KPMG

OXFORD COUNTY

Transportation Network (Roads & Bridges) Operations & Maintenance Service Delivery Review

Final Report

March 17, 2022

Disclaimer

This report has been prepared by KPMG LLP ("KPMG") for Oxford County ("Client") and its Area Municipalities pursuant to the terms of our Agreement with the Client. 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.

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. Should additional information be provided to KPMG after the issuance of this charter, KPMG reserves the right (but will be under no obligation) to review this information and adjust its comments accordingly.

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, Oxford County and its Area Municipalities. KPMG has not and will not perform management functions or make management decisions for Oxford County or its Area Municipalities.

This report may include or make reference to future oriented financial information. Readers are cautioned that since these financial projections are based on assumptions regarding future events, actual results will vary from the information presented even if the hypotheses occur, and the variations may be material.

Comments in this report are not intended, nor should they be interpreted, to be legal advice or opinion.

KPMG has no present or contemplated interest in Oxford County and its Area Municipalities nor are we an insider or associate of Oxford County and its Area Municipalities. Accordingly, we believe we are independent of Oxford County and its Area Municipalities, and are acting objectively.

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Project Overview

Oxford County
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Project Overview

Introduction

This final report was prepared to present observations and evidence to form a potential case for change supporting operational improvements to Oxford County ("the County") and its Area Municipalities. Observations are derived from operational analysis, interviews with County and Area Municipality staff, and comparison relative to leading practice for other similarly focused organizations. In addition to the content of this report, the Final Report includes an analysis of three (3) alternative service delivery options for transportation services.

Setting the Stage

The County of Oxford is located in the heart of Southwestern Ontario in the centre of Perth County (North), Region of Waterloo (North-East), Brant County (East), Norfolk County (South-East), Elgin County (South-West), and Middlesex County (West). The County is made up of eight (8) Area Municipalities:

- Township of Blandford-Blenheim;
- Township of East Zorra – Tavistock;
- Town of Ingersoll;
- Township of Norwich;
- Township of South-West Oxford;
- Town of Tillsonburg;
- City of Woodstock; and
- Township of Zorra

Over the next decade, increased residential and employment growth is anticipated across the County. Currently, the County and its Area Municipality's strive to meet expected levels of service given their current resource structure; however, the anticipated growth may strain the resources. As such, the County and its Area Municipalities are looking for opportunities for maintaining the regional transportation network in the most appropriate and cost-effective way while maintaining or improving service levels both currently and in the future.

Project Overview

Project Objectives

- Project objectives clarified the expectations between the consultant and the client.

Project Objectives – *How will we define success?*

KPMG was engaged by Oxford County (“the County”) and its Area Municipalities to assist in a comprehensive review of the regional transportation network (roads & bridges) operations and maintenance conducted by Oxford County and its contracted service providers (Ingersoll, Woodstock, Tillsonburg) on the County road network (arterial road network). The ultimate objective of this review was to determine the most appropriate and cost-effective way of operating and maintaining the regional transportation network in the County while maintaining or improving service levels.

The service delivery review:

- Examined the operational effectiveness of the existing transportation network system;
- Reviewed the operational effectiveness of maintenance service delivery models (e.g., in-house, service contracts, etc.);
- Reviewed transportation levels of services and historical financial performance;
- Identified potential alternative organizational approaches for delivering transportation services, and;
- Identified opportunities for cost savings while maintaining or improving levels of service.

Due to data limitations discovered during the project, the following was considered out of scope:

- Conduct a full lifecycle cost benefit analysis.

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Project Overview

Project Drivers – *What problem are we trying to solve?*

- Reviewed the current regional transportation network system assets, level of service, service offerings, organizational structure, and current/future issues and trends impacting transportation operations.
- Identified opportunities to implement alternative service delivery models that will result in cost savings while maintaining or improving levels of service.

Project Principles – *What is Important to Us?*

- The knowledge and expertise of County and Area Municipality staff was fully engaged and built upon, to arrive at recommended actions through a transparent, participative and inclusive process facilitated by KPMG.
- The aim was to, wherever possible, transfer knowledge and necessary “tools” to 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.

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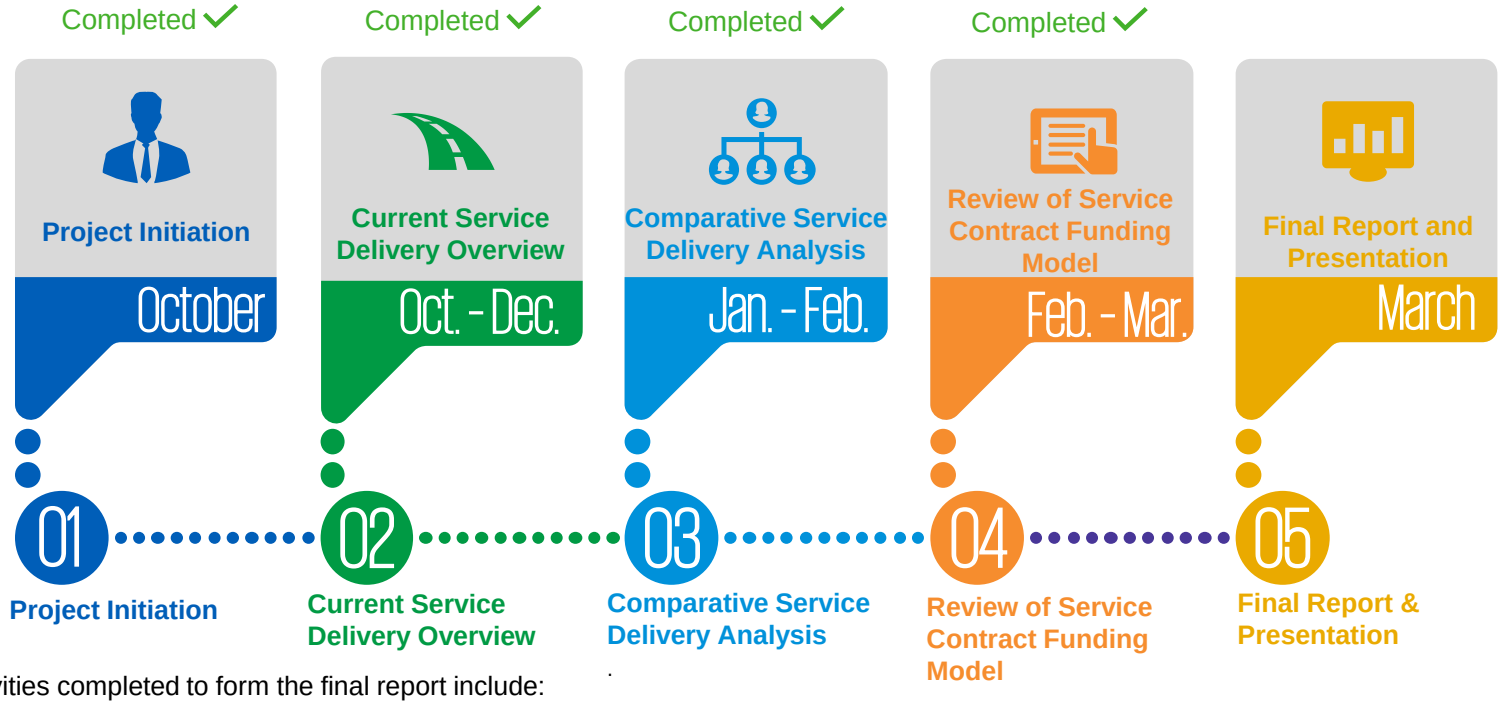
Introduction and Context

Work Plan and Progress Report

This engagement commenced in October 2021 and was completed when the draft final report was presented to management March 7, 2022. The diagram below depicts the key phases as outlined in the Project Charter



The activities completed to form the final report include:

- Current state assessment of the County's transportation services
- Current state transportation services financial analysis for County and its Area Municipalities
- SWOT analysis on a status quo+ and three alternative service delivery models
- Financial analysis and human capital analysis on three alternative service delivery models
- Analysis on current contracted service model
- Develop of opportunities and recommendations to improve service delivery.

County Overview

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County of Oxford Transportation Services

Source – Map of Oxford County, Oxford County Library, *Local History*

Oxford County Transportations Services

The County's Public Works Division is responsible for the supervision, maintenance, and the day-to-day administration of the County's road network, facilities owned or leased by the County, waste management, and water and wastewater facilities. The scope of this project focuses on transportation services.

The County's Public Works activities are carried out through four (4) patrol shops: the Drumbo Patrol Shop, the Highland Patrol Shop, Springford Patrol Shop, and the Woodstock Patrol Shop. The County performs both summer and winter activities out of all Patrol Shops while certain County-wide activities are performed specifically out of one shop (e.g., all County-wide catch basin cleaning and urban street sweeping is performed out of the Drumbo Patrol Shop). Approximately 30 full-time employees and 73 pieces of equipment (i.e., trucks, snow plows, mowers, etc.) are distributed across the County's four (4) Patrol Shops.

Currently, the operation and maintenance of County roads located in urban areas is outsourced to the urban Area Municipalities of Woodstock, Ingersoll and Tillsonburg. All other operations and maintenance activities on the County road network is conducted by Oxford County.

Boundary & Maintenance Agreements

Oxford County Transportation Network

Boundary & Maintenance Agreements

There currently exist a number of County-municipal and County-County maintenance agreements that deal with road maintenance activities on a wide variety of boundary roads.

Agreements reviewed include the following:

- Woodstock – Oxford (dated 2010)
- Tillsonburg – Oxford (dated 2008)
- Ingersoll – Oxford (dated 2008)
- Wilmot – Oxford (dated 2013)
- Oxford – Middlesex (dated 2014)
- Oxford – Elgin (undated)
- Oxford – Norfolk (undated)
- Oxford – Waterloo (dated 2020)
- Oxford – Perth (dated 2008)

Broadly speaking, the existing agreements focus on the **owning-party paying for the following costs of the performing party**:

- ***Generally Included:*** all minor repairs, such as wind or storm damage, washouts to shoulders, banks, undermining of a curb requiring a local replacement, bridge washing, shoulder maintenance
- ***Generally Excluded:*** scheduled reconstruction or scheduled replacement work, where surfaces and facilities need to be resurfaced or replaced as a part of a planned upgrading of infrastructure, planned traffic signal maintenance, bridge maintenance, culvert work, gravel work, catch basins, storm sewers, shouldering and ditching.

Urban Maintenance Agreements

The standard ratio to be used in cost allocation urban road maintenance agreements (e.g., Woodstock, Tillsonburg, Ingersoll) is as follows:

$$Ratio = \frac{Paved\ Kilometers\ County}{(Paved\ Kilometers\ City + Paved\ Kilometers\ County)} * 1.22$$

Kilometers are in centerline, with the factor of 1.22 representing the ~22% increased road width of urban versus County roads.

Urbans vs. Rural Area Municipalities

Given the size of the County's transportation network, there are County roads within both urban and rural areas. The below outlines core differences between these Area Municipalities and how it impacts service delivery:

	Urbans		Rurals	
	On average, urban areas such as Woodstock will have a denser population with settlements being closer together.	 **Population**	On average, rural areas such as Zorra will have less dense populations in comparison to urban areas as settlements are further apart.	
	The dense populations of these urban areas means that the roadways within the areas are, on average, travelled more and experience more traffic.	 **Road Usage**	The lower population density of rural areas has created an environment where the daily traffic on roadways is less than in urban areas.	
	The increased traffic raises resident's expectations of the quality of roads. This increased level of expectation amongst residents can lead to urban municipalities going above and beyond the minimum standards to when servicing its roadways.	 **Service Levels**	As there is less traffic in rural areas then urban areas, residents have lower expectations regarding the level of service performed on them. Rural municipalities are still providing at least the minimum standards, they may still be providing a lower level of service compared to urban areas.	

County of Oxford Transportation Services

To gain and understanding of the relative size of each Area Municipality, KPMG reviewed key statistics including total population, number of households, total area (sq.m), total lane KM, and number of staff within the Public Works department. The below summarizes the current state for each Area Municipality:

	Population[1]	Households[1]	Area Sq KM[1]	Total Municipal Lane KM (paved and unpaved)[2]	Total County Lane KM within Municipal Boundary
Oxford County	121,781	49,455	2,040	N/A	1,288
Urban Municipalities					
Woodstock	46,705	19,528	49	486	61[3]
Tillsonburg	18,615	8,494	22	236	16[4]
Ingersoll	13,693	5,627	13	151	26
Rural Municipalities					
Norwich	11,151	3,892	431	721	312
Zorra	8,628	3,284	529	1,019	278
South-West Oxford	7,583	2,708	371	616	188
Blandford-Blenheim	7,565	2,857	382	667	208
East Zorra - Tavistock	7,399	3,055	242	435	164

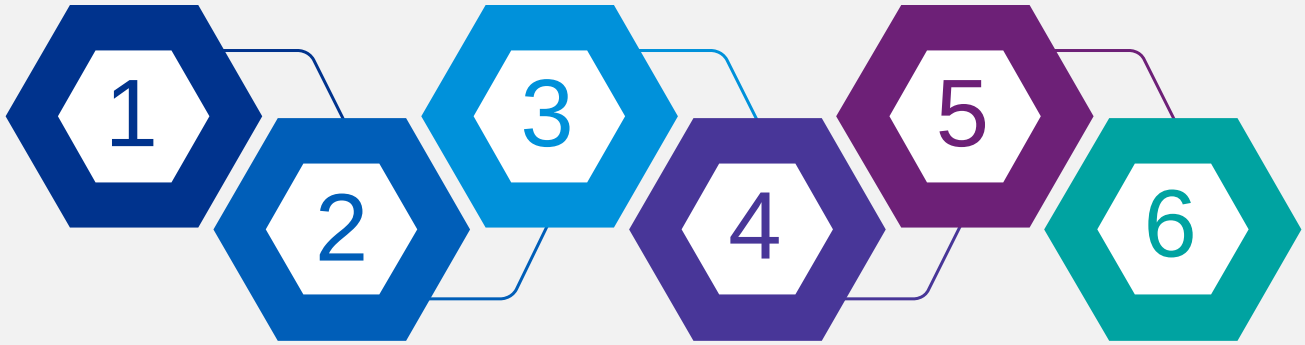
1 – 2021 Census data
2 – Total lane KM includes both paved and unpaved lane KMs FIR schedule 80D.
3 – Total County Lane KM maintained by Woodstock excluding Oxford Road 30,17 and 4.
4 – Total County Lane KM maintained by Tillsonburg excluding Oxford Road 20..

Factors impacting Service Delivery

Although challenges were not specifically raised during our conversations, KPMG identified the following factors that are impacting municipal and County level transportation network operations across Southern Ontario.

These factors could apply differently across different jurisdictions, but they do force governments to look at the efficiencies of their operations to ensure they can continue to provided the expected levels of service.

1. Sustained growth may cause strain on service delivery
2. Increasing impact of climate events on both reactive service and the accelerated degradation of transportation assets
3. As more responsibilities are brought in-house, greater strain on resources
4. Resource availability, impacting both governments and contactors.
5. Lack of proactive measures could cause issues with road patrolling
6. Asset management backlog that puts pressure on maintenance budgets.



Current State Review

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Transportation Services

Throughout this project KPMG focused on all Public Works activities performed by Oxford County and its Area Municipalities on the County road network. To create a more standardized analysis, KPMG organized each activity into the following service categories: roads, winter control, and bridges & culverts, focusing on activities performed on the County road network. Each category contains various activities as outlined below:

Roads

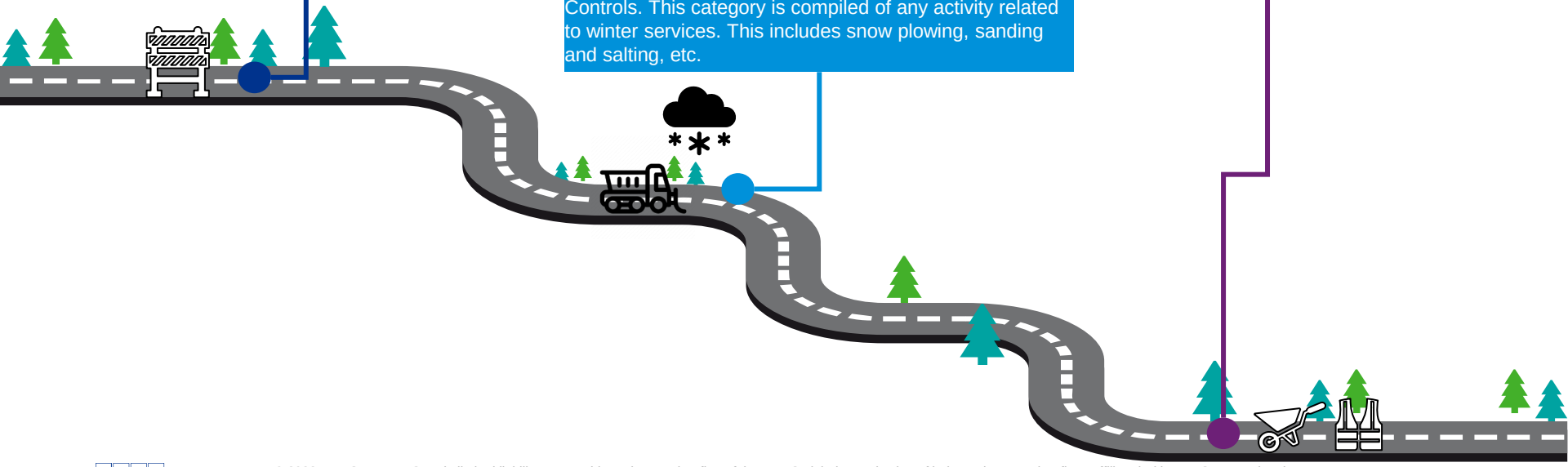
The largest category in KPMG's analysis is Roads. This category is compiled of all activities related to the County road network outside of winter controls. This includes hardtop maintenance, ditch maintenance, curb maintenance etc.

Winter Maintenance

The second largest category in KPMG's analysis is Winter Controls. This category is compiled of any activity related to winter services. This includes snow plowing, sanding and salting, etc.

Bridges & Culverts

The final category in KPMG's analysis has been Bridges & Culverts. This category is compiled of any activity related to the construction, reconstruction, or maintenance of bridges and culverts. This includes bridge reconstruction, bridges & culverts maintenance, etc.



Current State Review

Service Delivery - Roads

For each activity within the service category, KPMG analyzed financial data to gain an understanding of the current service delivery method (i.e., in-house, partially contracted, full outsourced). The table below summarizes the core activities that may be performed on the County road network and the current service delivery method for each Area Municipality:

Legend

- In-house
- Partially Contracted Service
- Fully Contracted Service

Roads[1]	Curb Maint.	Ditch Maint.	Guiderail Maint.	Hardtop Maint.	Pavement Markings	Railway Crossing Maint.	ROW Maint.	Road Closures	Road Patrol
Oxford County	Partially Contracted Service	Partially Contracted Service	Partially Contracted Service	Partially Contracted Service	In-house	Fully Contracted Service	Partially Contracted Service	In-house	In-house
Woodstock	Partially Contracted Service	In-house	In-house	Partially Contracted Service	Fully Contracted Service	Fully Contracted Service	Partially Contracted Service	In-house	In-house
Tillsonburg	Fully Contracted Service	Fully Contracted Service	Partially Contracted Service	Partially Contracted Service	Partially Contracted Service	Fully Contracted Service	Partially Contracted Service	In-house	In-house
Ingersoll	In-house	In-house	Partially Contracted Service	In-house	Partially Contracted Service	Fully Contracted Service	In-house	In-house	In-house
Norwich	Partially Contracted Service	In-house	Partially Contracted Service	In-house	Fully Contracted Service	Fully Contracted Service	Partially Contracted Service	In-house	In-house
Zorra	Fully Contracted Service	In-house	Partially Contracted Service	Partially Contracted Service	Fully Contracted Service	Fully Contracted Service	In-house	In-house	In-house
SWOX	Fully Contracted Service	Partially Contracted Service	Partially Contracted Service	Partially Contracted Service	Fully Contracted Service	Fully Contracted Service	Partially Contracted Service	In-house	In-house
BB	Fully Contracted Service	Partially Contracted Service	Partially Contracted Service	Partially Contracted Service	Fully Contracted Service	Fully Contracted Service	Partially Contracted Service	In-house	In-house
EZT	Partially Contracted Service	Partially Contracted Service	Partially Contracted Service	Partially Contracted Service	Partially Contracted Service	Fully Contracted Service	Partially Contracted Service	In-house	In-house

1 – Financial data received from each Area Municipality

Current State Review

Service Delivery - Roads

For each activity within the service category, KPMG analyzed financial data to gain an understanding of the current service delivery method (i.e., in-house, partially contracted, full outsourced). The table below summarizes the core activities that may be performed on the County road network and the current service delivery method for each Area Municipality:

Legend

- In-house
- Partially Contracted Service
- Fully Contracted Service

Road Network[1]	Roadside Maintenance	Safety Equipment	Shoulder Maintenance	Sign Maintenance	Street Lighting	Street Sweeping	Traffic Signal	Washout Repair
Oxford County								
Woodstock								
Tillsonburg								
Ingersoll								
Norwich								
Zorra								
SWOX								
BB								
EZT								

1 – Financial data received from each Area Municipality

Service Delivery – Winter Maintenance

For each activity within the service category, KPMG analyzed financial data to gain an understanding of the current service delivery method (i.e., in-house, partially contracted, full outsourced). The table below summarizes the core activities that may be performed on the County road network and the current service delivery method for each Area Municipality:

Legend

- In-house
- Partially Contracted Service
- Fully Contracted Service

Winter Maintenance[1]	Ice Blading	Other Winter Activities	Sanding & Salting	Snow Fencing	Snow Plowing	Winter Patrol
Oxford County						
Woodstock						
Tillsonburg						
Ingersoll						
Norwich						
Zorra						
SWOX						
BB						
EZT						

1 – Financial data received from each Area Municipality

Service Delivery – Bridges & Culverts

For each activity within the service category, KPMG analyzed financial data to gain an understanding of the current service delivery method (i.e., in-house, partially contracted, full outsourced). The table below summarizes the core activities that may be performed on the County road network and the current service delivery method for each Area Municipality:

Legend

- In-house
- Partially Contracted Service
- Fully Contracted Service

Bridges & Culverts[1]	Bridge Reconstruction	Bridges & Culverts Maintenance	Entrance Culverts
Oxford County			
Woodstock			
Tillsonburg			
Ingersoll			
Norwich			
Zorra			
SWOX			
BB			
EZT			

1 – Financial data received from each Area Municipality

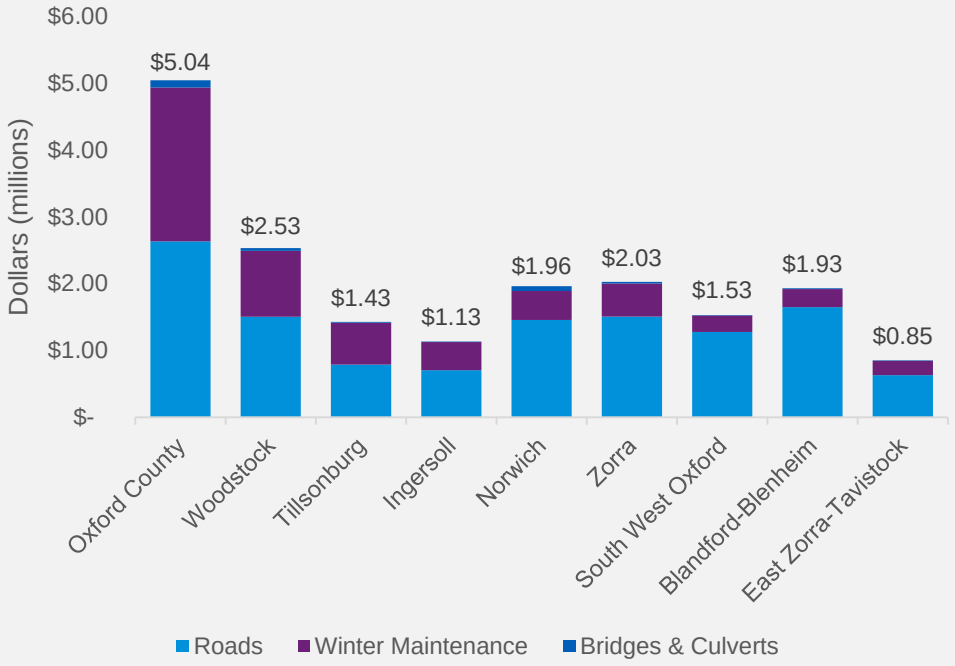
Current State Financial Analysis

To gain an understanding of the recent operating expenditures on the regional transportation network by Oxford County and its Area Municipalities, KPMG reviewed the 3-year (2018-2020) operating expenditures actuals for the County and its Area Municipalities. KPMG organized the expenditures of the County and its Area Municipalities into three (3) distinct categories; Roads, Winter Maintenance, and Bridges and Culverts. The three-year total spend average for the County and its Area Municipalities on roads was $12.16 million, on winter maintenance spend was $5.99 million and on bridges and culverts spend was $286 thousand. The below summarizes the average spend broken down by Area Municipality:

3-Year Average Total Actuals (millions)[1]

	Roads	Winter Maintenance	Bridges & Culverts
Oxford County	$2.63	$2.30	$0.11
Woodstock	$1.51	$0.98	$0.04
Tillsonburg	$0.79	$0.63	$0.01
Ingersoll	$0.71	$0.42	$0.01
Norwich	$1.46	$0.43	$0.07
Zorra	$1.51	$0.50	$0.02
South-West Oxford	$1.28	$0.25	$0.01
Blandford-Blenheim	$1.65	$0.27	$0.01
East Zorra-Tavistock	$0.63	$0.21	$0.01

3-Year Average (2018-2020) Public Works Operating Expenditure (millions) [1]



Source: 1- Area Municipality Financials

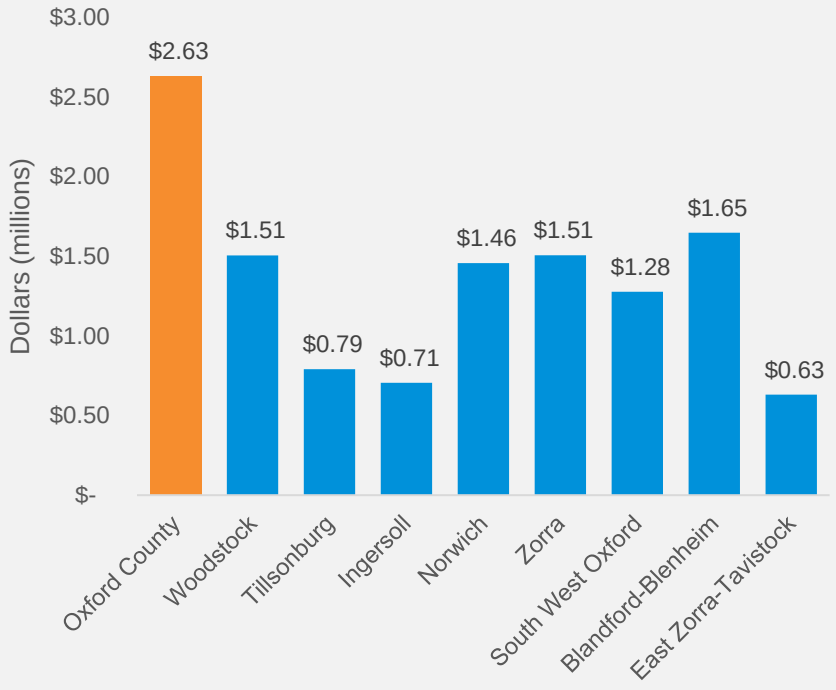
Current State Financial Analysis - Roads

To gain an understanding of the recent operating expenditures on the regional transportation network by the County and its Area Municipalities, KPMG reviewed the 3-year (2018-2020) operating expenditures actuals for County and its Area Municipalities. KPMG organized the expenditures of the County and its Area Municipalities into three (3) distinct categories; Roads, Winter Maintenance, and Bridges and Culverts. KPMG then sorted the Roads activities into four categories; Salaries, Wages, and Benefits, Materials, Equipment, and Contracted Services. The below summarizes the average Roads spend broken down by Area Municipality:

3-Year Average Total Actuals - Roads (millions)[1]

	Salaries, Wages, and Benefits	Materials	Equipment	Contracted Service
Oxford County	$ 1.03	$ 0.78	$ -	$ 0.82
Woodstock	$ 0.60	$ 0.16	$ 0.37	$ 0.38
Tillsonburg	$ 0.22	$ 0.20	$ 0.18	$ 0.20
Ingersoll	$ 0.32	$ 0.25	$ 0.13	$ -
Norwich	$ 0.63	$ 0.48	$ -	$ 0.34
Zorra	$ 0.35	$ -	$ 0.40	$ 0.76
South-West Oxford	$ 0.35	$ 0.62	$ 0.12	$ 0.19
Blandford-Blenheim	$ 0.68	$ -	$ 0.69	$ 0.28
East Zorra-Tavistock	$ 0.10	$ 0.03	$ 0.12	$ 0.38

3-Year Average (2018-2020) Public Works Operating Expenditure - Roads (millions) [1]



Source: 1- Area Municipality Financials

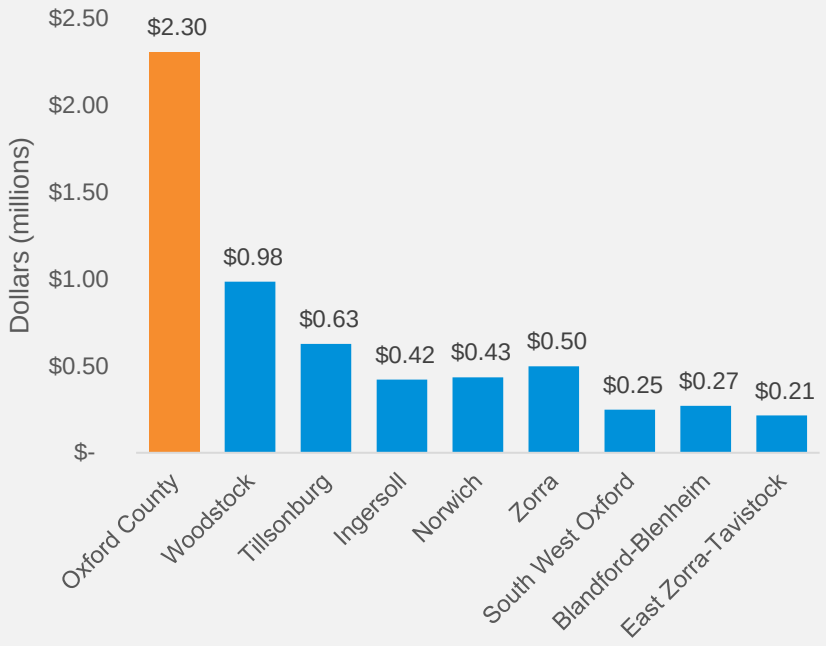
Current State Financial Analysis - Winter Maintenance

To gain an understanding of the recent operating expenditures on the regional transportation network by the County and its Area Municipalities, KPMG reviewed the 3-year (2018-2020) operating expenditures actuals for County and its Area Municipalities. KPMG organized the expenditures of the County and its Area Municipalities into three (3) distinct categories; Roads, Winter Maintenance, and Bridges and Culverts. KPMG then sorted the Winter Maintenance activities into four categories; Salaries, Wages, and Benefits, Materials, Equipment, and Contracted Services. The below summarizes the average Winter Maintenance spend broken down by Area Municipality:

3-Year Average Total Actuals – Winter Maintenance (millions)[1]

	Salaries, Wages, and Benefits	Materials	Equipment	Contracted Service
Oxford County	$ 0.41	$ 1.20	$ -	$ 0.69
Woodstock	$ 0.32	$ 0.29	$ 0.35	$ 0.03
Tillsonburg	$ 0.23	$ 0.13	$ 0.26	$ 0.01
Ingersoll	$ 0.13	$ 0.14	$ 0.12	$ 0.03
Norwich	$ 0.23	$ 0.14	$ -	$ 0.06
Zorra	$ 0.21	$ -	$ 0.05	$ 0.24
South-West Oxford	$ 0.11	$ 0.06	$ 0.06	$ 0.02
Blandford-Blenheim	$ 0.13	$ -	$ 0.14	$ -
East Zorra-Tavistock	$ 0.06	$ 0.04	$ 0.09	$ 0.02

3-Year Average (2018-2020) Public Works Operating Expenditure – Winter Maintenance (millions) [1]



Source: 1- Area Municipality Financials

Current State Financial Analysis - Bridges & Culverts

To gain an understanding of the recent operating expenditures on the regional transportation network by the County and its Area Municipalities, KPMG reviewed the 3-year (2018-2020) operating expenditures actuals for County and its Area Municipalities. KPMG organized the expenditures of the County and its Area Municipalities into three (3) distinct categories; Roads, Winter Maintenance, and Bridges and Culverts. KPMG then sorted the Bridges & Culverts activities into four categories; Salaries, Wages, and Benefits, Materials, Equipment, and Contracted Services. The below summarizes the average Bridges & Culverts spend broken down by Area Municipality:

3-Year Average Total Actuals – Bridges & Culverts (thousands)[1]

	Salaries, Wages, and Benefits	Materials	Equipment	Contracted Service
Oxford County	$ 42.39	$ 26.78	$ -	$ 39.46
Woodstock	$ 19.16	$ 1.38	$ 18.34	$ 3.66
Tillsonburg	$ 2.07	$ 0.08	$ 3.47	$ 5.10
Ingersoll	$ 5.60	$ -	$ 1.67	$ -
Norwich	$ 30.26	$ 23.47	$ -	$ 16.63
Zorra	$ 9.37	$ -	$ 8.28	$ 5.56
South-West Oxford	$ -	$ -	$ -	$ 5.23
Blandford-Blenheim	$ -	$ -	$ 11.62	$ -
East Zorra-Tavistock	$ 3.38	$ 0.77	$ 2.60	$ 0.48

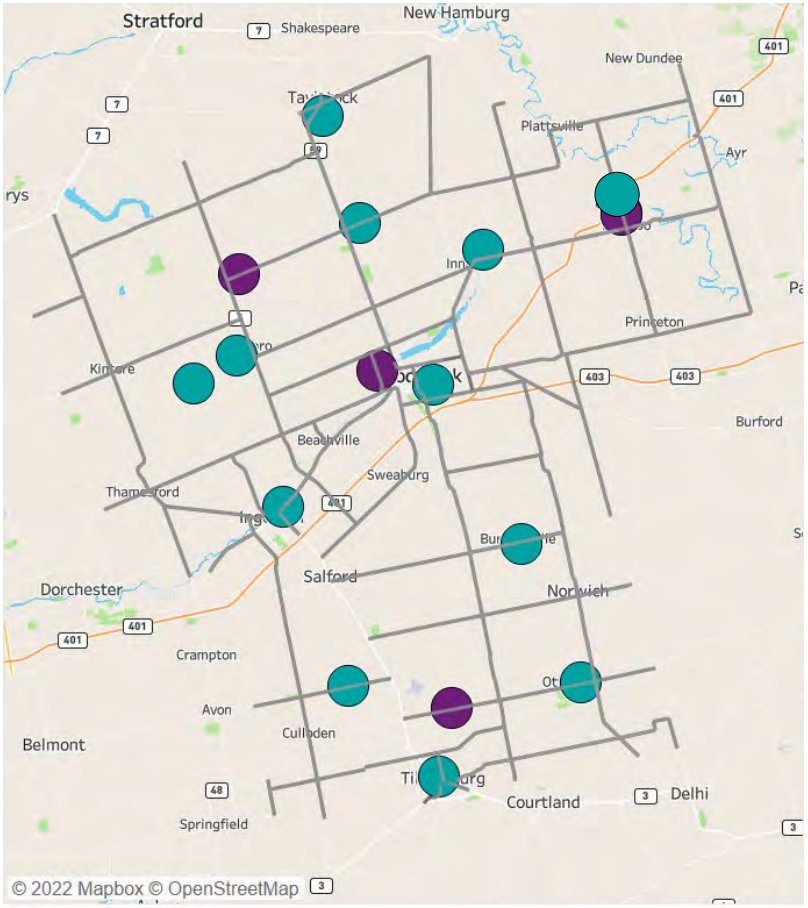
3-Year Average (2018-2020) Public Works Operating Expenditure – Bridges & Culverts (thousands) [1]

Source: 1- Area Municipality Financials

Current State Review

Facilities & Equipment

To gain an understanding of the number of Public Works patrol yards and equipment available within the County and its Area Municipalities, KPMG reviewed the asset inventory and facility assessment for each Area Municipality. In total, there are 16 patrol yards and over 173 pieces of major equipment deployed to maintain the regional transportation network. The below summarizes the facilities and major pieces of equipment owned by the County and its Area Municipalities:



Facilities & Equipment

	Facilities	Major Equipment				
	Patrol Yards	Pick-up Truck	Snow Plows	Grader	Loader	Float Trailer
Oxford County	4	12	19[1]	3	3	4
Woodstock	1	15	8	0	5[2]	0
Tillsonburg	1	6	6	1	2	4
Ingersoll	1	0	6	1	1	0
Norwich	2	4	8	2	2	2
Zorra	2	4	7	6	3	0
South-West Oxford	1	3	5	2	2	1
Blandford-Blenheim	2	2	5	3	2	0
East Zorra - Tavistock	2	3	3	3	1	0
Total	**16**	**50**	**67**	**21**	**21**	**14**

1- County's snow plow total includes 17 active plows with 2 spares.
2-Woodstock maintains 3 loaders with front plows that used for winter maintenance

Staffing

To gain an understanding of the staffing compliment of the County and its Area Municipalities, KPMG requested organizational charts from the County and its Area Municipalities. KPMG then aggregated these charts into the three (3) main job categories (management, forepersons, and operators).The chart below summarizes the staffing compliments for the County and its Area Municipalities:

Public Works Staffing				
	Management	Forepersons	Operators	
			Full-time	Seasonal
Oxford County	5	4	22	8
Woodstock	3	3	44	4
Tillsonburg	2	1	8	3
Ingersoll	2	1	10	0
Norwich	2	0	10	0
Zorra	1	2	13	2
South-West Oxford	1	2	8	0
Blandford-Blenheim	2	0	5	3
East Zorra-Tavistock	1	1	7	2
Total	**19**	**14**	**131**	**19**

Current State Review

Level of Service

The Ontario Minimum Maintenance Standards for Municipal Highways (MMS) outlines the minimum standards for roads maintenance for all municipalities. The MMS classifies roadways based on average daily traffic and speed limits. The minimum requirements for each road are based on its classification, with class 1 roads requiring the highest level of service. The below summarizes each road classification and the MMS service requirement for common County road services:

Road Class 1
Patrol frequency: 3 times every 7 days
Winter maintenance: 2.5cm accumulation cleared within 4 hours
Potholes: 600cm^2 and 8cm deep repaired within 4 days
Cracks: Repaired within 30 days

Road Class 2
Patrol frequency: 2 times every 7 days
Winter maintenance: 5cm accumulation cleared within 6 hours
Potholes: 800cm^2 and 8cm deep repaired within 4 days
Cracks: Repaired within 30 days

Road Class 3
Patrol frequency: once every 7 days
Winter maintenance: 8cm cleared within 12 hours
Potholes: 1000cm^2 and 8cm deep repaired within 7 days
Cracks: Repaired within 60 days

Road Class 4
Patrol frequency: once every 14 days
Winter maintenance: 8cm cleared within 16 hours
Potholes:1000cm^2 and 8cm deep repaired within 14 days
Cracks: Repaired within 180 days

Class 5
Patrol frequency: once every 30 days
Winter maintenance: 10cm cleared within 24 hours
Potholes:1000cm^2 and 8cm deep repaired within 30 days
Cracks: Repaired within 180 days

Class 6
Patrol frequency: once every 30 days
Winter maintenance: 10cm cleared within 24 hours
Potholes:1000cm^2 and 8cm deep repaired within 30 days
Cracks: Repaired within 180 days

Level of Service by Road Classification

KPMG worked with the County and its Area Municipalities to determine the total County road KM maintained by each MMS classification. The MMS road classification will impact the level and cost of service in each municipality. As such, each municipality will maintain its roads to different maintenance standards.

Total County Road KM by Road Classification

	Efficiency Metrics		Total County Road KM by Classification[1]					
	Roads Cost per Lane KM	Winter Maintenance Cost per Lane KM	LoS 1	LoS 2	LoS 3	LoS 4	LoS 5	LoS 6
Oxford County	$ 2,221	$ 1,944	Road Class 1 (Highway 401) maintained by the Province	264KM (21%)	785KM (64%)	156KM (13%)	28KM (2%)	
Woodstock	$ 2,754	$ 2,026		9KM (15%)	43KM (73%)	7KM (12%)		
Tillsonburg	$ 3,139	$ 2,655		2KM (12%)	3KM (18%)	6KM (38%)	5KM (32%)	
Ingersoll	$ 3,986	$ 2,787			6KM (22%)	21KM (78%)		

1 Road Classification data sourced from County GIS data.

- Approximately 85% of roads maintained by the County are class 2 or class 3. By comparison, the urban municipalities are mostly maintaining class 3 and class 4 County roads. Only Woodstock and Tillsonburg maintain a portion of class 2 County roads (15% and 12% of County road network maintained).
- The roads cost per lane KM efficiency metric will not vary significantly based on road classification. Summer activities can be proactively scheduled based on service level requirements and costs will not increase for activities performed (e.g., cost to fix a pothole on a class 3 road vs. class 4 road will not vary significantly).
- However, due to the reactiveness of winter maintenance activities, costs will vary based on road classification. As such, KPMG approximated the average cost of winter maintenance activities for each level of service.

Level of Service by Road Classification

Using the MMS service standards for winter maintenance (see slide 27), KPMG analyzed the County's weighted average cost per road class. The cost to perform summer activities will not vary significantly (due to the ability to proactively schedule summer maintenance), however the reactive nature of winter maintenance results in a relatively higher cost for each class of road. To show this comparison, we analyzed the total lane KM that would be maintained over a 24 hour snow event period.

Weight Average Cost of Winter Maintenance by Road Classification

	Service Multiplier (*a*)	County Road KM[1] (*b*)	Total KM Maintained in a 24 hour period (*a*b*)	Average cost of Winter Maintenance (*d*)	Service Level Cost per KM (*d/c*)	Weighted Average Cost per Classification (*d*a*)
LoS 2	Snow cleared every 6 hours (4 times in a 24 hour period) 4x	264KM	1,056	$2,303,528	$797.62/KM	$3,190/KM
LoS 3	Snow cleared every 12 hours (2 times in a 24 hour period) 2x	785KM	1,570			$1,595/KM
LoS 4	Snow cleared every 16 hours (1.5 times in a 24 hour period) 1.5x	156KM	234			$1,196/KM
LoS 5	Snow cleared every 24 hours (1 time in a 24 hour period) 1x	28KM	28			$797/KM
Totals		**1,233**	**2,888** (*c*)			

1 Road Classification data sourced from County GIS data.

- Over a 24 hour snow event period, the County maintains a total of 2,888KM of road. The majority of maintenance is performed on class 2 or class 3 roads.
- Using the 3-average winter maintenance expenditures, the average cost to deliver winter maintenance for each road class is $797.62/KM.
- The service level cost per KM is then multiplied by the service multiplier to identify the weighted average cost per classification.

Future Opportunities

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Opportunity Development

Our Approach to Developing and Analyzing the Opportunities

KPMG identified seven (7) future state opportunities based upon results from the current state analysis and discussions with the County and its Area Municipalities:

1. Determine preferred future state between an enhanced status quo and three analysed alternatives.
2. Conduct a review of the public works patrol yards
3. Consider joint procurement opportunities for core transportation services
4. Implement additional KPIs to measure the effectiveness of transportation service delivery
5. a) Utilize level of service metrics in urban maintenance agreements

   b) Enhance the maturity of activity based costing
6. Utilize GPS technology to more effectively monitor transportation service activities
7. Re-evaluate the organizational structure for transportation services

KPMG performed qualitative and quantitative analysis for each opportunity (where applicable) in order to provide recommendations. Additionally, four (4) alternative service delivery models were considered for opportunity #1 including:

1a. Status Quo+

1b. Centralized Service Delivery

1c. Localized Service Delivery

1d. Full Asset Download

Each opportunity is aligned to KPMG's Target Operating Model as seen to the right.

Target Operating Model

Service Delivery Model

- Explore alternative service delivery models
- Conduct a review of the public works patrol yards

Processes

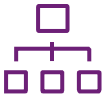
- Consider joint procurement opportunities for core transportation services
- Implement additional KPIs to measure the effectiveness of transportation service delivery

Data & Analytics

- Utilize level of service metrics in urban maintenance agreements
- Enhance the maturity of activity based costing

Equipment & Technology

- Utilize GPS technology to more effectively monitor transportation service activities



People

- Re-evaluate the organizational structure for transportation services

Opportunity #1: Explore Alternative Service Delivery Models

Oxford County
Transportation Network (Roads & Bridges) Operations & Maintenance Service Delivery Review
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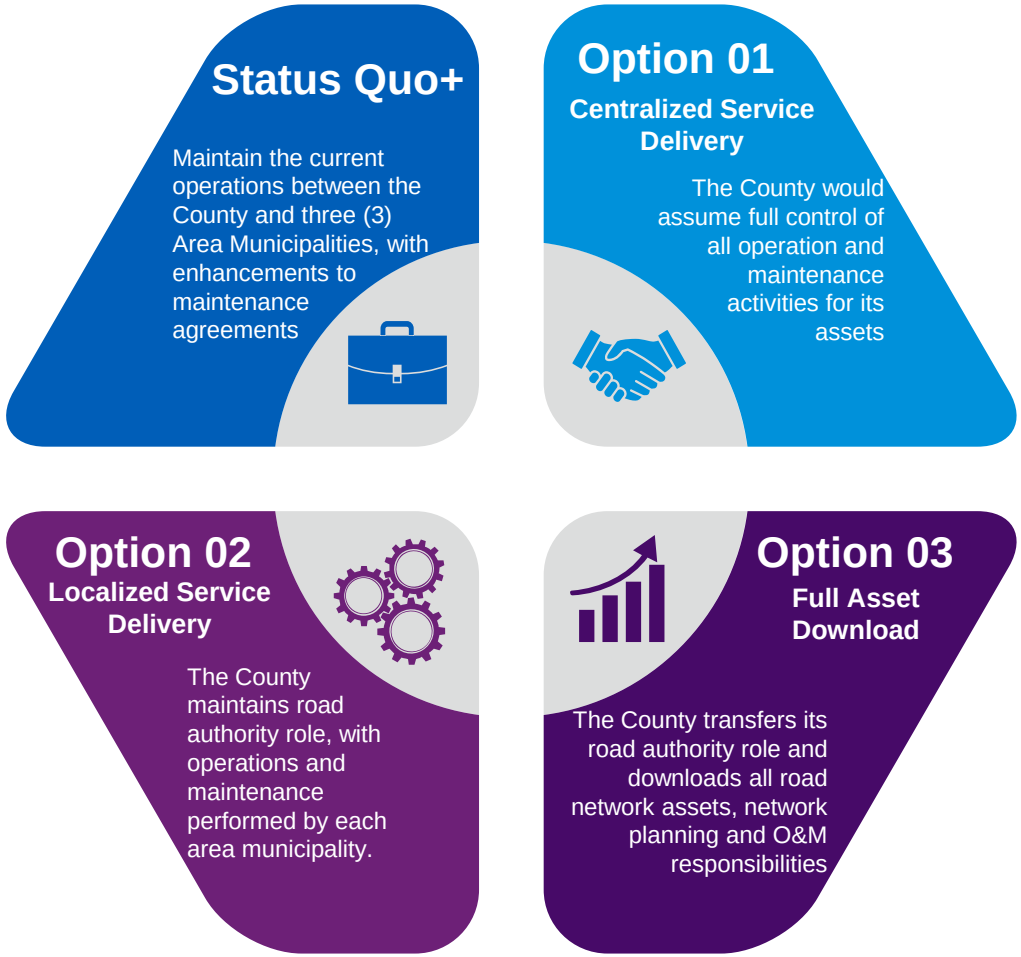
Alternative Delivery Structures

Option Description

- Based on the current state understanding of County operations, KPMG developed a status quo+ scenario and three alternative delivery structures for consideration.
- Each structure was analyzed to determine the impact on operating expenditures and human capital.



Current State (Base Case)

The current state financials were used to assess each alternative service delivery model. Throughout the analysis, the current state financials are referred to as the "base case". The base case is summarized below:

	3 Year Historical Operating Expenditure								
	Operating Expenditures				Revenues				
	Current State Opex - Roads	Current State Opex - Winter Maintenance	Current State Opex - Bridges	Total Public Works Operating Spend	Maintenance Revenue - Roads	Maintenance Revenue - Winter Control	Maintenance Revenue - Bridges	Total Maintenance Revenue	Net Operating Expenditures
Oxford County	$ 2,631,798	$ 2,303,528	$ 108,638	**$ 5,043,965**					**$ 5,043,965**
Woodstock	$ 1,506,189	$ 984,513	$ 42,533	**$ 2,533,234**	$ (134,074)	$ (133,944)	$ (5,787)	**$ (273,805)**	**$ 2,383,000**
Tillsonburg	$ 790,936	$ 626,619	$ 10,709	**$ 1,428,264**	$ (25,638)	$ (41,518)	$ (830)	**$ (67,985)**	**$ 1,402,761**
Ingersoll	$ 705,482	$ 420,773	$ 7,274	**$ 1,133,529**	$ (83,216)	$ (75,406)	$ (1,304)	**$ (159,926)**	**$ 1,046,054**
Norwich	$ 1,457,586	$ 434,244	$ 70,365	**$ 1,962,195**					**$ 2,268,116**
Zorra	$ 1,507,184	$ 497,055	$ 23,213	**$ 2,027,451**					**$ 3,406,318**
South-West Oxford	$ 1,277,480	$ 248,149	$ 5,227	**$ 1,530,856**					**$ 1,820,946**
Blandford-Blenheim	$ 1,648,798	$ 270,368	$ 11,624	**$ 1,930,790**					**$ 2,381,765**
East Zorra - Tavistock	$ 631,778	$ 214,370	$ 7,233	**$ 853,381**					**$ 1,253,809**
Total	**$ 12,157,231**	**$ 5,999,619**	**$ 286,817**	$ 18,443,667	**$ (242,928)**	**$ (250,869)**	**$ (7,920)**	**$ (501,716)**	$ 21,006,734

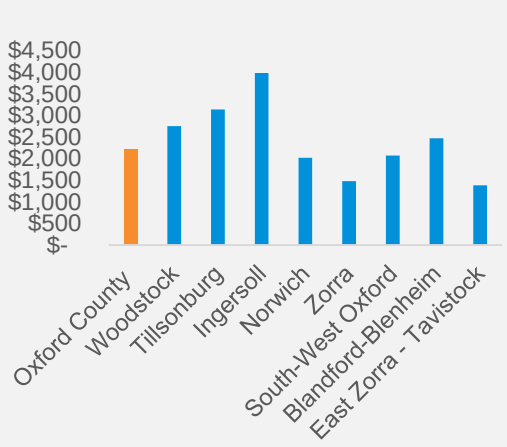
Transportation Services Efficiency Metrics

Based on the base case financials, KPMG derived efficiency metrics including roads expense per lane KM, winter expense per lane KM and bridge and culvert expense per sq.m of bridges. When compared to its Area Municipalities, Oxford County is cost competitive on a per KM basis. The efficiency metrics were used to determine operational impact for each of the alternative service delivery models. The below summarizes the efficiency metrics for Oxford County and its Area Municipalities:

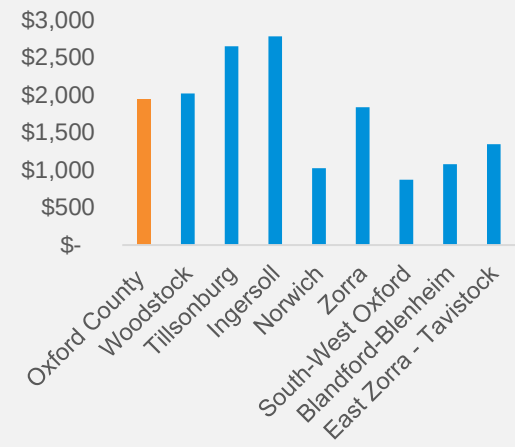
3-Year Average Efficiency Metrics[1]

	Roads Expense per Lane KM	Winter Expense per Lane KM	Bridge Expense per SqM Bridges
Oxford County	$ 2,221	$ 1,944	$ 3
Woodstock	$ 2,754	$ 2,026	$ 10
Tillsonburg	$ 3,139	$ 2,655	$ 2
Ingersoll	$ 3,986	$ 2,787	$ 2
Norwich	$ 2,022	$ 1,027	$ 11
Zorra	$ 1,479	$ 1,841	$ 2
South-West Oxford	$ 2,074	$ 874	$ 1
Blandford-Blenheim	$ 2,472	$ 1,081	$ 1
East Zorra-Tavistock	$ 1,385	$ 1,348	$ 2

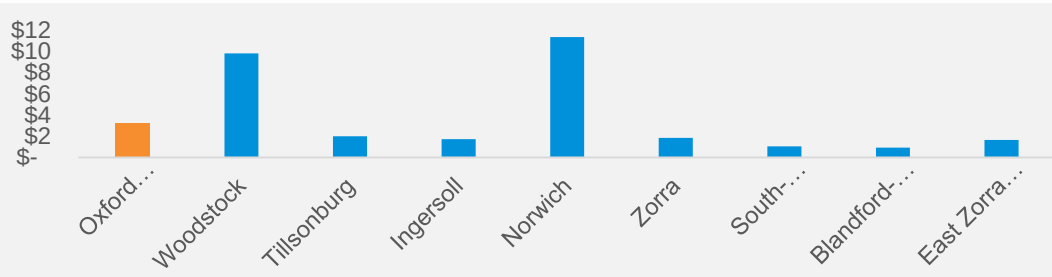
3-Year Average (2018-2020) Efficiency Metrics – Roads[1]



3-Year Average (2018-2020) Efficiency Metrics –Winter Maintenance[1]



3-Year Average (2018-2020) Efficiency Metrics –Bridges & Culverts[1]



Source: 1- Area Municipality Financials

KPMG

Status Quo+

Oxford County
Transportation Network (Roads & Bridges) Operations & Maintenance Service Delivery Review
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Status Quo+

Description

- County Roads: 1 authority (Oxford), 4 operators (Oxford, Tillsonburg, Ingersoll, Woodstock)
- Municipal Roads: 8 authorities, 8 operators
- Urban agreements would be revised for existing services.
- Boundary agreements are formalized across the County with lower tiers.
- Cost calculation is refined in an attempt to normalize the unit operating costs across the Region (required more granular cost tracking).
- This would include isolating costs of activities performed on County road assets to confirm LoS.
- Would require GPS for snow plowing equipment.

The Opportunity

Maintain the current operations between the County and three (3) Area Municipalities, with enhancements to maintenance agreements.

* Map of the County Road Network (Arterial Roads)

Road Authority	**Oxford County**
Lane KM maintained by County	**1,185 KM**
Lane KM maintained by area municipalities	**103 KM**
Overall Cost Increase (Savings) to **the County**	**$ -283,943 (-5.63%)**
Global Cost Increase (Savings) across **the County and Area Municipalities**	**$-269,008 (-1.28%)**

Status Quo+

As part of the alternative structure analysis, KPMG completed a SWOT analysis to assess the strengths, opportunities, weaknesses and threats of the status quo+ option:

Strengths

- The County remains the overall road authority for its road network.
- Maintenance agreements between the County and three (3) Area Municipalities (Woodstock, Tillsonburg, Ingersoll) are formalized.
- There is no impact on County or area municipality staffing.
- County realizes savings due to changes to the urban maintenance ratio.

Opportunities

- This option may drive increased maturity in activity planning, costing and tracking by the three (3) Area Municipalities.
- There is an opportunity to implement additional efficiency, performance and financial metrics to gain a better understanding of service levels delivered on County roads.
- There is an opportunity to use cost savings on roads activities towards increasing service levels in other areas (e.g., bridges).

Weaknesses

- Cost to maintain the County road network are not fixed for each urban municipality.
- Inconsistent service level standards on County Roads may exist.
- Time commitment required to implement solutions to obtain detailed activity data for maintenance activities and tracking of service levels.

Threats

- Public reaction as a result of revenue reductions due to adjusted urban maintenance ratios.
- Area Municipalities may require an increase to their tax base to make up for the decrease in revenue from the County
- Area Municipalities may face additional costs for the procurement and acquisition of technology to better manage and track service levels.

Assumptions

- Oxford County is paying for a level of service above its minimum road class requirements to the urban municipalities for operation and maintenance activities completed on County roads by using the maintenance ratio.
- The cost per road KM efficiency metric is largely driven by service levels (e.g., higher cost per KM assumes higher service level).

Status Quo+ - Financial Impact

To review the impact of adjusting the urban maintenance ratio, KPMG analyzed the scenario operating expenditures against the current state (base case) operating expenditures.

	Base Case Total Spend *(a)*	Total Scenario Operating Expenditures *(d)*	County Maintenance Transfer *(e)*	Joint Procurement Savings *(f)*	Total Scenario Spend *(d+e+f=g)*	$ Variance to Base Case *(h)*	% Variance to Base Case
Oxford County	$ 5,043,965	$ 4,542,229	$ 371,296	$(153,503)	$4,760,022	($283,943)	-5.63%
Woodstock	$ 2,383,000	$ 2,656,804	$ (250,796)	$(27,782)	$2,378,226	($4,774)	-0.20%
Tillsonburg	$ 1,402,761	$ 1,470,746	$ (57,086)	$(12,644)	$1,401,016	($1,745)	-0.12%
Ingersoll	$ 1,046,054	$ 1,205,979	$ (63,394)	$(3,268)	$1,139,317	$93,263	8.92%
Norwich	$ 2,268,116	$ 2,268,115		$(19,256)	$2,248,859	($19,257)	-0.85%
Zorra	$ 3,406,318	$ 3,406,318		$(33,793)	$3,372,525	($33,793)	-0.99%
South-West Oxford	$ 1,820,946	$ 1,820,946		$(11,546)	$1,809,400	($11,546)	-0.63%
Blandford-Blenheim	$ 2,381,765	$ 2,381,764		N/A	$2,381,764	-	0.00%
East Zorra - Tavistock	$ 1,253,809	$ 1,253,809		$(7,212)	$1,246,597	($7,212)	-0.58%

The assumptions underpinning the analysis above are detailed on slide 40 that follows.

Financial Impact - Assumptions

Each alternative service delivery option was analyzed to determine the financial impact, staffing impact and equipment impact of each option. Each scenario contains summary tables to highlight the results of the analysis. The following guide outlines the calculations derived within each table:

Column Name	Definition
Financial Impact	
Base Case Total Spend **(a)**	*Base Case Total Spend* is the current state spend referred to on slide 34. This figure is a three-year historical average spend for roads, winter maintenance and bridges & culverts.
Total Scenario Operating Expenditures (**d)**	In the Status Quo+ Scenario, *Total Scenario Operating Expenditures* are derived by multiplying the current state efficiency metric (see slide 35) by the total road KM maintained under the service delivery option. For example, under the centralized service delivery option, the County's scenario spend on roads is calculated by multiplying the roads maintained (1,288) by the efficiency metric ($2,220).
County Maintenance Transfer **(e)**	Cost paid by the County to the Area Municipalities for maintenance activities performed on County roads per the maintenance agreements. To calculate the County maintenance transfer for each Area Municipality we have used the following assumptions: • For urban municipalities, any costs above the County's cost of service are a result of the urban's providing a higher level of service. As such, these costs will be incurred by the urban municipality. • For rural municipalities, any downloaded County roads will be maintained up to the County's level of service using the County's efficiency metric as a baseline.
Joint Procurement Savings **(f)**	Estimated savings through joint procurement. Estimated savings of 10% based on assumption of economies of scale for current contracted services. See opportunity #3 for full analysis.
Total Scenario Spend **(d+e+f=g)**	Difference between *Total Scenario Operating Expenditures (d)* and scenario savings (e+f). The Status Quo+ option assumes no change to staffing or equipment requirements.
$ Variance to Base Case **(h)**	Difference between *Total Scenario Spend (g)* and *Base Case Total Spend (a)*

Status Quo+ Key Takeaways

The key takeaways from the status quo+ scenario analysis are summarized below:

Financial Summary

- The scenario results in a decrease of approximately 5.63% to the County's net annual operating expenditures (~$283,943 savings).
- County’s cost portion of urban maintenance is decreased as a result of normalized urban maintenance sharing agreements.
- Ingersoll realized an increase of $93,263 to annual operating expenditures resulting from a decrease in revenue sharing from the County.
- Scenario has no financial impact on transportation operations and maintenance in rural municipalities.

KPMG

Option 1: Centralized Service Delivery

Oxford County
Transportation Network (Roads & Bridges) Operations & Maintenance Service Delivery Review
Final Report

Option #1: Centralized Service Delivery

Description

- County Roads: 1 authority (Oxford), 1 operator (Oxford)
- Municipal Roads: 8 authorities, 8 operators
- County assumes full control of all activities performed on its assets.
- Each authority accountable and responsible for their own asset base.
- No changes to County vs. municipal burden on tax base

The Opportunity

Under the centralized service delivery option, the County would assume full control of all operation and maintenance activities for its assets.

Centralized Option
Oxford County

* Map of the County Road Network (Arterial Roads)

Road Authority	**Oxford County**
Lane KM maintained by County	**1,288 KM**
Lane KM maintained by area municipalities	**0 KM**
Overall Cost Increase (Savings) to **the County**	**$-393,536 (-7.8%)**
Global Cost Increase (Savings) across **the County and Area Municipalities**	**$-328,979 (-1.6%)**

KPMG

Option #1: Centralized Service Delivery

As part of the alternative structure analysis, KPMG completed a SWOT analysis to assess the strengths, opportunities, weaknesses and threats of the centralized service delivery option:

Strengths

- Oxford County gains full control of the level of service provided on its road network assets.
- Elimination of maintenance agreements, billing and annual budgeting with the Area Municipalities gains efficiency.
- Economies of scale realized through more efficient service delivery.
- County maintains road authority responsibility.
- No impact to existing County unionized staffing compliment
- Each of the nine (9) Municipalities are responsible for their own assets and any associated road liabilities.

Opportunities

- Ability to achieve a consistent level of service across the entire regional transportation network.
- Opportunity to realize an efficiency factor resulting from non-segregated service provision responsibility.
- Streamlining of service bundling and procurement.
- Increased assessment revenue tied to Area Municipality growth will serve to offset loss of County revenue to the same

Weaknesses

- County may be required to increase service levels on urban county roads.
- Potential minor impact to staffing at each of the three (3) urban Area Municipalities.
- Winter route studies may be required to ensure additional County roads have been effectively mapped within existing routes.

Threats

- Collective bargaining agreements may impact the ability to transfer staff to another municipality (if required).
- Three (3) urban Area Municipalities may require an increase to their tax base to make up for the decrease in revenue from the County.
- Negative public reaction from residents who have become accustomed to higher levels of service performed locally on County roads that are currently operated under contract by the three (3) Area Municipalities.

Assumptions

- The centralized O&M service amalgamation brings economies of scale resulting in an efficiency factor for the County. KPMG has estimated the efficiency factor to be 5%.
- Oxford County continues to receive municipal recoveries for work completed on municipal roads.

Option #1: Centralized Service Delivery – Financial Impact

To review the impact of uploading all County road network assets to Oxford County, KPMG analyzed the scenario operating expenditures against the current state (base case) operating expenditures.

	Base Case Total Spend *(a)*	Scenario Base Operating Expenditures *(b)*	Scenario Equipment Costs *(c)*	Total Scenario Operating Expenditures *(b+c=d)*	County Maintenance Transfer *(e)*	Joint Procurement Savings *(f)*[1]	Total Scenario Spend *(d+e+f=g)**	$ Variance to Base Case *(h)*	% Variance to Base Case
Oxford County	$ 5,043,965	$ 5,472,943	$ 111,950	$ 5,584,893	$ (501,716)	$(153,503)	**$ 4,650,429**	$ (393,536)	-7.8%
Woodstock	$ 2,383,000	$ 2,365,268	$ -	$ 2,365,268		$(27,782)	**$ 2,455,749**	$ 72,749	3.1%
Tillsonburg	$ 1,402,761	$ 1,378,046	$ -	$ 1,378,046		$(12,644)	**$ 1,434,304**	$ 31,543	2.2%
Ingersoll	$ 1,046,054	$ 1,029,899	$ -	$ 1,029,899		$(3,268)	**$ 1,078,126**	$ 32,072	3.1%
Norwich	$ 2,268,116	$ 2,268,116	$ -	$ 2,268,116		$(19,256)	**$ 2,248,860**	$ (19,256)	-0.8%
Zorra	$ 3,406,318	$ 3,406,318	$ -	$ 3,406,318		$(33,793)	**$ 3,372,525**	$ (33,793)	-1.0%
South-West Oxford	$ 1,820,946	$ 1,820,946	$ -	$ 1,820,946		$(11,546)	**$ 1,809,400**	$ (11,546)	-0.6%
Blandford-Blenheim	$ 2,381,765	$ 2,381,765	$ -	$ 2,381,765		N/A	**$ 2,381,765**	$ -	0.0%
East Zorra - Tavistock	$ 1,253,809	$ 1,253,809	$ -	$ 1,253,809		$(7,212)	**$ 1,246,597**	$ (7,212)	-0.6%

For the assumptions that underpin the analysis in this table please see slide 48.

Option #1: Centralized Service Delivery – Staffing Impact

The upload of County roads from Woodstock, Tillsonburg and Ingersoll to the County's operations and maintenance portfolio may impact staffing complements. To determine the staffing impact for each scenario, KPMG analyzed the County's current staffing model used to achieve their current service levels. This ratio was considered the baseline standard for service delivery and used to assess surplus (or deficits) in FTEs across the area municipalities based on County road allocation within each scenario.

	Scenario Based Human Capital *(a)*			Scenario Variance to County Standard *(a-County Standard=b)*			Net FTE Impact (Surplus/- Deficit) *(b*scenario road maintained/100)*		
	Management Staff per 100 Lane KM	Forepersons per 100 Lane KM	Operators per 100 Lane KM	Management Staff per 100 Lane KM	Forepersons per 100 Lane KM	Operators per 100 Lane KM	Management Staff	Forepersons	Operators
Oxford County	0.39	0.31	2.33	-0.03	-0.03	-0.20	-0.43	-0.35	-2.61
Woodstock	0.62	1.03	8.02	0.20	0.69	5.49	0.26	0.21	1.54
Tillsonburg	0.85	0.42	3.81	0.43	0.09	1.28	0.07	0.05	0.41
Ingersoll	1.32	1.32	5.96	0.90	0.99	3.43	0.11	0.09	0.66
Norwich	0.14	0.28	1.11	-0.28	-0.06	-1.42	0.00	0.00	0.00
Zorra	0.10	0.20	0.98	-0.32	-0.14	-1.55	0.00	0.00	0.00
South-West Oxford	0.16	0.32	0.97	-0.26	-0.01	-1.56	0.00	0.00	0.00
Blandford-Blenheim	0.15	0.15	1.05	-0.27	-0.19	-1.48	0.00	0.00	0.00
East Zorra - Tavistock	0.22	0.44	1.10	-0.20	0.10	-1.44	0.00	0.00	0.00

For the assumptions that underpin the analysis in this table please see slide 49.

Option #1: Centralized Service Delivery – Equipment Impact

Major equipment impact (e.g., plow trucks and pick-up trucks) was also considered as part of the alternative options analysis. Based on the allocation of County roads under the scenario, KPMG determine the number of additional equipment required to maintain roads at the current level of service. Equipment cost was then included as part of the total scenario operating expenditures.

Plow Truck*

Initial Cost: $350,000

Average Useful Life: 10 years

Annual Cost: $35,000

*Assumes a tandem axel dump truck with plow

Pick-up Truck*

Initial Cost: $65,000

Average Useful Life: 4 years

Annual Cost: $16,250

*Assumes a ½ tonne crew cab pick-up truck

Scenario Equipment Impact

		Equipment Impact			
	Scenario Base Operating Expenditures (*b*)	Total Plows Required	Total Trucks Required	Initial Estimated Capital Cost of Equipment	Scenario Equipment Costs (*c*)
Oxford County	$ 5,472,943	2	1	$ 765,000	$ 111,950
Woodstock	$ 2,365,268	0	0	$ -	$ -
Tillsonburg	$ 1,378,046	0	0	$ -	$ -
Ingersoll	$ 1,029,899	0	0	$ -	$ -
Norwich	$ 2,268,116	0	0	$ -	$ -
Zorra	$ 3,406,318	0	0	$ -	$ -
South-West Oxford	$ 1,820,946	0	0	$ -	$ -
Blandford-Blenheim	$ 2,381,765	0	0	$ -	$ -
East Zorra - Tavistock	$ 1,253,809	0	0	$ -	$ -

For the assumptions that underpin the analysis in this table please see slide 50.

Financial Impact - Assumptions

Each alternative service delivery option was analyzed to determine the financial impact, staffing impact and equipment impact of each option. Each scenario contains summary tables to highlight the results of the analysis. The following guide outlines the calculations derived within each table:

Column Name	Definition
Financial Impact	
Base Case Total Spend **(a)**	*Base Case Total Spend* is the current state spend referred to on slide 34. This figure is a three-year historical average spend for roads, winter maintenance and bridges & culverts.
Scenario Base Operating Expenditures **(b)**	*Scenario Base Operating Expenditures* are derived by multiplying the current state efficiency metric (see slide 35) by the total road KM maintained under the service delivery option. For example, under the centralized service delivery option, the County's scenario spend on roads is calculated by multiplying the roads maintained (1,288) by the efficiency metric ($2,220).
Scenario Equipment Costs **(c)**	Estimated annualized cost of additional major equipment required based on the service delivery option. For the purposes of our analysis, only snow plows and pickup trucks were included. The analysis focused on highlight utilized equipment that performs the majority of road maintenance activities. It therefore does not include small equipment or lower-utilized specialized equipment. Please see slide 50 for further details on inclusions/exclusions for equipment and asset costs.
Total Scenario Operating Expenditures **(b+c=d)**	Aggregation of *Scenario Base Operating Expenditures (b)* plus *Scenario Equipment Costs (c).*
County Maintenance Transfer **(e)**	Cost paid by the County to the Area Municipalities for maintenance activities performed on County roads per the maintenance agreements. To calculate the County maintenance transfer for each Area Municipality we have used the following assumptions: • For urban municipalities, any costs above the County's cost of service are a result of the urban's providing a higher level of service. As such, these costs will be incurred by the urban municipality. • For rural municipalities, any downloaded County roads will be maintained up to the County's level of service using the County's efficiency metric as a baseline.
Joint Procurement Savings **(f)**	Estimated savings through joint procurement. Estimated savings of 10% based on assumption of economies of scale for current contracted services. See opportunity #3 for full analysis.
Total Scenario Spend **(d+e+f=g)**	Difference between *Total Scenario Operating Expenditures (d)* and scenario savings (e+f). *Total Scenario Spend* includes the application of an efficiency factor of 5% for urban municipalities and 2% for rural municipalities. The efficiency factor reflects operational efficiencies that may be gained as a result of centralizing or localizing service delivery. The efficiency factor is also applied inversely to reflect potential service disruptions resulting from change in asset ownership.
$ Variance to Base Case **(h)**	Difference *between Total Scenario Spend (g)* and *Base Case Total Spend (a).*

Staffing Impact - Assumptions

Each alternative service delivery option was analyzed to determine the financial impact, staffing impact and equipment impact of each option. Each scenario contains summary tables to highlight the results of the analysis. The following guide outlines the calculations derived within each table:

Column Name	Definition
Staffing Impact	
Scenario Based Human Capital **(a)**	Based on the total lane KMs maintained under the scenario, KPMG calculated each municipality's total management, forepersons, and operators per 100 lane KMs. Current state staffing for each municipality is identified on slide 26.
Scenario Variance to the County Standard **(a-County Standard=b)**	The County Standard is defined as the County's current staffing model used to achieve their service levels. The County standard was considered the baseline standard for service delivery and used to assess surplus (or deficits) in FTEs for each scenario. The scenario variance is the difference between the scenario based human capital and the County standard for each position.
Net FTE Impact **(b*scenario road maintained/100)**	Surplus (or deficit) in FTEs based on road allocation within each scenario. The staffing impact calculation does not consider the unique service level expectations in the urban municipalities. As a result, there may be a perceived FTE surplus in the urban municipalities.

Equipment Impact - Assumptions

Each alternative service delivery option was analyzed to determine the financial impact, staffing impact and equipment impact of each option. Each scenario contains summary tables to highlight the results of the analysis. The following guide outlines the calculations derived within each table:

Column Name	Definition
Equipment Impact	
Scenario Base Operating Expenditures **(b)**	*Scenario Base Operating Expenditures* are derived by multiplying the current state efficiency metric (see slide 35) by the total road KM maintained under the service delivery option. For example, under the centralized service delivery option, the County's scenario spend on roads is calculated by multiplying the roads maintained (1,288) by the efficiency metric ($2,220).
Total Plows Required	Total number of additional plow trucks required to maintain roads allocated within the scenario. Assumption that one additional snow plow is required for every 71.5KM of County Road added to the municipalities service portfolio.
Total Trucks Required	Total number of additional pick-up trucks required to maintain roads allocated within the scenario. Assumption that one pick-up truck is required for each additional foreperson.
Initial Estimated Capital Cost of Equipment	Initial cost to purchase the additional pieces of major equipment. Purchase cost for the plow truck and pick-up is estimated at $350,000 and $65,000, respectfully.
Scenario Equipment Costs **(c)**	Annual cost of depreciation and O&M on additional equipment. The incremental cost of facilities required to house any additional equipment was not included in the analysis, as from our experience municipalities can have different approaches to the storage of equipment (e.g. in heated garage bays vs. outside). Should a scenario be considered that requires additional equipment, this would have to be an analysis complete by each affected municipality (see Opportunity #2). Due to data limitations, the cost savings attributed to the County or a municipality requiring less equipment has not been incorporated into the analysis. In some instances, the reduction of service may not result in a reduced need of equipment, as it could be used to perform other activities or to increase the spare ratio of equipment. This applies to costs of operating the equipment and to potentially selling equipment. Similarly, the cost savings that could be linked to reduced facility space to support equipment have not been included, as our analysis did not include the detailed space utilization of any municipality.

Option #1: Centralized Service Delivery – Key Takeaways

The key takeaways from the centralized service delivery scenario analysis are summarized below:

Financial Summary

- The County adds 103KM of urban County roads to its operations. The County's additional expense is offset by the decrease in urban maintenance revenue paid to the urban municipalities.
- The County does not pay the urban maintenance ratio to urban municipalities. As a result, net urban transportation operating expenditures increase.
- The County realizes an efficiency factor of 5% due to economies of scale.
- The scenario does not impact rural municipalities.

Staffing Summary

- The additional County lane KM allocated to the County under the centralized service delivery option would require an additional 0.43 FTE for management staff, 0.35 FTE for Forepersons and 2.61 FTE for Operators to maintain the County's current service level standards. This assumes that the County's current staff is at capacity and unable to take on the additional workload.
- Each urban municipality would have a staff surplus in all positions that may be reallocated to the County.

Equipment Summary

- The upload of County road assets to the County's operations and maintenance portfolio may require the addition of two snow plows and one pick-up to the County's existing fleet.
- The annualized cost of the additional equipment is estimated at $111,950.
- Additional facility space requirements and costs were not considered as part of this analysis.

Option 2: Localized Service Delivery

Oxford County
Transportation Network (Roads & Bridges) Operations & Maintenance Service Delivery Review
Final Report

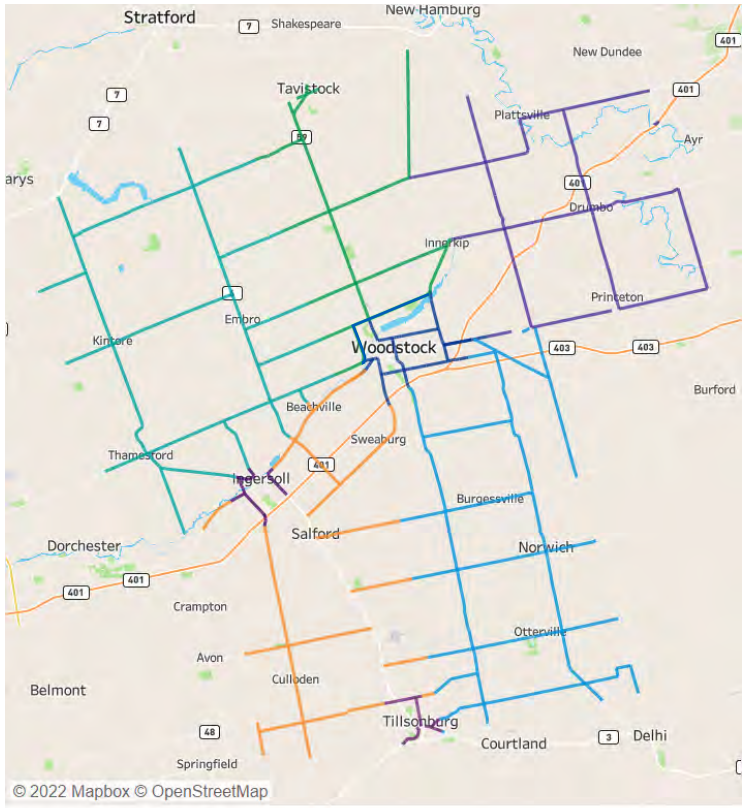
Option #2: Localized Service Delivery

Description

- County: 1 authority (Oxford), 8 operators
- Municipal: 8 authorities, 8 operators
- Each municipality contracted by County for O&M of County roads within their boundaries.
- ‘Status Quo+’ agreement principles applied to both urban and rural municipal agreements.
- County retains authority role and associated transportation network activities (transportation planning, traffic mgmt., corridor mgmt., road safety, traffic calming, ROW storm water management, capital planning & asset management, etc.)
- No changes to County vs. municipal burden on tax base.

The Opportunity

Under the localized service delivery option, the County maintains road authority role, with operations and maintenance contracted out to each area municipality. For Urban municipalities (Woodstock, Tillsonburg, Ingersoll), the localized service delivery option has the same impact noted in Status Quo+. For rural municipalities, the localized service delivery option assumes they will taken on delivery of service on County roads and be reimbursed per a maintenance agreement with the County.



* Map only displaying County road network

Road Authority	**Oxford County**
Lane KM maintained by County	**0 KM**
Lane KM maintained by area municipalities	**1,288 KM**
Overall Cost Increase (Savings) to **the County**	**$-412,499 -8.2%**
Global Cost Increase (Savings) across **the County and Area Municipalities**	**$751,390 3.6%**

Option #2: Localized Service Delivery

As part of the alternative structure analysis, KPMG completed a SWOT analysis to assess the strengths, opportunities, weaknesses and threats of the localized service delivery option:

Strengths

- Oxford County maintains road authority role and asset ownership.
- Boundary and maintenance agreements with Area Municipalities are formalized.
- No change to the burdens on municipal tax bases.
- Rural municipalities will be reimbursed by the County for the additional assets they will be maintaining through maintenance agreements.

Opportunities

- Municipalities may achieve efficiencies through the assumption of all transportation service delivery within their jurisdiction.
- There is an opportunity to implement additional efficiency, performance and financial metrics to gain a better understanding of service levels delivered on County roads.

Weaknesses

- May require the reallocation (or reduction) of County staff.
- Potential implications on current collective bargaining agreements due to staff reallocation.
- Potential for inconsistent levels of service of County roads due to multiple Area Municipality operators.

Threats

- Rural municipalities may require additional staff and equipment.
- Collective bargaining agreements may impact the ability to transfer staff to another municipality.
- Indemnification for O&M liability now transfers to all Area Municipalities (previously just the three (3) urban municipalities).
- Further study may be required to determine the impact (if any) on the County and Area Municipality tax assessment.

Assumptions

- Rural municipalities will be required to maintain an increased level of service on County roads to manager higher class roads in accordance with MMS (County minimum LoS is consistent with MMS) when compared to the LoS they maintain on the rest of their municipal road network.

Option #2: Localized Service Delivery – Financial Impact

To review the impact of transitioning all County road operation and maintenance activities to each Area Municipality, KPMG analyzed the scenario operating expenditures against the current state (base case) operating expenditures.

	Base Case Total Spend *(a)*	Scenario Base Operating Expenditures *(b)*	Scenario Equipment Costs *(c)*	Total Scenario Operating Expenditures *(b+c=d)*	County Maintenance Transfer *(e)*	Joint Procurement Savings *(f)*	Total Scenario Spend *(d+e+f=g)*	$ Variance to Base Case *(h)*	% Variance to Base Case
Oxford County	$ 5,043,965	$ 108,638	$ -	$ 108,638	$ 4,676,330	$(153,503)	**$ 4,631,466**	$ (412,499)	-8.2%
Woodstock	$ 2,383,000	$ 2,656,804	$ -	$ 2,656,804	$ (250,796)	$(27,782)	**$ 2,378,226**	$ (4,773)	-0.2%
Tillsonburg	$ 1,402,761	$ 1,470,747	$ -	$ 1,470,747	$ (57,086)	$(12,644)	**$ 1,401,017**	$ (1,745)	-0.1%
Ingersoll	$ 1,046,054	$ 1,205,980	$ -	$ 1,205,980	$ (63,394)	$(3,268)	**$ 1,139,318**	$ 93,264	8.9%
Norwich	$ 2,268,116	$ 3,567,544	$ 270,400	$ 3,837,944	$ (1,146,525)	$(19,256)	**$ 2,595,404**	$ 265,646	14.4%
Zorra	$ 3,406,318	$ 4,564,142	$ 204,950	$ 4,769,092	$ (1,055,593)	$(33,793)	**$ 3,584,324**	$ 130,280	5.2%
South-West Oxford	$ 1,820,946	$ 2,603,935	$ 158,450	$ 2,762,385	$ (665,152)	$(11,546)	**$ 2,030,439**	$ 173,037	11.5%
Blandford-Blenheim	$ 2,381,765	$ 3,300,265	$ 158,450	$ 3,458,715	$ (818,217)	N/A	**$ 2,571,323**	$ 153,103	8.0%
East Zorra - Tavistock	$ 1,253,809	$ 1,936,842	$ 158,450	$ 2,095,292	$ (619,568)	$(7,212)	**$ 1,426,606**	$ 136,341	13.8%

For the assumptions that underpin the analysis in this table please see slide 58.

Option #2: Localized Service Delivery – Staffing Impact

The download of County roads to its Area Municipalities' operations and maintenance portfolios may impact staffing complements. To determine the staffing impact for each scenario, KPMG analyzed the County's current staffing model used to achieve their current service levels. This ratio was considered the baseline standard for service delivery and used to assess surplus (or deficits) in FTEs across the area municipalities based on County road allocation within each scenario.

	Scenario Based Human Capital *(a)*			Scenario Variance to County Standard *(a-County Standard=b)*			Net FTE Impact (Surplus/- Deficit) *(b*scenario road maintained/100)*		
	Management Staff per 100 Lane KM	Forepersons per 100 Lane KM	Operator 100 Lane KM	Management Staff per 100 Lane KM	Forepersons per 100 Lane KM	Operators per 100 Lane KM	Management Staff	Forepersons	Operators
Oxford County	N/A	N/A	N/A	N/A	N/A	N/A	1.10	4.00	25.3
Woodstock	0.55	0.91	7.13	0.13	0.58	4.60	0.00	0.00	0.00
Tillsonburg	0.79	0.40	3.57	0.37	0.06	1.04	0.00	0.00	0.00
Ingersoll	1.13	1.13	5.08	0.71	0.79	2.55	0.00	0.00	0.00
Norwich	0.10	0.19	0.77	-0.33	-0.14	-1.76	-1.32	-1.05	-7.90
Zorra	0.08	0.15	0.77	-0.34	-0.18	-1.76	-1.17	-0.94	-7.04
South-West Oxford	0.12	0.25	0.75	-0.30	-0.09	-1.79	-0.79	-0.63	-4.76
Blandford-Blenheim	0.11	0.11	0.80	-0.31	-0.22	-1.73	-0.88	-0.70	-5.27
East Zorra - Tavistock	0.16	0.32	0.81	-0.26	-0.01	-1.73	-0.69	-0.55	-4.15

For the assumptions that underpin the analysis in this table please see slide 59.

Option #2: Localized Service Delivery – Equipment Impact

Major equipment impact (e.g., plow trucks and pick-up trucks) was also considered as part of the alternative options analysis. Based on the allocation of County roads under the scenario, KPMG determine the number of additional equipment required to maintain roads at the current level of service. Equipment cost was then included as part of the total scenario operating expenditures.

Plow Truck*

Initial Cost: $350,000

Average Useful Life: 10 years

Annual Cost: $35,000

*Assumes a tandem axel dump truck with plow

Pick-up Truck*

Initial Cost: $65,000

Average Useful Life: 4 years

Annual Cost: $16,250

*Assumes a ½ tonne crew cab pick-up truck

	Scenario Equipment Impact				
		Equipment Impact			
	Scenario Base Operating Expenditures (*b*)	Total Plows Required[1]	Total Trucks Required[2]	Initial Estimated Capital Cost of Equipment	Scenario Equipment Costs (*c*)
Oxford County	$ 108,638	0	0	$ -	$ -
Woodstock	$ 2,656,804	0	0	$ -	$ -
Tillsonburg	$ 1,470,747	0	0	$ -	$ -
Ingersoll	$ 1,205,980	0	0	$ -	$ -
Norwich	$ 3,567,544	5	2	$ 1,880,000	$ 270,400
Zorra	$ 4,564,142	4	1	$ 1,465,000	$ 204,950
South-West Oxford	$ 2,603,935	3	1	$ 1,115,000	$ 158,450
Blandford-Blenheim	$ 3,300,265	3	1	$ 1,115,000	$ 158,450
East Zorra - Tavistock	$ 1,936,842	3	1	$ 1,115,000	$ 158,450

For the assumptions that underpin the analysis in this table please see slide 60.

Financial Impact - Assumptions

Each alternative service delivery option was analyzed to determine the financial impact, staffing impact and equipment impact of each option. Each scenario contains summary tables to highlight the results of the analysis. The following guide outlines the calculations derived within each table:

Column Name	Definition
Financial Impact	
Base Case Total Spend **(a)**	*Base Case Total Spend* is the current state spend referred to on slide 34. This figure is a three-year historical average spend for roads, winter maintenance and bridges & culverts.
Scenario Base Operating Expenditures **(b)**	*Scenario Base Operating Expenditures* are derived by multiplying the current state efficiency metric (see slide 35) by the total road KM maintained under the service delivery option. For example, under the centralized service delivery option, the County's scenario spend on roads is calculated by multiplying the roads maintained (1,288) by the efficiency metric ($2,220).
Scenario Equipment Costs **(c)**	Estimated annualized cost of additional major equipment required based on the service delivery option. For the purposes of our analysis, only snow plows and pickup trucks were included. The analysis focused on highlight utilized equipment that performs the majority of road maintenance activities. It therefore does not include small equipment or lower-utilized specialized equipment. Please see slide 50 for further details on inclusions/exclusions for equipment and asset costs.
Total Scenario Operating Expenditures **(b+c=d)**	Aggregation of *Scenario Base Operating Expenditures (b)* plus *Scenario Equipment Costs (c).* Operating expenditures related to bridges & culverts were not allocated to each Area Municipality as GIS data tying bridges to a municipal boundary was not available. However, total operating expenditures for bridges only represents 0.5% of the total transportation spend and will not have a significant impact on this analysis.
County Maintenance Transfer **(e)**	Cost paid by the County to the Area Municipalities for maintenance activities performed on County roads per the maintenance agreements. To calculate the County maintenance transfer for each Area Municipality we have used the following assumptions: • For urban municipalities, any costs above the County's cost of service are a result of the urban's providing a higher level of service. As such, these costs will be incurred by the urban municipality. • For rural municipalities, any downloaded County roads will be maintained up to the County's level of service using the County's efficiency metric as a baseline. Finally, the County Maintenance Transfer calculation is net of municipal recoveries. In the current state, municipal recoveries are paid by the rural municipalities to the County for roads activities performed on the municipal road network.
Joint Procurement Savings **(f)**	Estimated savings through joint procurement. Estimated savings of 10% based on assumption of economies of scale for current contracted services. See opportunity #3 for full analysis.
Total Scenario Spend **(d+e+f=g)**	Difference between *Total Scenario Operating Expenditures (d)* and scenario savings (e+f). *Total Scenario Spend* includes the application of an efficiency factor of 5% for urban municipalities and 2% for rural municipalities. The efficiency factor reflects operational efficiencies that may be gained as a result of centralizing or localizing service delivery. The efficiency factor is also applied inversely to reflect potential service disruptions resulting from change in asset ownership.
$ Variance to Base Case **(h)**	Difference *between Total Scenario Spend (g)* and *Base Case Total Spend (a)*

Staffing Impact - Assumptions

Each alternative service delivery option was analyzed to determine the financial impact, staffing impact and equipment impact of each option. Each scenario contains summary tables to highlight the results of the analysis. The following guide outlines the calculations derived within each table:

Column Name	Definition
Staffing Impact	
Scenario Based Human Capital **(a)**	Based on the total lane KMs maintained under the scenario, KPMG calculated each municipality's total management, forepersons, and operators per 100 lane KMs. Current state staffing for each municipality is identified on slide 26.
Scenario Variance to the County Standard **(a-County Standard=b)**	The County Standard is defined as the County's current staffing model used to achieve their service levels. The County standard was considered the baseline standard for service delivery and used to assess surplus (or deficits) in FTEs for each scenario. The scenario variance is the difference between the scenario based human capital and the County standard for each position.
Net FTE Impact **(b*scenario road maintained/100)**	Surplus (or deficit) in FTEs based on road allocation within each scenario. The staffing impact calculation does not consider the unique service level expectations in the urban municipalities. As a result, there may be a perceived FTE surplus in the urban municipalities. In the rural municipalities, this calculation can be used to analyze the additional staff resources required to maintain the uploaded County roads to the County's service level requirements.

Equipment Impact - Assumptions

Each alternative service delivery option was analyzed to determine the financial impact, staffing impact and equipment impact of each option. Each scenario contains summary tables to highlight the results of the analysis. The following guide outlines the calculations derived within each table:

Column Name	Definition
Equipment Impact	
Scenario Base Operating Expenditures **(b)**	*Scenario Base Operating Expenditures* are derived by multiplying the current state efficiency metric (see slide 35) by the total road KM maintained under the service delivery option. For example, under the centralized service delivery option, the County's scenario spend on roads is calculated by multiplying the roads maintained (1,288) by the efficiency metric ($2,220).
Total Plows Required	Total number of additional plow trucks required to maintain roads allocated within the scenario. Assumption that one additional snow plow is required for every 71.5KM of County Road added to the municipalities service portfolio.
Total Trucks Required	Total number of additional pick-up trucks required to maintain roads allocated within the scenario. Assumption that one pick-up truck is required for each additional foreperson.
Initial Estimated Capital Cost of Equipment	Initial cost to purchase the additional pieces of major equipment. Purchase cost for the plow truck and pick-up is estimated at $350,000 and $65,000, respectfully.
Scenario Equipment Costs **(c)**	Annual cost of depreciation and O&M on additional equipment. The incremental cost of facilities required to house any additional equipment was not included in the analysis, as from our experience municipalities can have different approaches to the storage of equipment (e.g. in heated garage bays vs. outside). Should a scenario be considered that requires additional equipment, this would have to be an analysis complete by each affected municipality (see Opportunity #2). Due to data limitations, the cost savings attributed to the County or a municipality requiring less equipment has not been incorporated into the analysis. In some instances, the reduction of service may not result in a reduced need of equipment, as it could be used to perform other activities or to increase the spare ratio of equipment. This applies to costs of operating the equipment and to potentially selling equipment. Similarly, the cost savings that could be linked to reduced facility space to support equipment have not been included, as our analysis did not include the detailed space utilization of any municipality.

Option #2: Localized Service Delivery – Key Takeaways

The key takeaways from the localized service delivery scenario analysis are summarized below:

Financial Summary

- The County's net operating expenditures decrease by approximately 8.2% as a result of downloading the operation and maintenance of the County road network to the rural municipalities.
- Municipalities realize a increase in operating expenditures resulting additional operations and maintenance activities.
- Rural municipalities may incur larger gross operating expenditures resulting from increased service level expectations.
- Rural municipalities realize an efficiency factor of 2%.

Staffing Summary

- Given the County lane KMs allocated to the rural municipalities in this scenario, each rural municipality would require additional resources at all levels to achieve the current County standard.
- Under the localized service delivery model, the County's FTE surplus may be allocated to the rural municipalities to close FTE deficits if collective agreements permit such potential reallocation.
- The County maintains the overall road authority. This role accounts for approximately 78% of management time across five transportation and seven engineering positions.

Equipment Summary

- The download of County road assets the Area Municipality operations and maintenance portfolio may require the addition of seventeen snow plows and six pick-ups distributed across the rural municipalities (based on County road distribution).
- The annualized cost of the additional equipment is estimated at a total of $950,700.
- Additional facility space requirements and costs were not considered as part of this analysis.

KPMG

Option 3: Full Asset Download

Oxford County
Transportation Network (Roads & Bridges) Operations & Maintenance Service Delivery Review
Final Report

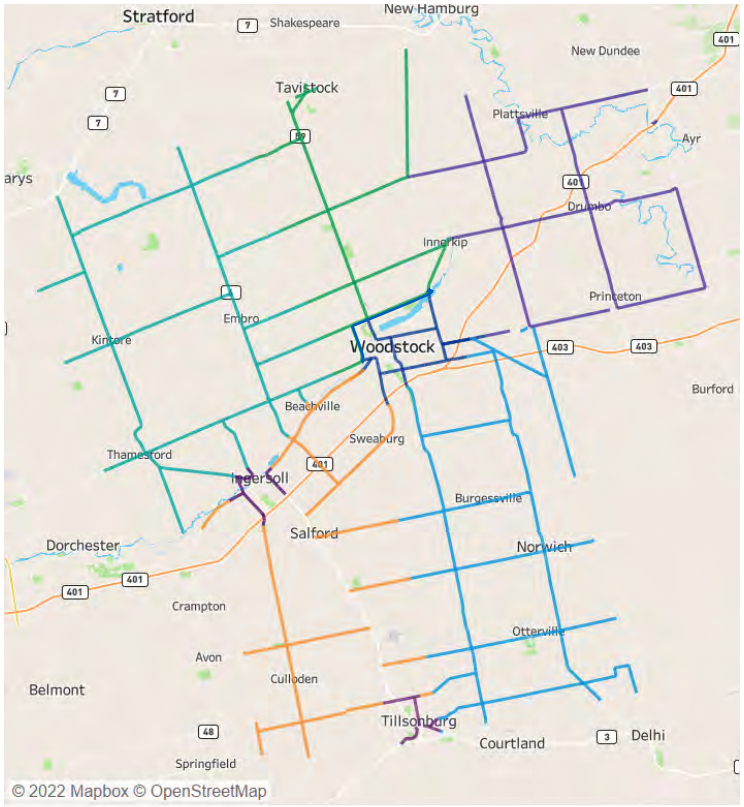
Option #3: Full Asset Download

Description

- County roads: 8 authorities, 8 operators
- Municipal roads: 8 authorities, 8 operators
- County downloads asset ownership/responsibility within municipal boundaries
- Municipalities take on County staff under successor stipulations in collective agreements
- County relinquishes authority role and associate transportation network activities to municipalities.
- Sale of assets shifts burden to municipal tax base.
- Transfer of full assert liability and asset management funding responsibilities.

The Opportunity

Under the full asset download service delivery option, the County transfers its road authority role and downloads all road network assets, network planning and O&M responsibilities



Localized Service Delivery
- Blandford-Blenheim
- East Zorra-Tavistock
- Ingersoll
- Norwich
- South-West Oxford
- Tilsonburg
- Woodstock
- Zorra

* Map only displaying County road network

Road Authority	**Each Area Municipality**
Lane KM maintained by County	**0 KM**
Lane KM maintained by area municipalities	**1,288 KM**
Overall Cost Increase (Savings) to **the County**	**$-4,449,794 -89.2%**
Global Cost Increase (Savings) across **the County and Area Municipalities**	**$1,340,425 6.4%**

Option #3: Full Asset Download

As part of the alternative structure analysis, KPMG completed a SWOT analysis to assess the strengths, opportunities, weaknesses and threats of the full asset download delivery option:

Strengths

- Elimination of County transportation costs.
- Elimination of maintenance agreements.
- Integration of all stormwater management activities by Area Municipalities

Opportunities

- Each Area Municipality may achieve efficiencies through the assumption of all service delivery within their jurisdiction.
- Successor rights support the reallocation of County staff to the Area Municipalities.

Weaknesses

- Significant consideration should be given to the sale of transportation assets from the County to its Area Municipalities.
- The reallocation of staff may have union and collective bargaining implications that may impact the feasibility of the option.
- Organizational structure assessments and role assessments may be required due to the inheritance of the road authority role.
- Potential for inconsistent levels of service of County roads due to multiple Area Municipality operators.

Threats

- Further study may be required to determine the impact (if any) on the County and Area Municipality tax assessment.
- Negative public reaction due to loss of revenue from County maintenance agreements.
- Negative public reaction due to potential of inconsistent service levels on County roads.
- Area Municipalities assume full road and storm water asset liability and sustainable funding responsibilities.

Assumptions

- Rural municipalities will require an increased level of service to align with MMS for higher class roads transferred from the County.
- Financial implications of reorganization due to added road authority role has not been considered (i.e. sale and transfer of County road and storm water assets).
- Current asset condition and reserve funds available for capital projects have not been considered as part of the financial analysis.

Option #3: Full Asset Download – Financial Impact

To review the impact of downloading all County road network assets to each Area Municipality, KPMG analyzed the scenario operating expenditures against the current state (base case) operating expenditures.

	Base Case Total Spend *(a)*	Scenario Base Operating Expenditures *(b)*	Scenario Equipment Costs *(c)*	Total Scenario Operating Expenditures *(b+c=d)*	County Maintenance Transfer *(e)*	Joint Procurement Savings *(f)*	Total Scenario Spend *(d+e+f=g)*	$ Variance to Base Case *(h)*	% Variance to Base Case
Oxford County	$ 5,043,965	$ 108,638	$ -	$ 108,638	$ 589,036	$(153,503)	**$544,171**	($4,499,794)	-89.2%
Woodstock	$ 2,383,000	$ 2,656,804	$ -	$ 2,656,804	$ -	$(27,782)	**$2,629,022**	$246,022	10.3%
Tillsonburg	$ 1,402,761	$ 1,470,747	$ -	$ 1,470,747	$ -	$(12,644)	**$1,458,103**	$55,342	3.9%
Ingersoll	$ 1,046,054	$ 1,205,980	$ -	$ 1,205,980	$ -	$(3,268)	**$1,202,712**	$156,658	15.0%
Norwich	$ 2,268,116	$ 3,567,544	$ 270,400	$ 3,837,944	$ -	$(19,256)	**$ 3,741,929**	$1,412,171	65.0%
Zorra	$ 3,406,318	$ 4,564,142	$ 204,950	$ 4,769,092	$ -	$(33,793)	**$ 4,639,917**	$1,185,873	36.2%
South-West Oxford	$ 1,820,946	$ 2,603,935	$ 158,450	$ 2,762,385	$ -	$(11,546)	**$ 2,695,591**	$838,189	48.0%
Blandford-Blenheim	$ 2,381,765	$ 3,300,265	$ 158,450	$ 3,458,715	$ -	N/A	**$ 3,389,541**	$971,320	42.3%
East Zorra - Tavistock	$ 1,253,809	$ 1,936,842	$ 158,450	$ 2,095,292	$ -	$(7,212)	**$ 2,046,174**	$ 755,909	63.2%

For the assumptions that underpin the analysis in this table please see slide 68.

Option #3: Full Asset Download – Staffing Impact

The full download (or sale) of County road assets to its Area Municipalities' operations and maintenance portfolios may impact staffing complements. To determine the staffing impact for each scenario, KPMG analyzed the County's current staffing model used to achieve their current service levels. This ratio was considered the baseline standard for service delivery and used to assess surplus (or deficits) in FTEs across the area municipalities based on County road allocation within each scenario.

	Scenario Based Human Capital *(a)*			Scenario Variance to County Standard *(a-County Standard=b)*			Net FTE Impact (Surplus/- Deficit) *(b*scenario road maintained/100)*[1]		
	Management Staff per 100 Lane KM	Forepersons per 100 Lane KM	Operator 100 Lane KM	Management Staff per 100 Lane KM	Forepersons per 100 Lane KM	Operators per 100 Lane KM	Management Staff	Forepersons	Operators
Oxford County	N/A	N/A	N/A	N/A	N/A	N/A	5.00	4.00	25.3
Woodstock	0.55	0.91	7.13	0.13	0.58	4.60	0.15	0.00	0.00
Tillsonburg	0.79	0.40	3.57	0.37	0.06	1.04	0.21	0.00	0.00
Ingersoll	1.13	1.13	5.08	0.71	0.79	2.55	0.28	0.00	0.00
Norwich	0.10	0.19	0.77	-0.33	-0.14	-1.76	-1.32	-1.05	-6.85
Zorra	0.08	0.15	0.77	-0.34	-0.18	-1.76	-1.17	-0.94	-6.10
South-West Oxford	0.12	0.25	0.75	-0.30	-0.09	-1.79	-0.79	-0.63	-4.12
Blandford-Blenheim	0.11	0.11	0.80	-0.31	-0.22	-1.73	-0.88	-0.70	-4.56
East Zorra - Tavistock	0.16	0.32	0.81	-0.26	-0.01	-1.73	-0.69	-0.55	-3.60

For the assumptions that underpin the analysis in this table please see slide 69.

Option #3: Full Asset Download- Equipment Impact

Major equipment impact (e.g., plow trucks and pick-up trucks) was also considered as part of the alternative options analysis. Based on the allocation of County roads under the scenario, KPMG determine the number of additional equipment required to maintain roads at the current level of service. Equipment cost was then included as part of the total scenario operating expenditures.

Plow Truck*

Initial Cost: $350,000

Average Useful Life: 10 years

Annual Cost: $35,000

*Assumes a tandem axel dump truck with plow

Pick-up Truck*

Initial Cost: $65,000

Average Useful Life: 4 years

Annual Cost: $16,250

*Assumes a ½ tonne crew cab pick-up truck

	Scenario Equipment Impact				
		Equipment Impact			
	Scenario Base Operating Expenditures (*b*)	Total Plows Required[1]	Total Trucks Required[2]	Initial Estimated Capital Cost of Equipment	Scenario Equipment Costs (*c*)
Oxford County	$ 108,638	0	0	$ -	$ -
Woodstock	$ 2,656,804	0	0	$ -	$ -
Tillsonburg	$ 1,470,747	0	0	$ -	$ -
Ingersoll	$ 1,205,980	0	0	$ -	$ -
Norwich	$ 3,740,044	5	2	$ 1,880,000	$ 270,400
Zorra	$ 4,720,392	4	1	$ 1,465,000	$ 204,950
South-West Oxford	$ 2,725,185	3	1	$ 1,115,000	$ 158,450
Blandford-Blenheim	$ 3,421,515	3	1	$ 1,115,000	$ 158,450
East Zorra - Tavistock	$ 2,058,092	3	1	$ 1,115,000	$ 158,450

For the assumptions that underpin the analysis in this table please see slide 70.

Financial Impact - Assumptions

Each alternative service delivery option was analyzed to determine the financial impact, staffing impact and equipment impact of each option. Each scenario contains summary tables to highlight the results of the analysis. The following guide outlines the calculations derived within each table:

Column Name	Definition
Financial Impact	
Base Case Total Spend **(a)**	*Base Case Total Spend* is the current state spend referred to on slide 34. This figure is a three-year historical average spend for roads, winter maintenance and bridges & culverts.
Scenario Base Operating Expenditures **(b)**	*Scenario Base Operating Expenditures* are derived by multiplying the current state efficiency metric (see slide 35) by the total road KM maintained under the service delivery option. For example, under the centralized service delivery option, the County's scenario spend on roads is calculated by multiplying the roads maintained (1,288) by the efficiency metric ($2,220).
Scenario Equipment Costs **(c)**	Estimated annualized cost of additional major equipment required based on the service delivery option. For the purposes of our analysis, only snow plows and pickup trucks were included. The analysis focused on highlight utilized equipment that performs the majority of road maintenance activities. It therefore does not include small equipment or lower-utilized specialized equipment. Please see slide 50 for further details on inclusions/exclusions for equipment and asset costs.
Total Scenario Operating Expenditures **(b+c=d)**	Aggregation of *Scenario Base Operating Expenditures (b)* plus *Scenario Equipment Costs (c).* Operating expenditures related to bridges & culverts were not allocated to each Area Municipality as GIS data tying bridges to a municipal boundary was not available. However, total operating expenditures for bridges only represents 0.5% of the total transportation spend and will not have a significant impact on this analysis.
County Maintenance Transfer **(e)**	Cost paid by the County to the Area Municipalities for maintenance activities performed on County roads per the maintenance agreements. To calculate the County maintenance transfer for each Area Municipality we have used the following assumptions: • For urban municipalities, any costs above the County's cost of service are a result of the urban's providing a higher level of service. As such, these costs will be incurred by the urban municipality. • For rural municipalities, any downloaded County roads will be maintained up to the County's level of service using the County's efficiency metric as a baseline. Finally, the County Maintenance Transfer calculation is net of municipal recoveries. In the current state, municipal recoveries are paid by the rural municipalities to the County for roads activities performed on the municipal road network.
Joint Procurement Savings **(f)**	Estimated savings through joint procurement. Estimated savings of 10% based on assumption of economies of scale for current contracted services. See opportunity #3 for full analysis.
Total Scenario Spend **(d+e+f=g)**	Difference between *Total Scenario Operating Expenditures (d)* and scenario savings (e+f). *Total Scenario Spend* includes the application of an efficiency factor of 5% for urban municipalities and 2% for rural municipalities. The efficiency factor reflects operational efficiencies that may be gained as a result of centralizing or localizing service delivery. The efficiency factor is also applied inversely to reflect potential service disruptions resulting from change in asset ownership.
$ Variance to Base Case **(h)**	Difference *between Total Scenario Spend (g)* and *Base Case Total Spend (a)*

Staffing Impact - Assumptions

Each alternative service delivery option was analyzed to determine the financial impact, staffing impact and equipment impact of each option. Each scenario contains summary tables to highlight the results of the analysis. The following guide outlines the calculations derived within each table:

Column Name	Definition
Staffing Impact	
Scenario Based Human Capital **(a)**	Based on the total lane KMs maintained under the scenario, KPMG calculated each municipality's total management, forepersons, and operators per 100 lane KMs. Current state staffing for each municipality is identified on slide 26.
Scenario Variance to the County Standard **(a-County Standard=b)**	The County Standard is defined as the County's current staffing model used to achieve their service levels. The County standard was considered the baseline standard for service delivery and used to assess surplus (or deficits) in FTEs for each scenario. The scenario variance is the difference between the scenario based human capital and the County standard for each position.
Net FTE Impact **(b*scenario road maintained/100)**	Surplus (or deficit) in FTEs based on road allocation within each scenario. The staffing impact calculation does not consider the unique service level expectations in the urban municipalities. As a result, there may be a perceived FTE surplus in the urban municipalities.

Equipment Impact - Assumptions

Each alternative service delivery option was analyzed to determine the financial impact, staffing impact and equipment impact of each option. Each scenario contains summary tables to highlight the results of the analysis. The following guide outlines the calculations derived within each table:

Column Name	Definition
Equipment Impact	
Scenario Base Operating Expenditures **(b)**	*Scenario Base Operating Expenditures* are derived by multiplying the current state efficiency metric (see slide 35) by the total road KM maintained under the service delivery option. For example, under the centralized service delivery option, the County's scenario spend on roads is calculated by multiplying the roads maintained (1,288) by the efficiency metric ($2,220).
Total Plows Required	Total number of additional plow trucks required to maintain roads allocated within the scenario. Assumption that one additional snow plow is required for every 71.5KM of County Road added to the municipalities service portfolio.
Total Trucks Required	Total number of additional pick-up trucks required to maintain roads allocated within the scenario. Assumption that one pick-up truck is required for each additional foreperson.
Initial Estimated Capital Cost of Equipment	Initial cost to purchase the additional pieces of major equipment. Purchase cost for the plow truck and pick-up is estimated at $350,000 and $65,000, respectfully.
Scenario Equipment Costs **(c)**	Annual cost of depreciation and O&M on additional equipment. The incremental cost of facilities required to house any additional equipment was not included in the analysis, as from our experience municipalities can have different approaches to the storage of equipment (e.g. in heated garage bays vs. outside). Should a scenario be considered that requires additional equipment, this would have to be an analysis complete by each affected municipality (see Opportunity #2). Due to data limitations, the cost savings attributed to the County or a municipality requiring less equipment has not been incorporated into the analysis. In some instances, the reduction of service may not result in a reduced need of equipment, as it could be used to perform other activities or to increase the spare ratio of equipment. This applies to costs of operating the equipment and to potentially selling equipment. Similarly, the cost savings that could be linked to reduced facility space to support equipment have not been included, as our analysis did not include the detailed space utilization of any municipality.

Option #3: Full Asset Download- Key Takeaways

The key takeaways from the full asset download scenario analysis are summarized below:

Financial Summary

- The County downloads all County road and storm water assets to the Area Municipalities.
- Area Municipality operating expenditures increase as a result of additional roads and the loss of County maintenance cost sharing.
- Each Area Municipality becomes the road authority. The cost of additional staff resources to inherit road authority activities has not been considered.
- Rural Area Municipality operating expenditures to increase as a result of increase service level MMS requirements for higher class roads.

Staffing Summary

- Given the County lane KMs allocated to the rural municipalities in this scenario, each rural municipality would require additional resources, equipment and facilities at all levels to achieve the current County standard that aligns with MMS requirements.
- Under the full asset download model, the County's FTE surplus could be allocated to the rural municipalities to close FTE deficits.
- The County transfers road authority to the Area Municipalities. This role accounts for approximately 78% of management time across five transportation and seven engineering positions. Each Area Municipality will have to assess their current organizational structure and staff capacity to ensure a successful transition.

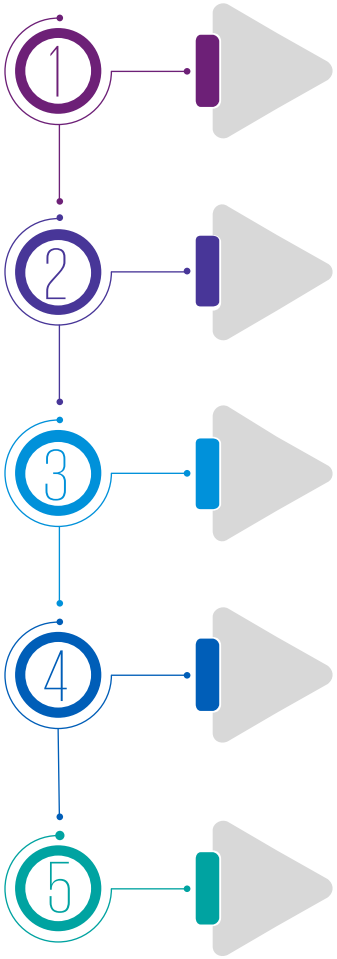
Equipment Summary

- The full download of County road assets the Area Municipality operations and maintenance portfolio may require the addition of seventeen snow plows and six pick-ups distributed across the rural municipalities (based on County road distribution).
- The annualized cost of the additional equipment is estimated at a total of $950,700.
- Additional facility space requirements and costs were not considered as part of this analysis.

Option #3: Full Asset Download

Additional Option Considerations

- In addition to the quantitative analysis for the full asset download option, KPMG identified a number of qualitative factors that may impact the effectiveness of the option.



Asset Condition Assessments

In order to implement the full asset download option, condition assessments would need to be completed on each of the County's transportation network assets.

Labour Laws

As part of the full asset download option, staff may be reallocated to the Area Municipalities. However, the reallocation of staff may have union and collective bargaining implications that may impact the feasibility of the option.

Municipal Taxes

Further study may be required to determine the impact (if any) on the County and Area Municipality tax assessment.

Municipal Reserves

The County would need to transfer funds held in reserve for future capital projects related to transportation network assets.

Sale of Transportation Assets

Significant consideration should be given to the sale of transportation assets from the County to its Area Municipalities. This is a complex undertaking that may increase expenditures noted in the financial impact. This could include the transfer of reserves and would involve Area Municipalities taking on associated liability

Summary of Alternative Service Delivery Options

Overall assessment

The quantitative results of the alternative servicey delivery analysis are summarized below. If the objective of transitioning the transportation service delivery model is to lower the cost to the County, the full asset download would achieve this objective. However, this option involves a number of other conditions (i.e., sale of assets, impact on municipal taxes, labour considerations) that have not been fully analyzed and may reduce or eliminate the cost benefit to the County. If the objective is to lower the cost to the taxpayers, the centralized service delivery model would achieve this objective. In the short-term, the status quo+ option outlines an opportunity to modify existing urban maintenance agreements to reflect the level of service required by the County with minimal impact to operations.

Status Quo+ — **% change in global expenditures**

Base case total operating expenditures: **$21,006,734**
Scenario total operating expenditures: **$20,737,726**
-1.3%

Option #1: Centralized Service Delivery

Base case total operating expenditures: **$21,006,734**
Scenario total operating expenditures : **$20,677,755**
-1.6%

Option #2: Localized Service Delivery

Base case total operating expenditures: **$21,006,734**
Scenario total operating expenditures : **$21,758,123**
+3.6%

Option #3: Full Asset Download*

Base case total operating expenditures: **$21,006,734**
Scenario total operating expenditures : **$22,347,159**
+6.4%

* Total operating expenditures for full asset download does not include expenditures related to the sale of assets or other conditions noted on slide 61

Status Quo +

The County would only pay for operations and maintenance activities up to the expected level of service. Any costs above the expected level of service would be incurred by the Area Municipality. This scenario would result in annual savings of approximately $283,943 for the County and have minimal impact on current operations.

Alternative Options

- Based on the analysis of the centralized, localized and full asset download options, the centralized service delivery model presents the lowest overall cost to both the County and its Area Municipalities.
- Through the centralization of transportation service delivery, the County's average operating spend would decrease to $4,650,429 from $5,043,965 (or 7.8%) per year, with minimal disruption to current operations.
- When analysing based on lowest cost for the County, the full asset download option will save the County an average of $4,499,794 (or 89.2%) per year as all road network assets would be transitioned to the Area Municipalities. However, this option would require more study into asset condition, labour laws, and municipal taxes to understand the full impact of transitioning the County's assets.

Opportunity #2: Conduct a Review of Public Works Patrol Yards

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Conduct a Review of Public Works Patrol Yards

The County currently delivers transportation services from four patrol yards in **Drumbo**, **Highland**, **Springford**, and **Woodstock**. In addition, each Area Municipality delivers services from various patrol yards within their municipal boundary. In total, there are **16 patrol yards** throughout the County that may require consolidation as a result of the County's future state service delivery model.

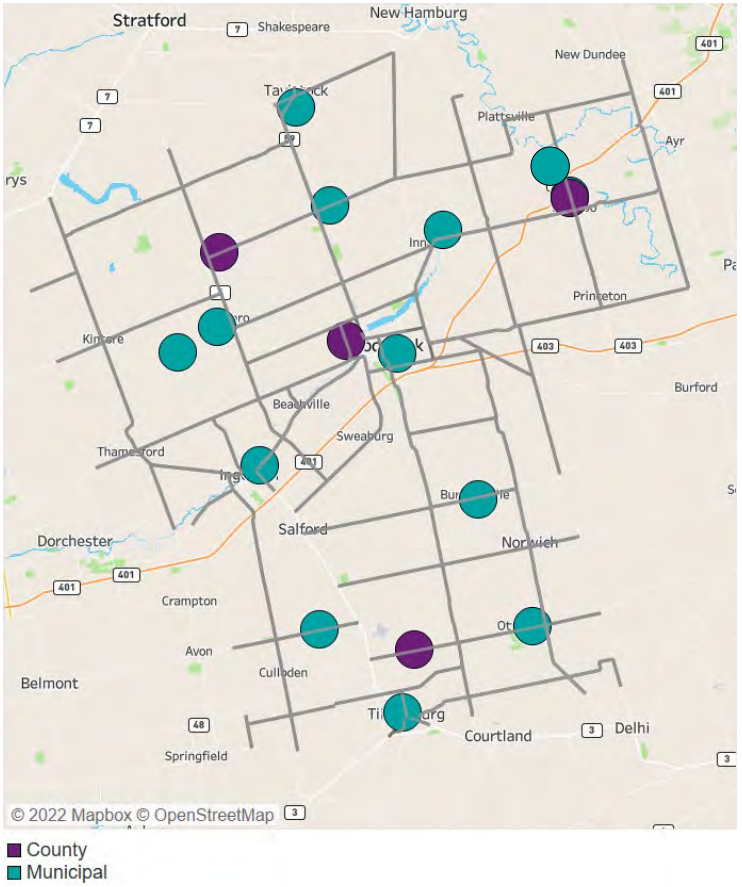
Regardless of the future state transportation services service delivery model, the County should consider conducting a patrol yard analysis to optimize Public Works facility space across the County. The study would help to ensure a thorough understanding of the lifecycle of each patrol yard, current space and identify opportunities for co-investment with its Area Municipalities where the replacement cycles align.

Facilities assessments of each yard would become vital if assets are transferred to the County's Area Municipalities as part of the *localized* or *full asset download* service delivery model. In addition, a facilities review can have the following impacts on operations:

- Improved service delivery result from more optimal locations
- Better supervision, collaboration and coordination of activities
- Optimize available storage space by taking advantage of existing property

Other municipalities, like as Wellington County, have adjoining or shared facilities with one or more of their Area Municipalities. We are increasingly seeing this raised as an issue, particularly when area municipalities see growth that outpaces the capabilities of site constrained existing facilities.

Current County and Area Municipality Patrol Yards



Opportunity #3: Consider joint procurement opportunities

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Key Contracted Services

To gain an understanding of the core activities that are outsourced by the County and its Area Municipalities, KPMG analyzed service listings and financial activity data received from each Area Municipality. KPMG also analyzed the contracted services agreements. The chart below summarizes the core activities that are outsourced by the County and its Area Municipalities:

Contracted Services	
Activity	**Description**
Snow Plowing	Due to how some Area Municipalities grouped their costs, the snow plowing activity contains additional activities. It contains some costs for sanding / salting, snow removal, roadway winter maintenance, parking lot and sidewalk plowing, and snow removal.
Hard Top Maintenance	To make smaller costs more comparable, KPMG grouped a variety of costs into hard top maintenance. These costs include asphalt patching, cold mix, hot mix paving, crack sealing, street maintenance, base repair. KPMG also grouped other costs into hard top maintenance such as sweeping and line painting if they were already grouped into one line item.
Right of Way Maintenance	To make smaller costs more comparable, KPMG grouped a variety of costs into right of way maintenance. These costs include brush, tree trimming / removal / planting, mowing, weed spraying / control, leaf removal, litter pick-up, street tree maintenance.
Railway Crossing Maintenance	This activity includes any work related to the maintenance of railway crossing such as inspections and maintenance.
Ditch Maintenance	This activity includes any work related to the maintenance of ditches such as ditching and culvert / bridge inspections.
Bridges & Culverts Maintenance	This activity includes any work related to the maintenance of bridges and culverts such as culvert / bridge inspections, dust control, culvert construction / maintenance.
Pavement Markings	This activity includes any work related to pavement markings such as line locates, portable pavement markings, and line painting.
Curb Maintenance	This activity includes any work related to curb maintenance such as curb / gutter maintenance and curb repairs.

Future Opportunities

Cost of Contracted Services

Based on the financial data, KPMG identified the total cost for each contracted service as well as the % of the service that is contracted by each Area Municipality.

	Total Contracted Spend	Total Activity Spend	% Contracted
Snow Plowing			
Oxford County	$ 746,163	$ 1,092,390	68.3%
Woodstock	$ 28,683	$ 984,513	2.9%
Tillsonburg	$ 11,437	$ 535,996	2.1%
Ingersoll	$ 32,683	$ 420,773	7.8%
Norwich	$ 54,360	$ 151,731	35.8%
Zorra	$ 237,089	$ 446,521	53.1%
South-West Oxford	$ 744	$ 105,817	0.7%
East Zorra-Tavistock	$ 22,133	$ 200,733	11.0%
Hard Top Maintenance			
Oxford County	$ 326,890	$ 557,254	58.7%
Woodstock	$ 43,370	$ 429,490	10.1%
Tillsonburg	$ 53,903	$ 108,124	49.9%
Norwich	$ 42,822	$ 350,159	12.2%
Zorra	$ 95,266	$ 213,185	44.7%
South-West Oxford	$ 24,672	$ 46,506	53.1%
East Zorra-Tavistock	$ 11,536	$ 22,025	52.4%
Railway Crossing Maintenance			
Oxford County	$ 158,908	$ 159,596	99.6%
Woodstock	$ 27,109	$ 27,109	100.0%
South-West Oxford	$ 4,298	$ 4,303	99.9%

Future Opportunities

Cost of Contracted Services

Based on the financial data, KPMG identified the total cost for each contracted service as well as the % of the service that is contracted by each Area Municipality.

	Total Contracted Spend	Total Activity Spend	% Contracted
Bridges & Culverts Maintenance			
Oxford County	$ 29,118	$ 55,763	52.2%
Woodstock	$ 3,657	$ 42,533	8.6%
Tillsonburg	$ 5,101	$ 10,709	47.6%
Norwich	$ 16,634	$ 70,365	23.6%
Zorra	$ 5,564	$ 14,935	37.3%
South-West Oxford	$ 5,227	$ 5,227	100.0%
East Zorra-Tavistock	$ 483	$ 7,233	6.7%
Right of Way Maintenance			
Oxford County	$ 182,016	$ 338,094	53.8%
Woodstock	$ 156,767	$ 505,559	31.0%
Tillsonburg	$ 25,461	$ 158,315	16.1%
Norwich	$ 76,821	$ 159,008	48.3%
South-West Oxford	$ 48,381	$ 93,546	51.7%
East Zorra-Tavistock	$ 32,440	$ 95,579	33.9%
Ditch Maintenance			
Oxford County	$ 91,039	$ 212,580	42.8%
Tillsonburg	$ 649	$ 2,053	31.6%
Norwich	$ 1,926	$ 27,697	7.0%
South-West Oxford	$ 11,242	$ 46,540	24.2%
East Zorra-Tavistock	$ 5,530	$ 25,712	21.5%

Future Opportunities

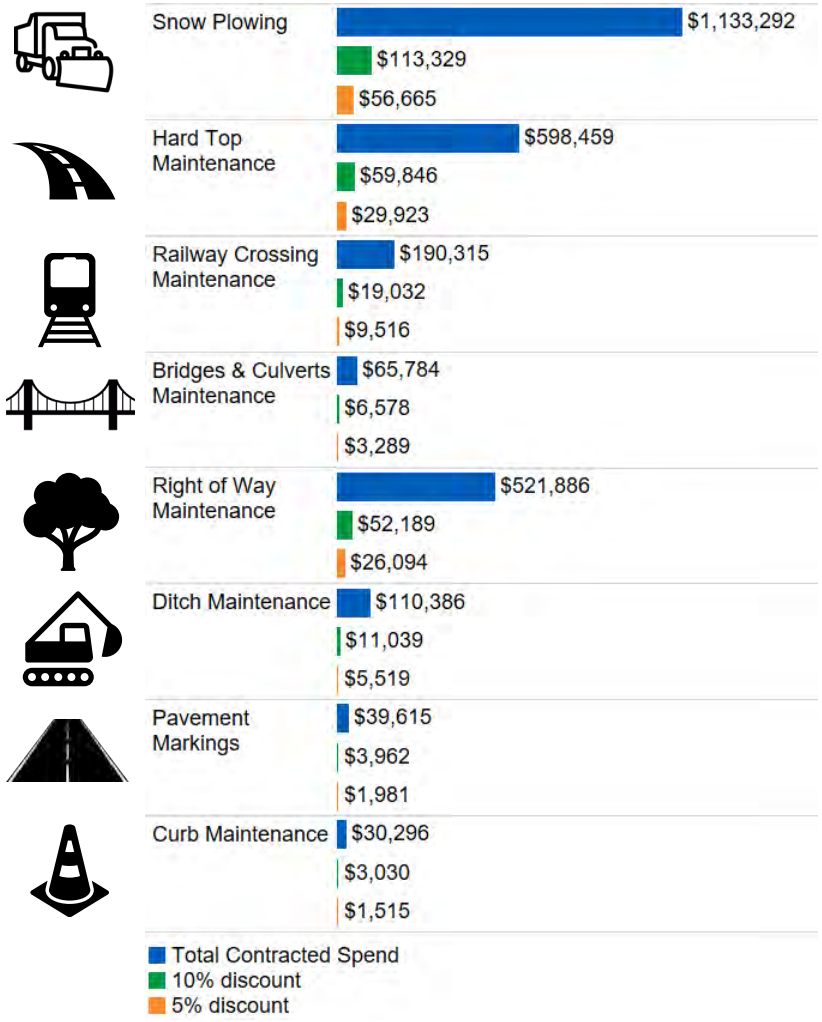
Cost of Contracted Services

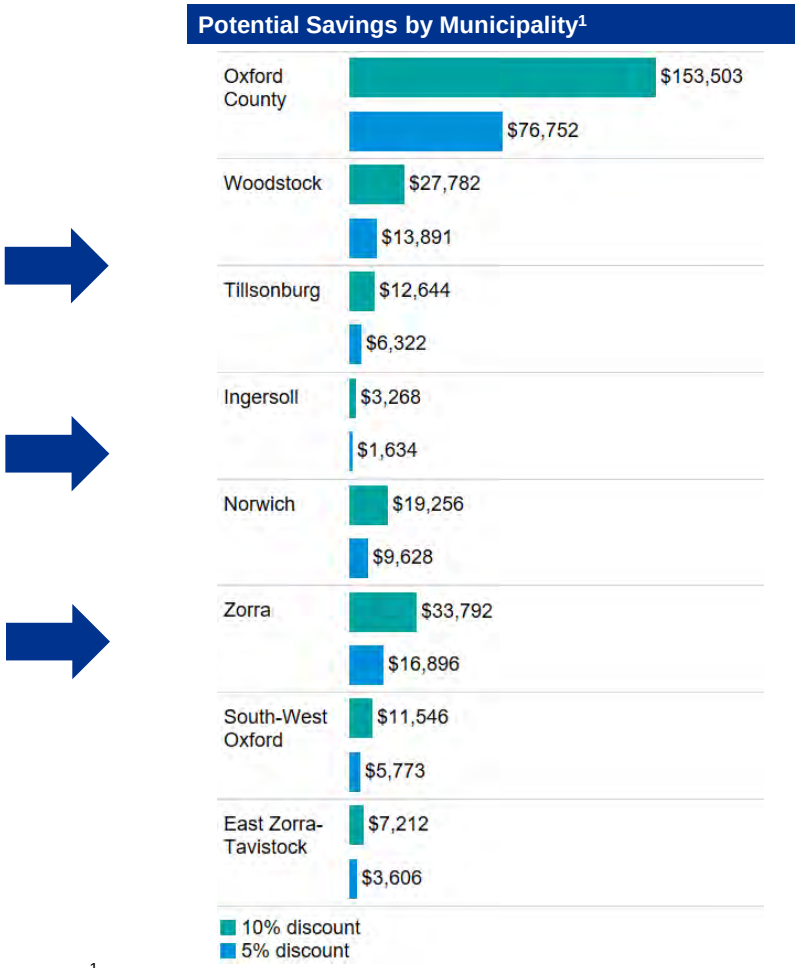
Based on the financial data, KPMG identified the total cost for each contracted service as well as the % of the service that is contracted by each Area Municipality.

	Total Contracted Spend	Total Activity Spend	% Contracted
Pavement Markings			
Woodstock	$ 16,602	$ 16,602	100.0%
Tillsonburg	$ 2,120	$ 33,044	6.4%
South-West Oxford	$ 20,893	$ 20,893	100.0%
Curb Maintenance			
Oxford County	$ 897	$ 1,775	50.5%
Woodstock	$ 1,628	$ 6,706	24.3%
Tillsonburg	$ 27,771	$ 29,439	94.3%

Joint Procurement Savings

Based on industry experience, outsourced service providers may extend a discount of 5-10% for large service contracts. As noted in the previous slides, joint procurement saving will not affect the County and its Area Municipalities equally as each Area Municipality outsources various portions of each activity.





[1] KPMG did not have access to detailed outsource contracts to complete a detailed contracted activity analysis. This comparison should be complete before any joint procurement opportunities are explored.

Opportunity #4: Implement Additional KPIs

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Future Opportunities

KPI Framework

The use and regular review of performance measures are critical to the success of any organization or complex process. During the review it was noted that the County tracks a number of efficiency metrics including cost per road KM, cost per winter lane KM, and cost for bridges and culverts, however additional metrics can be used to improve performance measurement.

The County should build upon the performance measurement framework to improve the management and evaluation of transportation services. The framework should be grounded in leading practice and analysis of past performance. It should include:

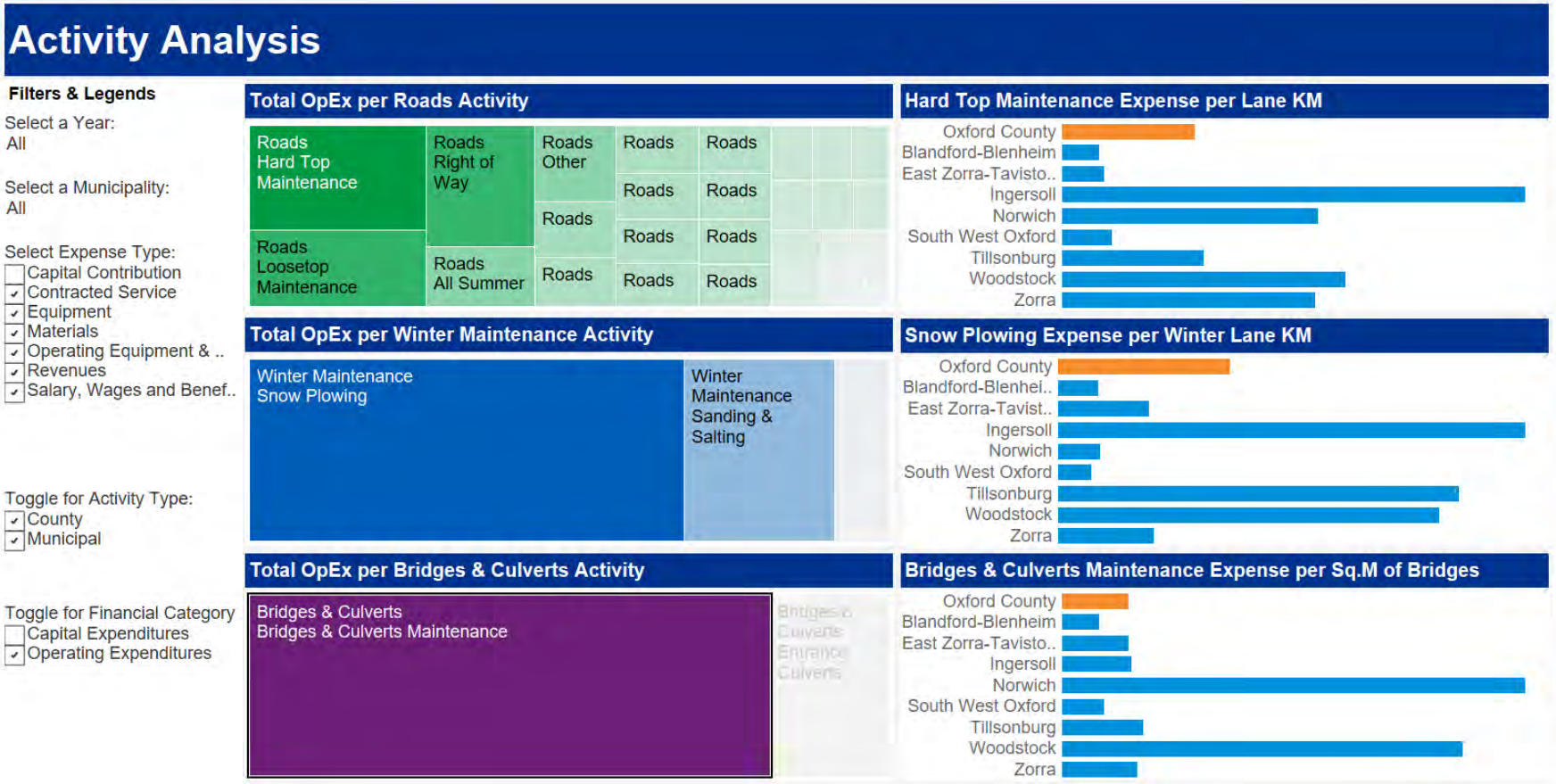
- The identification of end-to-end and department-specific key performance indicators KPIs, including efficiency and effectiveness measures;
- KPI collection procedures;
- KPI reporting procedures, including the identification of appropriate KPIs for each major stakeholder group and how they will be shared (e.g., a high-level monthly dashboard with strategic KPIs for senior-level staff and a weekly report with operational measures for managers); and,
- A process for reviewing the effectiveness of KPIs.

Example indicators are included below. These KPIs are based on KPMG leading practice. This is an illustrative list and not meant to be exhaustive.

In addition, dashboard reporting can be leveraged to more effectively monitor the service performance of the County and its Area Municipalities. A sample dashboard has been included on the following page.

Category	KPI
Roads	• Percent of County road network in excellent, good, or fair condition • Share of urban County road network with poor ride quality • Share of rural County road network with poor ride quality • Frequency of achieving minimum maintenance standards on the County road network
Winter Maintenance	• Annual total salt and sand use above the recommended usage • Frequency of achieving bare lanes within service level target after a winter event
Bridges & Culverts	• Share of bridges in poor condition as a percentage of total Sq.M

KPI Framework



Note: The visualization above is dashboard view of the outputs derived from County and Area Municipality financial data. Financial data include actuals for 2018-2020.

Opportunity #5: Service Level Metrics

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Service Level Metrics

During the current state analysis, it was noted that each Area Municipality is at a different maturity for level of service planning and costing. This is at least partially a result of a reactive approach to transportation data collection and management and creates challenges in quantifying the level of service provided on the County road network.

Interim State

In the short term, the County can utilize service level efficiency metrics for winter maintenance (see slide 29) as a baseline to update urban maintenance agreements. These efficiency metrics provide a more accurate measurement of the cost of service delivery based on road classification and would more closely align to the service level expected by the County. Any updates to the urban maintenance agreements should be subject to negotiation based on data provided by the Area Municipalities.

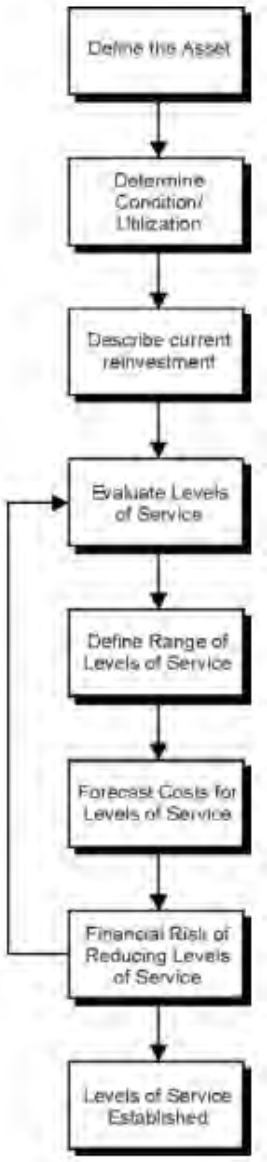
Target State

All parties should develop a level of service for all transportation-related activities, according to the process shown at right, which comes from the National Research Council and Federation of Canadian Municipalities' *Developing Levels of Service* best practices guide (link).

Forecasting the cost of the levels of service can be achieved through the identification of the following metrics for its core transportation assets:

- Service levels
- Equipment required to achieve service levels
- Manpower required to achieve service levels

It should be noted that the Municipal Asset Management Planning Regulation outlines a phased approach to developing a detailed asset management plan. As such, the information noted above is not fully required until phase 4 of the plan. The deadline for phase 4 is currently noted as July 1, 2025.



Opportunity #6: Utilize GPS Technology

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Future Opportunities

GPS Technology

During the current state analysis, it was noted that the County and its Area Municipalities are not full utilizing GPS technology to gain full visibility into transportation services and operations.

GPS technology provides a more effective way to monitor and track road assets, fuel costs, asset maintenance, asset utilization, and materials utilization. In addition, GPS technology can help to ensure that all transportations assets (i.e., roads, bridges, ect.) are adequately serviced as per service level standards through real-time data capture. The successful implementation of GPS and other innovative technology can also reduce the need for transportation activities, such as road patrol, creating capacity for transportation staff.

Sample Case Studies

1. In 2020, the City of Hamilton initiated its Smart Cities Project with an objective to demonstrate the potential of automated data capture and reporting. The City partnered with a technology firm to implement GPS and other technology on the City's fleet and static assets. As a result, the City was able to derive 850 process automation, cost efficiency and level of service observations from 23,036 data points.
2. In 2019, the City of Guelph initiated its AI-enabled pavement condition assessment project. The objective of the project was to address road preventative maintenance issues. With the assistance of a technology partner, the City was able to implement technology on its existing fleet to increase the collection and frequency of data concerning road conditions.

Source: lidarmag.com, Autodesk.com, vgis.io, sse-llc.com, smartcitiesworld.net

Opportunity #7: Re-evaluate Organizational Structure

Oxford County
Transportation Network (Roads & Bridges) Operations & Maintenance Service Delivery Review
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Re-Evaluate the Organizational Structure for Transportation Services

As part of the alternative service delivery model options analysis, there may be human capital requirements to ensure efficient delivery of transportation services operation and maintenance activities. To determine the human capital requirements for each scenario, KPMG analyzed the County's current staffing model utilized to achieve their desired service levels. While this provides insight into potential FTE requirements for each scenario, further study on organizational structure, roles & responsibilities and capacity may be required.

Re-evaluate the organizational structure and resourcing model for Transportation Services to support the future state service delivery model. This may include:

High-Level Implementation Plan

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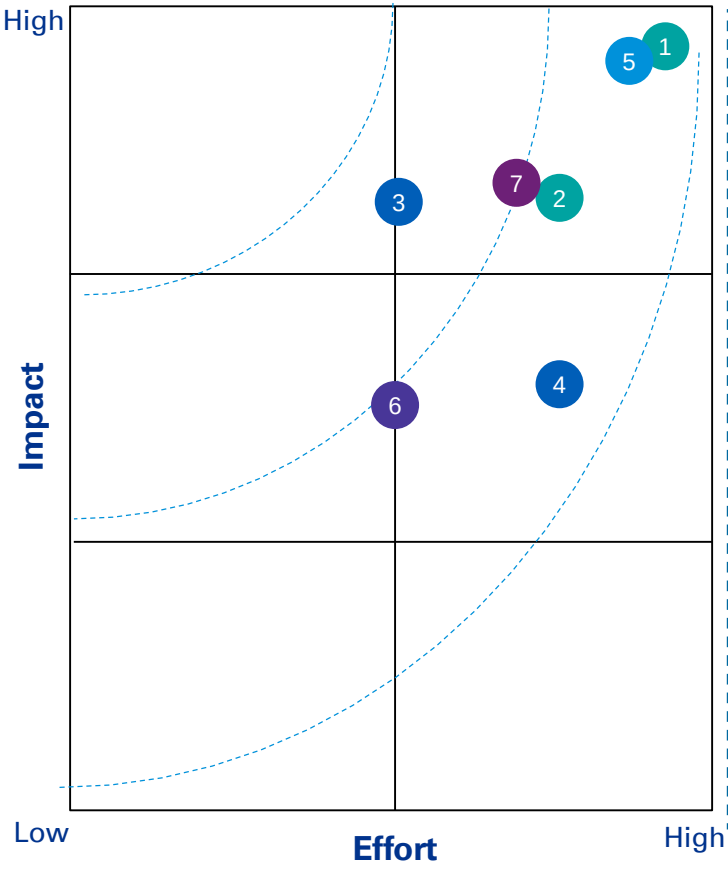
Prioritization of Suggested Recommendations

Suggested recommendations have been mapped for ***impact*** *vs* ***effort*** to help prioritize activities. The order that recommendations should be implemented would be top left quadrant (low effort, high impact) to bottom left quadrant (low effort, low impact) and top right quadrant (high effort, high impact) down to bottom right quadrant (high effort, low impact). Those in the bottom right quadrant would be considered to be optional as a result of the potential effort required versus the potential benefit derived.



Suggested Actions

1. Review objectives associated with the transition of the transportation service delivery model to implement the optimal model based on the alternative service delivery analysis
2. Conduct a review of transportation services patrol yards
3. Consider joint procurement opportunities for core transportation service activities
4. Implement additional KPIs to measure the effectiveness of transportation service delivery
5. a) Utilize level of service metrics in urban maintenance agreements
   b) Enhance the maturity of activity based costing
6. Utilize GPS technology to more effectively monitor transportation service activities
7. Re-evaluate the organizational structure for transportation services

Legend

Service Delivery Model | Processes | Data & Analytics | Equipment & Technology | People

Conclusion

KPMG was engaged by Oxford County (“the County”) and its Area Municipalities to assist in a comprehensive review of the regional transportation network (roads & bridges) operations and maintenance conducted by Oxford County and its contracted service providers (Ingersoll, Woodstock, Tillsonburg). The ultimate objective of this review was to determine the most appropriate and cost-effective way of operating and maintaining the regional transportation network in the County while maintaining or improving service levels.

The following was noted during the review.

1. Based upon the development and review of transportation services efficiency metrics, the County is cost competitive compared to its Area Municipalities. The County’s three year average roads expense per lane KM ($2,220.93) and winter expense per lane KM ($1,943.91) are the lowest among its current contracted urban service providers (Ingersoll, Woodstock, Tillsonburg).
2. Each Area Municipality is at a different maturity **for level of service planning and costing**. This is at least partially a result of a reactive approach to transportation data collection and management. As such, it is difficult to quantify the current level of service for transportation activities. The County should consider service level efficiency metrics as a baseline for urban maintenance agreements.
3. The operating, staffing and equipment impact of a status quo+ and three alternative service delivery models (centralized, localized and full asset download) was assessed. In the short-term, the status quo+ option outlines an opportunity to modify existing urban maintenance agreements to reflect the level of service required by the County. In the long-term, the County, in collaboration with its Area Municipalities, should determine the appropriateness of progressing to the implementation of an alternative service delivery model based on overall objectives (i.e., overall cost to the County vs. overall cost to the taxpayers)
4. The County and its Area Municipalities are spending an average of $2.7M on contracted services annually. Common outsourced services include snow plowing, hardtop maintenance, right of way maintenance, railway crossing maintenance, ditch maintenance, bridge and culvert maintenance, pavement markings and curb maintenance. Leveraging joint procurement for these services can result in savings of 5-10% or $77,000-$154,000 annually.

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