



Master Plan – For the Network Design of Roads Depots for the City of Kawartha Lakes

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1.0 Executive Summary

Through amalgamation, in 2001, the City of Kawartha Lakes was formed to become a single-tier city with 3,100 sq. km of land area, and 15 Roads and Fleet Maintenance Depots. Since then, the depots have continued to deteriorate, become outgrown, and approach the end of their expected 60 year service life.

To address the City's concern about the ability of these Depots to meet the growing demand for services and legislative requirements, the City of Kawartha Lakes retained Stirling Rothesay Consulting to complete a Master Plan. The Master Plan will recommend the preferred network design: the preferred number, location, and size of Roads and Fleet Maintenance Depots to achieve productivity, legislative and service delivery objectives through to 2041, while minimizing the environmental impact. The Master Plan will also address Phases 1 and 2 of the Municipal Class Environmental Assessment Act (The EA Act).

As required by the EA Act, a number of Alternative Solutions were analysed, compared, and ranked using the following criteria:

- Operational Needs and Growth Requirements
- Legislative and Environmental Requirements
- Impact on the Natural and Social Environment
- Best Practice and Industry Trends for the Design of Roads Depots
- Capital Cost Requirements
- Impact on Operating Costs
- Impact on Employee Productivity and Service Levels

In total, four Alternative Solutions were analysed, compared and ranked.

Alternative Solutions

Alternative Solution 1:

- Maintain the status quo by continuing to use and maintain the existing 15 depots

Based on the impact to employee productivity and operational needs, we do not believe that this Alternative will be the Preferred Solution. For example, some of the existing facilities are already insufficient in terms of size and employee amenities to satisfy operational requirements. Furthermore, most of the facilities will be, by 2037, exceeding their theoretical life expectancy of 60 years.

Alternative Solution 2:

- Divide the City into three operations areas – **North**, **Central** and **South**
- Each area would have one main Primary Depot and one Satellite Depot (for sand/salt/material storage and snow dump)
- The **North** area would have an expanded Coboconk for the Primary Depot (including Fleet Services) and Carden for the Satellite Depot
- The **Central** area would have a new site for the Primary Depot (slightly east of Fenelon Falls) and either Fenelon Falls or Eldon for the Satellite Depot
- The **South** area would have St. David Street for the Primary Depot and Manvers as the Satellite Depot (with sand/salt/material storage). Transit and EMS would be expected to relocate
- The Fleet Services Depot would remain as is unless Transit storage relocate there

Alternative Solutions Continued

Alternative Solution 3:

- This solution would be the same as Alternative 2 except the **South** area would build a new Primary Depot close to the Fleet Services Depot on Little Britain Road, and use Manvers as the Satellite Depot (with sand/salt/material storage). Vacating the St. David Street Depot would permit Transit to control this facility and, eventually, build their maintenance bays there to achieve full consolidation
- The existing Fleet Services Depot facility would remain as is at Little Britain Road providing maintenance services to Roads
- The benefits include more land for expansion at Little Britain than at St. David Street (more would need to be purchased), and the Fleet Services and Primary Depot would be consolidated on the same site

Alternative Solution 4:

- This solution would be the same as Alternative 2 except each area would have one main Primary Depot and **two** Satellite Depots (for sand/salt/material storage and snow dump)
- The **North** area would have an expanded Coboconk for the Primary Depot (including Fleet Services) and Carden **and one new location** for the Satellite Depots
- The **Central** area would have a new site for the Primary Depot (slightly east of Fenelon Falls) and **both** Fenelon Falls and Eldon for the Satellite Depots
- The **South** area would have St. David Street for the Primary Depot and Manvers **and Emily** as the Satellite Depots (with sand/salt/material storage). Transit and EMS would be expected to relocate
- The Fleet Services Depot would remain as is unless Transit storage relocated there

Preferred Solution Findings

Based on the study findings and input from technical agencies and the public, Alternative Solution 3 was ranked the highest - largely because it recommended that the Roads operation at the St. David Street Depot be relocated to a new facility close to the existing Fleet Services facility at Little Britain Road (outside of Lindsay). Consolidating the Roads operation with Fleet Services would offer numerous operational benefits (rather than trying to upgrade the St. David Depot). It would also provide room for growth.

It was also concluded that there would be operational benefits to incorporating some of the features of Alternative Solution 4 – namely keeping the Eldon and Emily Depots as secondary Satellite Depots in the Central and South areas.

Therefore, the Preferred Solution is a Modified Version of Alternatives 3 & 4 as outlined below:

- Divide the City into three operations areas – **North, Central** and **South**
- Each area would have one main Primary Depot and two Satellite Depots (for sand/salt/material storage and snow dump) except the **North** area which would just have one Satellite Depot
- The **North** area would have an expanded Coboconk for the Primary Depot (including Fleet Services) and Carden for the Satellite Depot
- The **Central** area would have a new site for the Primary Depot (slightly east of Fenelon Falls) and Fenelon Falls and Eldon for the two Satellite Depots
- The **South** area would build a new Primary Depot close to the Fleet Services Depot on Little Britain Road, and use the Manvers and Emily Depots as the two Satellite Depots

With respect to environmental impact, none of the recommended design changes to the existing Depots (for the Preferred Solution) would negatively impact the natural or social environment. However, before the land is purchased for the two new Primary Depots, a MCEA should be completed with more detailed investigations to confirm the acceptability of the sites (from a facility design and environmental perspective) and any mitigation requirements.

Preferred Solution Findings Continued

The benefits of the Preferred Solution include:

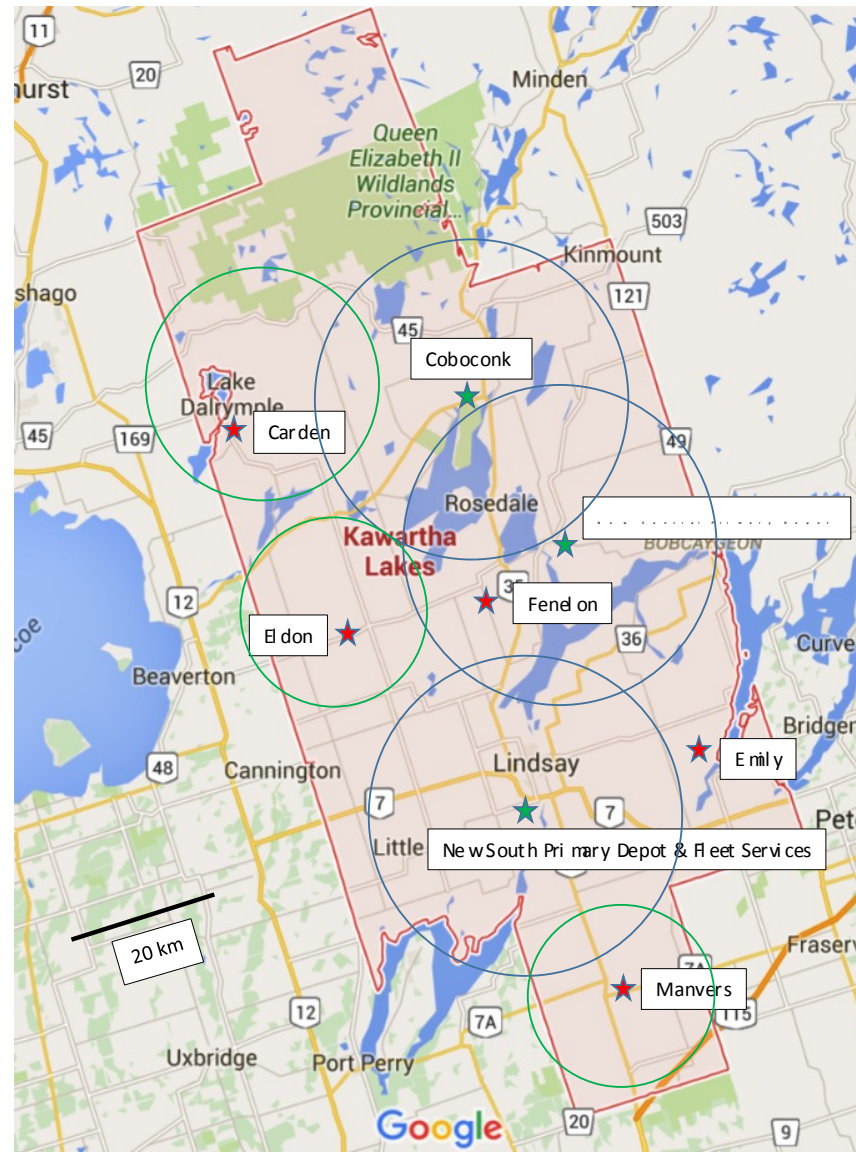
1. The workforce will be more effectively managed as it becomes centralized into three Primary Depots. This should lead to improved workforce productivity and flexibility – reducing operating costs and/or improving service levels
2. The total cost of operating and maintaining the remaining depots will decrease
3. The three primary depots will be designed according to Best Practices to enable lean, efficient flow of employees, vehicles, materials and equipment

The total 20 year capital and facility operating cost for the Preferred Solution (including the cost to rebuild those depots that have exceeded their expected useful life of 60 years) is estimated to be **\$34,599,326**. By comparison, the total 20 year cost for Alternative Solution 1 (the Do Nothing approach) is estimated to be **\$35,667,638**. Therefore, a savings of \$1,068,312 over 20 years is provided by the Preferred Solution. However, the Preferred Solution is also expected to achieve labour productivity improvements of at least **\$4,540,000** over a 20 year period.

When the managers, supervisors and employees are consolidated at one of three primary depots, we expect an increase in management focus, communication, and effectiveness. This should result in an improvement in collaboration and productivity/ service levels by the crews. This form of productivity gain is also why Fleet Services are currently consolidated at two depots rather than being scattered across 15 depots.

Taking this into consideration, the Preferred Solution requires **\$5,608,312** less funding than the Do Nothing approach.

Location of the Preferred Network Design of Depots



Preferred Solution Capital and Operating Costs



The following 20 year capital and facility operating costs are required for the Preferred Alternative Solution:

Factors	Capital & Facility Operating Costs (\$)
North – Primary - Expanded Coboconk Depot	900,000
North – Satellite - Expanded Carden Depot	882,200
Central – Primary - New Primary Depot	7,339,214
Central – Satellite - Expanded Fenelon Depot	285,000
Central – Satellite – Expanded Eldon Depot	165,000
South – Primary - Expanded Fleet Services Site	9,788,232
South – Satellite - Expanded Manvers Depot	396,800
South – Satellite – Expanded Emily Depot	165,000
Purchase Land	700,000 (14+ acres)
Sale of Depots	(1,666,000)
20 Year Facility Repair	2,379,880
20 Year Energy/Insurance	4,437,000
60 Year Theoretical Replacement Cost (starting in 2037)	8,827,000
TOTAL	34,599,326

Potential Labour Productivity Savings

Note that these are potential labour productivity savings over a 20 year horizon.

Savings	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Potential Employee Productivity Increase due to Consolidation of Depots (\$)	0	3,332,000	3,332,000	3,332,000
Potential Employee Productivity Increase Because the Vehicle Shuttle to Fleet Services is No Longer Required in the South Area (\$)	0	N/A	1,208,000	N/A
Total Cost Savings (\$)	0	3,332,000	4,540,000	3,332,000

Recommendations for the City

Our recommendation is for the City to build the two new Primary Depots, and to upgrade the Coboconk Depot as soon as capital funding can be arranged. This would provide for the earliest opportunity to consolidate the Roads staff and crews into the three Primary Depots so that expected improvements in productivity can begin to take place. Improvements to the satellite depots are not urgent and could be completed as additional capital funding becomes available. However, our understanding is that the capital funding required to implement the Preferred Solution will be spread out over as many as 25 years depending on the City's ability to secure funding.

Therefore, in terms of priorities, we recommend that the City begin by selecting and purchasing the appropriate site, and then building the new Central Area Primary Depot. Next, we recommend that the facilities at the Coboconk Depot be upgraded so that it can serve as the North Primary Depot. Lastly, the new South Area Primary Depot should be built close to the existing Fleet Services Depot, and the remaining satellite depots should be upgraded to meet Best Practices.

Building these two new depots and upgrading the Coboconk Depot will permit the closure of eight existing depots (Bobcaygeon, Burnt River, Downeyville, Sturgeon Point, Hartley, Oakwood, Ops, St. David). This will also permit the Roads Department to begin consolidating the employees into the Primary Depots and benefiting from the expected increase in productivity, and increase in service levels to the most densely populated areas within the City.

We believe that it should be emphasized that failure to begin planning for the phased investment in new depots (as per the preferred solution) will find the City in a situation, 20 plus years from now, where most of the depots will have exceeded their expected useful life of 60 years. This will leave the City in a situation where (1) it will be very expensive to continue maintaining these depots, (2) most of the depots will not meet the operational needs of the Roads Department, and (3) there will be little time to plan for the required depot replacement costs.

Recommended Depot Phasing Strategy



On the following two pages, we display the recommended phasing strategy over the next 10, 15 and 20 years. The strategy's principle is to transfer capital funding that would have gone towards replacing the existing depots in Alternative 1 (as they reach the end of their expected 60 year service life) towards, instead, implementing the Preferred Solution. We also include the expected revenue from the sale of 8 depots, and the expected facility and operational efficiency savings.

Phasing Strategy

Period	0-10 years (2027)	10-15 years (2032)	15-20 years (2037)
Sale of depots	N/A	863,000	803,000
Capital funding available by not replacing Depot facilities at the end of their expected service life	9,088,284	2,676,290	2,917,794
Facility repair, energy, insurance savings by closure of Depots	N/A	349,600	2,640,358
Potential efficiency savings by consolidating depots	N/A	600,000	600,000
Phase 1 - Cost of new Central Area Primary Depot and closure of Central Satellite Depots	(7,339,214)	N/A	N/A
Cost of upgrades to Coboconk Depot and closure of North Satellite Depots	(900,000)	N/A	N/A
Phase 2 – Cost of new South Area Primary Depot and closure of South Satellite Depots	N/A	N/A	(9,788,232)
Phase 3 - Cost of upgrades to remaining Satellite Depots	N/A	N/A	(1,894,000)
Surplus/deficit at end of the period	849,070	5,337,960	616,880

Three Phases Over Time

Activity		2017-2027										2027-2032					2032-2037				
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Phase 1	Seek Council Approval for Funding for New Central Area Primary Depot and Upgrades to Coboconk Depot	█																			
	Select New Depot Site		█																		
	Complete MCEA for new Site		█																		
	Purchase New Site		█																		
	Design/Build Central Area Primary Depot									█	█										
	Close Bobcaygeon, Sturgeon Pt., Hartley											█									
	Upgrade Coboconk Depot										█										
	Close Burnt River											█									
	Phase 2	Seek Council Approval for Funding for New South Area Primary Depot																	█		
Select New Depot Site																			█		
Complete MCEA for new Site																			█		
Purchase New Site																			█		
Design/Build South Area Primary Depot																				█	█
Close Oakwood, Ops, Downeyville, David																					█
Phase 3	Seek Council Approval for Funding																		█		
	Upgrade Remaining Satellite Depots																				█

Master Plan Creation

Consultation with the public, agencies, and First Nations communities is an important part of the Municipal Class EA process with the level and methods of consultation being appropriate to the scope and potential impacts of the proposed project.

As part of the MCEA, two **Public Information Centres (PIC's)** were held on July 27, 2016 and January 5, 2017 at the Ops Community Centre and the Fenelon Falls Community Centre, respectively. The purpose of the PIC's was to consult with the public, permitting them to review the study details and provide feedback. At each PIC, a 1 hour presentation was made describing the current study finding.

During the two PIC's, there were no questions or concerns raised about the potential impact of the Alternative Solutions on the Natural and Social Environment. Furthermore, the Project Team did not receive, at any time during the project, any communications from the public, agencies or First Nations communities about the potential impact of the Alternative Solutions on the Natural and Social Environment.

This Master Plan will be made available for public and agency review for a period of thirty (30) calendar days. Once any concerns raised during the review period have been addressed, the public and government agencies will be notified of the completion of the study (Notice of Study Completion).

2.0 Introduction

2.1 Background

Through amalgamation, in 2001, the City of Kawartha Lakes was formed and, in the process, inherited 15 Roads and Fleet Maintenance Depots located throughout the City in various sizes, styles, and states of condition. Since then, the depots have continued to deteriorate, and many are quickly approaching the end of their expected service life of 60 years.

In 2016, the City of Kawartha Lakes initiated the creation of a Master Plan to review the current network design of Roads and Fleet Maintenance Depots, and to assess their ability to efficiently and effectively meet the growing demand for services and legislative requirements over the next twenty-five years. The Master Plan will address Phases 1 and 2 of the Municipal Class Environmental Assessment Act.

2.2 Ontario's Environmental Assessment Act

Ontario's Environmental Assessment Act (the EA Act), passed in 1976, requires the study, documentation, and examination of the environmental effects that could result from major projects or activities. The objective of the EA Act is to consider the possible effects of these projects early in the planning process and to select a preferred alternative with the fewest environmental impacts.

The EA Act defines the environment as:

- Air, land, or water
- Plant and animal life, including humans
- The social, economic, and cultural conditions that influence the life of humans or a community
- Any building, structure, machine, or other device or thing made by humans
- Any solid, liquid, gas, odour, heat, sound, vibration or radiation resulting directly or indirectly from human activities
- Any part or combination of the above and the interrelationships between any two or more of them

EA Planning

The following two types of EA planning and approval processes are applied to projects to meet requirements of the EA Act:

- **Individual EA's (Part II of the Act):** Projects for which a Terms of Reference and an individual EA are carried out and submitted to the Minister of the Environment (MOE) for review and approval
- **Class EA's:** Projects that are approved subject to compliance with an approved class EA process with respect to a class of undertakings. Provided that the appropriate Class EA approval process is followed, a proponent will comply with Section 13(3) a, Part II.1 of the Act.

2.3 Municipal Class Environmental Assessment Process

All municipalities within Ontario are subject to provisions of the EA Act when undertaking public works projects. The MEA's Municipal Class Environmental Assessment (September 2007) document provides municipalities with a five-phase planning procedure approved under the Act to plan and undertake all municipal sewage, water, stormwater management, and transportation projects that occur frequently, are usually limited in scale, and have a predictable range of environmental impacts and applicable mitigation measures.

The EA planning process includes the following key components:

- Consultation early and throughout the process
- Reasonable range of alternatives
- Consideration of effects on the environment and ways to avoid/reduce impacts
- Systematic evaluation of alternatives
- Clear documentation
- Traceable decision making

Planning Procedure

The five-phase planning procedure is as follows:

- Phase 1:** Identify the Opportunity that the project will be addressing.
- Phase 2:** Identify the Alternative Solutions that will address the Opportunity. Analysis of the Alternative Solutions and selection of the Preferred Solution must take into consideration the existing environment and public and agency input.
- Phase 3:** For Schedule C projects, examine alternative methods of implementing the Preferred Solution based on the existing environment, public input, anticipated environmental effects, and methods of minimizing negative effects.
- Phase 4:** For Schedule C projects, document in an Environmental Study Report a summary of the rationale and the planning, design, and project consultation process and make the Report available for review by agencies and the public.
- Phase 5:** Complete contract drawings and documents, and then proceed to construction.

2.4 Class EA Schedules

Based on the 2007 MEA Municipal Class EA document, projects are classified as either Schedule A, A+, B, or C projects. Each classification requires a different level of review to satisfy the Act.

The requirements of a **Schedule B** project are as follows:

The project must complete Phases 1 and 2 of the Class EA planning process and a project file report must be prepared and submitted for review by the public. If there are no outstanding concerns raised by the public, then the recommendations of the project may be implemented. Schedule B projects generally include improvements and expansions to existing facilities where there is the potential for some adverse environmental impacts.

2.5 Project Team

Stirling Rothesay Consulting was retained by the City of Kawartha Lakes to complete the Master Plan.

3.0 Problem Definition

3.1 The Opportunity

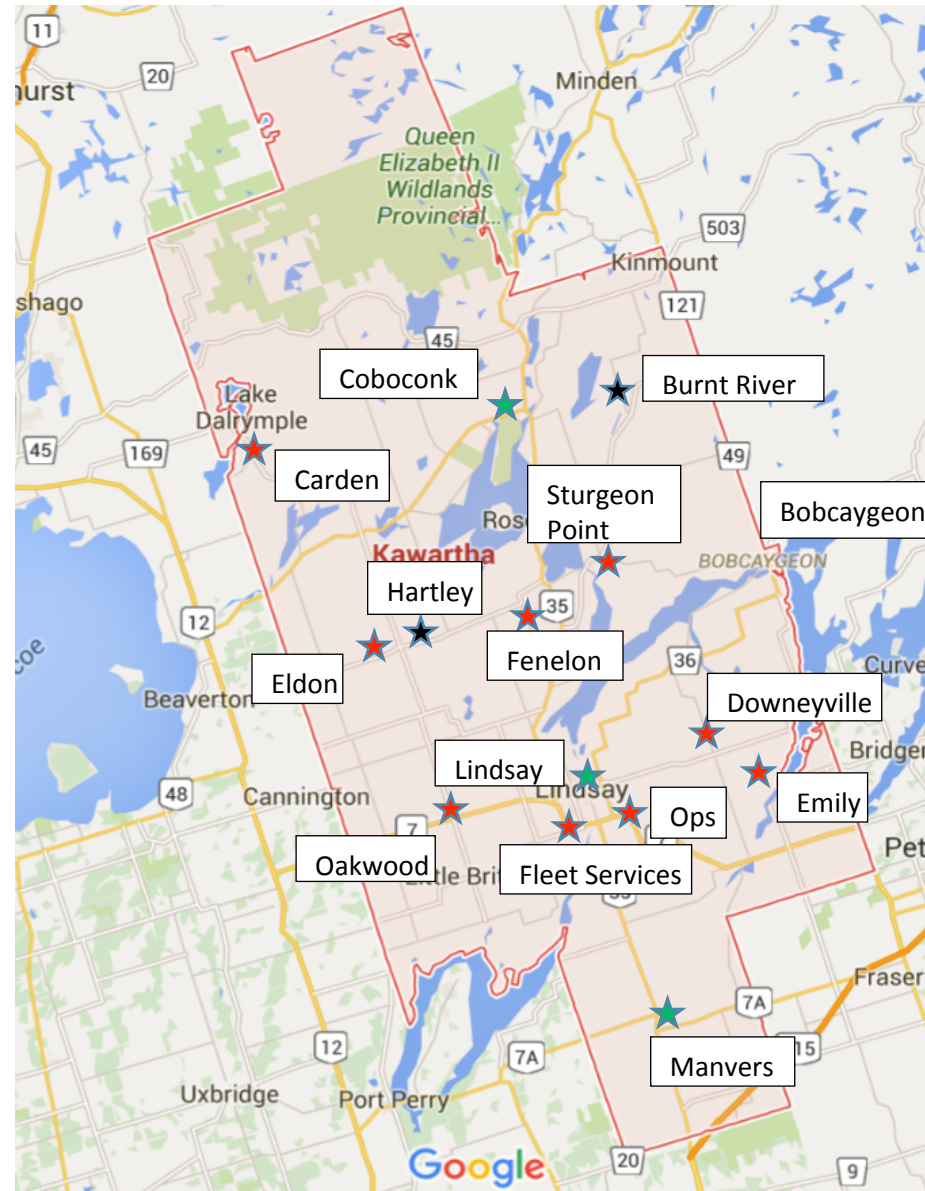
To address the City's concern about their current Roads and Fleet Maintenance Depots, and their ability to meet the demand for services and legislative requirements over the next twenty-five years, the City of Kawartha Lakes initiated a Master Plan (addressing Phases 1 and 2 of the Municipal Class Environmental Assessment Act) to analyse the current depot network design and to recommend the preferred network design – the preferred number, location, and size of Roads and Fleet Maintenance Depots, within the City, to achieve productivity, legislative and service delivery objectives through to 2041.

As required by the Environmental Assessment planning procedures, this involved identifying a number of Alternative Solutions and then evaluating them in terms of their ability to address the above Opportunity. Determining which was the Preferred Alternative required the evaluation of each Alternative Solution using the following criteria:

- Operational Needs and Growth Requirements
- Legislative and Environmental Requirements
- Impact on the Natural and Social Environment
- Best Practice and Industry Trends for the Design of Roads Depots
- Capital Cost Requirements
- Impact on Operating Costs
- Impact on Employee Productivity and Service Levels

3.2 The Study Area

The current depot network design is shown to the right. The configuration is a result of municipal amalgamation which took place over 15 years ago. The design, therefore, does not reflect the current Roads Department organizational design or operational needs.



4.0 Issues Influencing the Preferred Depot Network Design

Determining the preferred depot network design will require evaluation of numerous issues that will affect the ability of the design to meet the City's operational objectives, demand for services, and legislative requirements over the next twenty-five years. These issues include:

- The City covers a vast area (3,083 km²) which is mostly rural with two lane roads
- 28% of the full-time population lives in one town – Lindsay
- The population increases during the summer due to seasonal, lake-side cottages
- The north area of the City is mostly parkland or privately owned
- The southern area of the City, the three largest towns, and the areas around the lakes will experience the most residential/commercial growth (and demand for services) in the coming decades
- Travel time around the lakes can be extensive
- The City strives to maintain high service levels
- Centralizing work crews into a few Operations Centres (with a few satellite depots) will reduce operating costs and/or improve service levels
- The condition and location of the current depots

5.0 Existing Condition and Location of the Current Depots

In this section we will analyse the condition and location of the current depots. The criteria to be evaluated are as follows:

- Lot size and capacity to satisfy future needs
- Whether there is currently indoor sand/salt storage
- The ratio of estimated building repair/replacement costs over the next 20 years
- Compatibility with the adjacent neighbours
- Access to haul routes
- Proximity to work areas

The value of the site will then be characterized as either **HIGH**, **LOW** or **VERY LOW**. Those depots that are characterized as **VERY LOW** will be recommended for closure. The remaining depots will be further analysed for conversion into either Primary or Satellite Depots.

Current Condition of Depots

Depot	Lot Size (acres) - greater than 2 preferred	Inside Sand/Salt Storage	20 Yr Repair Versus Replacement Costs – less than 0.5 preferred	Compatibility With the Neighbours And Environment	Access to a Haul Route	Proximity to Work Areas	Value of Site as a Depot
St. David (89 St. David St.)	4.98	Yes	0.22	Yes	Yes	Yes	High
Little Britain (2094 Little Britain Road)	7.72	No	0.77	Yes	No	Yes	Low
Oakwood (1010 Eldon Road)	<1	Yes	0.27	No	No	No	Low
Fenelon Falls (710 Cameron Road)	101.44	Yes	0.29	Yes	No	No	Low
Hartley (574 Hartly Road)	1.45	No	1.42	No	No	No	Very Low
Eldon (603 Sandringham Road)	0.58	Yes	0.36	No	No	Yes	Low
Carden (12 Lake Dalrymple Road)	1.74	Yes	0.56	Yes	No	Yes	Low
Coboconk (2863 Rd. #48)	9.2	Yes	0.36	Yes	Yes	Yes	High
Ops (77 Fieldside Drive)	2.76	Yes	0.52	No	No	No	Low
Manvers (679 Hwy. #7A)	12.97	Yes	0.60	Yes	Yes	Yes	High
Emily (193 Centreline Road)	100.5	Yes	0.54	Yes	No	No	Low
Downeyville (1079 Rd. #7)	52.5	No	0.98	Yes	No	Yes	Low
Bobcaygeon (62 Duke St.)	0.5	Yes but small	0.38	No	Yes	No	Very Low
Sturgeon Point (64 Sturgeon Pt. Road (Rd. #25))	2.32	Yes	0.26	No	No	No	Low
Burnt River (90 Burnt River Rd. (Road #44))	1.5	Salt shed but No sand	0.51	No	No	No	Very Low

Depot Potential

Depots that have very low value and should be closed are:

1. Hartley: No sand/salt storage, too little land, and the repairs will be costly
2. Bobcaygeon: Very little land for growth
3. Burnt River: Old facility, little land and no sand/salt storage

Depots that could become Primary Depots are:

1. **St. David:** Very close to the largest town within the City
2. **Coboconk:** Has 9 acres for expansion of the facilities, and is close to arterial roads and a haul road. Also, close to the northern service area within the City

Depots that could become Satellite Depots:

1. **Carden:** Not a good facility and requires more land but has a sand dome and is in a good location
2. **Eldon:** Very good facility, has a sand dome, and a good location but more land would be required
3. **Manvers:** Very good facility, has a sand dome and is situated well for the south end of the City
4. **Downeyville:** Not a good facility but has a sand dome, lots of land and is in a good location
5. **Little Britain – Fleet Services:** In a good area to add value to the St. David Depot. Would be best if it were consolidated with the St. David Depot

Depot Potential Continued

Depots that could become Satellite Depots:

6. **Oakwood:** Adjacent to the parking lot for the arena – a safety issue. Very little land but has a sand dome
7. **Fenelon Falls:** Very good facility, lots of land, and has a sand dome but not an ideal location.
8. **Sturgeon Point:** Has a sand dome but not an ideal location.
9. **Ops:** Too close to the St. David Depot but may be beneficial if the St. David facility can't be expanded to satisfy space requirements
10. **Emily:** Has a sand dome and a nice facility but not in a good location

6.0 Future Employee and Vehicle Requirements

The number of Roads employees and work vehicles, in 2041, will be dictated by a number of issues including new infrastructure, changes in technology, government legislation, condition of existing infrastructure, environmental requirements, and service level requirements. All of these will likely lead to an increase in the number of employees and work vehicles. However, there is no precise way to know how all of these issues will unfold, interact and affect the Roads operation over the next 25 years.

The City's forecasted growth, over the next 15 years, focuses on population, housing and employment growth. We consider the housing growth to be the most important indicator of the potential impact on the Roads operation. Over the next 15 years, the total number of housing units is forecasted to increase by 26%. If the City continues at this rate, the number of housing units, by 2041, will increase by 43%. Given Provincial Policy, we expect the majority of this growth to be in the four urban settlement areas - Lindsay, Bobcaygeon, Fenelon Falls, and Omemee.

We believe that it is reasonable to assume that the number of employees will increase, over the next 25 years, by approximately 20%. We will also assume that 10% of the employees will be female (but will provide female locker rooms assuming 15%).

Regarding the number of work vehicles that need to be stored indoors (i.e. plows), we will design to the current number because we believe that number will satisfy future requirements.

Current Vehicle Conditions

FUTURE STATE - 2041																									
Depot	# Employees			Vehicles That Are Stored Inside											Vehicles That Are Stored Outside							# Truck Bays	Pole Barn Bays		
	Supervisor	Summer	Winter	Plows	1-Ton	Graders	Sidewalk	Bucket	Vac Truck	Backhoe	1/2 Ton	Loader	sweeper	Other	Plows	Contracted Plows	Back Hoe	Loader	Grader	1-Ton Truck	Pick-up's			Other	
St. David	1	19	29	5	2	0	5	1	1	1	1	1	1	1		1					2	3	25	0	
Coboconk	0.5	12	6	4	0	0	0	0	0	0	0	0	1		1	2	1	1	1	1	1			4	8
Bobcaygeon	0.5	12	5	4	1	0	1	0	0	0	0	0	1	0			1	1	1	0	1			2	0
Burnt River	0.5	7	2	2	1	0	0	0	0	1	1	1		0		2	1	0	1	0	0	0		3	
Hartley	0	0	0		0		0																	3	0
Carden	0.5	0	5	4	0	0	0	0	0	0	0	1					1	0	1	1					
Eldon	1	11	7	6	1	1	0	0	0	1	1							1	1					5 plus wash	0
Fenelon	1	11	11	5	1	1	0	0	0	1	1				1		1							6 plus wash	0
Sturgeon Point	0.5	5	4	3	1	0	1	0	0	0	1	1		0		1	0	0	0	0	0	0		5	
Oakwood	1	11	9	6	1	1	0	0	0	1	1	1			1									6	1
Ops	0.5	0	5	4	0	0	0	0	0	0	0	0		0			1	0	0	0	0	0		4	
Downeyville	0	0	0	0	0	0	0	0	0	0	0	0		0			0	0	0	0	0	0			2
Emily	1	11	9	6	1	0	0	0	0	1	1	1		0	1	1		2						5	
Manvers	1	11	9	6	1	0	0	0	0	0	1	0		0	1	1	1	1	0					5	3
Fleet Services Lindsay	0.5	11	11												5			1			2	3		7	3
Fleet Services Coby	0.5	4	4												5						2	5		4	
TOTAL		125	116																						

Please Note that for the St. David St. depot only the roads department equipment has been included, there are 4 other departments with equipment, staff and material located at this location. Space is a

Please Note that there are 4 additional Secondary plow routes that are serviced by contracted forces - equipment and labour are house off site

Note: Number of unionized employees has been increased by 20% to accommodate growth in services

Denotes required indoor storage

7.0 Identification and Analysis of Alternative Solutions

To identify the Alternative Solutions we will start by understanding the strategic balance between Cost and Service Levels:

- Can have Low Cost or High Service Levels – but not both
- Low Cost = One Depot = Low Service Levels (i.e. Slow Response Time)
- High Service Levels (i.e. Fast Response Time) = Fifteen Depots = High Cost

Now, what is the City's balancing point – the strategic objective? Are costs and service levels (in some cases) too high? And what is the preferred number, location and size of depots to achieve this strategic objective? To answer this, we will select and analyse four Alternative Solutions.

The first Alternative Solution will be the status quo – to do nothing with the current depots. To determine the other Alternative Solutions our approach will be to start by placing the first Primary Depot where the most work is – Lindsay. Lindsay's population of 20,400 full time residents represents 28% of the City's population. Bobcaygeon and Fenelon Falls, combined, represent 7% of the population

We will then add additional Primary Depots so that each covers an area with a radius of approximately 20km. Therefore, the round trip travel time should rarely exceed 1 hr. Preferably, work crews eat lunch in the field

Next we will add Satellite Depots in outlying areas for the storage of sand/salt and other materials to reduce the need for return trips to the Primary Depots during the day.

Four Alternative Solutions

In total, four Alternative Solutions have been identified and will be described and analysed within the following pages of this section.

The analysis of each Alternative will focus on its impact on the following criteria:

- Operational Needs and Growth Requirements
- Legislative and Environmental Requirements
- Impact on the Natural and Social Environment
- Best Practice and Industry Trends for the Design of Roads Depots
- Capital Cost Requirements
- Impact on Operating Costs
- Impact on Employee Productivity and Service Levels

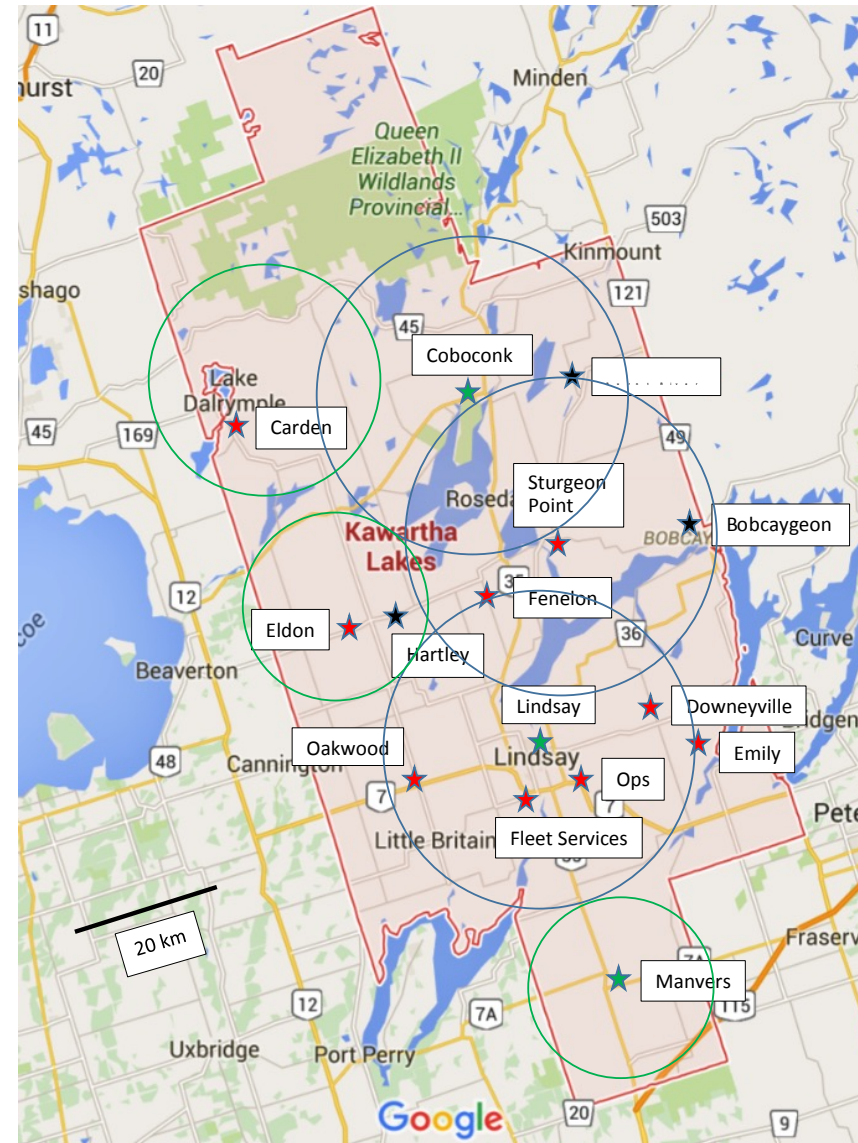
Alternative Solution 1:

- Maintain the status quo by continuing to use and maintain the existing 15 depots

Based on the impact to employee productivity and operational needs, we do not believe that this Alternative will be the Preferred Solution. For example, some of the existing facilities are already insufficient in terms of size and employee amenities to satisfy operational requirements. Furthermore, most of the facilities will be, by 2037, exceeding their theoretical life expectancy of 60 years.

A full description and comparison of the costs and operational issues associated with this alternative will be discussed in section 8.0.

Location of Existing Depots and Radius Rings

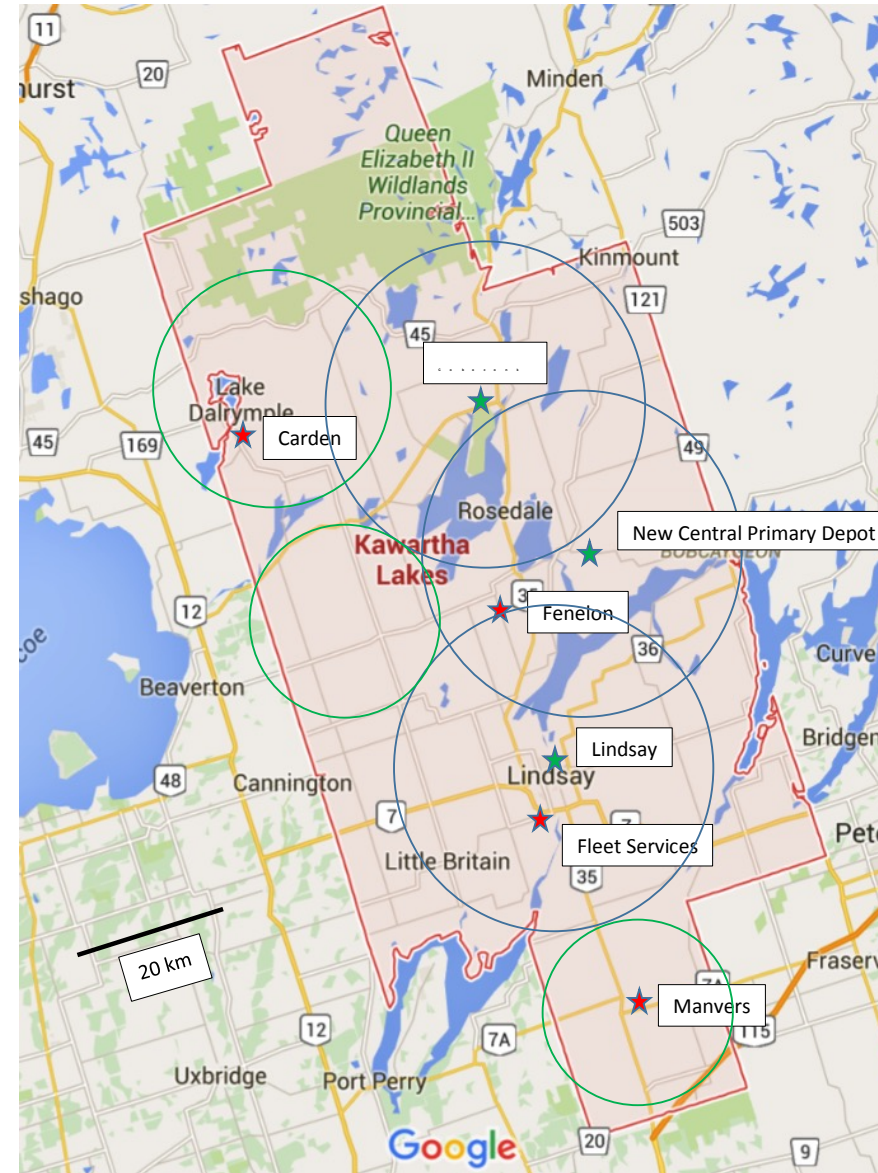


- ★ High future value as an Operations Centre or satellite depot
- ★ Potential satellite depot
- ★ Should close the depot

Alternative Solution 2

- Divide the City into three operations areas – **North, Central** and **South**
- Each area would have one main Primary Depot and one Satellite Depot (for sand/salt/material storage and snow dump)
- The **North** area would have an expanded Coboconk for the Primary Depot (including Fleet Services) and Carden for the Satellite Depot
- The **Central** area would have a new site for the Primary Depot (slightly east of Fenelon Falls) and either Fenelon Falls or Eldon for the Satellite Depot
- The **South** area would have St. David Street for the Primary Depot and Manvers as the Satellite Depot (with sand/salt/material storage). Transit and EMS would be expected to relocate
- The Fleet Services Depot would remain as is unless Transit storage relocate there

Location of 3 Primary and 3 Satellite Depots, Fleet Services, and 20 km Radius Rings



- ★ Primary Depots
- ★ Satellite Depots

Operational Needs/Growth Requirements for Solution 2



All upgraded or new depots (Central Primary Depot) would be built to satisfy the growing functional and spatial requirements for the Roads Department for the next 25 years and beyond (e.g. indoor vehicle storage and wash bays, modern office and employee amenities, and efficiently designed yard configuration).

The upgraded and new facilities would also be built to achieve energy efficiency. Current facilities are neither energy efficient nor environmentally sustainable.

Consolidation of employees into fewer depots would increase employee flexibility and the ability of staff to schedule and assign tasks to employees.

The location of the primary and satellite depots would provide good access to most parts of the City so as to better balance operating cost versus service delivery.

Operational Needs/Growth Requirements for Solution 2 (continued)



FUTURE STATE - 2041

Area	Primary/Satellite Depots	Consolidated Depots	# Employees Peak Season	Office m2	Storage m2	Lunch Rm m2	Change/Wash Rm m2	Training Room m2	Mech/Elec m2	Total Area m2	Needed at Main/Sat		Needed at Main		Pole Barn
											# Heated Truck/Wash Bays	Bays Have	Heated Bays m2	# Unheated Truck Bays	Bays Have
North	Coboconk	Burnt River	23+2	41.6	11.7	53.5	53	28	0	216	10	4	0		8
	Carden/New		0								5	0	520		0
Central	New	Bobcaygeon	39+3	62.4	20.8	92	85	45	32	472	24	24	2132		0
		Sturgeon Point													
		Hartley													
		Fenelon/Eldon													
	Fenelon/Eldon		0								7	6	0		0
South	St. David	Oakwood	61+5	104	20.8	138	110	45	32	585	44	25	1144		0
		Ops													
		Downeyville													
		Emily													
	Manvers		0								9	5	104		3
	Fleet Services		11+1								0	0	104		3
TOTAL											99				

Legislative/Environmental Requirements – Solution 2

This Alternative Solution Recommends minor changes to the design of six of the existing Depots within the City of Kawartha Lakes. One of the six Depots is in an industrial park within Lindsay. The other five are located within a rural environment. The Alternative Solution also recommends that a new Primary Depot be constructed close to Fenelon Falls.

With respect to environmental impact, none of the recommended changes to the existing Depots would negatively impact the natural or social environment. There would be no changes that would permanently affect noise levels, air quality, or water quantity and quality. During construction steps would be taken, as described below, to ensure that all municipal by-laws and MOECC sound level criteria were satisfied.

Before the land is purchased for the proposed Central Area Primary Depot, a MCEA should be completed to conduct more detailed investigations to confirm the acceptability of the site (from a facility design and environmental perspective) and any mitigation requirements.

7.1 Natural Environment

There are no Areas of Natural and Scientific Interest (ANSI), Environmentally Significant Areas (ESA), or Provincially Significant Wetlands (PSW) located within the proximity of the six Depots (study areas).

Natural vegetation within the five rural study areas is largely restricted to coniferous and deciduous forest (within a natural wood lot), and upland meadows. The Depot within the industrial park is surrounded by manicured lawns. There are no recorded natural heritage features or rare vegetation communities within the study areas. Furthermore, there are no species listed as at risk (under the provincial Endangered Species Act (2007), either.

There are no locally, provincially or federally rare wildlife species within the study area.

Legislative/Environmental Requirements – Solution 2 Continued (2)



7.2 Water Quantity and Quality

The recommended changes to the Depots are not expected to impact the porosity of ground surfaces. Therefore, we predict no increase to overland flow of storm water during wet weather events.

There will be no new activities at the existing Depots that will pose a threat to nearby wells, creeks, rivers, lakes or drinking water.

7.3 Socio-Cultural Environment

All six Depots are located within the City of Kawartha Lakes. Five of the six areas are located within a rural environment. The sixth is located within an industrial park within Lindsay. Based on a review of detailed mapping, none of the study areas are located within the Greenbelt Plan area.

7.4 Air Quality and Noise

The six Depots are currently operational and have been for decades. The recommended minor changes to the six Depots are not expected to have a permanent impact on local odour, air quality, or noise that would affect residential developments, or other sensitive land uses.

7.5 Impact During Construction

During construction, at each of the six Depots, it is not anticipated that truck traffic will have an adverse effect on the environment. Truck access and parking will be arranged during the detailed design phase of each project.

Since the proposed work will take place either in an industrial park or well away from a residential neighbourhood (or other sensitive land uses), the construction activities are expected to produce minimal impact on noise and air quality. Although the construction activities will produce some noise, it will be completed during normal working hours, and is not expected to cause undue disturbance due to adequate separation distances.

Legislative/Environmental Requirements – Solution 2 Continued (3)

All construction will comply with municipal noise by-laws and implement general noise control measures, investigate noise complaints, and comply with MOECC sound level criteria for construction equipment.

There will be no requirement to remove excavated soils from the individual Depot sites, and there is no expectation that the quality and quantity of ground and surface water will be affected. Furthermore, there will be no potential to impact wells, creeks, rivers or lakes, and there will be no need to dewater or divert water or cause soil erosion.

North Area Depot Best Practice Area Requirements – Coboconk (Solution 2)



The **Coboconk Primary Depot** will require the following areas:

1. 9 heated indoor bays for storing vehicles,
2. 1 indoor wash bay,
3. New office, employee amenities, training room for 2 staff and 23 employees
4. Indoor storage space for equipment and tools
5. Salt and sand storage domes
6. Outdoor wash bay
7. Outdoor material dump ramp
8. Outdoor vehicle refueling area (gas, diesel, dyed diesel)
9. Outdoor material storage bunkers
10. Outdoor work vehicle and employee parking area (25 stalls)
11. The Fleet Services area will remain as it is.

North Area Depot Redesign Requirements – Coboconk (Solution 2)



The [Coboconk Primary Depot](#) will require the following redesign changes:

1. Convert the Pole Barn into an 8 bay cool storage area for vehicles and tools
2. Convert 2 of the 4 heated garage bays (within the main depot) into a wash bay and vehicle storage bay
3. Convert the other 2 heated garage bays and existing office into a new office, employee amenities, and training room
4. Construct an outdoor wash bay, material dump ramp, material storage bunkers, and a work vehicle and employee parking area

North Area Depot Best Practice Area Requirements – Carden (Solution 2)



The [Carden Satellite Depot](#) will require the following areas:

1. 4 heated indoor bays for storing vehicles,
2. 1 indoor wash bay,
3. Outdoor wash bay
4. Salt and sand storage domes
5. Outdoor vehicle refueling area (gas, diesel, dyed diesel)
6. Outdoor material storage bunkers
7. Outdoor work vehicle and employee parking area

North Area Depot Redesign Requirements – Carden (Solution 2)



The [Carden Satellite Depot](#) will require the following redesign changes:

1. Construct a new building with a 4 bay cool storage area for storing vehicles and tools, and a wash bay
2. Construct an outdoor wash bay, material storage bunkers, and a work vehicle and employee parking area

Central Area Depot Best Practice Area Requirements – New Primary Depot (Solution 2)



The [New Central Area Primary Depot](#) will require the following areas:

1. Heated indoor storage for 13 plows, 5 pick-up trucks, 1 sweeper, 2 sidewalk plows
2. 2 heated indoor bays for vehicle maintenance
3. 1 indoor wash bay
4. New office, employee amenities, training room for 3 staff and 39 employees
5. Indoor storage space for equipment and tools
6. Salt and sand storage domes
7. Outdoor wash bay
8. Outdoor material dump ramp
9. Outdoor vehicle refueling area (gas, diesel, dyed diesel)
10. Outdoor material storage bunkers
11. Outdoor work vehicle and employee parking area (42 stalls)

Central Area Depot Redesign Requirements – New Primary Depot (Solution 2)



The [New Central Area Primary Depot](#) will require the following design elements:

1. Construct a large heated building for storing 13 plows, and 5 pick-up trucks
2. Attached to the storage building should be 2 full size bays (for the sweeper and sidewalk plows), 2 maintenance bays, an indoor wash bay, storage space for equipment and tools, office, employee amenities, and training room for 3 staff and 39 employees
3. Construct salt and sand storage domes
4. Construct an outdoor wash bay, material dump ramp, material storage bunkers, and a work vehicle and employee parking area
5. Construct an outdoor vehicle refueling area (gas, diesel, dyed diesel)

Central Area Depot Best Practice Area Requirements – Fenelon/Eldon (Solution 2)



The **Fenelon/Eldon Satellite Depot** will require the following areas:

1. 6 heated indoor bays for storing vehicles
2. 1 indoor wash bay
3. Outdoor wash bay
4. Salt and sand storage domes
5. Outdoor vehicle refueling area (gas, diesel, dyed diesel)
6. Outdoor material storage bunkers
7. Outdoor work vehicle and employee parking area

Central Area Depot Redesign Requirements – Fenelon/ Eldon (Solution 2)



The **Fenelon/Eldon Satellite Depot** will require the following redesign changes:

1. Construct 0 or 1 additional heated storage bays on the main depot building (so that there is a total of 6 storage bays and a wash bay)
2. Construct an outdoor wash bay, material storage bunkers, and a work vehicle and employee parking area

South Area Depot Best Practice Area Requirements – St. David (Solution 2)



The [St. David Primary Depot](#) will require the following areas:

1. 35 heated indoor bays for storing vehicles
2. 1 indoor wash bay
3. Office, employee amenities, training room for 5 staff and 61 employees
4. Indoor storage space for equipment and tools
5. Salt and sand storage domes
6. Outdoor wash bay
7. Outdoor material dump ramp
8. Outdoor vehicle refueling area (gas, diesel, dyed diesel)
9. Outdoor material storage bunkers
10. Outdoor work vehicle and employee parking area

South Area Depot Redesign Requirements – St. David (Solution 2)



The [St. David Primary Depot](#) will require the following redesign changes:

1. Construct a new heated storage building for storing 10 large work vehicles (and have Transit vacate the site). This will then provide stalls for 35 large work vehicles.
2. Attached to the new storage building should be an indoor wash bay, and storage space for equipment and tools
3. Expand the size of the employee amenities (within the existing main depot) and training room for 5 staff and 61 employees (assuming Transit is vacating the site)
4. Construct an outdoor wash bay, material dump ramp, material storage bunkers, and an expanded work vehicle and employee parking area
5. Add an indoor sand storage facility

South Area Depot Best Practice Area Requirements – Manvers (Solution 2)

The [Manvers Satellite Depot](#) will require the following areas:

1. 8 heated indoor bays for storing vehicles
2. 1 indoor wash bay
3. Indoor storage space for equipment and tools
4. Salt and sand storage domes
5. Outdoor wash bay
6. Outdoor vehicle refueling area (gas, diesel, dyed diesel)
7. Outdoor material storage bunkers
8. Outdoor work vehicle and employee parking area

South Area Depot Redesign Requirements – Manvers (Solution 2)



The [Manvers Satellite Depot](#) will require the following redesign changes:

1. Modify the Pole Barn so that it is heated and can provide cool storage for 3 large work vehicles. This combined with the existing 5 heated bays in the main depot will provide a total of 8 storage bays
2. Construct onto the existing depot building a new indoor wash bay, and storage space for equipment and tools
3. Construct an outdoor wash bay, material storage bunkers, and a work vehicle and employee parking area

South Area Depot Best Practice Area Requirements – Fleet Services (Solution 2)



The **Fleet Services Depot** will require the following areas:

1. 13 heated indoor bays for maintenance of Transit and Roads vehicles (no Roads vehicle storage). The new maintenance bays will not be required if Transit vacates the St. David facility and builds a new Transit Storage/Maintenance Facility.
2. 1 indoor wash bay
3. Indoor storage space for equipment and tools
4. Outdoor wash bay
5. Outdoor work vehicle and employee parking area

South Area Depot Redesign Requirements – Fleet Services (Solution 2)



The **Fleet Services Depot** will require the following redesign changes:

1. Modify the Pole Barn so that it is heated and can provide cool storage for 3 large work vehicles
2. Construct onto the existing Fleet Services building a new indoor wash bay, 5 Maintenance bays and storage space for equipment and tools.
3. Construct an outdoor wash bay, and a work vehicle and employee parking area

Capital Costs – Solution 2

The following capital costs are required to complete the redesign requirements for Alternative Solution 2:

Redesign Requirements	Capital Costs (\$)
North – Primary - Expanded Coboconk Depot	900,000
North – Satellite - Expanded Carden Depot	882,200
Central – Primary - New Primary Depot	7,339,214
Central – Satellite - Expanded Fenelon Depot	285,000
South – Primary - Expanded St. David Depot	2,170,000
South – Satellite - Expanded Manvers Depot	396,800
Expanded Fleet Services	920,000
TOTAL	12,893,214

Operating Costs – Solution 2

Alternative Solution 2 will create significant operational savings to help offset the required capital costs:

1. Consolidating the number of depots from 15 to 7 (including Fleet Services) will reduce the total facility repair costs and total facility operating costs (i.e. energy and insurance). See next two pages for financial costs.
2. The new Central Primary Depot will incorporate energy efficient materials and systems that will reduce its energy costs by as much as 40%.

Alternative Solution 2 will also add some operational costs:

1. Fuel costs and vehicle life cycle costs will increase slightly because the work crews will be consolidated into 3 Primary Depots, thus, resulting in slightly further driving distances to the outlying areas. This will be mitigated, to a certain extent, by providing each of the 3 Primary Depots with a Satellite Depot that will be used to store salt, sand, miscellaneous materials, and plows (to reduce deadhead times).

Operating Costs – Facility Repair Costs (Solution 2)

The following facility repair costs (as calculated by Altus Engineering) are required over the next 20 years for Alternative Solution 2:

Facility Repairs	Operating Costs (\$)
North – Primary – Expanded Coboconk Depot	215,150
North – Satellite – Expanded Carden Depot	201,700
Central – Satellite – Expanded Fenelon Depot	293,820
South – Primary – Expanded St. David Depot	492,453
South – Satellite – Expanded Manvers Depot	294,260
Expanded Fleet Services	567,280
TOTAL	2,064,663

Operating Costs – Facility Operating Costs (Solution 2)

The following facility operating costs (e.g. energy and insurance) are required over the next 20 years for Alternative Solution 2:

Projects	Operating Costs (\$)
North – Primary – Expanded Coboconk Depot	556,000
North – Satellite – Expanded Carden Depot	260,000
Central – Primary - New Primary Depot	700,000
Central – Satellite – Expanded Fenelon Depot	260,000
South – Primary – Expanded St. David Depot	800,000
South – Satellite – Expanded Manvers Depot	324,000
Expanded Fleet Services	700,000
TOTAL	3,600,000

Employee Productivity/Service Levels – Solution 2

Consolidating the number of depots from 15 to 7 (including Fleet Services) will create numerous advantages including:

1. The workforce will be centralized within just 3 depots (plus Fleet services). This will lead to improved communication and collaboration amongst staff, and improved flexibility with the scheduling of employees and work tasks. This will lead to improved employee productivity and flexibility – reducing operating costs and/or improving service levels
2. Providing each of the 3 Primary Depots with a Satellite Depot will help reduce deadheading and crew travel times. This should also improve employee productivity and service levels

The disadvantages of fewer depots will include:

1. Travel time to some of the outer areas of the City will increase slightly – reducing productivity, and increasing response time to these outlying areas. However, response time to the main towns may decrease.

Employee Productivity/Service Levels Continued (Solution 2)



Redesigning some of the depots and building a new Central Primary Depot will create numerous advantages including:

1. Best Practices in depot facility design and yard configuration will be incorporated to enable the safe, lean, efficient flow of employees, vehicles, and materials throughout the facilities. Furthermore, required space for offices, employee amenities, vehicle/material storage, and vehicle wash equipment will be provided. This will improve employee morale and productivity – reducing operating costs and/or improving service levels

Employee Productivity/Service Levels Continued (3)

Solution 2



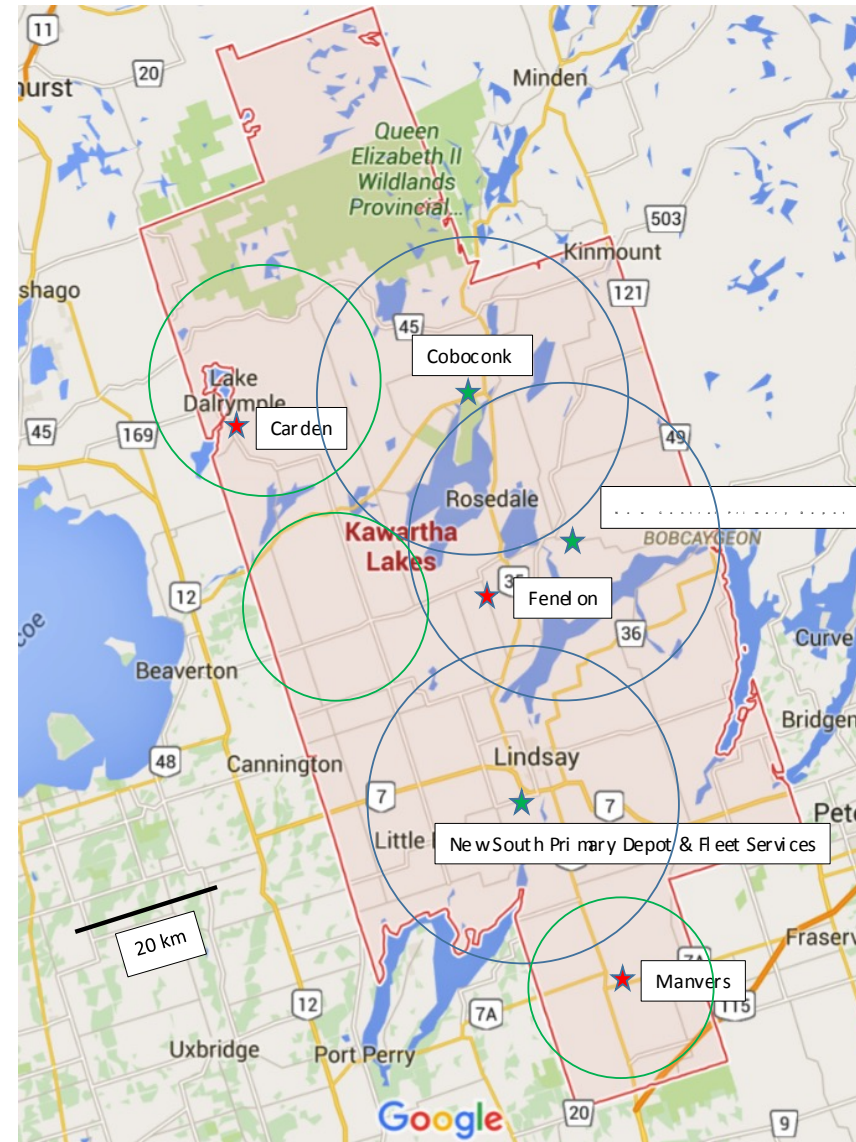
Implementing Performance Management and Lean tools to identify waste, redesign processes, and continuously improve the flow of employees, vehicles, materials and equipment will create numerous advantages including:

1. Improved workforce culture, morale, productivity and flexibility – reducing operating costs and/or improving service levels

Alternative Solution 3

- This solution would be the same as Alternative 2 except the **South** area would build a new Primary Depot close to the Fleet Services Depot on Little Britain Road, and use Manvers as the Satellite Depot (with sand/salt/material storage). Vacating the St. David Street Depot would permit Transit to control this facility and, eventually, build their maintenance bays there (likely in the current EMS area) to achieve full consolidation
- The existing Fleet Services Depot facility would remain as is at Little Britain Road providing maintenance services to Roads
- The benefits include more land for expansion at Little Britain than at St. David Street (more would need to be purchased), and the Fleet Services and Primary Depot would be consolidated on the same site

Location of 3 Primary and 3 Satellite Depots, and 20 km Radius Rings



Operational Needs/Growth Requirements – Solution 3

All upgraded or new depots (**Central Primary and South Primary Depots**) would be built to satisfy the growing functional and spatial requirements for the Roads Department for the next 25 years and beyond (e.g. indoor vehicle storage and wash bays, modern office and employee amenities, and efficiently designed yard configuration).

The upgraded and new facilities would also be built to achieve energy efficiency. Current facilities are neither energy efficient nor environmentally sustainable.

Consolidation of employees into fewer depots would increase employee flexibility and the ability of staff to schedule and assign tasks to employees.

The location of the primary and satellite depots would provide good access to most parts of the City so as to better balance operating cost versus service delivery.

Operational Needs/Growth Requirements Continued – Solution 3



FUTURE STATE - 2041 Same as Option 2 except



Area	Primary/Satellite	Consolidated	# Employees	Office	Storage	Lunch Rm	Change/Wash Rm	Training Room	Mech/Electrical	Total Area	# Heated Truck/Wash Bays	Bays have	Heated Bays	# Unheated Truck Bays	Bays Have	
	Depots	Depots	Peak Season	m2	m2	m2	m2	m2	m2	m2			m2			
North	Coboconk	Burnt River	23+2	41.6	11.7	53.5	53	28	0	216	10	4	0		8	
	Carden/New		0								5	0	520		0	
Central	New	Bobcaygeon	39+3	62.4	20.8	92	85	45	32	472	24	24	2041		0	
		Sturgeon Point														
		Hartley														
		Fenelon/Eldon														
	Fenelon/Eldon		0								7	6	0		0	
South	Fleet Services	St. David	72+6	125	20.8	168	126	45	32	723	48	0	3650		3	
		Oakwood														
		Ops														
		Downeyville														
		Emily														
	Manvers		0								9	5	104		3	
TOTAL																

Legislative/Environmental Requirements – Solution 3

This Alternative Solution Recommends minor changes to the design of four of the existing Depots within the City of Kawartha Lakes. One of the four Depots is in an industrial park within Lindsay. The other three are located within a rural environment. The Alternative Solution also recommends that two new Primary Depot's be constructed - close to Fenelon Falls and Lindsay.

With respect to environmental impact, none of the recommended changes to the existing Depots would negatively impact the natural or social environment. There would be no changes that would permanently affect noise levels, air quality, or water quantity and quality. During construction steps would be taken, as described below, to ensure that all municipal by-laws and MOECC sound level criteria were satisfied.

Before the land is purchased for the two proposed Primary Depots, a MCEA should be completed to conduct more detailed investigations to confirm the acceptability of the sites (from a facility design and environmental perspective) and any mitigation requirements.

7.1 Natural Environment

There are no Areas of Natural and Scientific Interest (ANSI), Environmentally Significant Areas (ESA), or Provincially Significant Wetlands (PSW) located within the proximity of the six Depots (study areas).

Natural vegetation within the five rural study areas is largely restricted to coniferous and deciduous forest (within a natural wood lot), and upland meadows. The Depot within the industrial park is surrounded by manicured lawns. There are no recorded natural heritage features or rare vegetation communities within the study areas. Furthermore, there are no species listed as at risk (under the provincial Endangered Species Act (2007), either.

There are no locally, provincially or federally rare wildlife species within the study area.

Legislative/Environmental Requirements Continued – Solution 3

7.2 Water Quantity and Quality

The recommended changes to the Depots are not expected to impact the porosity of ground surfaces. Therefore, we predict no increase to overland flow of storm water during wet weather events.

There will be no new activities at the existing Depots that will pose a threat to nearby wells, creeks, rivers, lakes or drinking water.

7.3 Socio-Cultural Environment

All four Depots are located within the City of Kawartha Lakes. Five of the six areas are located within a rural environment. The sixth is located within an industrial park. Based on a review of detailed mapping, none of the study areas are located within the Greenbelt Plan area.

7.4 Air Quality and Noise

The four Depots are currently operational and have been for decades. The recommended minor changes to the six Depots are not expected to have a permanent impact on local odour, air quality, or noise that would affect residential developments, or other sensitive land uses.

7.5 Impact During Construction

During construction, at each of the four Depots, it is not anticipated that truck traffic will have an adverse effect on the environment. Truck access and parking will be arranged during the detailed design phase of each project.

Since the proposed work will take place either in an industrial park or well away from a residential neighbourhood (or other sensitive land uses), the construction activities are expected to produce minimal impact on noise and air quality. Although the construction activities will produce some noise, it will be completed during normal working hours, and is not expected to cause undue disturbance due to adequate separation distances.

Legislative/Environmental Requirements Continued (3) - Solution 3

All construction will comply with municipal noise by-laws and implement general noise control measures, investigate noise complaints, and comply with MOECC sound level criteria for construction equipment.

There will be no requirement to remove excavated soils from the individual Depot sites, and there is no expectation that the quality and quantity of ground and surface water will be affected. Furthermore, there will be no potential to impact wells, creeks, rivers or lakes, and there will be no need to dewater or divert water or cause soil erosion.

North Area Depot Best Practice Area Requirements – Coboconk (Solution 3)

The [Coboconk Primary Depot](#) will require the following areas:

1. 9 heated indoor bays for storing vehicles,
2. 1 indoor wash bay,
3. New office, employee amenities, training room for 2 staff and 23 employees
4. Indoor storage space for equipment and tools
5. Salt and sand storage domes
6. Outdoor wash bay
7. Outdoor material dump ramp
8. Outdoor vehicle refueling area (gas, diesel, dyed diesel)
9. Outdoor material storage bunkers
10. Outdoor work vehicle and employee parking area
11. The Fleet Services area will remain as it is.

North Area Depot Redesign Requirements – Coboconk (Solution 3)



The [Coboconk Primary Depot](#) will require the following redesign changes:

1. Convert the Pole Barn into an 8 bay cool storage area for vehicles and tools
2. Convert 2 of the 4 heated garage bays into a wash bay and vehicle storage bay
3. Convert the other 2 heated garage bays and existing office into a new office, employee amenities, and training room
4. Construct an outdoor wash bay, material dump ramp, material storage bunkers, and a work vehicle and employee parking area

North Area Depot Best Practice Area Requirements – Carden (Solution 3)



The [Carden Satellite Depot](#) will require the following areas:

1. 4 heated indoor bays for storing vehicles,
2. 1 indoor wash bay,
3. Outdoor wash bay
4. Salt and sand storage domes
5. Outdoor vehicle refueling area (gas, diesel, dyed diesel)
6. Outdoor material storage bunkers
7. Outdoor work vehicle and employee parking area

North Area Depot Redesign Requirements – Carden (Solution 3)



The [Carden Satellite Depot](#) will require the following redesign changes:

1. Construct a new building with a 4 bay cool storage area for storing vehicles and tools, and a wash bay
2. Construct an outdoor wash bay, material storage bunkers, and a work vehicle and employee parking area

Central Area Depot Best Practice Area Requirements – New Primary Depot (Solution 3)



The [New Central Area Primary Depot](#) will require the following areas:

1. Heated indoor storage for 13 plows, 5 pick-up trucks, 1 sweeper, 2 sidewalk plows
2. 2 heated indoor bays for vehicle maintenance
3. 1 indoor wash bay
4. New office, employee amenities, training room for 3 staff and 39 employees
5. Indoor storage space for equipment and tools
6. Salt and sand storage domes
7. Outdoor wash bay
8. Outdoor material dump ramp
9. Outdoor vehicle refueling area (gas, diesel, dyed diesel)
10. Outdoor material storage bunkers
11. Outdoor work vehicle and employee parking area (42 stalls)

Central Area Depot Redesign Requirements – New Primary Depot (Solution 3)



The [New Central Area Primary Depot](#) will require the following design elements:

1. Construct a large heated building for storing 13 plows, and 5 pick-up trucks
2. Attached to the storage building should be 2 full size bays (for the sweeper and sidewalk plows), 2 maintenance bays, an indoor wash bay, storage space for equipment and tools, office, employee amenities, and training room for 3 staff and 39 employees
3. Construct salt and sand storage domes
4. Construct an outdoor wash bay, material dump ramp, material storage bunkers, and a work vehicle and employee parking area
5. Construct an outdoor vehicle refueling area (gas, diesel, dyed diesel)

Central Area Depot Best Practice Area Requirements - Fenelon/Eldon (Solution 3)



The **Fenelon/Eldon Satellite Depot** will require the following areas:

1. 6 heated indoor bays for storing vehicles
2. 1 indoor wash bay
3. Outdoor wash bay
4. Salt and sand storage domes
5. Outdoor vehicle refueling area (gas, diesel, dyed diesel)
6. Outdoor material storage bunkers
7. Outdoor work vehicle and employee parking area

Central Area Depot Redesign Requirements - Fenelon/ Eldon (Solution 3)



The **Fenelon/Eldon Satellite Depot** will require the following redesign changes:

1. Construct 0 or 1 additional heated storage bays on the existing building so that there are a total of 6
2. Construct an outdoor wash bay, material storage bunkers, and a work vehicle and employee parking area

South Area Depot Best Practice Area Requirements – Fleet Services (Solution 3)



The **Fleet Services Depot** will require the following areas:

1. Heated indoor storage for 27 plows, 8 pick-up trucks, 1 sweeper, 5 sidewalk plows, and 1 vacuum truck
2. 1 indoor wash bay
3. New office, employee amenities, training room for 6 staff and 72 employees
4. Indoor storage space for equipment and tools
5. 13 heated indoor bays for maintenance of Transit and Roads vehicles (no Roads vehicle storage). The new maintenance bays will not be required if Transit consolidates their maintenance into the St. David facility or builds a new Transit Storage/Maintenance Facility.
6. Salt and sand storage domes
7. Outdoor wash bay
8. Outdoor material dump ramp, and material storage bunkers
9. Outdoor work vehicle and employee parking area

South Area Depot Redesign Requirements – Fleet Services (Solution 3)



The **Fleet Services Depot** will require the following redesign changes:

1. Construct a large heated building for storing 27 plows, and 8 pick-up trucks
2. Attached to the new storage building should be 3 full size bays (for the sweeper, sidewalk plows, and vacuum truck) an indoor wash bay, 5 Maintenance bays and storage space for equipment and tools
3. Construct, as part of the new storage building, an office, employee amenities and training room for 6 staff and 72 employees
4. Construct salt and sand storage domes
5. Construct an outdoor wash bay, material dump ramp, material storage bunkers, and an expanded work vehicle and employee parking area
6. Purchase at least 4 adjacent acres of land

South Area Depot Best Practice Area Requirements – Manvers (Solution 3)

The [Manvers Satellite Depot](#) will require the following areas:

1. 8 heated indoor bays for storing vehicles
2. 1 indoor wash bay
3. Indoor storage space for equipment and tools
4. Salt and sand storage domes
5. Outdoor wash bay
6. Outdoor vehicle refueling area (gas, diesel, dyed diesel)
7. Outdoor material storage bunkers
8. Outdoor work vehicle and employee parking area

South Area Depot Redesign Requirements – Manvers (Solution 3)



The [Manvers Satellite Depot](#) will require the following redesign changes:

1. Modify the Pole Barn so that it is heated and can provide cool storage for 3 large work vehicles. This combined with the existing 5 heated bays in the main depot will provide a total of 8 storage bays
2. Construct onto the existing depot building a new indoor wash bay, and storage space for equipment and tools
3. Construct an outdoor wash bay, material storage bunkers, and a work vehicle and employee parking area

Capital Costs – Solution 3

The following capital costs are required to complete the redesign requirements for Alternative Solution 3:

Redesign Requirements	Capital Costs (\$)
North – Primary - Expanded Coboconk Depot	900,000
North – Satellite - Expanded Carden Depot	882,200
Central – Primary - New Primary Depot	7,339,214
Central – Satellite - Expanded Fenelon Depot	285,000
South – Primary - Expanded Fleet Services Site	9,788,232
South – Satellite - Expanded Manvers Depot	396,800
TOTAL	19,591,446

Operating Costs – Solution 3

Alternative Solution 3 will create significant operational savings to help offset the required capital costs:

1. Consolidating the number of depots from 15 to 6 (including Fleet Services) will reduce the total facility repair costs and total facility operating costs (i.e. energy and insurance). See next two pages for financial costs.
2. The new Central Primary Depot and new South Primary Depot will incorporate energy efficient materials and systems that will reduce their energy costs by as much as 40%.

Alternative Solution 3 will also add some operational costs:

1. Fuel costs and vehicle life cycle costs will increase slightly because the work crews will be consolidated into 3 Primary Depots, thus, resulting in slightly further driving distances. This will be mitigated, to a certain extent, by providing each of the 3 Primary Depots with a Satellite Depot that will be used to store salt, sand, miscellaneous materials, and plows (to reduce deadhead times). However, by locating the South Primary Depot with Fleet Services, there will be a reduction in travel distance required to maintain the depots work vehicles.

Operating Costs – Repair Costs (Solution 3)

The following maintenance repair costs (as calculated by Altus Engineering) are required over the next 20 years for Alternative Solution 3:

Maintenance Repairs	Operating Costs (\$)
North – Primary – Expanded Coboconk Depot	215,150
North – Satellite – Expanded Carden Depot	201,700
Central – Satellite – Expanded Fenelon Depot	293,820
South – Primary – Expanded Fleet Services Site	567,280
South – Satellite – Expanded Manvers Depot	294,260
TOTAL	1,572,210

Operating Costs – Facility Operating Costs (Solution 3)



The following facility operating costs (e.g. energy and insurance) are required over the next 20 years for Alternative Solution 3:

Project	Operating Costs (\$)
North – Primary – Expanded Coboconk Depot	556,000
North – Satellite – Expanded Carden Depot	260,000
Central – Primary – New Primary Depot	700,000
Central – Satellite – Expanded Fenelon Depot	260,000
South – Primary – Expanded Fleet Services Site	1,300,000
South – Satellite – Expanded Manvers Depot	324,000
TOTAL	3,400,000

Employee Productivity/Service Levels – Solution 3

Consolidating the number of depots from 15 to 6 (including Fleet Services) will create numerous advantages including:

1. The workforce will be centralized within just 3 depots. This will lead to improved communication and collaboration amongst staff, and improved flexibility with the scheduling of employees and work tasks. This will lead to improved employee productivity – reducing operating costs and/or improving service levels
2. Locating the new South Primary Depot with Fleet Services will reduce the travel time required to maintain the depots work vehicles
3. Providing each of the 3 Primary Depots with a Satellite Depot will help reduce deadheading and crew travel times. This should also improve employee productivity and service levels

The disadvantages of fewer depots will include:

1. Travel time to some of the outlying areas of the City will increase slightly – reducing productivity, and increasing response time to these areas. However, response time to the more populated towns may decrease.

Employee Productivity/Service Levels – Solution 3 (2)



Redesigning some of the depots and building a new Central Primary Depot and South Primary Depot will create numerous advantages including:

1. Best Practices in depot facility design and yard configuration will be incorporated to enable the safe, lean, efficient flow of employees, vehicles, and materials throughout the facilities. Furthermore, required space for offices, employee amenities, vehicle/material storage, and vehicle wash equipment will be provided. This will improve employee morale and productivity – reducing operating costs and/or improving service levels

Employee Productivity/Service Levels – Solution 3 (3)



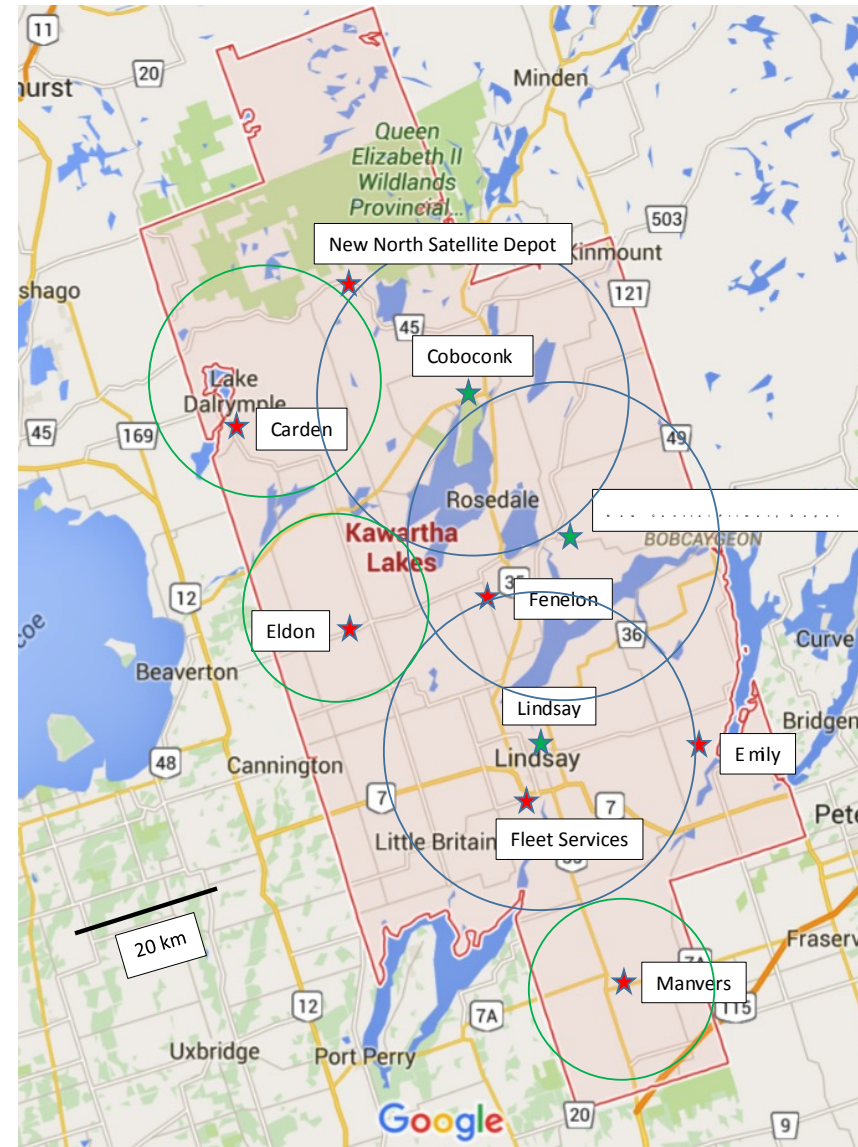
Implementing Performance Management and Lean tools to identify waste, redesign processes, and continuously improve the flow of employees, vehicles, materials and equipment will create numerous advantages including:

1. Improved workforce culture, morale, productivity and flexibility – reducing operating costs and/or improving service levels

Alternative Solution 4

- This solution would be the same as Alternative 2 except each area would have one main Primary Depot and **two** Satellite Depots (for sand/salt/material storage and snow dump)
- The **North** area would have an expanded Coboconk for the Primary Depot (including Fleet Services) and Carden **and one new location** for the Satellite Depots
- The **Central** area would have a new site for the Primary Depot (slightly east of Fenelon Falls) and **both** Fenelon Falls and Eldon for the Satellite Depots
- The **South** area would have St. David Street for the Primary Depot and Manvers **and Emily** as the Satellite Depots (with sand/salt/material storage). Transit and EMS would be expected to relocate
- The Fleet Services Depot would remain as is unless Transit storage relocated there

Location of 3 Primary and 6 Satellite Depots, Fleet Services, and 20 km Radius Rings



Operational Needs/Growth Requirements – Solution 4

All upgraded or new depots (Central Primary Depot **and North Satellite Depot**) would be built to satisfy the growing functional and spatial requirements for the Roads Department for the next 25 years and beyond (e.g. indoor vehicle storage and wash bays, modern office and employee amenities, and efficiently designed yard configuration).

The upgraded and new facilities would also be built to achieve energy efficiency. Current facilities are neither energy efficient nor environmentally sustainable

Consolidation of employees into fewer depots would increase employee flexibility and the ability of staff to schedule and assign tasks to employees

The location of the primary and satellite depots would provide good access to most parts of the City so as to better balance operating cost versus service delivery

Operational Needs/Growth Requirements – Solution 4 (2)



FUTURE STATE - 2041 Same as Option 2 except

Area	Primary/Satellite	Consolidated	# Employees	Office	Storage	Lunch Rm	Change/Wash Rm	Training Room	Mech/Electrical	Total Area	# Heated Truck/Wash Bays	Bays have	Heated Bays	# Unheated Truck Bays	Bays have	
	Depots	Depots	Peak Season	m2	m2	m2	m2	m2	m2	m2			m2			
North	Coboconk	Burnt River	23+2	41.6	11.7	53.5	53	28	0	216	10	4	0		8	
	Carden		0								5	0	520		0	
	New		0													
Central	New	Bobcaygeon	39+3	62.4	20.8	92	85	45	32	472	24	24	2132		0	
		Sturgeon Point														
		Hartley														
	Fenelon		0								7	6	0		0	
	Eldon		0													
South	St. David	Oakwood	61+5	104	20.8	138	110	45	32	585	44	25	1144		0	
		Ops														
		Downeyville														
	Manvers		0								9	5	104		3	
	Emily		0													
	Fleet Services		11+1								0	0	104		3	
TOTAL										99						

Legislative/Environmental Requirements – Solution 4

This Alternative Solution Recommends minor changes to the design of eight of the existing Depots within the City of Kawartha Lakes. One of the eight Depots is in an industrial park within Lindsay. The other seven are located within a rural environment. The Alternative Solution also recommends that a new Primary Depot be constructed close to Fenelon Falls.

With respect to environmental impact, none of the recommended changes to the existing Depots would negatively impact the natural or social environment. There would be no changes that would permanently affect noise levels, air quality, or water quantity and quality. During construction steps would be taken, as described below, to ensure that all municipal by-laws and MOECC sound level criteria were satisfied.

Before the land is purchased for the proposed new Primary Depot, a MCEA should be completed to conduct more detailed investigations to confirm the acceptability of the site (from a facility design and environmental perspective) and any mitigation requirements.

7.1 Natural Environment

There are no Areas of Natural and Scientific Interest (ANSI), Environmentally Significant Areas (ESA), or Provincially Significant Wetlands (PSW) located within the proximity of the six Depots (study areas).

Natural vegetation within the five rural study areas is largely restricted to coniferous and deciduous forest (within a natural wood lot), and upland meadows. The Depot within the industrial park is surrounded by manicured lawns. There are no recorded natural heritage features or rare vegetation communities within the study areas. Furthermore, there are no species listed as at risk (under the provincial Endangered Species Act (2007), either.

There are no locally, provincially or federally rare wildlife species within the study area.

Legislative/Environmental Requirements Continued – Solution 4 (2)

7.2 Water Quantity and Quality

The recommended changes to the Depots are not expected to impact the porosity of ground surfaces. Therefore, we predict no increase to overland flow of storm water during wet weather events.

There will be no new activities at the existing Depots that will pose a threat to nearby wells, creeks, rivers, lakes or drinking water.

7.3 Socio-Cultural Environment

All eight Depots are located within the City of Kawartha Lakes. Five of the six areas are located within a rural environment. The sixth is located within an industrial park. Based on a review of detailed mapping, none of the study areas are located within the Greenbelt Plan area.

7.4 Air Quality and Noise

The eight Depots are currently operational and have been for decades. The recommended minor changes to the six Depots are not expected to have a permanent impact on local odour, air quality, or noise that would affect residential developments, or other sensitive land uses.

7.5 Impact During Construction

During construction, at each of the eight Depots, it is not anticipated that truck traffic will have an adverse effect on the environment. Truck access and parking will be arranged during the detailed design phase of each project.

Since the proposed work will take place either in an industrial park or well away from a residential neighbourhood (or other sensitive land uses), the construction activities are expected to produce minimal impact on noise and air quality. Although the construction activities will produce some noise, it will be completed during normal working hours, and is not expected to cause undue disturbance due to adequate separation distances.

Legislative/Environmental Requirements Continued – Solution 4 (3)



All construction will comply with municipal noise by-laws and implement general noise control measures, investigate noise complaints, and comply with MOECC sound level criteria for construction equipment.

There will be no requirement to remove excavated soils from the individual Depot sites, and there is no expectation that the quality and quantity of ground and surface water will be affected. Furthermore, there will be no potential to impact wells, creeks, rivers or lakes, and there will be no need to dewater or divert water or cause soil erosion.

North Area Depot Best Practice Area Requirements – Coboconk (Solution 4)

The **Coboconk Primary Depot** will require the following areas:

1. 9 heated indoor bays for storing vehicles,
2. 1 indoor wash bay,
3. New office, employee amenities, training room for 2 staff and 23 employees
4. Indoor storage space for equipment and tools
5. Salt and sand storage domes
6. Outdoor wash bay
7. Outdoor material dump ramp
8. Outdoor vehicle refueling area (gas, diesel, dyed diesel)
9. Outdoor material storage bunkers
10. Outdoor work vehicle and employee parking area
11. The Fleet Services area will remain as it is.

North Area Depot Redesign Requirements – Coboconk (Solution 4)



The [Coboconk Primary Depot](#) will require the following redesign changes:

1. Convert the Pole Barn into an 8 bay cool storage area for vehicles and tools
2. Convert 2 of the 4 heated garage bays (within the main depot) into a wash bay and vehicle storage bay
3. Convert the other 2 heated garage bays and existing office into a new office, employee amenities, and training room
4. Construct an outdoor wash bay, material dump ramp, material storage bunkers, and a work vehicle and employee parking area

North Area Depot Best Practice Area Requirements – Carden (Solution 4)

The [Carden Satellite Depot](#) will require the following areas:

1. 4 heated indoor bays for storing vehicles,
2. 1 indoor wash bay,
3. Outdoor wash bay
4. Salt and sand storage domes
5. Outdoor vehicle refueling area (gas, diesel, dyed diesel)
6. Outdoor material storage bunkers
7. Outdoor work vehicle and employee parking area

North Area Depot Redesign Requirements – Carden (Solution 4)



The [Carden Satellite Depot](#) will require the following redesign changes:

1. Construct a new building with a 4 bay cool storage area for storing vehicles and tools, and a wash bay
2. Construct an outdoor wash bay, material storage bunkers, and a work vehicle and employee parking area

North Area Depot Best Practice Area Requirements – New 2nd Satellite Depot (Solution 4)



The **New 2nd Satellite Depot** will require the following areas:

1. Salt and sand storage domes
2. Outdoor material storage bunkers
3. Outdoor work vehicle and employee parking area

North Area Depot Redesign Requirements – New 2nd Satellite Depot (Solution 4)



The **New 2nd Satellite Depot** will require the following redesign changes:

1. Construct Salt and sand storage domes
2. Construct material storage bunkers, and a work vehicle and employee parking area

Central Area Depot Best Practice Area Requirements – New Primary Depot (Solution 4)



The [New Central Area Primary Depot](#) will require the following areas:

1. Heated indoor storage for 13 plows, 5 pick-up trucks, 1 sweeper, 2 sidewalk plows
2. 2 heated indoor bays for vehicle maintenance
3. 1 indoor wash bay
4. New office, employee amenities, training room for 3 staff and 39 employees
5. Indoor storage space for equipment and tools
6. Salt and sand storage domes
7. Outdoor wash bay
8. Outdoor material dump ramp
9. Outdoor vehicle refueling area (gas, diesel, dyed diesel)
10. Outdoor material storage bunkers
11. Outdoor work vehicle and employee parking area (42 stalls)

Central Area Depot Redesign Requirements – New Primary Depot (Solution 4)



The [New Central Area Primary Depot](#) will require the following design elements:

1. Construct a large heated building for storing 13 plows, and 5 pick-up trucks
2. Attached to the storage building should be 2 full size bays (for the sweeper and sidewalk plows), 2 maintenance bays, an indoor wash bay, storage space for equipment and tools, office, employee amenities, and training room for 3 staff and 39 employees
3. Construct salt and sand storage domes
4. Construct an outdoor wash bay, material dump ramp, material storage bunkers, and a work vehicle and employee parking area
5. Construct an outdoor vehicle refueling area (gas, diesel, dyed diesel)

Central Area Depot Best Practice Area Requirements – Fenelon (Solution 4)



The [Fenelon Satellite Depot](#) will require the following areas:

1. 6 heated indoor bays for storing vehicles
2. 1 indoor wash bay
3. Outdoor wash bay
4. Salt and sand storage domes
5. Outdoor vehicle refueling area (gas, diesel, dyed diesel)
6. Outdoor material storage bunkers
7. Outdoor work vehicle and employee parking area

Central Area Depot Redesign Requirements – Fenelon (Solution 4)



The [Fenelon Satellite Depot](#) will require the following redesign changes:

1. Construct an outdoor wash bay, material storage bunkers, and a work vehicle and employee parking area

Central Area Depot Best Practice Area Requirements – Eldon (Solution 4)



The **Eldon 2nd Satellite Depot** will require the following areas:

1. 5 heated indoor bays for storing vehicles
2. Outdoor wash bay
3. Salt and sand storage domes
4. Outdoor vehicle refueling area (gas, diesel, dyed diesel)
5. Outdoor material storage bunkers
6. Outdoor work vehicle and employee parking area

Central Area Depot Redesign Requirements – Eldon (Solution 4)



The [Eldon 2nd Satellite Depot](#) will require the following redesign changes:

1. Construct an outdoor wash bay, material storage bunkers, and a work vehicle and employee parking area

South Area Depot Best Practice Area Requirements – St. David (Solution 4)



The [St. David Primary Depot](#) will require the following areas:

1. 30 heated indoor bays for storing vehicles
2. 1 indoor wash bay
3. Office, employee amenities, training room for 5 staff and 61 employees
4. Indoor storage space for equipment and tools
5. Salt and sand storage domes
6. Outdoor wash bay
7. Outdoor material dump ramp
8. Outdoor vehicle refueling area (gas, diesel, dyed diesel)
9. Outdoor material storage bunkers
10. Outdoor work vehicle and employee parking area

South Area Depot Redesign Requirements – St. David (Solution 4)



The [St. David Primary Depot](#) will require the following redesign changes:

1. Construct a new heated storage building for storing 5 large work vehicles (and have Transit vacate the site). This will then provide stalls for 30 large work vehicles.
2. Attached to the new storage building should be an indoor wash bay, and storage space for equipment and tools
3. Expand the size of the employee amenities (within the existing main depot) and training room for 5 staff and 61 employees (assuming Transit is vacating the site)
4. Construct an outdoor wash bay, material dump ramp, material storage bunkers, and an expanded work vehicle and employee parking area
5. Add an indoor sand storage facility

South Area Depot Best Practice Area Requirements – Manvers (Solution 4)

The [Manvers Satellite Depot](#) will require the following areas:

1. 8 heated indoor bays for storing vehicles
2. 1 indoor wash bay
3. Indoor storage space for equipment and tools
4. Salt and sand storage domes
5. Outdoor wash bay
6. Outdoor vehicle refueling area (gas, diesel, dyed diesel)
7. Outdoor material storage bunkers
8. Outdoor work vehicle and employee parking area

South Area Depot Redesign Requirements – Manvers (Solution 4)



The [Manvers Satellite Depot](#) will require the following redesign changes:

1. Modify the Pole Barn so that it is heated and can provide cool storage for 3 large work vehicles. This combined with the existing 5 heated bays in the main depot will provide a total of 8 storage bays
2. Construct onto the existing depot building a new indoor wash bay, and storage space for equipment and tools
3. Construct an outdoor wash bay, material storage bunkers, and a work vehicle and employee parking area

South Area Depot Best Practice Area Requirements – Emily (Solution 4)



The **Emily 2nd Satellite Depot** will require the following areas:

1. 5 heated indoor bays for storing vehicles
2. Salt and sand storage domes
3. Outdoor wash bay
4. Outdoor material storage bunkers
5. Outdoor work vehicle and employee parking area

South Area Depot Redesign Requirements – Emily (Solution 4)



The **Emily 2nd Satellite Depot** will require the following redesign changes:

1. Construct an outdoor wash bay, material storage bunkers, and a work vehicle and employee parking area

South Area Depot Best Practice Area Requirements – Fleet Services (Solution 4)



The **Fleet Services Depot** will require the following areas:

1. 13 heated indoor bays for maintenance of Transit and Roads vehicles (no Roads vehicle storage). The new maintenance bays will not be required if Transit vacates the St. David facility and builds a new Transit Storage/Maintenance Facility.
2. 1 indoor wash bay
3. Indoor storage space for equipment and tools
4. Outdoor wash bay
5. Outdoor work vehicle and employee parking area

South Area Depot Redesign Requirements – Fleet Services (Solution 4)



The **Fleet Services Depot** will require the following redesign changes:

1. Modify the Pole Barn so that it is heated and can provide cool storage for 3 large work vehicles.
2. Construct onto the existing Fleet Services building a new indoor wash bay, 5 Maintenance bays and storage space for equipment and tools
3. Construct an outdoor wash bay, and a work vehicle and employee parking area

Capital Costs – Solution 4

The capital costs for Alternative 4 are:

Project	Capital Costs (\$)
North – Primary - Expanded Coboconk Depot	900,000
North – Satellite - Expanded Carden Depot	882,200
North – 2nd Satellite – New Satellite Depot	900,000
Central – Primary - New Primary Depot	7,339,214
Central – Satellite - Expanded Fenelon Depot	285,000
Central – 2nd Satellite – Expanded Eldon Depot	165,000
South – Primary - Expanded St. David	2,170,000
South – Satellite - Expanded Manvers	396,800
South – Satellite – Expanded Emily Depot	165,000
Expanded Fleet Services	920,000
TOTAL	14,123,214

Operating Costs – Solution 4

Alternative Solution 4 will create significant operational savings to help offset the required capital costs:

1. Consolidating the number of depots from 15 to 10 (including Fleet Services) will reduce the total facility repair costs and total facility operating costs (i.e. energy and insurance). See the next two pages for financial costs.
2. The new Central Primary Depot and new North Satellite Depot will incorporate energy efficient materials and systems that will reduce their energy costs by as much as 40%.

Alternative Solution 4 will also add some operational costs:

1. Fuel costs and vehicle life cycle costs will increase slightly because the work crews will be consolidated into 3 Primary Depots, thus, resulting in slightly further driving distances to the outlying areas. This will be mitigated, to a certain extent, by providing each of the 3 Primary Depots with 2 Satellite Depots that will be used to store salt, sand, miscellaneous materials, and plows (to minimize deadheading).

Operating Costs – Repair Costs (Solution 4)

The following facility repair costs (as calculated by Altus Engineering) are required over the next 20 years for Alternative Solution 4:

Facility Repairs	Operating Costs (\$)
North – Primary – Expanded Coboconk Depot	215,150
North – Satellite – Expanded Carden Depot	201,700
Central – Satellite – Expanded Fenelon Depot	293,820
Central – Satellite – Expanded Eldon Depot	361,190
South – Primary – Expanded St. David Depot	492,453
South – Satellite – Expanded Manvers Depot	294,260
South – Satellite – Expanded Emily Depot	446,480
Expanded Fleet Services	567,280
TOTAL	2,872,333

Operating Costs – Facility Operating Costs (Solution 4)

The following facility operating costs are required over the next 20 years:

Project	Operating Costs (\$)
North – Primary - Expanded Coboconk Depot	556,000
North – Satellite - Expanded Carden Depot	260,000
North – 2nd Satellite – New Satellite Depot	260,000
Central – Primary - New Primary Depot	700,000
Central – Satellite - Expanded Fenelon Depot	260,000
Central – 2nd Satellite – Expanded Eldon Depot	768,000
South – Primary - Expanded St. David	800,000
South – Satellite - Expanded Manvers	324,000
South – Satellite – Expanded Emily Depot	270,000
Expanded Fleet Services	700,000
TOTAL	4,898,000

Employee Productivity/Service Levels – Solution 4

Consolidating the number of depots from 15 to 10 (including Fleet Services) will create numerous advantages including:

1. The workforce will be centralized within just 3 depots (plus Fleet services). This will lead to improved communication and collaboration amongst staff, and improved flexibility with the scheduling of employees and work tasks. This will lead to improved employee productivity and flexibility – reducing operating costs and/or improving service levels
2. Providing each of the 3 Primary Depots with 2 Satellite Depots will help reduce deadheading and crew travel times. This should also improve employee productivity and service levels

The disadvantages of fewer depots will include:

1. Travel time to some of the outlying areas of the City will increase – reducing productivity, and increasing response time to these areas. However, response time to the main towns may decrease.

Employee Productivity/Service Levels (2) - Solution 4



Redesigning some of the depots and building a new Central Primary Depot will create numerous advantages including:

1. Best Practices in depot facility design and yard configuration will be incorporated to enable the safe, lean, efficient flow of employees, vehicles, and materials throughout the facilities. Furthermore, required space for offices, employee amenities, vehicle/material storage, and vehicle wash equipment will be provided. This will improve employee morale and productivity – reducing operating costs and/or improving service levels

Employee Productivity/Service Levels (3) - Solution 4



Implementing Performance Management and Lean tools to identify waste, redesign processes, and continuously improve the flow of employees, vehicles, materials and equipment will create numerous advantages including:

1. Improved workforce culture, morale, productivity and flexibility – reducing operating costs and/or improving service levels

8.0 Comparison of Alternative Solutions

In this section we will screen and compare the merits of the four Alternative Solutions. The evaluation criteria to be used to compare and rank each Alternative against the others are as follows:

- 20 Year Capital & Facility Operating Costs
- Theoretical Replacement Cost for Depots that have exceeded their expected useful life of 60 years. Assume replacement begins in 2037
- Employee Productivity/Service Levels
- Operational Needs/Growth Requirements
- Legislative/Environmental Requirements
- Impact on Natural and Social Environment

Based on the results of the rankings, a Preferred Alternative Solution will be selected.

20 Year Capital & Facility Operating Costs

Note that these are total costs that will be spent during a 20 year horizon. The 2037 Theoretical Depot Replacement Cost estimates the capital cost of replacing those depots, in 2037, that have exceeded their expected useful life of 60 years. Also, for Alternative Solutions 2 to 4, the annual fuel and vehicle life-cycle costs are expected to be higher than for Alternative Solution 1.

Costs	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Purchase Land	0	500,000(10+ acres)	700,000 (14+ acres)	530,000 (11+ acres)
Depot Redesign	0	12,893,214	19,591,446	14,123,214
Sale of Depots	0	(2,855,750)	(2,855,750)	(1,666,000)
20 Year Facility Repair	4,670,638	2,064,663	1,572,210	2,872,333
20 Year Energy/ Insurance	7,488,000	3,600,000	3,400,000	4,898,000
60 Yr Theoretical Replacement Cost (starting 2037)	23,509,000	11,753,000	4,728,000	15,853,000
Total Cost	35,667,638	27,955,127	27,135,906	36,610,547

Employee Productivity/Service Levels



Factor	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Impact of Consolidation of Crews into Fewer Depots	The large number of depots (15) and decentralized work force helps to reduce travel distances/ times and, therefore, increase productivity and service levels. However, a more centralized approach (with fewer depots) will have a net positive effect on productivity, and will reduce facility operating costs. These improvements could be used to provide higher service levels.	The workforce will be centralized within just 3 depots (plus Fleet Services) leading to improved communication, collaboration, flexibility and productivity/service levels by the crews. This is a significant advantage over Alternative #1. As shown on page 122, this represents a potential productivity savings, over 20 years, of \$3,332,000.	The workforce will be centralized within just 3 depots (including Fleet Services) leading to improved communication, collaboration, flexibility and productivity/service levels by the crews. This is an advantage over Alternatives #1, 2 & 4). As shown on page 122, this represents a potential productivity savings, over 20 years, of \$3,332,000.	The workforce will be centralized within just 3 depots (plus Fleet Services) leading to improved communication, collaboration, flexibility and productivity/service levels by the crews (same as Alternative #2). As shown on page 122, this represents a potential productivity savings, over 20 years, of \$3,332,000.
Utilizing Best Practices in Depot Design and Yard Configuration	The existing depots were designed and built many decades ago and, therefore, do not benefit from modern materials, and Best Practices in facility design and yard configuration.	Redesigning some of the depots and building a new Central Primary Depot will result in improved safety, flow and crew productivity/service levels. This is a significant advantage over Alternative #1	Redesigning some of the depots and building a new Central Primary Depot and South Primary Depot will result in improved safety, flow and crew productivity/service levels. This is an advantage over Alternatives #2 & 4).	Redesigning some of the depots and building a new Central Primary Depot will result in improved flow and crew productivity/service levels (same as Alternative #2).

Employee Productivity/Service Levels



Factor	Alternative 1	Alternative 2	Alternative 3	Alternative 4
<p>Impact on Travel Time</p>	<p>The large number of depots (15) and decentralized work force helps to reduce travel distances/ times for the work crews and plows. This improves productivity/service levels and reduces fuel costs.</p>	<p>Slightly longer travel times than Alternative #1 because of fewer depots. However, providing each of the 3 Primary Depots with 1 Satellite Depot will help reduce a potential increase in deadheading and crew travel times.</p>	<p>Slightly longer travel times than Alternative #1 because of fewer depots. However, providing each of the 3 Primary Depots with 1 Satellite Depot will help reduce deadheading and crew travel times (same as Alternative #2).</p> <p>Locating the new South Primary Depot with Fleet Services will reduce the travel distance/time required to shuttle the work vehicles to the maintenance bays. As shown on the following page, this will represent a 20 year savings of \$1,208,000. This will be an advantage over Alternatives #1, 2 & 4.</p>	<p>Slightly longer travel times than Alternative #1. However, providing each of the 3 Primary Depots with 2 Satellite Depots will help reduce deadheading and crew travel times. This will be an advantage over Alternatives #2 & 3.</p>

20 Year Employee Productivity Improvements

Note that these are potential total labour cost savings over a 20 year horizon.

Improvements	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Potential Employee Productivity Increase due to Consolidation of Depots (\$)	0	3,332,000	3,332,000	3,332,000
Potential Employee Productivity Increase Because the Vehicle Shuttle to Fleet Services is No Longer Required in the South Area (\$)	0		1,208,000	
Total Cost Savings (\$)	0	3,332,000	4,540,000	3,332,000

Operational Needs/Growth Requirements

Factors	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Will the Depots Satisfy Operational Needs and Growth Requirements for 25 Years and Beyond	No. Many of the depots are already too small and lack required employee amenities and functional requirements. Also, most of the Depots, by 2037, will have exceeded their expected useful life of 60 years and need to be replaced. See Appendix B for cost estimates to replace them.	All upgraded or new depots (Central Primary Depot) would be built to satisfy the growing functional and spatial requirements for the Roads Department for the next 25 years and beyond	All upgraded or new depots (Central Primary Depot and South Primary Depot) would be built to satisfy the growing functional and spatial requirements for the Roads Department for the next 20 years and beyond. This will be an advantage over Alternatives #1, 2 & 4.	All upgraded or new depots (Central Primary Depot and North Satellite Depot) would be built to satisfy the growing functional and spatial requirements for the Roads Department for the next 20 years and beyond. This will be an advantage over Alternatives #1 & 2.
Will the Depots Be Energy Efficient	The current facilities are neither energy efficient nor environmentally sustainable	The upgraded and new facilities would be built to achieve energy efficiency.	Same as Alternative #2	Same as Alternative #3

Operational Needs/Growth Requirements



Factors	Alternative 1	Alternative 2	Alternative 3	Alternative 4
<p>Will the Depots Facilitate Greater Employee Productivity and/or Service Delivery</p>	<p>No. There would be no change.</p>	<p>Consolidation of employees into fewer depots would increase employee productivity. Redesigning some of the depots and building a new Central Primary Depot would result in improved crew productivity. The location of the depots would provide good access to most service areas and better balance operating costs versus service delivery. Providing each of the 3 Primary Depots with 1 Satellite Depot would help reduce a potential increase in deadheading and crew travel times (as a result of reducing the total number of depots).</p>	<p>Same as Alternative # 2 except there would be an added advantage by also building a new South Primary Depot. This depot would provide Best Practice design and improve employee productivity. This will be an advantage over Alternatives #1, 2 & 4.</p>	<p>Same as Alternative # 2 except there would be an added advantage by also building a new North Satellite Depot. This depot would provide Best Practice design and improve employee productivity. This will be an advantage over Alternatives #1 & 2.</p>

Legislative/Environmental Requirements

Requirement	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Natural Environment	No negative impact	No negative impact	No negative impact	No negative impact
Water Quality/Quantity	No negative impact	No negative impact	No negative impact	No negative impact
Socio-Cultural	No negative impact	No negative impact	No negative impact	No negative impact
Air Quality	No negative impact	No negative impact	No negative impact	No negative impact
Noise Quality	No negative impact	No negative impact	No negative impact	No negative impact
Impact During Construction	No negative impact	No negative impact	No negative impact	No negative impact

Legislative/Environmental Requirements

Requirements	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Accessibility	Currently do not meet all requirements	All legislated accessibility requirements will be met	All legislated accessibility requirements will be met	All legislated accessibility requirements will be met
Salt Management	Currently, all requirements are met	Currently, all requirements are met	Currently, all requirements are met	Currently, all requirements are met
Environmental Sustainability	Currently do not meet all requirements	All legislated accessibility requirements will be met	All legislated accessibility requirements will be met	All legislated accessibility requirements will be met
Fuel Management	Currently, all requirements are met	Currently, all requirements are met	Currently, all requirements are met	Currently, all requirements are met
Compatibility with Neighbours	Currently, all requirements are met	Currently, all requirements are met	Currently, all requirements are met	Currently, all requirements are met
Compatibility with Zoning Requirements	Currently, all requirements are met	Currently, all requirements are met	Currently, all requirements are met	Currently, all requirements are met

Note that for Alternatives 2 – 4, a MCEA should be completed to conduct more detailed investigations to confirm the acceptability of the proposed site(s) (from a facility design and environmental perspective) and any mitigation requirements.

Summary Comparison of Alternative Solutions



Assessment Criteria	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Minimize Capital Costs	1st	2nd	4th	3rd
Minimize Operating Costs	4th	2nd	1st	3rd
Improve Productivity	Unacceptable	3rd	1st	2nd
Improve Service Levels	4th	3rd	1st	2nd
Meet Operational Needs	Unacceptable	3rd	1st	2nd
Meet Growth Requirements	Unacceptable	Tied for 1st	Tied for 1st	Tied for 1st
Meet Legislative Requirements	2nd	Tied for 1st	Tied for 1st	Tied for 1st
Meet Environmental Requirements	2nd	Tied for 1st	Tied for 1st	Tied for 1st
OVERALL RANKING	4th	3rd	1st	2nd

9.0 Selection of Preferred Alternative Solution

In the summary table, on the previous page, Alternative Solution 3 was ranked the highest followed by Alternative Solution 4. The primary feature that benefits #3 over the other potential solutions is the move of the Roads operation at the St. David Street Depot to the Fleet Services facility at Little Britain Road outside of Lindsay. Consolidating the Roads operation with Fleet Services, by building a new South Primary Depot, would offer numerous operational benefits (rather than trying to upgrade the St. David Depot). It would also provide room for growth.

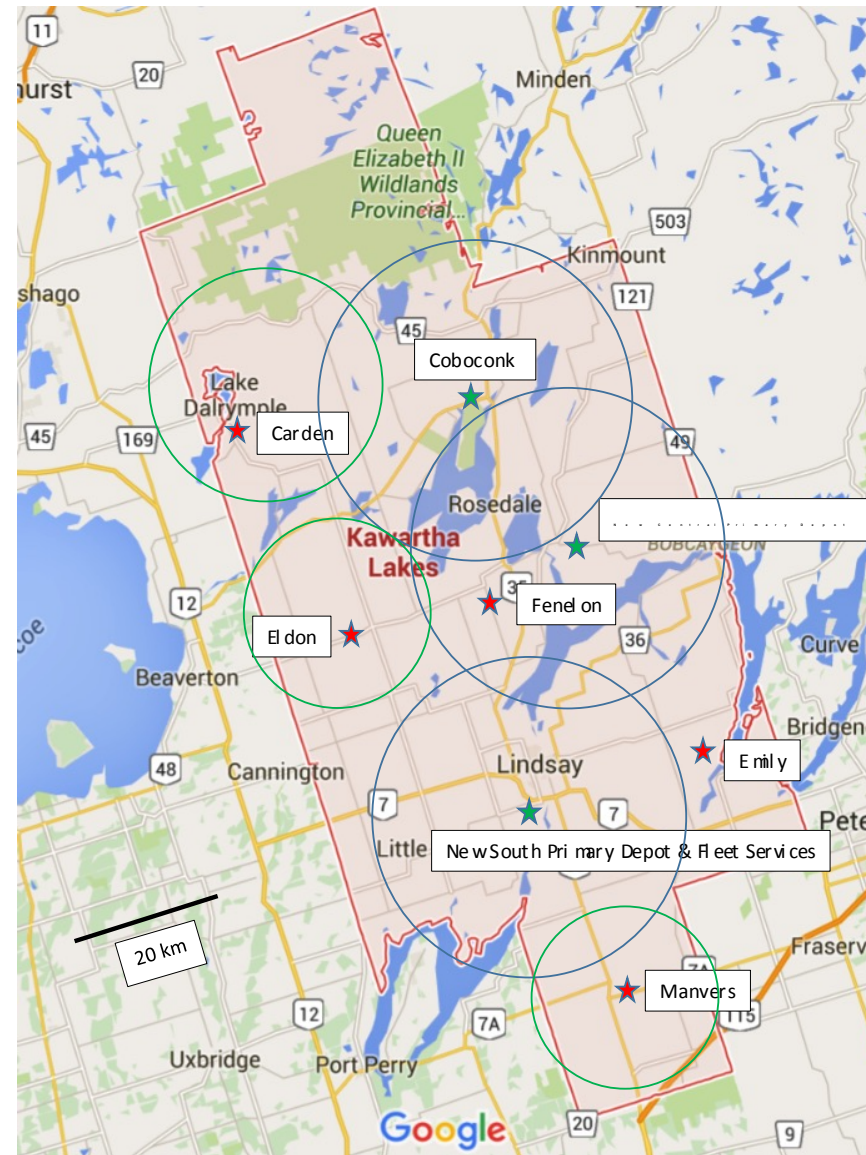
We also believe that there would be operational benefits to incorporating some of the features of Alternative Solution 4 – namely keeping the Eldon and Emily Depots as secondary Satellite Depots in the Central and South areas.

With respect to environmental impact, it is our opinion that none of the recommended improvements to the existing Depots (for the Preferred Solution) would negatively impact the natural or social environment. However, before the land is purchased for the two new Primary Depots, a MCEA should be completed with more detailed investigations to confirm the acceptability of the proposed sites (from a facility design and environmental perspective) and any mitigation requirements.

Therefore, the Preferred Solution is a Modified Version of Alternatives 3 & 4 as outlined below:

- Divide the City into three operations areas – **North, Central** and **South**
- Each area would have one main Primary Depot and two Satellite Depots (for sand/salt/material storage and snow dump) except the **North** area which would just have one Satellite Depot
- The **North** area would have an expanded Coboconk for the Primary Depot (including Fleet Services) and Carden for the Satellite Depot
- The **Central** area would have a new site for the Primary Depot (slightly east of Fenelon Falls) and Fenelon Falls and Eldon for the two Satellite Depots
- The **South** area would build a new Primary Depot close to the Fleet Services Depot located on Little Britain Road, and use Manvers and Emily Depots as the two Satellite Depots

Location of the 3 Primary and 5 Satellite Depots



20 Year Capital & Facility Operating Costs – Preferred Solution



The following 20 year capital and facility operating costs are required for the Preferred Alternative Solution:

Project	Capital & Facility Operating Costs (\$)
North – Primary - Expanded Coboconk Depot	900,000
North – Satellite - Expanded Carden Depot	882,200
Central – Primary - New Primary Depot	7,339,214
Central – Satellite - Expanded Fenelon Depot	285,000
Central – Satellite – Expanded Eldon Depot	165,000
South – Primary - Expanded Fleet Services Site	9,788,232
South – Satellite - Expanded Manvers Depot	396,800
South – Satellite – Expanded Emily Depot	165,000
Purchase Land	700,000 (14+ acres)
Sale of Depots	(1,666,000)
20 Year Facility Repair	2,379,880
20 Year Energy/Insurance	4,437,000
60 Year Theoretical Replacement Cost (starting in 2037)	8,827,000
TOTAL	34,599,326

Employee Productivity Improvements Over 20 Years

Note that these are potential total labour cost savings over a 20 year horizon.

Improvements	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Potential Employee Productivity Increase due to Consolidation of Depots (\$)	0	3,332,000	3,332,000	3,332,000
Potential Employee Productivity Increase Because the Vehicle Shuttle to Fleet Services is No Longer Required in the South Area (\$)	0		1,208,000	
Total Cost Savings (\$)	0	3,332,000	4,540,000	3,332,000

Total 20 Year Costs

The total 20 year capital and facility operating cost for the Preferred Solution (including the cost to rebuild those depots that have exceeded their expected useful life of 60 years) is estimated to be **\$34,599,326**. By comparison, the total 20 year cost for Alternative Solution 1 (the Do Nothing approach) is estimated to be **\$35,667,638**. Therefore, a savings of \$1,068,312 over 20 years is provided by the Preferred Solution. However, the Preferred Solution is also expected to achieve labour productivity improvements of at least **\$4,540,000** over a 20 year period.

When the managers, supervisors and employees are consolidated at one of three primary depots, we expect an increase in management focus, communication, and effectiveness. This should result in an improvement in collaboration and productivity/ service levels by the crews. This form of productivity gain is also why Fleet Services are currently consolidated at two depots rather than being scattered across 15 depots.

Taking this into consideration, the Preferred Solution requires **\$5,608,312** less funding than the Do Nothing approach.

Phasing – Preferred Solution

Our recommendation is for the City to build the two new Primary Depots, and to upgrade the Coboconk Depot as soon as capital funding can be arranged. This would provide for the earliest opportunity to consolidate the Roads staff and crews into the three Primary Depots so that expected improvements in productivity can begin to take place. Improvements to the satellite depots are not urgent and could be completed as additional capital funding becomes available. However, our understanding is that the capital funding required to implement the Preferred Solution will be spread out over as many as 25 years depending on the City's ability to secure funding.

Therefore, in terms of priorities, we recommend that the City begin by selecting and purchasing the appropriate site, and then building the new Central Area Primary Depot. Next, we recommend that the facilities at the Coboconk Depot be upgraded so that it can serve as the North Primary Depot. Lastly, the new South Area Primary Depot should be built close to the existing Fleet Services Depot, and the remaining satellite depots should be upgraded to meet Best Practices.

Building these two new depots and upgrading the Coboconk Depot will permit the closure of eight existing depots (Bobcaygeon, Burnt River, Downeyville, Sturgeon Point, Hartley, Oakwood, Ops, St. David). This will also permit the Roads Department to begin consolidating the employees into the Primary Depots and benefiting from the expected increase in productivity, and increase in service levels to the most densely populated areas within the City.

We believe that it should be emphasized that failure to begin planning for the phased investment in new depots (as per the preferred solution) will find the City in a situation, 20 plus years from now, where most of the depots will have exceeded their expected useful life of 60 years. This will leave the City in a situation where (1) it will be very expensive to continue maintaining these depots, (2) most of the depots will not meet the operational needs of the Roads Department, and (3) there will be little time to plan for the required depot replacement costs.

Recommended Phasing Strategy – Preferred Solution



On the following two pages, we display the recommended phasing strategy over the next 10, 15 and 20 years. The strategy's principle is to transfer capital funding that would have gone towards replacing the existing depots in Alternative 1 (as they reach the end of their expected 60 year service life) towards, instead, implementing the Preferred Solution. We also include the expected revenue from the sale of 8 depots, and the expected facility and operational efficiency savings.

Phasing Over 10, 15, and 20 Years – Preferred Solution

Period	0-10 years (2027)	10-15 years (2032)	15-20 years (2037)
Sale of depots	N/A	863,000	803,000
Capital funding available by not replacing Depot facilities at the end of their expected service life	9,088,284	2,676,290	2,917,794
Facility repair, energy, insurance savings by closure of Depots	N/A	349,600	2,640,358
Potential efficiency savings by consolidating depots	N/A	600,000	600,000
Phase 1 - Cost of new Central Area Primary Depot and closure of Central Satellite Depots	(7,339,214)	N/A	N/A
Cost of upgrades to Coboconk Depot and closure of North Satellite Depots	(900,000)	N/A	N/A
Phase 2 – Cost of new South Area Primary Depot and closure of South Satellite Depots	N/A	N/A	(9,788,232)
Phase 3 - Cost of upgrades to remaining Satellite Depots	N/A	N/A	(1,894,000)
Surplus/deficit at end of the period	849,070	5,337,960	616,880

3 Phases – Preferred Solution

	Activity	2017-2027										2027-2032					2032-2037				
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Phase 1	Seek Council Approval for Funding for New Central Area Primary Depot and Upgrades to Coboconk Depot	█																			
	Select New Depot Site		█																		
	Complete MCEA for new Site		█																		
	Purchase New Site		█																		
	Design/Build Central Area Primary Depot										█	█									
	Close Bobcaygeon, Sturgeon Pt., Hartley												█								
	Upgrade Coboconk Depot																				
	Close Burnt River																				
Phase 2	Seek Council Approval for Funding for New South Area Primary Depot																		█		
	Select New Depot Site																			█	
	Complete MCEA for new Site																			█	
	Purchase New Site																			█	
	Design/Build South Area Primary Depot																			█	
	Close Oakwood, Ops, Downeyville, David																			█	
Phase 3	Seek Council Approval for Funding																			█	
	Upgrade Remaining Satellite Depots																			█	

10.0 Site Plans for the Two New Depots

In this section are conceptual site plan drawings for the proposed two new facilities – the Central Primary Depot and the South Primary Depot. The drawings reflect the program elements (buildings) and functional areas recommended for each depot, and Best Practice layout to achieve an efficient flow of vehicles and employees.

The site plans include the following design features:

- The employee parking areas have two entrances/exits to prevent bottlenecks and time delays;
- The employee parking areas have stalls for handicap, visitor, full-time and seasonal employees. The parking lot should include down-lit lighting;
- To improve yard security, the entrances/exits to each yard should be closed off with automated gates to exclude people and vehicles that are not part of the operation;
- Noise attenuating berms and/or trees should be erected along the property lines to remedy potential noise problems, and hide unsightly storage areas;
- The flow of work vehicle traffic, through each yard, proceeds, when possible, in straight lines on designated roads to improve the efficiency of flow and to minimize pedestrian accidents. The yards also separate operational vehicles from private vehicles to avoid accidents by restricting private vehicles to the exterior of the operations yard;

Site Plans for Two New Depots (2)

- The yards should be equipped with well marked signage that clearly marks direction of travel, storage locations, and special movement and safety instructions;
- Work vehicle parking is located such that employee walking distances to access the vehicles are minimized. Also, those vehicles that are more frequently used should be located closest to the main building;
- Some work vehicles (e.g. plows, sweepers, vacuum trucks) should be stored inside the garage bays to protect them from the elements. Protecting these vehicles from the elements would increase their longevity and minimize start-up delays;
- Two modern storage structures, for salt and sand, are provided to improve the efficiency of the loading process and to reduce the amount of salt that may enter the environment;
- Should there be a future need to increase the number of garage bays, space has been provided for at least six additional bays. These new bays would be built in line with the existing bays. This would create the fewest disruptions to the current use of the yard and would provide good internal flow for vehicles and employees;
- All equipment stored in the yard is organized in well marked storage locations to improve space utilization and to facilitate finding the items when required;
- Bulk materials are stored in well designed bunkers or storage bins that allow easy access for loading, yet contain the pile in a neat and orderly manner to minimize space requirements;
- An elevated ramp is provided (complete with an elevated access ramp) where operations staff can ergonomically dump items into designated steel bins;

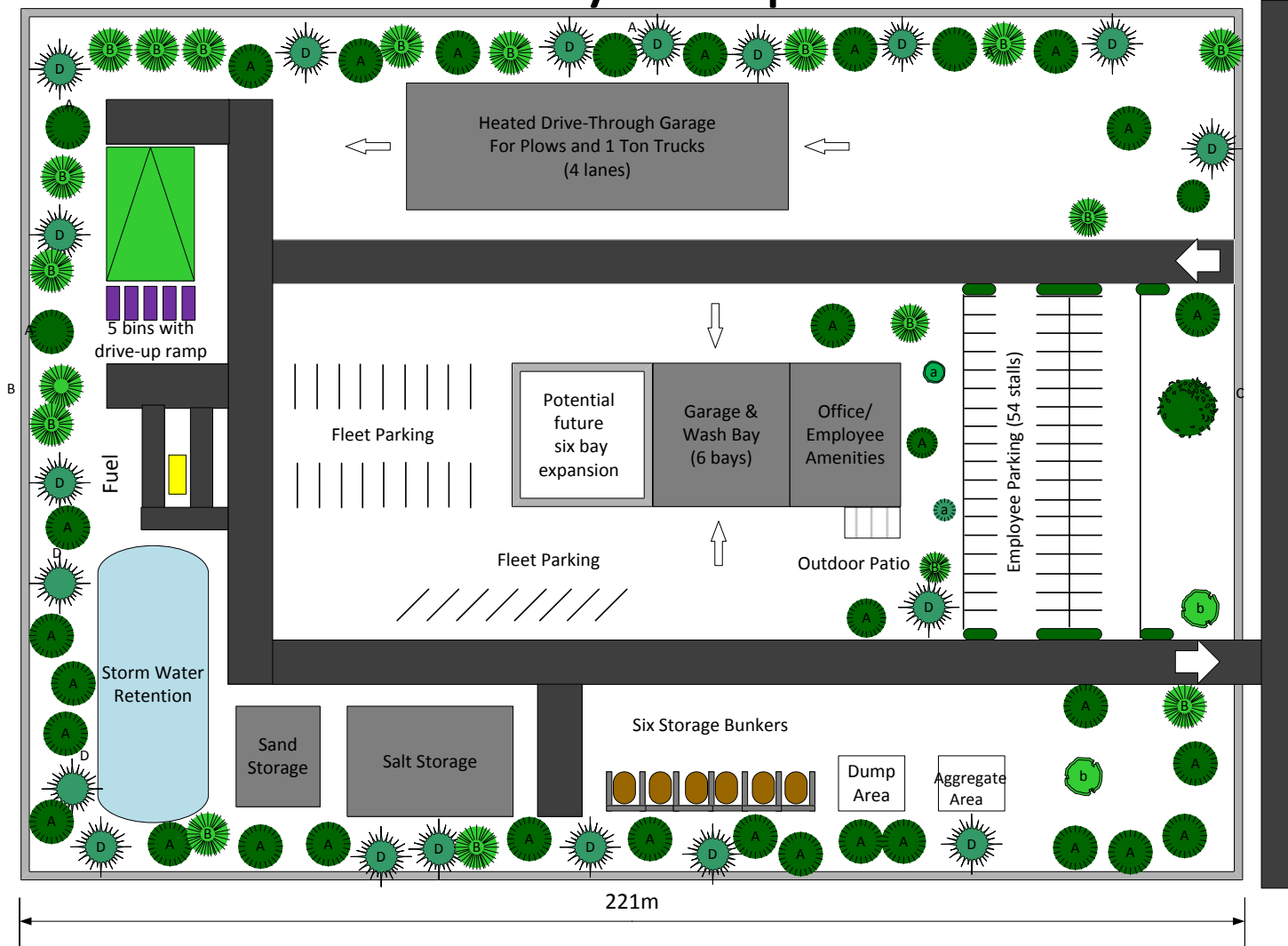
Site Plans for Two New Depots (3)

- Outdoor storage areas should not be paved, unless needed, to allow storm water to percolate naturally into the ground. When paving is required, materials that are permeable to water are recommended (e.g. permeable concrete);

The recommend site plans will require significant capital expense but will achieve numerous advantages for the safe and efficient use of each yard. The advantages include the following:

- Improved employee parking facilities that allow employees to be ready for work in a quick, efficient manner shortly after they arrive at the facility;
- Improved yard security, and landscaping to improve sightlines and reduce noise levels;
- Improved flow of traffic, within the yard, that reduces delays, and chances of accidents by improving visibility especially when vehicles are being reversed;
- Improved storage location of equipment and vehicles to improve access and to minimize walking distances by employees;
- Improved space utilization, within the yard, for the storage of vehicles and equipment so that off-site storage is not required;
- Allocation of sufficient space for future, possible expansion of the garages.

Central Area Primary Depot

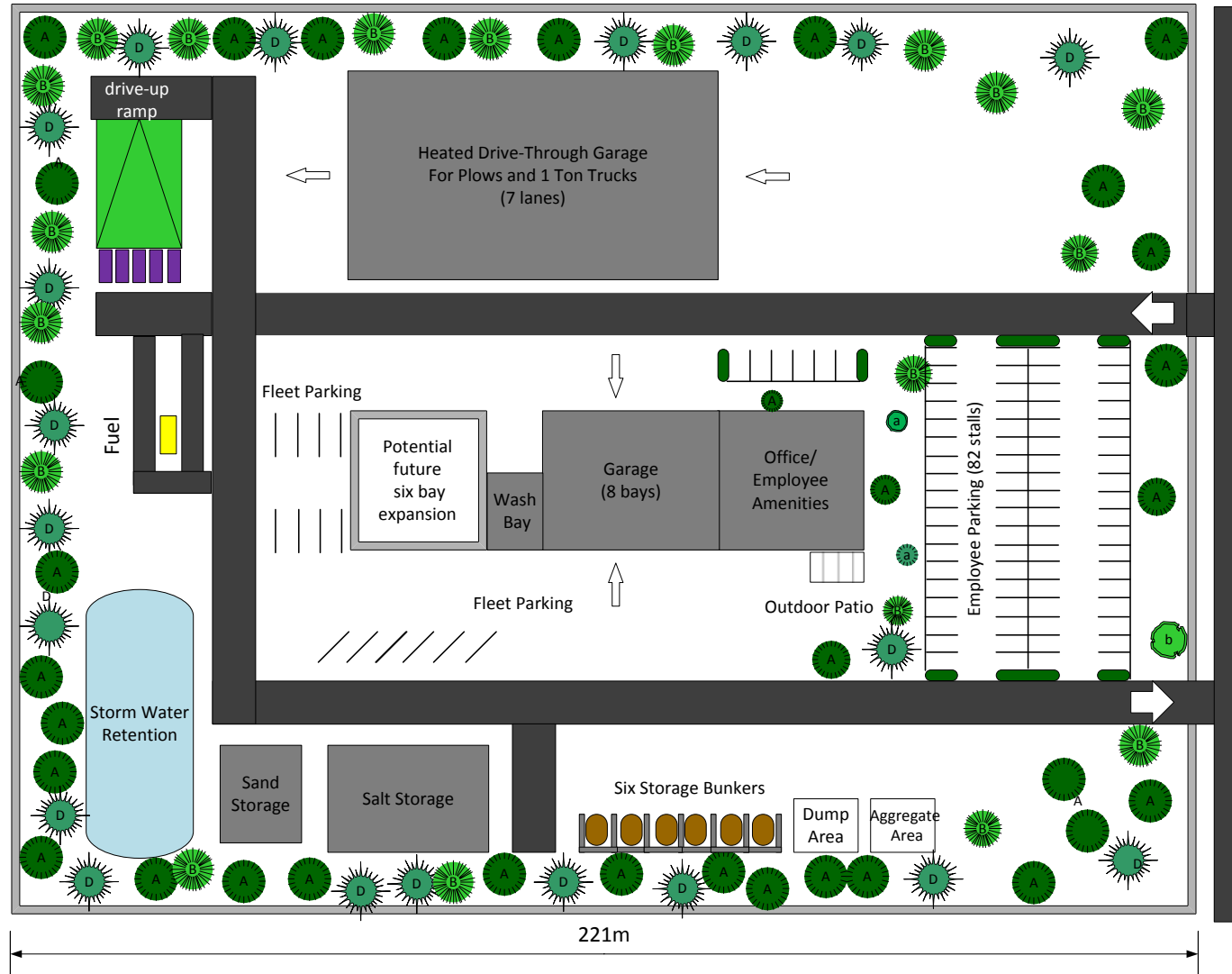


Scale: 1mm = 1m
 The site as shown equals 8.6 acres

157m

**Drawing 1.0 -
 Conceptual Layout
 For the Central Area
 Primary Depot**

South Area Primary Depot



Scale: 1mm = 1m
The site as shown equals 9.3 acres

170m

221m

**Drawing 2.0 -
Conceptual Layout
For the South Area
Primary Depot**

11.0 Consultation

11.1 Public Consultation

Consultation with the public, agencies, and First Nations communities is an important part of the Municipal Class EA process with the level and methods of consultation being appropriate to the scope and potential impacts of the proposed project.

The start of the MCEA was advertised to the public with the placement of **A Notice of Study Commencement** in the local paper, *Kawartha Lakes This Week* in July, 2016. This notice provided a brief introduction to the study and encouraged interested parties to contact the Project Team for more information. Furthermore, members of 5 local First Nations communities were contacted and notified about the study and upcoming public meetings:

- Chief LaRocca, Mississaugas of Scugog Island
- Chief Big Canoe, Chippewas of Georgina Island
- Chief Williams, Curve Lake First Nation
- Chief Marsden, Alderville First Nation
- Chief Cowie, Hiawatha First Nation
- Kawartha Nishnawbe First Nation
- Metis Nation of Ontario

As part of the MCEA, two **Public Information Centres (PIC's)** were held on July 27, 2016 and January 5, 2017 at the Ops Community Centre and the Fenelon Falls Community Centre, respectively. The purpose of the PIC's was to consult with the public, permitting them to review the study details and provide feedback. At each PIC, a 1 hour presentation was made describing the current study findings.

Review

During the two PIC's, there were no questions or concerns raised about the potential impact of the Alternative Solutions on the Natural and Social Environment. Furthermore, the Project Team did not receive, at any time during the project, any communications from the public, agencies or First Nations communities about the potential impact of the Alternative Solutions on the Natural and Social Environment. If any comments had been received, they would have been used to assist the City to evaluate the Alternative Solutions and select the Preferred Solution.

11.2 Notice of Completion

The results of the project have been documented into a Master Plan Report. It will be made available for public and agency review for a period of thirty (30) calendar days. Once any concerns raised during the review period have been addressed, the public and government agencies will be notified of the completion of the study (Notice of Study Completion). Following this, the City will be permitted to proceed with implementing the preferred solution documented in the Report (pending additional detailed investigations prior to purchasing the land for the proposed two new Primary Depots).

Appendix A

APPENDIX A – Order of Magnitude Capital Cost Estimates for the Preferred Alternative Solution



North Depots



AREA	DEPOT	DESCRIPTION	QUANTITY (sq.ft.)	UNITE RATE (\$/sq.ft.)	TOTAL (\$)
North	Coboconk Depot	Expanded Office & Employee Amenities	2,325	200	465,000
		Indoor Wash Bay	1,200	100	120,000
		Outdoor Wash Area			25,000
		Material Dump Ramp			50,000
		Material Storage Bunkers			40,000
		Paving & Lighting			200,000
					900,000

AREA	DEPOT	DESCRIPTION	QUANTITY (sq.ft.)	UNITE RATE (\$/sq.ft.)	TOTAL (\$)
North	Carden Depot	Four Storage Bays	4,472	100	447,200
		Indoor Wash Bay	1,200	100	120,000
		Outdoor Wash Area			25,000
		Material Storage Bunkers			40,000
		Paving & Lighting			250,000
					882,200

Central Depots

AREA	DEPOT	DESCRIPTION	QUANTITY (sq.ft.)	UNITE RATE (\$/sq.ft.)	TOTAL (\$)
Central	Fenelon Depot	Indoor Wash Bay	1,200	100	120,000
		Outdoor Wash Area			25,000
		Material Storage Bunkers			40,000
		Paving & Lighting			100,000
					285,000

AREA	DEPOT	DESCRIPTION	QUANTITY (sq.ft.)	UNITE RATE (\$/sq.ft.)	TOTAL (\$)
Central	Eldon Depot	Outdoor Wash Area			25,000
		Material Storage Bunkers			40,000
		Paving & Lighting			100,000
					165,000

South Depots

AREA	DEPOT	DESCRIPTION	QUANTITY (sq.ft.)	UNITE RATE (\$/sq.ft.)	TOTAL (\$)
South	Manvers	Tool Storage	1,118	100	111,800
		Indoor Wash Bay	1,200	100	120,000
		Outdoor Wash Area			25,000
		Material Storage Bunkers			40,000
		Paving & Lighting			100,000
					396,800

AREA	DEPOT	DESCRIPTION	QUANTITY (sq.ft.)	UNITE RATE (\$/sq.ft.)	TOTAL (\$)
South	Emily	Outdoor Wash Area			25,000
		Material Storage Bunkers			40,000
		Paving & Lighting			100,000
					165,000

Appendix B

APPENDIX B – Order of Magnitude Capital Cost Estimates for the Replacement of those Depots that have, in 2037, Exceeded their Expected Useful Life of 60 Years



Capital Cost Estimates for Replacement

Asset	Gross Floor Area	Year Built	Theoretical Replacement Year	Unit Replacement Cost	Estimated Replacement Cost	Alternative 1	Preferred Solution	Alternative 2	Alternative 3	Alternative 4
Bobcaygeon Roads Operations Garage 2	2,880	1960	2020	\$213	\$613,440	\$613,440				
Burnt River Equipment Storage (Quonset Hut)	2,418	1975	2035	\$93	\$224,874	\$224,874				
Burnt River Roads Operations Garage	3,840	1975	2035	\$213	\$817,920	\$817,920				
Coboconk Roads Operations and Fleet Garage	12,100	1968	2028	\$213	\$2,577,300	\$2,577,300	\$2,577,300	\$2,577,300	\$2,577,300	\$2,577,300
Carden Roads Operations Garage	4,800	1973	2033	\$213	\$1,022,400	\$1,022,400				
Downeyville Equipment Storage Shed	2,360	1968	2028	\$93	\$219,480	\$219,480				
Eldon Equipment Storage (Quonset Hut)	1,890	1966	2026	\$93	\$175,770	\$175,770	\$175,770			\$175,770
Eldon Roads Operations Garage	9,828	1966	2026	\$213	\$2,093,364	\$2,093,364	\$2,093,364			\$2,093,364
Emily Equipment Storage Shed (Pole Barn)	4,360	1968	2028	\$93	\$405,480	\$405,480	\$405,480			\$405,480
Emily Roads Operations Garage	4,690	1974	2034	\$213	\$998,970	\$998,970	\$998,970			\$998,970
Sturgeon Point Roads Operations Garage	3,920	1960	2020	\$213	\$834,960	\$834,960				
Hartley Roads Operations Garage	2,884	1963	2023	\$213	\$614,292	\$614,292				
Lindsay Roads Operations Garage	32,984	1965	2025	\$213	\$7,025,592	\$7,025,592		\$7,025,592		\$7,025,592
Manvers Equipment Storage Shed (Pole Barn)	2,866	1978	2038	\$93	\$266,538	\$266,538	\$266,538	\$266,538	\$266,538	\$266,538
Manvers Roads Operation Garage	5,177	1970	2030	\$213	\$1,102,701	\$1,102,701	\$1,102,701	\$1,102,701	\$1,102,701	\$1,102,701
Oakwood Equipment Storage Shed (Storage Barn)	1,530	1970	2030	\$93	\$142,290	\$142,290				
Oakwood Roads Operations Garage	7,200	1970	2030	\$213	\$1,533,600	\$1,533,600				
Emily Salt Shed	1,008	1978	2038	\$70	\$70,560	\$70,560	\$70,560			\$70,560
Emily Sand Dome	8,260	1978	2038	\$43	\$355,180	\$355,180	\$355,180			\$355,180
Downeyville Sand Dome	8,260	1968	2028	\$43	\$355,180	\$355,180				
Manvers Salt Shed	1,008	1978	2038	\$70	\$70,560	\$70,560	\$70,560	\$70,560	\$70,560	\$70,560
Manvers Sand Dome	8,260	1978	2038	\$43	\$355,180	\$355,180	\$355,180	\$355,180	\$355,180	\$355,180
Oakwood Salt Shed	1,024	1977	2037	\$70	\$71,680	\$71,680				
Oakwood Sand Dome	8,260	1977	2037	\$43	\$355,180	\$355,180				
Hartley Sand Dome	8,260	1975	2035	\$43	\$355,180	\$355,180				
Sturgeon Point Salt Shed	1,008	1971	2031	\$70	\$70,560	\$70,560				
Sturgeon Point Sand Dome	8,260	1971	2031	\$43	\$355,180	\$355,180				
Burnt River Salt Shed	1,008	1975	2035	\$70	\$70,560	\$70,560				
Coboconk Sand Dome	8,260	1968	2028	\$43	\$355,180	\$355,180	\$355,180	\$355,180	\$355,180	\$355,180
TOTAL						\$23,509,151	\$ 8,826,783	\$ 11,753,051	\$ 4,727,459	\$ 15,852,375

Note: Unit Replacement Costs and Estimated Replacement Costs provided by the City of Kawartha Lakes