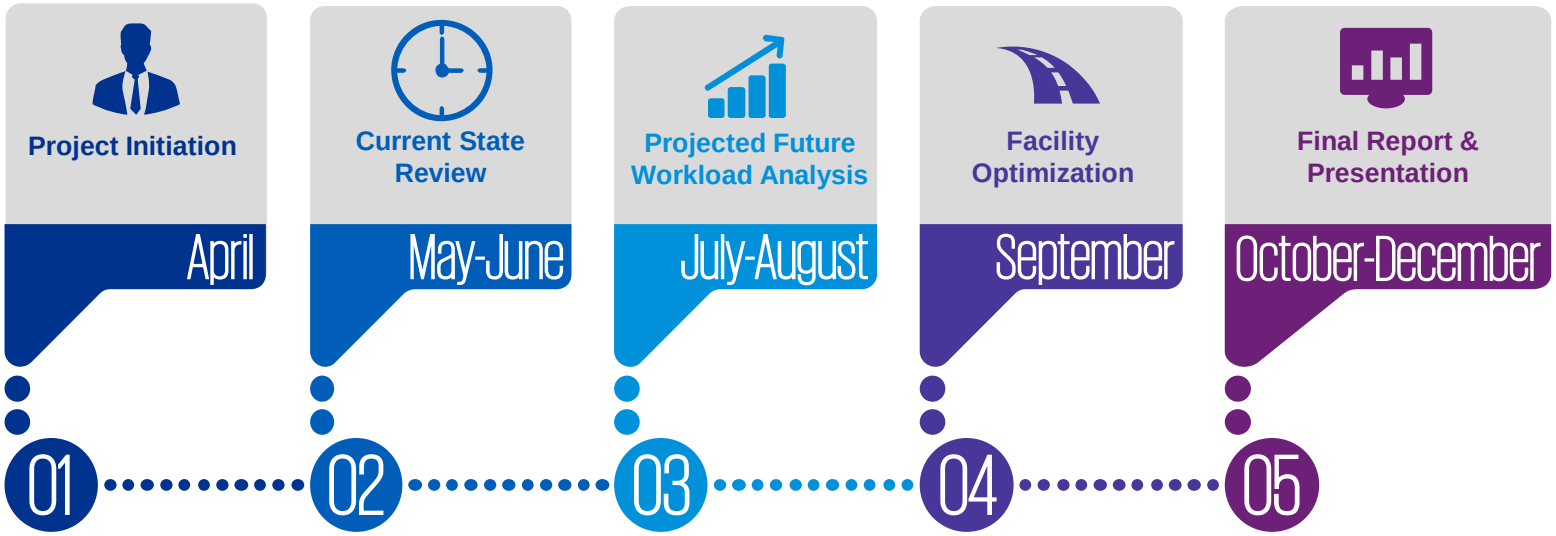
Project Principles

The knowledge and expertise of County staff was engaged to arrive at recommended actions through a transparent, participative and inclusive process facilitated by the consultant. Our framework and approach was based on leading practice from municipal or other levels of government and/or private sector experience. The aim has been to, wherever possible, transfer knowledge and necessary "tools" to County employees to enable them to better develop their own solutions to operational and process issues and challenges over time. Our model has been developed in Microsoft Excel and structured in a way that allows Public Works staff to adapt and update the model as necessary for future work planning needs.

Introduction and Context

Engagement Methodology

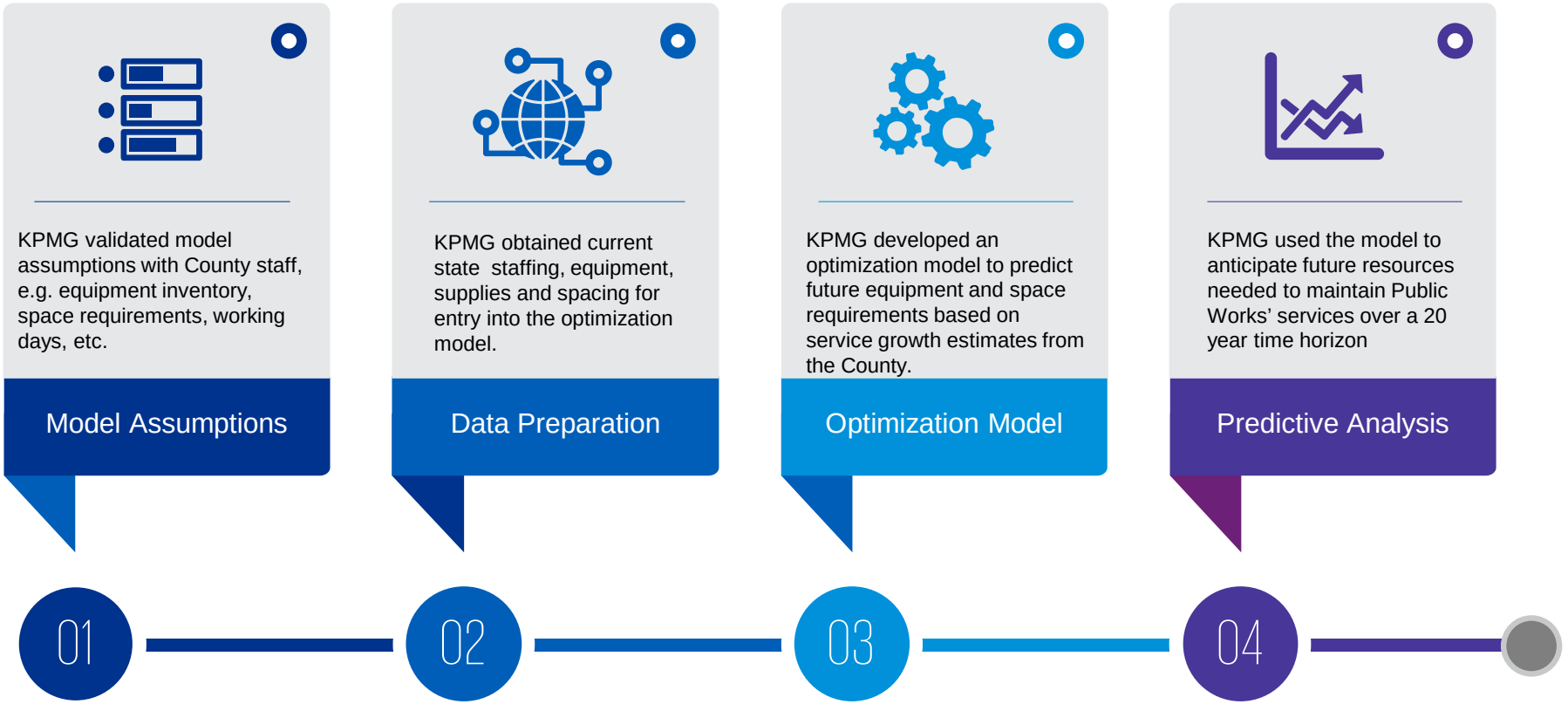
This engagement commenced on April 21, 2020, and was completed in alignment with the broader Service Review being undertaken. The diagram below depicts the key phases.



Introduction and Context

Asset Management Methodology

The framework guiding our engagement methodology is our Asset Management Methodology. A key goal of the data model created for future use of the Public Works team involved linking the **service planning**, to the **equipment requirements**, to the **storage requirements**. The Public Works department does not own equipment and facilities for the sake of ownership, but to provide services to its citizens. It then follows that those services drive all planning. KPMG developed a data model using the four phased methodology below.



KPMG

Current State

Services

Patrol Summary

1 Wingham 2 Wroxeter 3 Auburn 4 Zurich

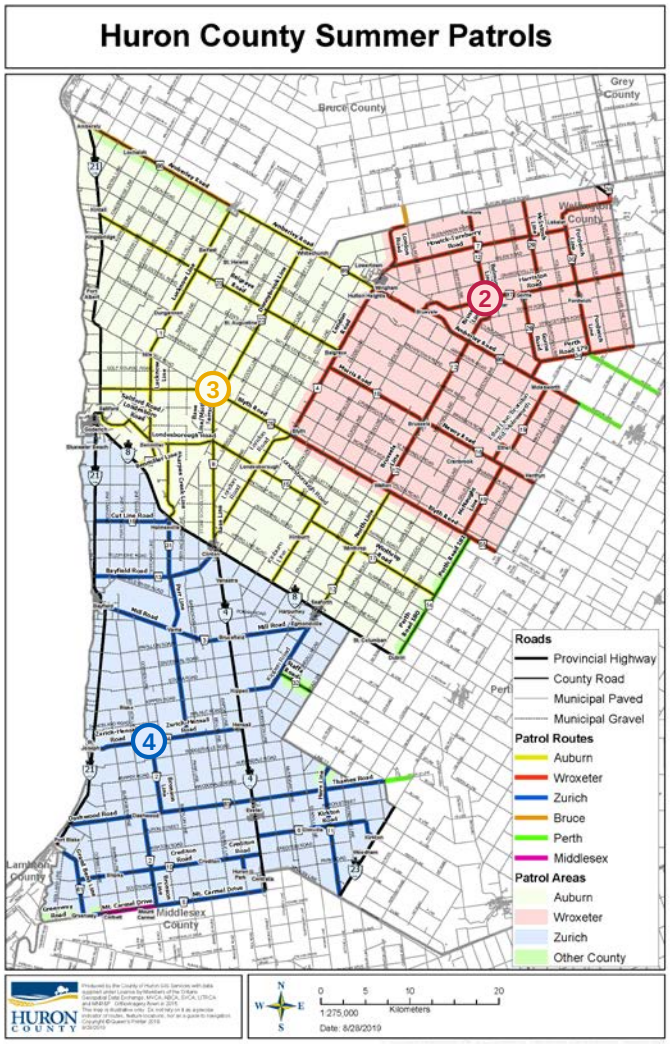
Huron County's Public Works services are currently deployed from four patrol yards: Wingham, Wroxeter, Auburn and Zurich.

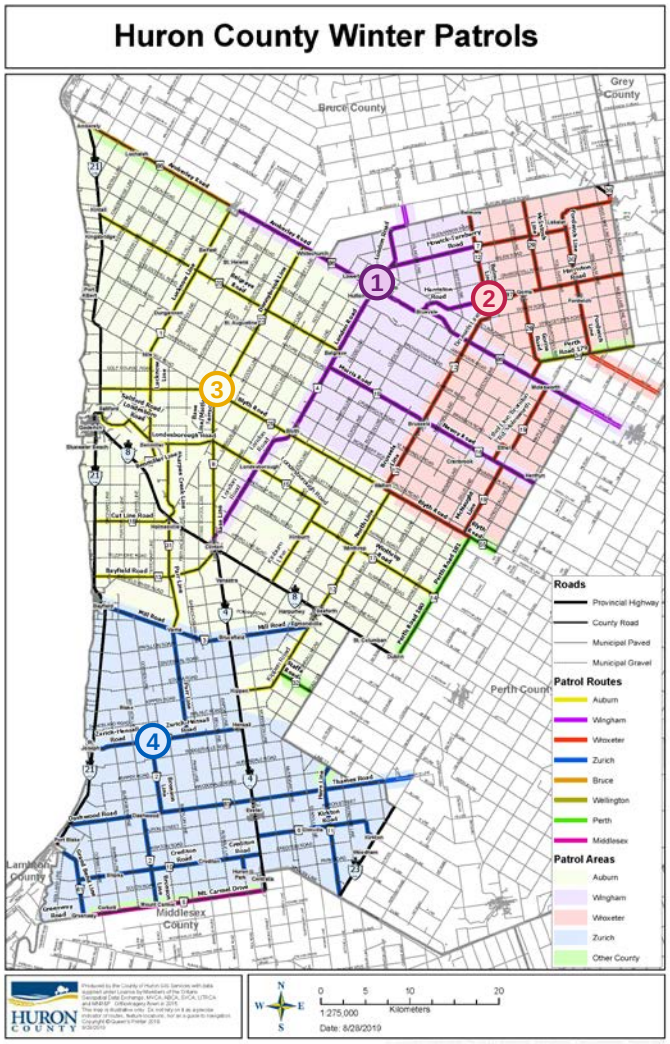
Crewing is deployed year-round from all yards except Wingham, with Wingham's utilization limited to equipment and material storage. Based on this, patrol boundaries shift between summer and winter.

Core winter services include snow removal and ice control, with the balance of effort supporting right-of-way maintenance

Summer services encompass multiple activities (and sub-activities) including:

- Drainage maintenance
- Right-of-way maintenance
- Road maintenance
- Major structures maintenance
- Road safety





Public Works Budget

From 2018 through 2020, the Public Works budget for core services increased approximately $1.1M, or an average of **8.25%** per year. Interviews suggest this increase is largely attributable to reaching the target level of service for a number of activities and the clearing of the service backlog rather than being directly tied to County growth.

As seen at right, Winter Maintenance activities, over a six month period, represents approximately 55% of the Public Works budget.

For the purposes of this review, Public Works actuals costs were used to determine the existing service levels for the variety of maintenance activities.

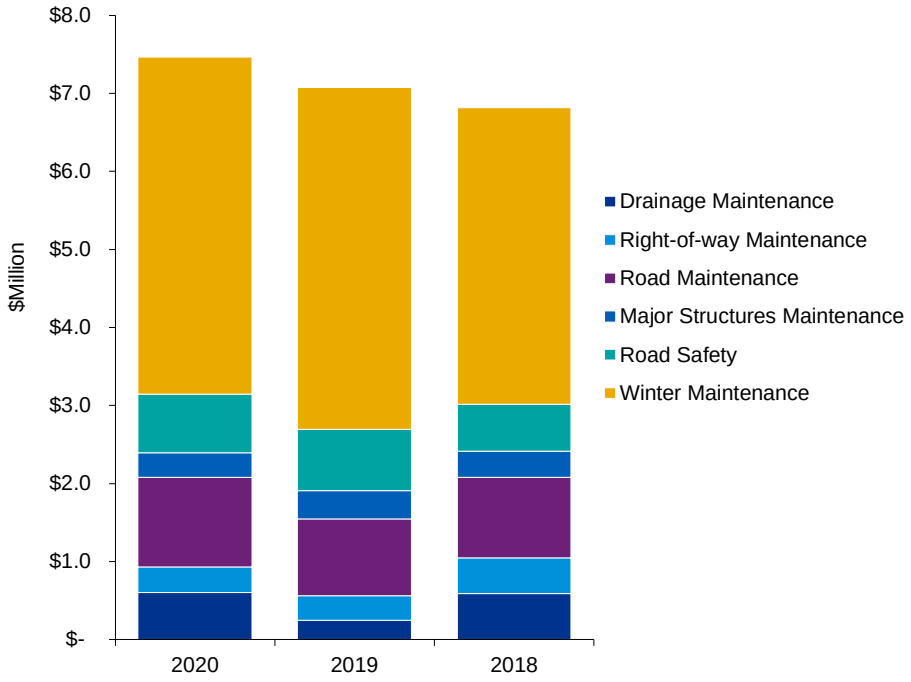
Given that actual costs are calculated by coded labour and equipment hours, as well as, actual material expenses, it is possible to calculate the number of person-days and equipment days for each activity.

Interviews suggest that the budgeting of Public Works activities has experienced significant improvement. In order to further facilitate this improvement, KPMG has developed a new **Public Works data model** as part of this engagement for the County's ongoing use.

This model allows for current and future inputs for the number of working days per activity, as well as the equipment required to complete those activities.

Although activity-based costing of all Public Works work activities was not a focus of this review, the data model will support its continued adoption in the future.

Public Works Annual Budget Breakdown



	Budget		
Job Description	**2020**	**2019**	**2018**
Drainage Maintenance	$ 600,676	$ 245,776	$ 590,893
Right-of-way Maintenance	$ 675,568	$ 656,755	$ 921,008
Road Maintenance	$ 1,149,764	$ 988,265	$ 1,029,193
Major Structures Maintenance	$ 312,104	$ 358,617	$ 337,222
Road Safety	$ 756,215	$ 789,147	$ 602,542
Winter Maintenance	$ 4,318,582	$ 4,379,305	$ 3,800,311
	$ 7,812,909	**$ 7,417,865**	**$ 6,835,420**

Current State - Services

Staffing & Deployment

The Public Works organizational structure was most recently updated in September 2020 to accommodate changes resulting from recent retirements.

Given challenges finding plow operators, whenever the County contemplates additional plow routes, considerations must be given to additional summer operations to allow the County to hire individual for full-time, all-year roles.

Currently, the Public Works department has **45 full-year staff and management**, 8 full time and 15 part time seasonal staff, 4 summer students, 6 vacancies, and 6 full-time-equivalent contract winter staff. Winter staffing also has the potential to fluctuate in the number of seasonal plow operators or patrollers, depending on the qualifications in a given year.

Central Operations

County Offices

- Manager of Public Works
- County Engineer (0.5 FTE)
- Engineering Project Manager (x2)
- Office Coordinator
- Clerk
- Work Management Technologist (vacant)
- Traffic Technologist (vacant)

Total: 5.5 FT
2 vacancies

Winter Operations

Patrol Yards

Wingham
- Contract Plows (x 6FT, 3PT)

Wroxeter
- Patrol Supervisor
- Patrol Lead Hand / Plow Operator
- Patroller (x4)
- Patroller (x2 – swing shift for Wingham)
- Plow operators (x5 FT, 3PT)
- Traffic/Sign Technician
- Bridge Maintenance Supervisor

Zurich
- Patrol Supervisor
- Patrol Lead Hand / Patroller
- Patroller (x3)
- Plow operators (x8 FT, 4PT)

Auburn
- Road Superintendent
- Fleet Supervisor
- Mechanic (x2)
- Patrol Lead Hand / Plow Operator
- Patroller (x4)
- Plow operators (x11 FT, 6PT)

Total: 48 FT (40 full year, 8 seasonal)
15 PT
9 contract

Summer Operations

Patrol Yards

Wingham
- none

Wroxeter
- Patrol Supervisor
- Patrol Lead Hand
- Maintenance 2 (x8)
- Traffic/Sign Technician
- Bridge Maintenance Supervisor
- Bridge Worker 1 (x2)
- Bridge Worker 2 (x2 + 2 vacant)
- Summer student (x1)

Zurich
- Patrol Supervisor
- Patrol Lead Hand
- Maintenance 1 (x1)
- Maintenance 2 (x7)
- Summer student (x1)

Auburn
- Road Superintendent
- Fleet Supervisor
- Mechanic (x2)
- Fleet Student (x1)
- Patrol Lead Hand
- Maintenance 2 (x8)
- Summer student (x1)

Total: 39 FT
4 students
2 vacancies

Public Works – Service Levels - Winter

Winter Maintenance services are dictated by the *Winter Operations Manual*, with a primary focus on event-driven snow removal and ice control as seen from the budget excerpt at right. The province's minimum services standards are detailed by *Ontario Reg. 239/02: Minimum Maintenance Standards for Municipal Highways* according to highway traffic classification (Class 1-5, 1 being highest).

As a part of our modelling, KPMG determined the 'target' service level for snow removal based on the County's existing plow routes and speeds. As is common in jurisdictions both across Ontario, and in other provinces, the County's target (current) service levels exceed the Province's minimum maintenance standards. As shown at bottom right, the County's road network is primarily Class 2 and 3, with one segment reaching Class 1 at peak time in the summer.

The County performs all winter routes in under 4 hours for ice treatment (using overtime as necessary), and under 6 hours for snow removal (when accounting for gaps in the shift schedule) effectively providing Class 2 snow removal and ice treatment levels of service to all Class 2-5 roads.

Job Description	Activity Description	2020 Budget ($)
Winter Maintenance	Winter Materials Handling & Preparation	1,601,208
	Winter Road Conditions Response	1,954,062
	Anti-Icing	30,000
	Road Patrol - Winter	397,561
	Indirect Maintenance Activities	184,533
	Winter Patrol Supervision	151,218
	SUBTOTAL	***4,318,582***

Classification	Provincial Minimum Standard					Huron
	Weather Patrol	Ice Prevention	Ice Treatment	Snow Accumulation		
	Freq'cy	*Time (h)*	*Time (h)*	*Depth*	*Time (h)*	*Time (h)*
Class 1	More frequent of: Once per shift OR 3 times per day	6	3	2.5 cm	4	-
Class 2		8	4	5 cm	6	< 4
Class 3		16	8	8 cm	12	< 4
Class 4		24	12	8 cm	16	< 4
Class 5		24	16	10 cm	24	< 6

Public Works - Service Levels - Winter

All winter routes were modelled using key assumptions for distance, speed and dead haul, as well as start up and reload times.

As shown in the table below, all routes are relatively well balanced, with a presumed time per route between 2.8 and 3.8 hours for ice treatment (shown below), and 2.5 to 3.2 hours for snow plowing (under an ideal modelling scenario).

The model was developed to allow individual road segments to be re-assigned from one route to another, or for a route to be assigned from one patrol yard to another. Coupled with the future inclusion of assumptions on plow-up distances, turnarounds or specialized requirements like benching for snow drifts, the model will allow the Public Works team to identify the impact of different scenarios to all of the plow routes.

Route #:	All Routes															
Municipality	Huron County Public Works															
	For future analysis															
Statistical Data	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	#14	#16	#17
Current Patrol	Auburn						Zurich				Wingham			Wroxeter		
Current Route Name	AUBURN 1	AUBURN 2	AUBURN 3	AUBURN 4	AUBURN 5	AUBURN 6	GRAND BEN	KIRKTON NO	KIRKTON SO	VARNA ROU	WINGHAM R	WINGHAM R	WINGHAM R	WROXETER	WROXETER	WROXETER
Truck	Tandem	Tandem	Tandem	Tandem	Tandem	Tandem	Tandem	Tandem	Tandem	Tandem	Tandem	Tandem	Tandem	Tandem	Tandem	Tandem
Key Assumptions																
Total Distance (Lane km)	81	100	101	74	82	85	74	80	73	103	93	81	78	101	103	111
Road Plow Distance (Lane km)	81	100	101	74	82	85	74	80	73	103	93	81	78	101	103	111
Avg. Salting/Plow Speed (km/h)	40	40	40	40	40	39	40	40	40	39	39	40	40	39	40	40
Required Legs	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Deadhaul Distance (Lane km)	2	-	2	2	14	14	20	36	3	1	-	-	-	3	1	-
Plow-Up Distance (Lane km)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turnarounds (#)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Road Calibration (excluding "Plow Up")																
Share of Total Road Distance (%)	5%	7%	7%	5%	6%	6%	5%	5%	5%	7%	6%	5%	5%	7%	7%	7%
Time Requirements (h)																
Startup	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Salting / Plowing	2.0	2.5	2.6	1.9	2.1	2.2	1.9	2.0	1.9	2.6	2.4	2.0	2.0	2.6	2.6	2.8
Plow Up	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Deadhaul	0.0	-	0.0	0.0	0.2	0.2	0.3	0.6	0.0	0.0	-	-	-	0.0	0.0	-
Reloading	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Turnarounds	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Time - Total	3.1	3.5	3.6	2.9	3.3	3.4	3.2	3.6	2.9	3.7	3.4	3.0	3.0	3.7	3.6	3.8
Average Coverage Speed (km/h)	26.4	28.5	28.1	25.6	25.0	25.0	23.2	22.3	25.1	28.2	27.3	26.7	26.1	27.6	28.4	29.3
Passes per Shift																
# of Passes	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2

Public Works – Service Levels - Summer

Whereas winter operations are primarily driven by events, summer operations are driven by planned activities. Many of these activities follow the same *Ontario Reg. 239/02: Minimum Maintenance Standards for Municipal Highways,* specifying requirements around road patrolling (1-2 times per week for Huron's road classifications Class 2-5), and rectification of potholes, shoulder drop-offs, cracks, burned out lights, sign damage, and bridge spalling, among others.

Asset	Number	Length (m)
Small Culverts	1,166	27,347
Guiderails	605	63,522
Rural Road	137	738,877
Urban Road	39	35,687
Catch Basins	1,070	
Signs	***6,304***	
Information	2,033	
Regulatory	1,859	
Tourism	72	
Warning	2,340	

Huron also has additional service requirements related to drainage, right-of-way maintenance, and trails.

Some of these are driven by the county's asset management ("AM") plans for its fixed assets (at left). The data model allows in future for AM plans to drive work planning based on the number of units completed per year.

For all of the activities highlighted at right, KPMG interviewed the Public Works department staff and management to determine the baseline days (totaled as crew days across all yards) that would align to the 2020 budget.

As noted previously, this review was not an activity-based costing exercise, although the data model was developed to allow for this in the future. The primary concern for this review was the equipment requirements driven by the baseline days of work, not the cost per day.

Job Description	Activity Description	2020 Budget ($)	Baseline Crew Days
Drainage Maintenance	Driveway Entrance Installations and Maintenance	14,381	9
	Rural Drainage Maintenance	218,557[1]	30
	Urban Drainage System Maintenance	60,758	36
	Municipal Drain Installations and Maintenance	306,980	contract
Right-of-way Maintenance	County Forestry Support	44,356	24
	Weed Control	137,606[1]	3
	Tree Management	347,134	201
	Debris and Litter Pickup	56,177	19
	Roadside Mowing	84,504	93
	Tourism and Wayfinding Signs	5,791	5
Road Maintenance	Asphalt Repairs	93,802	100
	Road sweeping and cleaning	162,416	75
	Shoulder Renewals	474,975	24
	Shoulder Grading	144,756	15
	Road Patrol	110,010	75
	Gen Patrol Supervision/Summer	163,805	390
	Spray Patching	200,000	100
Major Structures Maintenance	Bridge and Large Culvert Maintenance	226,641	72
	Small Culvert Maintenance (<1.5m)	20,781	2
	Structural Inspections and Assessments	64,681	6
Road Safety	Pavement Marking	340,315	96
	Sign Maintenance	145,784	48
	Guide Rail Maintenance	167,406	18
	911 Signage	8,502	-
	Sign Manufacturing	73,406	-
	Sign Inspection – Retroreflectivity	20,802	-
	SUBTOTAL	***3,694,327***	*1388*

[1] Costs for *Rural Drainage Maintenance* and *Weed Control* are higher than other services with comparable crew days as the costs above include both internal costs and contracted services.

KPMG

Current State

Equipment & Facilities

Equipment Inventory

A total of **115 pieces of equipment** were assessed as a part of the existing equipment register. Of those, **91 pieces of equipment** were identified in the activity modeling and allocated space. The balance included either small equipment (chainsaws) or equipment housed at other County properties, and so were not included in the assessment. The majority of the equipment is currently stored across the four patrol yards. The equipment analyzed includes the following:

Equipment Category	Quantity	Equipment Category	Quantity	Equipment Category	Quantity
3 Ton Truck	4	Grader	3	Spreader	1
Attachment - Reclaimer	1	Hydra Platform	1	Stacker	1
Attachment - Rotary Broom	3	Line Painter	1	Sweeper	1
Backhoe	3	Loader	4	Tandem	16
Cargo Van	1	Mobile Lights	1	Tar Kettle	1
Chipper	3	Mower	3	Tractor	3
Compressor	1	Pickup Truck	24	Trailer	8
Float	1	Portable Fuel Trailer	3	UTV	1
Forklift	4	Portable Traffic Lights	1		
Fuel Trailer	1	Pressure Washer	1		
Generator	8	Spray Patcher	1		

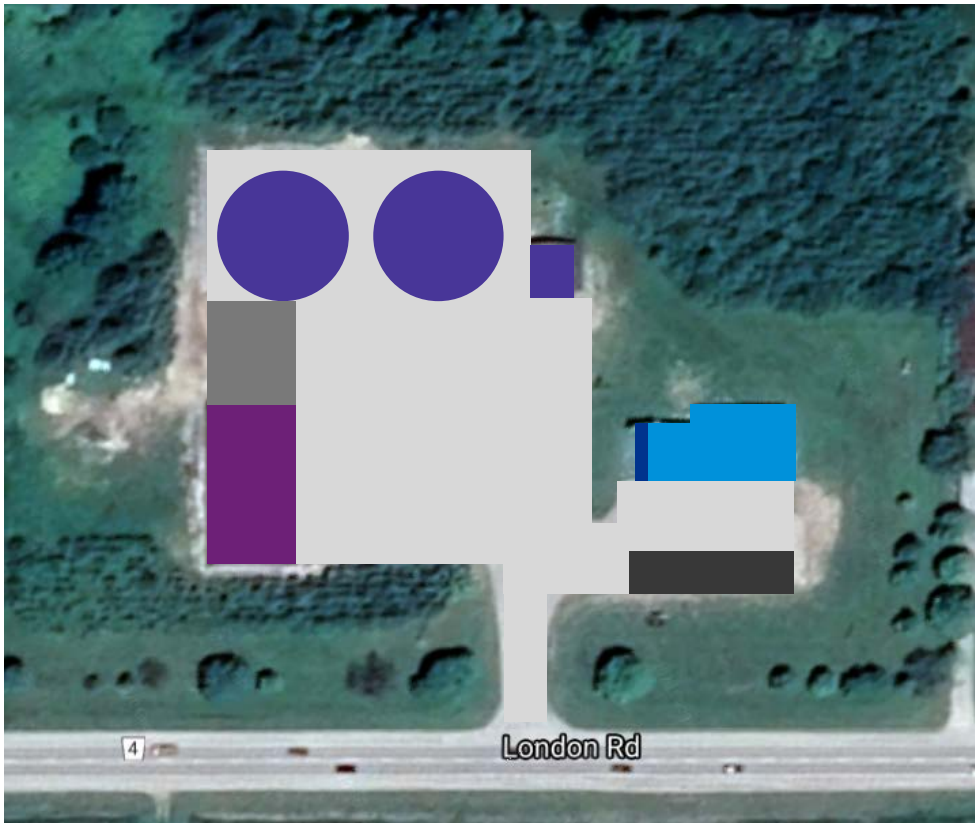
For each piece of equipment above, KPMG calculated the floor area required to store that equipment, and assumed a 50% space utilization factor to allow access to stored equipment. Each piece of equipment was also categorized by its ideal storage location, specifically:

- **Indoor Garage Bay**
- **Indoor Heated**
- **Indoor Unheated**
- **Outdoor Covered**
- **Outdoor Open**
- **Parking Space**

An equipment / fleet review was not within the scope of our work, so there was no analysis completed on the equipment health, operating costs or replacement requirements and timelines. The complete equipment historical information is however contained within the data model, and therefore analysis of equipment costs and optimal replacement timelines could be developed in the future. Such analysis could, for example, optimize a tandem snow plow's deployment across different routes throughout its life to minimize maintenance costs and wear and tear.

Current State - Yards

Wingham Yard



Operations Summary

- Contracted winter operations for **3 routes** are stored at this facility, with supervision managed out of the Wroxeter yard (existing facilities not suitable for crew use).
- Wingham does not currently house any staff, but instead functions as equipment and material storage for contracted winter operations, and summer bridge maintenance operations. The bridge crew currently mobilizes from Wroxeter before gathering equipment at Wingham.

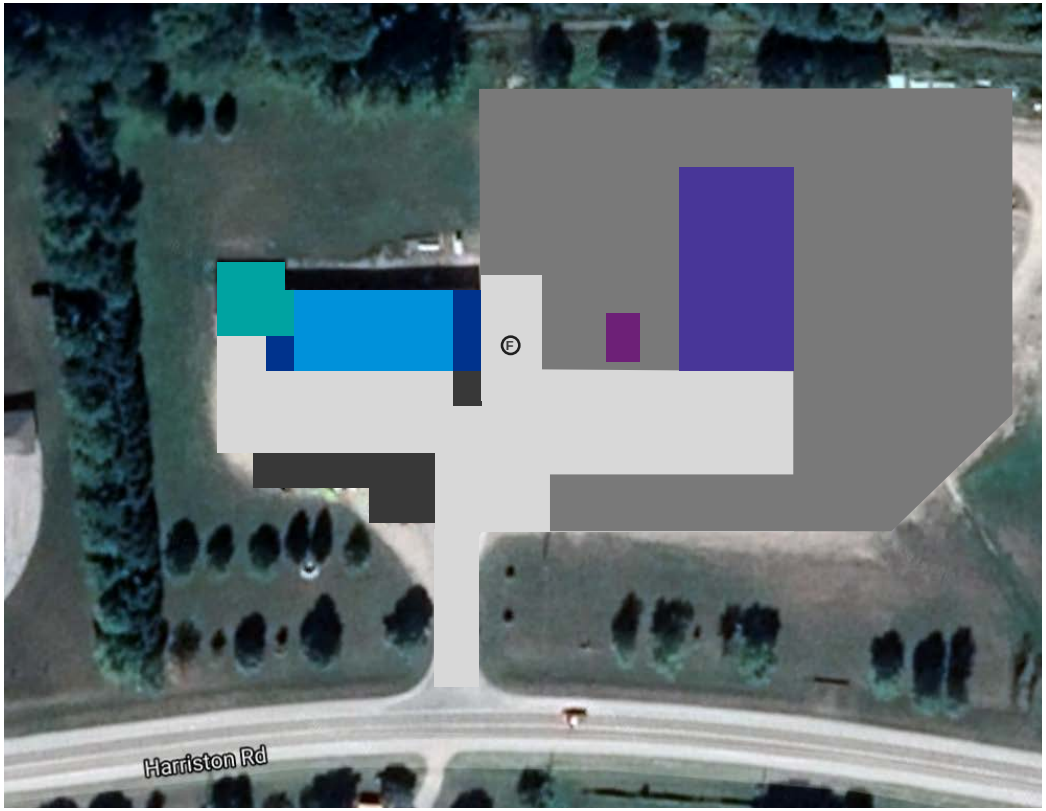
Facilities Summary

- Facilities include 2 material storage domes, 1 material storage shed, a 6-bay vehicle storage building, and an unheated storage building (bridge crew).
- A 2017 building assessment (by AAA Inc.) indicates the vehicle storage building (circa 1967) is at end-of-life, with a high-level estimated replacement cost of approximately $2.5M to $3.2M (2017$).
- Facility is currently slated for redevelopment, maintaining only the existing unheated storage building.
- Facility has no fueling station

		~ Area (m^2)	
		Available[1]	Required[2]
	Office / Employee	31	N/A[3]
	Garage Bays - Heated	532 [6 bays]	6 bays
	Indoor Storage - Heated	0	95
	Indoor Storage - Unheated	398[4]	375
	Material Storage - Unheated	1,479	1,479
	Outdoor Storage - Covered	0	160
	Outdoor Storage - Open	302	19
	Vehicle Parking	231 [~ 12 spots]	
	Access		

[1] For indoor and covered storage, reduced 15% for general material and supplies.
[2] Based on preferred storage type for equipment listed as stored at this location per the equipment register.
[3] N/A as staffing is assumed out of Wroxeter for current state calculations.
[4] Assume 250 m^2 of Bridge Crew building is used for material storage, rather than 15%.

Wroxeter Yard



Operations Summary

- Winter operations for **3 routes,** 1 spare plow
- Standard summer crews (including for Wingham patrol)
- Sign shop
- Summer base for mowing equipment and bridge crew mustering.

Facilities Summary

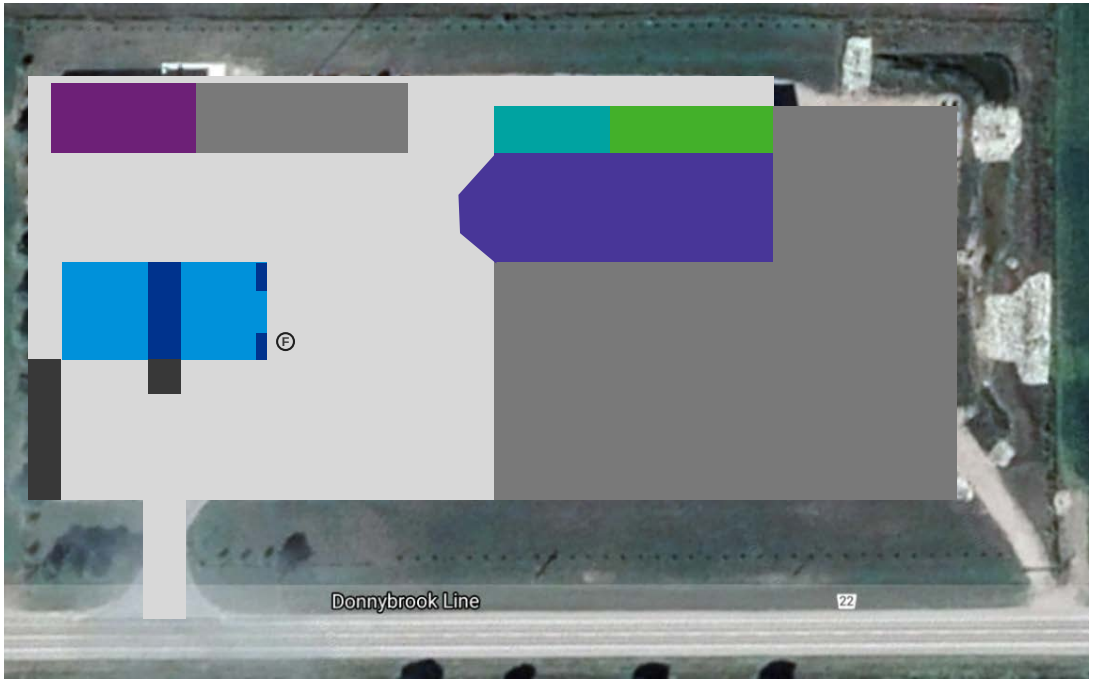
- Facilities include 1 material storage barn, 1 small storage shed, a 6-bay vehicle storage building (with offices, crew space, heated storage and sign shop), fueling station with underground storage tanks, well and septic system
- A 2019 facility assessment (by WalterFedy) indicates the small storage shed is at end-of-life, but the rest of the facilities do not require any significant near-term investment.
- Already identified opportunities include moving the sign shop to a Wingham redevelopment to repurpose existing space.

		~ Area (m²)	
Ⓕ	Fueling station	**Available[1]**	**Required[2]**
	Office / Employee	239	401[3]
	Garage Bays - Heated	644 [6 bays]	5 bays
	Indoor Storage – Heated (equip.)	0	123
	Indoor Storage – Heated (Sign Shop)	203	203
	Indoor Storage - Unheated	71	183
	Material Storage - Unheated	1,183	1,183
	Outdoor Storage - Covered	0	324
	Outdoor Storage - Open	7,418	134
	Vehicle Parking	231 [x27]	
	Access		

[1] For indoor and covered storage, reduced 15% for general material and supplies.
[2] Based on preferred storage type for equipment listed as stored at this location per the equipment register..
[3] Includes required space to accommodate staff that otherwise would mobilize from Wingham

Current State - Yards

Auburn Yard



Operations Summary

- Winter operations for **6 routes,** 1 spare plow
- Standard summer crews
- Mechanics' base of operations (parts, consumables, etc.)
- Due to large indoor (both heated and unheated), covered, and outdoor open storage areas, a wide array of equipment is shuttled to Auburn for longer-term storage
- Although the drive-through bays theoretically allow for double-parking of snow plows, this arrangement is less than ideal for accessibility within the garage. Coupled with the fleet maintenance use, the useable garage space is at or over capacity in winter.

Facilities Summary

- Facilities include 1 material storage barn (with attached heated and outdoor covered storage areas, 1 storage building, a 12-bay vehicle storage building (with offices, crew space, parts storage), fueling station with underground storage tanks, well and septic system.
- A 2019 facility assessment (by WalterFedy) indicate the facilities do not require any significant near-term investment.
- Already identified opportunities include finding additional space for mechanics/parts and moving indoor tank storage to materi

		~ Area (m^2)	
Ⓕ	Fueling station	**Available[1]**	**Required[2]**
	Office / Employee	380	288[3]
	Garage Bays - Heated	928 [12 bays]	7 bays
	Indoor Storage - Heated	296	96
	Indoor Storage - Unheated	555	265
	Material Storage - Unheated	1,978	1,978
	Outdoor Storage - Covered	438	296
	Outdoor Storage - Open	8,486	249
	Vehicle Parking	316 [~ 17 spots]	
	Access		

[1] For indoor and covered storage, reduced 15% for general material and supplies.
[2] Based on preferred storage type for equipment listed as stored at this location per the equipment register.
[3] Assumes larger existing lunchroom would not be subdivided

Current State - Yards

Zurich Yard

Operations Summary

- Winter operations for **4 routes,** 1 spare plow
- Standard summer crews
- 1 EMS vehicle and crewing space

Facilities Summary

- Facilities include a combined multi-purpose building that includes a material storage barn, indoor storage, 5-bay vehicle storage and office space. The site also includes a fueling station, septic system and shared well.
- According to the 2019 facility assessment (by WalterFedy), the facilities do not require any significant near-term investment.
- Already identified opportunities include a new shared facility (with EMS) on the vacant land.

		~ Area (m²)	
Ⓕ	Fueling station	**Available[1]**	**Required[2]**
	Office / Employee	145 (shared)	137
	Garage Bays - Heated	542 [5 bays]	5 bays
	Indoor Storage - Heated	375	156
	Indoor Storage - Unheated	0	188
	Material Storage - Unheated	1,458	1,458
	Outdoor Storage - Covered	0	213
	Outdoor Storage - Open	4,300	249
	Vehicle Parking	332 [~ 18 spots]	
	Access		

[1] For indoor and covered storage, reduced 15% for general material and supplies.
[2] Based on how current workplan requirements should be stored.

Space Summary

The total space requirements for equipment versus supply across all storage types can be found below for **today's service needs**.

		~ Total Available Area across all yards (m^2)		
		Available	**Required**	**Capacity (Deficiency)**
	Office / Employee	790	854	(64)
	Garage Bays - Heated	29 bays	29 bays[1]	-
	Indoor Storage – Heated (equipment)	787	471	316
	Indoor Storage – Heated (Sign Shop)	203	203	-
	Indoor Storage - Unheated	1,024	1,010	14
	Material Storage - Unheated	6,098	6,098	-
	Outdoor Storage - Covered	414	985	(571)
	Total Sheltered Equipment Space	*2,225*	*2,446*	*(241)*

[1] In the absence of available sheltered space, all garage bays not used for plows, patrol pickups or maintenance in winter months are otherwise storing other equipment..

The modelling shows that overall, there is a **current** shortfall of sheltered equipment space across the County, predominantly driven by a lack of outdoor covered space. Although some of this equipment may currently be stored in the extra capacity of indoor space, the distribution of available space across the yards means some may instead be stored outside, or shifted between yards. These pressures will only increase with future service requirements.

Based on KPMG's experience with other jurisdictions, public works and fleet departments have cited a notable improvement in equipment reliability and reduction in unplanned maintenance when that equipment is stored in its preferred method (i.e. covered or indoors rather than outdoors).

Of note, there is also an ~8% shortfall in employee space based on current staffing levels, predominantly concentrated in the locker rooms. Most of this shortfall is concentrated in Wroxeter due to it handling what would otherwise be Wingham-based summer staff.

KPMG

Future State
Services

County of Huron

Final Report

Public Works - Regional Growth

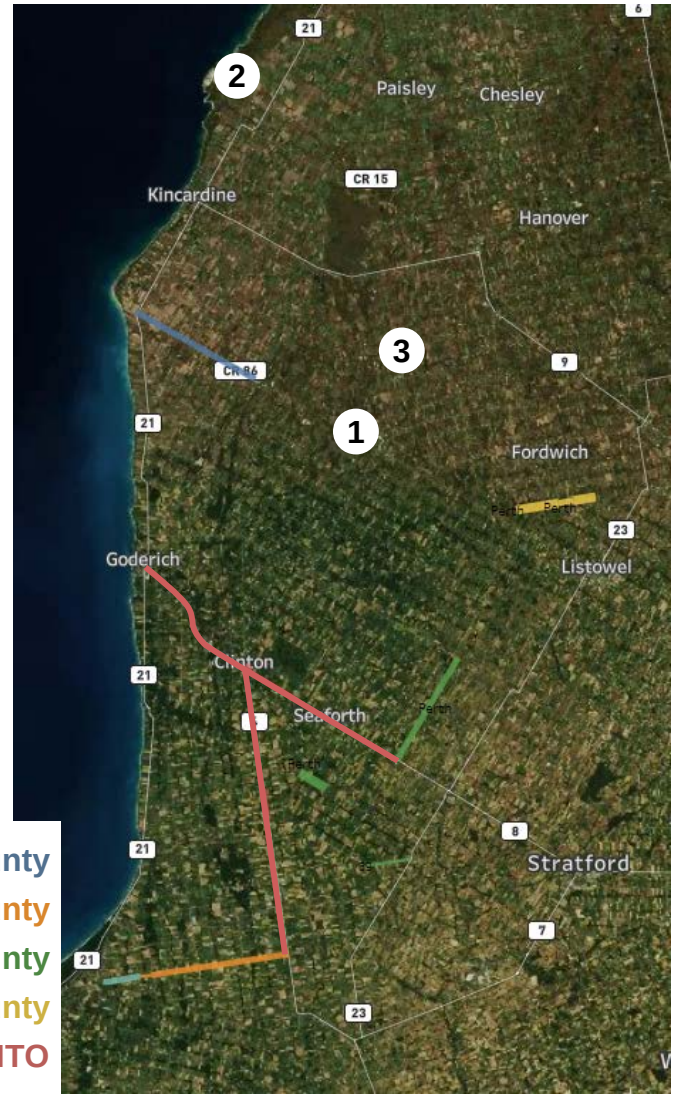
Although population growth may result in some highways seeing their classification change, there is unlikely to be an increase in the road network as far as new construction.

Where there are new urban developments, those responsibilities for new roads would lie at the Municipal / Township level. That said, any new developments would increase traffic, potentially to the point of raising the classification of some of the County's highways.

Beyond continued growth in the southwest, three specific drivers for future traffic growth were also highlighted as follows and at right.

1. **Wingham housing development** – 450 lots are proposed for Wingham by SZAM Capital Partners.
2. **Bruce Power Major Component Replacement (MCR) Project** – a 13-year, $13 billion program from 2020-2023, sustaining 5,000 new construction jobs per year.
3. **Nuclear Waste Management Organization – Deep Geological Repository** – South Bruce (just west of Teeswater) is one of two remaining potential locations to be chosen as the long-term storage site for Canada's nuclear waste. If South Bruce were selected in 2023, a decade of construction would follow in ~2033-2042.

The most likely contributor to the County expanding its service coverage would be the transfer of responsibilities of roads from the neighbouring, or provincial, jurisdictions. The coloured lines at right indicate existing agreements for sharing or trading of responsibilities of road maintenance along boundary roads. In the future, the County may be required to service these, or roads like these. Most recently there have been requests for the county to take on some roads near Hensall and Exeter.



Interviews indicated that the existing boundary agreements with neighbouring Counties are not balanced, in the sense that neighbouring Counties are shouldering a heavier burden than Huron. As a result, it is likely Huron could be asked to provide more service to balance in the future. Its important to note that the current state of equipment and facilities could not support such a growth in service.

The items noted above would likely have an impact on Zurich's coverage area, as well as potentially increase needs on Class 2 roads like County Roads 1, 4, 12, 13, 25 and 86.

Public Works – Service Levels - Winter

The future state model incorporated a number of proposed changes based on staff interviews about operational efficiencies to determine the future requirements for space. The major changes included:

- shifting *Auburn route 2* to Wingham yard
- moving the Bayfield segment of *Varna route* to *Auburn route 4*
- shortening *Auburn 3* by moving the Kippen segment to *Varna route* (to avoid the need for a tri-axle plow for axle loadings when full of ice treatment material)
- consolidating County Road 83 into *Kirkton North* by transferring the Dashwood segment from *Grand Bend route*

In an attempt to rebalance the remaining routes after the changes above, the following minor changes included:

- Shifting 1-2 segments each from *Kirkton North* to *Kirkton South*, *Varna* to *Kirkton South*, and *Kirton South* to *Grand Bend.*

Route #:	All Routes																
Municipality	Huron County Public Works																
For future analysis																	
Statistical Data	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	#14	#16	#17	
Current Patrol	Auburn	Wingham	Auburn				Zurich				Wingham			Wroxeter			
Current Patrol	AUBURN 1	AUBURN 2	AUBURN 3	AUBURN 4	AUBURN 5	AUBURN 6	GRAND BEN	KIRKTON NC	KIRKTON SC	VARNA ROU	WINGHAM R	WINGHAM R	WINGHAM R	WROXETER	WROXETER	WROXETER ROUTE 3	
Truck	Tandem	Tandem	Tandem	Tandem	Tandem	Tandem	Tandem	Tandem	Tandem	Tandem	Tandem	Tandem	Tandem	Tandem	Tandem	Tandem	
Key Assumptions																	**Total**
Total Distance (Lane km)	81	100	74	90	82	85	62	93	85	102	93	81	78	101	103	111	1,492
Road Plow Distance (Lane km)	81	100	74	90	82	85	62	93	85	102	93	81	78	101	103	111	1,492
Avg. Salting/Plow Speed (km/h)	40	40	40	40	40	39	40	40	39	39	39	40	40	39	40	40	
Required Legs	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	17
Deadhaul Distance (Lane km)	2	-	2	2	14	14	20	36	3	1	-	-	-	3	1	-	98
Plow-Up Distance (Lane km)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turnarounds (#)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Road Calibration (excluding "Plow Up")																	
Share of Total Road Distance (%)	5%	7%	5%	6%	6%	6%	4%	6%	6%	7%	6%	5%	5%	7%	7%	7%	100%
Time Requirements (h)																	
Startup	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	12.8
Salting / Plowing	2.0	2.5	1.9	2.3	2.1	2.2	1.6	2.4	2.2	2.6	2.4	2.0	2.0	2.6	2.6	2.8	37.9
Plow Up	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Deadhaul	0.0	-	0.0	0.0	0.2	0.2	0.3	0.6	0.0	0.0	-	-	-	0.0	0.0	-	1.5
Reloading	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	4.3
Turnarounds	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Time - Total	**3.1**	**3.5**	**2.9**	**3.3**	**3.3**	**3.4**	**2.9**	**3.9**	**3.2**	**3.7**	**3.4**	**3.0**	**3.0**	**3.7**	**3.6**	**3.8**	56.4
Average Coverage Speed (km/h)	26.4	28.5	25.6	27.3	25.0	25.0	21.6	23.6	26.3	28.0	27.3	26.7	26.1	27.6	28.4	29.3	
Passes per Shift																	
# of Passes	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	34

Of note is that over the next 10 years, the majority of the proposed *Kirkton North* route could shift entirely to Class 1 highway, requiring ice treatment within 3 hours. This change would likely necessitate the addition of a shift to the Zurich patrol. Furthermore, any rebalancing of boundary road responsibilities with Middlesex, or moving of roads to the County would require **1 additional winter route** out of the Zurich yard, or an additional shift, or both. Further analysis would be required to determine the timeline for any of these additions.

Public Works - Service Levels - Future Needs

Notes:
[1] Shared small culvert / ditching crew
[2] Brushing activity provides additional equipment to existing crew.
[3] Brushing reduces long-term needs for hazard tree management.

The Public Works department had identified increased future needs in a number of areas, primarily those highlighted in green at right. Culvert, ditching and brushing activities all represent additional work to clear existing maintenance backlog, in support of prudent asset management of those assets. Managing these areas proactively will result in a reduction of emergency repairs, a reduced need for major rectification projects and reactive hazard tree response.

County forestry support is currently provided as a backfill of crew time to the County's full-time position. With ever increasing demand from residents for outdoor amenities, the existing and future trail network will require increased attention (to mitigate liability), particularly with increased infrastructure and traffic.

Lastly, due to demand, the department has proposed a roadside tree program for improved aesthetics.

Based on the activity breakdowns at right, the equipment requirements will increase from 2022 onwards.

Job Description	Activity Description	Baseline Crew Days	2021	2022	2023	2024	2025-2030	2031-2040
Drainage Maintenance	Driveway Entrance Installations and Maintenance (small culverts)[1]	9	0	30	60	60	60	60
	Rural Drainage Maintenance / Ditching	30	30	30	30	30	30	10
	Ditching[1]	-	0	80	50	50	50	50
	Urban Drainage System Maintenance	36	36	36	36	36	36	36
	Municipal Drain Install and Maintenance	As needed contract						
Right-of-way Maintenance	County Forestry Support	24	0	50	60	80	80	80
	Weed Control (mostly contract)	3	3	3	3	3	3	3
	Tree Management (hazard)	40	40	40	40	40	30[3]	20[3]
	Debris and Litter Pickup	19	19	19	19	19	19	19
	Roadside Mowing	93	93	93	93	93	93	93
	Tourism and Wayfinding Signs	5	5	5	5	5	5	5
	Brushing[2]	-	0	60	60	60	60	60
	Roadside Tree Program	-	0	50	40	30	30	30
Road Maintenance	Asphalt Repairs	100	100	100	100	100	100	100
	Road sweeping and cleaning	75	75	75	75	75	75	75
	Shoulder Renewals	24	24	24	24	24	24	24
	Shoulder Grading	15	15	15	15	15	15	15
	Road Patrol	75	75	75	75	75	75	75
	Gen Patrol Supervision/Summer	390	390	390	390	390	390	390
	Spray Patching	-	100	100	100	100	100	100
Major Structures Maintenance	Bridge and Large Culvert Maintenance	72	120	120	120	120	120	120
	Small Culvert Maintenance (<1.5m)	2	2	2	2	2	2	2
	Structural Inspections and Assessments	6	6	6	6	6	6	6
Road Safety	Pavement Marking	96	96	96	96	96	96	96
	Sign Maintenance	48	48	48	48	48	48	48
	Guide Rail Maintenance	18	18	18	18	18	18	18
	911 Signage	-	-	-	-	-	-	-
	Sign Manufacturing	-	-	-	-	-	-	-
	Sign Inspection – Retro reflectivity	-	As needed full time staff					
	SUBTOTAL	***1180***	***1295***	***1565***	***1565***	***1575***	***1535***	***1505***

Staffing and Deployment

Although detailed staffing analysis not an output of this review, the data model has been set up to allow this inclusion for the County's future analysis. At a high level, the increase in service levels assumed in equipment and facility calculations would likely require the following:

- +1 crew for forestry and roadside tree program
- +1 crew for driveway culverts / ditching

The addition of these crews would likely result in converting some full-time winter seasonal positions (currently x9) to full-time annual positions.

Lastly, the potential for a future snow plow route to cover additional lane kilometers in Zurich would further require 2FT and 1 PT winter staff. An increase in the class of road would require an additional winter shift in Zurich.

Central Operations

County Offices

- Manager of Public Works
- County Engineer (0.5 FTE)
- Engineering Project Manager (x2)
- Office Coordinator
- Clerk
- Work Management Technologist
- Traffic Technologist

Total: 7.5 FT

Winter Operations

Patrol Yards

Wingham
- Bridge Maintenance / Patrol Supervisor
- Patroller (x4)
- Contract Plows (x 6FT, 3PT)
- Plow operators (x2 FT, 1PT)
- Traffic/Sign Technician

Wroxeter
- Patrol Supervisor
- Patrol Lead Hand / Patroller
- Patroller (x3)
- Plow operators (x6 FT, 3PT)

Zurich
- Patrol Supervisor
- Patrol Lead Hand / Patroller
- Patroller (x3)
- Plow operators (x8 FT, 4PT)

Auburn
- Road Superintendent
- Fleet Supervisor
- Mechanic (x2)
- Patrol Lead Hand / Patroller
- Patroller (x3)
- Plow operators (x10 FT, 8PT)

Total: 50 FT (all full year, no seasonal)
16 PT
9 contract

Note: Additional 2 FT summer could allow 1 more plow

Summer Operations

Patrol Yards

Wingham
- Bridge Maintenance / Patrol Supervisor
- Bridge Worker 1 (x2)
- Bridge Worker 2 (x4)
- Summer student (x1)
- Traffic/Sign Technician

Wroxeter
- Patrol Supervisor
- Patrol Lead Hand
- Maintenance 1 (x1)
- Maintenance 2 (x7)
- Summer student (x1)
- *Roadside tree/ forestry crew (x3) 1 lead, 2 operators*

Zurich
- Patrol Supervisor
- Patrol Lead Hand
- Maintenance 1 (x1)
- Maintenance 2 (x7)
- Summer student (x1)
- *New culverts/ditching crew (x7) 1 technical support, 6 operators*

Auburn
- Road Superintendent
- Fleet Supervisor
- Mechanic (x2)
- Fleet Student (x1)
- Patrol Supervisor
- Patrol Lead Hand
- Maintenance 1 (x1)
- Maintenance 2 (x8)
- Summer student (x1)

Total: 53 FT
5 students

KPMG

Future State
Equipment & Facilities

County of Huron

Service Review: Part A

Interim Report

Equipment Inventory Space Requirements

According to the activity-driven modelling, for the future state, there are **115 pieces of required equipment** due to the service level changes identified in the previous section (new in green). Future state equipment storage assumptions were as follows:

Equipment Category	Highest Req'mt	Space (m^2)	Equipment Category	Highest Req'mt	Space (m^2)	Equipment Category	Highest Req'mt	Space (m^2)
3 Ton Truck	OC	17	Generator	IU	6	Side-by-side	IU	6
Anti Icing Tank	IU	12	Grader	IU	40	Skid steer	IU	6
Attachment - Reclaimer	OC	3	Hydra Platform	IU	30	Spray patcher	IH	24
Attachment - Rotary Broom	OC	5	Line Painter	IU	8	Shoulder Spreader	OC	18
Backhoe	OC	16	Loader	IH	27	Stacker	OC	84
Car	PS	9	Mini-excavator	IU	8	Sweeper	OC	24
Cargo Van	IH	11	Mobile Lights	IU	16	Tandem	GB	20
Chipper	OC	12	Mower	OC	4	Tandem (w/ plow)	GB	46
Chipper Box	IU	8	Mowing attachment	IU	7	Tar Kettle	IU	12
Compressor	IU	12	Packer	IU	3	Tractor	OC	8
Cube Van	IU	30	Paint truck	IU	30	Utility Trailer	OC	12
Excavator	OC	28	Pickup Truck	PS	13	UTV	IU	6
Float	OC	32	Portable Traffic Lights	IU	20	Van - Full-size	PS	11
Forklift	IH	12	Rotary Broom	OC	4	Water tank	IU	8
Fuel Trailer	OC	5	Rotary cutter	IU	10			

- **Indoor Garage Bay (GB)**
- **Indoor Heated (IH)**
- **Indoor Unheated (IU)**
- **Outdoor Covered (OC)**
- **Outdoor Open (OO)**
- **Parking Space (PS)**

Properly storing equipment in a way that is sheltered from the elements will have a positive impact to maintenance costs and asset health/condition.

Facilities - Staff Accommodations

During interviews with management and staff, a lack of adequate employee space was a consistent finding, which was confirmed with KPMG's site visits to all four patrol yards.

Although there are no specific guidelines for space planning for public works facilities, the *Ontario Ministry of Health & Long-Term Care*'s published *Space Standards for Community Health Care Facilities* provides a useful starting point. For non-clinical and administrative space, the Ministry's Health Capital Investment Branch recommends the allocations at right.

Ontario MHLTC - Space Type	Space (sq. m)	Notes
Barrier free washroom	5	2-piece barrier free
Office Senior Management	14	1 person w/ meeting space
Office Management - Private	11	2 person w/ meeting space
Office Management - Shared	17	2 person w/o meeting space
Office Administrative - Private	9	1 person w/o meeting space
Office Administrative - Shared	14	2 person w/o meeting space
Staff Meeting Room	14	6 person capacity
Washroom - Staff	3	2-piece
Washroom - Staff	7	3-piece barrier free
Housekeeping closet	7	
Workstation - Administrative	6	
Mechanical / electrical	6	
Lunchroom	1	Per employee

In interviews, it was noted that locker rooms are particularly crowded. During winter operations this is driven by the heavier layers of clothing, while in summer, there is significant personal protective equipment (PPE), particularly for the bridge and forestry crews. Looking at the US Military's guidelines for fire stations, they prescribe 2.3 m^2 per person for locker rooms.

US Military - Space Type	Space (sq. m)	Notes
Locker room (fire station)	2.3	Per employee

As it stands, the majority of the County's lunchrooms meet space guidelines based on the facilities' maximum occupancy during a given shift, but the locker rooms do not (by half at Wroxeter and Auburn). Spacing is currently further compromised by Wingham summer staff mobilizing out of Wroxeter which is already undersized. These assumptions also do not account for social distancing for COVID-19.

The model also includes calculated needs for offices, which is included in the employee space noted on the following pages.

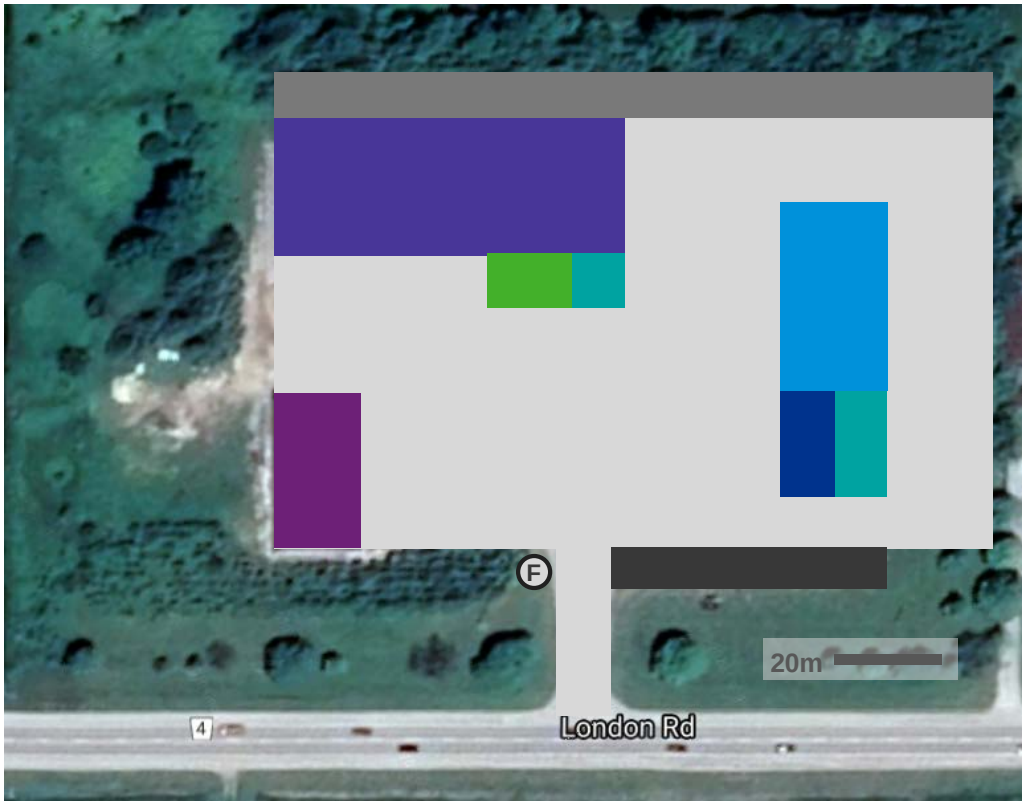
	Space (sq. m)			
	Wingham	Wroxeter	Auburn	Zurich
Lunch room				
Maximum Staff	9	14	17	18
Required Space	9	14	17	18
Existing Space	-	59	53	36
Locker room				
Maximum Staff	9	14	17	18
Required Space	21	33	40	42
Existing Space	-	9	12	25

Additionally, the existing locker room facilities do not provide for comparable female shower and locker facilities. The County's existing facilities are also not AODA accessible. KPMG would suggest the following, at a minimum, related to employee space:

- ***Wingham:*** include larger and male/female locker rooms for new facility and consider single level staff space.
- ***Wroxeter:*** explore ability to expand locker room into adjacent utility space and improve female facilities.
- ***Auburn:*** explore ability to expand locker room into existing storage room and improve female facilities.
- ***Zurich:*** include larger and male/female locker rooms for new facility and consider single level staff space

Future State - Yards

Wingham Yard



Facilities Recommendations

- New material storage facility of similar dimensions and layout to Auburn (without vestibule). Similar to Auburn, a shed structure would provide for covered and heated storage.
- New 6-bay vehicle storage building with offices and new sign shop
- No changes to existing unheated storage building (bridge crew)
- The County has put a high level estimate of the new facility's costs at approximately $2.7 million.

F		~ Area (m²)		
	Fueling station	Current	Req'd	Proposed
	Office / Employee	31	215	***215***
	Garage Bays - Heated	532 [6 bays]	5 bays	***6 bays***
	Indoor Storage – Heated (equip.)	0	96	***~100***
	Indoor Storage – Heated (Sign Shop)	0	203	***200***
	Indoor Storage - Unheated	410[1]	406	***NC***
	Material Storage - Unheated	1,479	1,479	***1,978***
	Outdoor Storage - Covered	0	152	***~160***
	Outdoor Storage - Open	302	20	
	Vehicle Parking	231 [x12]		
	Access			

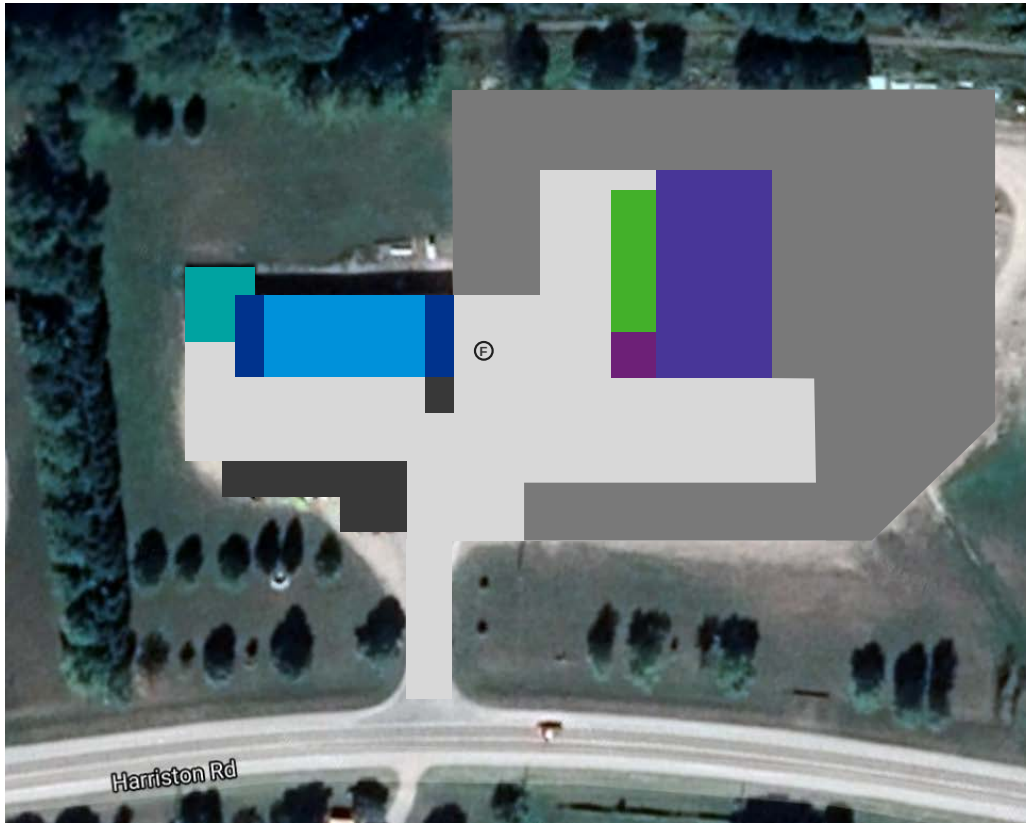
[1] Assume 200 m² (down from 250 m²) of Bridge Crew building is used for material storage, rather than 15%.
NC = No change

Operations Summary

- For Winter operations, **4 routes** would operate out of a new facility. This would involve contracted winter operations for **3 routes**, plus **1 route** transferred from Auburn stored at this facility, with supervision now managed from this yard.
- Patrol base for the bridge crew, their equipment and materials.
- Patrol base for new brushing operations and forestry support
- New sign shop

Future State - Yards

Wroxeter Yard



Operations Summary

- Winter operations for **3 routes,** 1 spare plow
- Patrol base for expanded forestry support activities
- Patrol base for expanded roadside tree management program

Facilities Recommendations

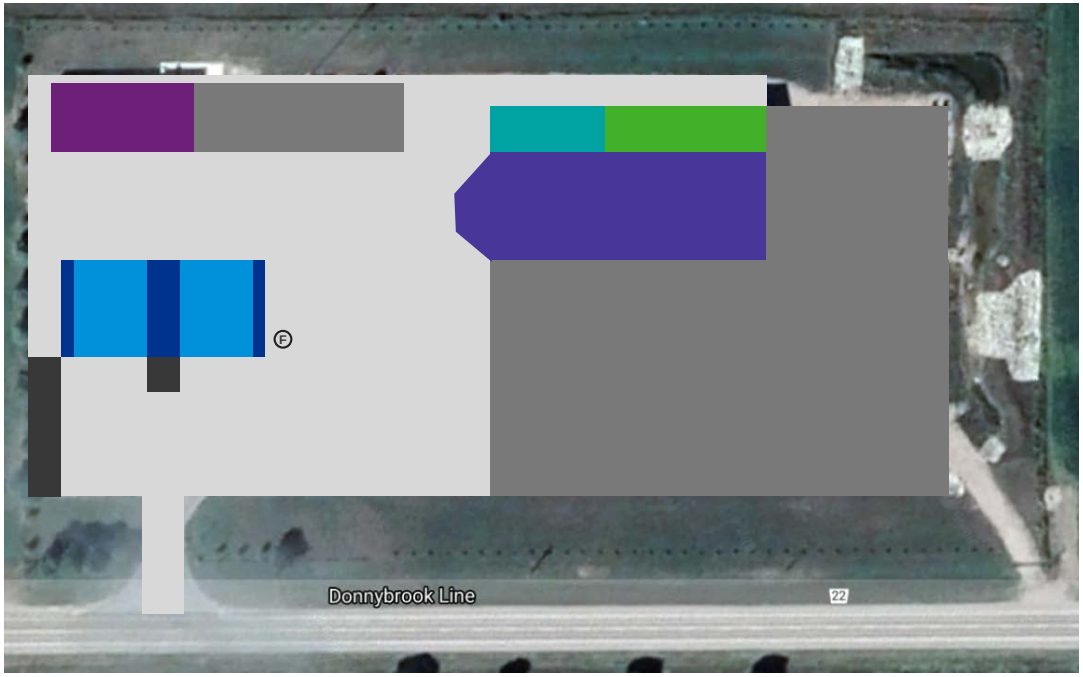
- No major facility replacements
- Interior modifications to be considered to optimize staff space and expand locker rooms, as office space expansion is limited by septic field, fueling station and garage bay access
- New lean-to structure off side of material storage building, with space divided for indoor unheated (to replace existing end-of-life structure) and new outdoor covered storage.
- Sign shop removed, converted to employee space and heated storage.

Ⓕ	Fueling station	~ Area (m²)		
		Current	**Req'd**	**Proposed**
	Office / Employee	239	306	***320***
	Garage Bays - Heated	644 [6 bays]	6	***NC***
	Indoor Storage – Heated	0	123	***220[1]***
	Indoor Storage - Unheated	71	183	***+100*** +use heated
	Material Storage - Unheated	1,183	1,183	***NC***
	Outdoor Storage - Covered	0	324	***+320***
	Outdoor Storage - Open	7,418	115	***NC***
	Vehicle Parking	231 [x27]		
	Access			

[1.] Existing sign shop to be converted to heated storage space and additional employee space.
[2.] Excess existing heated storage space lessens need for new unheated space.
NC = No change

Future State - Yards

Auburn Yard



Operations Summary

- Winter operations would be reduced by 1 to **5 routes,** 1 spare plow
- Spare plow could continue to be stored in heated indoor storage
- Back-to-back parking of plows in winter is less than ideal from an accessibility standpoint, but reduction of 1 route will have some positive impact
- Mechanics' base of operations (parts, consumables, etc.), but must share bay space with winter operations
- Patrol base for shoulder renewals activities
- Existing indoor heated storage and outdoor covered storage exceed the patrol-specific needs, but currently results in other equipment being shifted here for storage

Facilities Recommendations

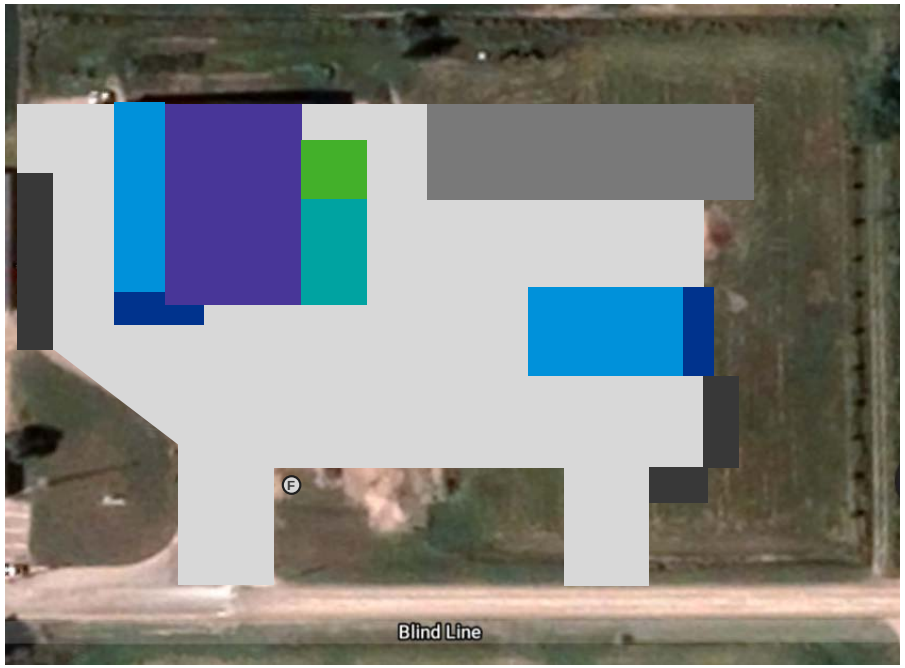
- No major changes proposed to facilities
- Interior modifications to be considered to optimize staff space and expand locker rooms
- De-icing tanks to be moved from unheated storage building to vestibule of material storage building
- Although unheated storage building shows underutilization from equipment perspective, it currently houses materials and spare parts/equipment from other yards. Partial conversion, or expansion of this space for tire storage could free up mezzanine space in the vehicle storage building for for staff usage.

		~ Area (m^2)		
Ⓕ	Fueling station	**Current**	**Req'd**	**Proposed**
	Office / Employee	380	215	NC
	Garage Bays - Heated	928 [12 bays]	10 bays[1]	NC
	Indoor Storage - Heated	296	96	NC
	Indoor Storage - Unheated	555	265	NC
	Material Storage - Unheated	1,978	1,978	NC
	Outdoor Storage - Covered	438	296	NC
	Outdoor Storage - Open	8,486	249	NC
	Vehicle Parking	316 [x17]		
	Access			

[1] Although an excess of bays is shown, vehicle parking in winter creates a challenge for maneuvering within the garage by staff.
NC = No change

Future State - Yards

Zurich Yard



Operations Summary

- Winter operations for **4 routes,** 1 spare plow
- Patrol base for future driveway culvert / ditching activities
- Patrol base for spray patching
- Paramedic Services base of operations (see following slide)

Growth Considerations

- Southwest Huron County has the greatest potential for future population growth and contain the roads most likely to advance to Class 1, and most unbalanced boundary road responsibilities.
- Based on current plowing operations, this level of growth would likely require the addition of a **fifth plow route** at this location.

Facilities Recommendations

- New drive-thru 6-bay vehicle storage building with offices (similar base plan to Wingham, with different orientation and no sign shop)
- New outdoor covered storage area as shed extension
- Existing bays and office space converted for EMS use (see following slide)
- If Zurich were to add an additional snow plow route in the future, the main material building may require expansion, either toward the road, or into the existing heated storage
- Typical lifecycle suggests the existing fuel tanks will likely need replacement. Also required is coloured diesel fuel.
- Discussions suggest siting the new building to protect for future northward expansion if required.

		~ Area (m^2)		
Ⓕ	Fueling station	**Current**	**Req'd**	**Proposed**
	Office / Employee	145 (shared)	139	140
	Garage Bays - Heated	542 [5 bays]	5 bays	6 bays
	Indoor Storage - Heated	375	156	NC
	Indoor Storage - Unheated	0	188	use heated
	Material Storage - Unheated	1,458	1,458	NC
	Outdoor Storage - Covered	0	213	+200 +use heated
	Outdoor Storage - Open	4,300	249	TBD
	Vehicle Parking	332 [x18]		
	Access			

NC = No change

Future State - Yards

Zurich Yard - Paramedic Services

20m

Facilities Recommendations

- Prior discussions had centred on the development of vacant land within the Zurich Yard for a standalone Paramedic Services facility based on their need for three garage bays and accompanying storage and staff space.
- The current facility shared between Public Works and the Paramedic Service has five bays which in winter are deployed as follows: **4 for Public Works** and **1 for Paramedic Services**.
- Optimally, Public Works requires six bays of their own: 4 for active plow routes, 1 for a spare plow, and 1 for winter patrol pickups.
- Conversations in early October 2020 with Paramedic Services suggest their requirements have increased to the use of all five existing bays for operating equipment, spare equipment and general storage.
- Based on the space requirements supplied by Paramedics Services below, the existing office space would meet their requirements with new HVAC and interior renovations.
- Additionally, with the removal of the Public Works' welding area and requisite ventilation equipment, the current underutilized mezzanine could be converted to useable space, such as a large training or meeting room or expanded locker rooms.

		~ Area (m²)			
		Available	Required		Space Description
	Office / Employee	234	95	*36*	Crew / office space
				7	Office
				7	Equipment Storage
				14	Washroom (3-piece barrier free x2)
				9	Clean Flow Machine room

- Public Works has advised that the site plan and layout of the existing building prevents its expansion with additional bays.
- A preferable option is likely therefore the conversion of the existing facility to full Paramedic Service use and the construction of a new Public Works facility to address Public Works' current and future needs. A new facility would also allow future expansion if necessary, which couldn't be accommodated in the existing building
- For simplicity and cost efficiencies, a very similar design to a new Wingham vehicle storage facility (except for the sign shop) could be used.

Future State

Summary of Opportunities

The primary purpose of this report has been to directly link the County's Public Works service levels to its equipment, resource and facility needs both now and in the future. This analysis will provide support to the decisions on the future of County Public Works facilities, including the Wingham yard. The opportunities identified in this report can be summarized as follows.

Facility Investments

- ***Wingham*** – Retain the existing unheated storage building while developing two new facilities on site to replace remaining existing end-of-life facilities: a new 6-bay vehicle storage building with attached staff space and sign shop, a new material storage building with attached indoor heated and outdoor covered storage space.
- ***Wroxeter*** – Consider construction of a shed addition to the existing material storage building, with indoor unheated and outdoor covered space. Convert the sign shop into expanded employee space and indoor heated storage.
- ***Auburn*** – Consider expansion of unheated storage building to move tire storage out of vehicle storage building.
- ***Zurich*** – Retain all existing structures, but convert existing office space and vehicle storage bays to Paramedic Services use. Develop a new 6-bay vehicle storage building with attached staff space for Public Works use. Consider construction of an open covered storage area off of the material storage building, directly behind the existing heated storage space. Protect for potential future expansion of the material storage building towards the road, if future operations require it.
- ***All yards*** – Consider renovations of existing locker room / washroom spaces with two considerations in mind: i) expansion based on 2.3 sq. m per staff at peak usage and ii) providing comparable facilities for female staff.
- **Equipment Investments**
- Future service plans would require the following additional equipment (over and above asset management driven replacements): medium-sized excavator & float (culverts, ditching, drainage), skid steer w/ trailer and brushing attachment (brushing, forestry), mini-excavator w/ trailer (forestry – trails), additional pickup trucks for each new crew

Operational Adjustments

- Shift 1 snowplow route from Auburn to a redeveloped Wingham yard, allowing Auburn's 6 bays to operate as intended (1 bay per route + 1 bay for patrol vehicles).
- Consider minor changes to plow routes to forestall requirements for tri-axle plows (driven by axle loads) or to balance service times: *Varna route* and *Auburn route 4, Auburn 3* and *Varna route, Kirkton North route* and *Grand Bend route.*
- Add two additional summer crews: +1 for forestry/roadside tree management, +1 for ditching/driveway culvert replacement. Staffing of these crews may allow for the conversion of some winter seasonal full-time staff to year-round.

Future State

Cost Benefits of Opportunities

The scope of this report, as a companion to the broader service review, was limited to assessing the equipment and facility requirements to meet the Public Works department's current and future service needs.

Operating Impacts

The opportunities outlined through this report will create additional operating costs, but also operating savings. As staff have previously reported, there is a significant cost benefit to pro-active maintenance work over reactive repair or replacement. This key principle of asset management is already applied in County's efforts in maintaining its road network. If the same principle is applied to activities such as forestry, brushing and ditching / small culvert replacement, then the County can expect future savings in the areas of trail repairs, hazard tree management and culvert failures respectively. Beyond the operating impacts, well-maintained infrastructure will also reduce the County's overall risk profile by reducing the liability for damages resulting from infrastructure failure. Future analysis can better quantify these impacts.

Facility Capital Costs

The facility recommendations presented in this report are based on storing equipment in its preferred facility type, whether that is indoors (heated or unheated) or outdoors (covered or in the open). We have assumed that the County intends to optimally utilize its existing four facilities and have based the distribution of activities amongst those facilities on staff's deep operational knowledge.

The recommendations presented have aimed to minimize incremental costs where possible. Redeployment of a plow route from Auburn to Wingham and the relocation of the sign shop to a new Wingham means that no changes should be required to the footprints of Auburn's or Wroxeter's existing vehicle storage buildings. Similarly, repurposing the existing Zurich garage and office facilities for EMS and building a new Public Works building would likely be more cost effective than constructing a new EMS facility and attempting to expand the existing garages.

The recommended facility changes will serve as the basis for a capital business case, which would involve comparison against other investment options. Benefits beyond cost will be factored into that analysis as well, including operational efficiencies, health and safety considerations, building accessibility, and a commitment to improving employee facility conditions.

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