Fleet Operations Evaluation

Trent Lakes, Ontario

FINAL REPORT

mcg consulting solutions

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1. Introduction and Executive Summary

This introductory chapter outlines the purpose of the Fleet Operations Evaluation, a description of the approach utilized by MCG Consulting Solutions in conducting the engagement, and a summary of the project team's findings and recommendations.

1. Introduction to the Study

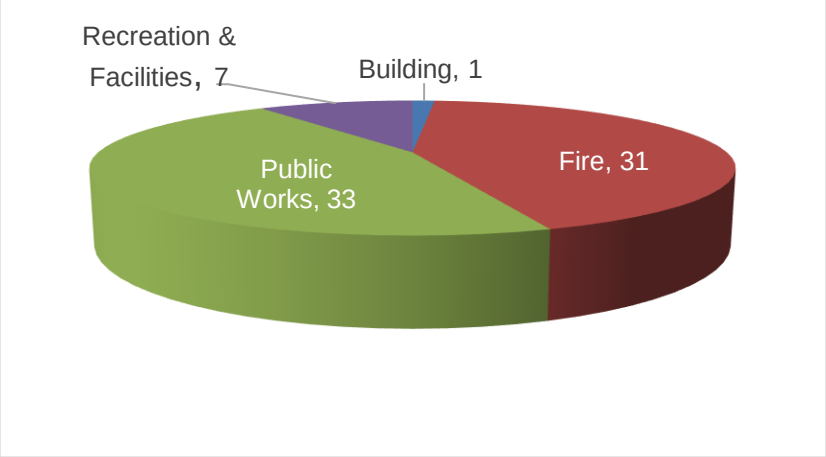
The Municipality of Trent Lakes is a rural township in the County of Peterborough. The Municipality has a fleet with 72 vehicles and pieces of equipment with a replacement value of nearly $10 million at the end of 2018. The fleet is currently managed and administered by each department independently with maintenance work being carried out utilizing in-house staff for some departments and different outsourced vendors for others.

The Municipality has 72 vehicles to support the organization's operations. The breakdown of this fleet by department is shown in Table 1 and Figure 1 below:

Table 1: Vehicles by Department

Department	Units
Building	1
Fire	31
Public Works	33
Recreation & Facilities	7
Grand Total	**72**

Figure 1: Vehicles by Department



The Municipality's policy on fleet replacement varies in time from 5 to 20 years depending on asset type. Pick-up trucks are 5 years, heavy-duty pick-ups and rescue trucks are 7

years, other heavy-duty equipment is 15 years, and Fire Trucks are 20 years. The Finance Department initiates a 10-year capital replacement plan and updates it annually. The average age of the fleet by Department is shown in the table below:

Table 2: Fleet Age by Department

Department	Average of Current Age in Years
Building	2.3
Fire	9.7
Public Works	6.6
Recreation & Facilities	5.3
Grand Total	**7.8**

The Municipality does not have a centralized fleet organization. Each department has a very different approach to managing and maintaining their fleet. Public Works principally maintains their fleet in-house using the existing municipal shop (one bay) and personnel (one mechanic and various drivers).

Fire uses the services of a technician on a part-time basis who does annual safety inspections and other repairs on an as-required basis at the Fire Halls or Buckhorn Road's Garage. Recreation and Facilities outsources all repair work to a commercial shop located in Bobcaygeon. There is no coordinated management of fleet maintenance, fuel, safety, or other fleet management functions such as policy enforcement.

The fleet budget is provided through a General Fund administered by the Finance Department. Finance is also responsible for maintaining an annual fleet replacement plan and budget in consultation with departments that vehicles are assigned to as well as a Departmental Capital Reserve fund for future capital replacement.

The Municipality engaged MCG Consulting Solutions to assess fleet operations. The goal of the evaluation is to review, audit, identify findings and make recommendations to improve service delivery, management controls, cost savings and operating practices across the full realm of fleet operations. Functional areas of fleet operations we reviewed included:

- Policy and governance
- Acquisition and disposition
- Maintenance and repair
- Replacement and lifecycle management

- Technology
- Cost recovery and rates
- Facilities and shop equipment
- Fuel operations
- Fleet assignment and utilization

2. Study Methodology

A central tenet of our approach to conducting operational studies is that there must be a strong analytical basis for evaluating needs and making recommendations. This methodology should be flexible enough to accommodate the unique elements of each client's own scope of work and service levels. We accomplish this by analyzing client data and comparing the resulting calculations, ratios, and benchmarks with industry norms. Our study approach also included:

- Collection of basic data on the fleet including type, assigned department, acquisition date, meter reading, and replacement cost.
- Development of statistics on fleet operations such as historical utilization for vehicles in the fleet, average age, historical replacement funding, ratio of staff to vehicles, compliance with maintenance inspections, downtime, etc.
- Interviews with user groups regarding their operational needs for vehicles, to discuss aspects of the fleet program that meet their needs and where changes may be needed.
- Assessment of fleet service practices and comparison to industry best management practices.
- Assessment of cost recovery practices.
- Development of draft and final reports.

These efforts have resulted in the following recommendations.

3. Primary Findings and Conclusions

The following table summarizes the recommendations contained in this report for changes in the fleet management program.

Table 3: Summary of Recommendations

#	Recommendation	Priority
1	Centralize fleet operations by creating a municipal-wide fleet asset management, maintenance, and safety program.	1
2	Assign municipal fleet management responsibilities to one individual.	1
3	Use the sample documents provided under separate cover to develop a comprehensive fleet policy framework.	1
4	Dispose of vehicles as they are replaced and discontinue the practice of retaining old vehicles, which creates an off book 'shadow fleet'.	1
5	Implement the recommendations of the separate Facility Audit and centralize fleet operations in a new purpose-built shop at the 49 facility.	2
6	Incorporate the bay dimensions and recommendation for a consolidated parts room into its planning process for a new shop.	2
7	Centralize the scheduling of maintenance and inspection of Fire equipment and related record keeping and continue to use a part-time EVT mechanic for fire equipment.	2
8	Complete maintenance and repair of remaining Fire vehicles (outside of pumpers and tankers) in-house.	2
9	Centralize maintenance and repair of Recreation and Facilities vehicles and adhere to industry-recommended PM intervals.	2
10	Add a mechanic position, minimize use of overtime, and reduce outsourcing when a new shop is built.	2
11	Ensure that the individual appointed to oversee fleet activities receives appropriate training.	1
12	Refine fleet performance measures and regularly communicate performance to departments.	2
13	Introduce a proactive PM program across all departments.	2
14		

	Change the parts allocation process to bill when a part is used for better inventory control.	1
15	Ensure budgeted funding levels are adequate to support replacement of vehicles in accordance with established replacement cycles.	1
16	Consider investing in the work order module of City Wide to improve access to management information for fleet and other maintenance activities.	1
17	Explore the development of cost charge-back rates as fleet functions are centralized.	2
18	Explore and adopt a fuel automation solution.	2
19	Conduct a detailed fleet-rightsizing study across all Departments to determine the number of vehicles including spares needed to meet service level and emergency response commitments.	3

Priority 1 recommendations should be completed in 2020. Priority 2 recommendations should be completed in the first half of 2021 with priority 3 recommendations completed in the second half of 2021. Most of the priority 1 and 2 recommendations await the centralization of fleet operations at a new facility.

2. Evaluation of Fleet Service Practices

In this section we report on our evaluation of fleet functional areas for compliance with industry best management practices (BMPs). The diagnostic assessment previously provided to the Municipality under separate cover provides details of the areas that were included in our review. In this section of the report we have limited discussion to the most important strategic issues facing the Municipality.

1. Policy and Governance

In this area we assessed issues relating to centralization and the fleet policy framework and content.

(1) Fleet Functions Are Not Centralized.

Support functions such as fleet services are more efficient when organized in a consolidated and centralized manner. This organizational alignment provides economies of scale, reduces duplication of effort, and ensures that fleet management expertise is applied to all important fleet issues, across all Departments.

The fleet centralization decision is driven by four factors – efficiency, expertise, liability and cost. Proponents of decentralization may argue that the responsiveness of the fleet organization depends on being close to end users; however, we know that a well-managed, central fleet organization run by a qualified expert can better meet the needs of diverse organizations whilst enjoying the economies of scale provided by centralization.

Centralizing fleet functions increases efficiency as it allows for a single manager to have complete visibility over all operational fleet decisions. This promotes better strategic decisions regarding the fleet and in turn avoids duplication of effort. Centralized acquisition results in greater fleet standardization which means fewer parts on hand, less training required for mechanics, and easier transferability of drivers. These efficiencies translate to overall savings for organizations where fleet is often a major spend.

Fleet management is a complex business. Mobility, autonomous features, telematics, and alternate fuels are all industry trends that require the knowledge of a qualified expert. Finding one such expert can be challenging, let alone finding several such individuals to manage disparate fleets throughout an organization. Once organizations hire an expert, they should invest in continued training to keep them up to date. Centralization allows an organization to leverage investments in personnel, technology, and training for the benefit of all departments throughout the enterprise.

The third area of importance related to centralizing fleet is liability. Fleet operations involve the risk of damages to organizational resources and personnel. The regulatory environment related to fleet operations is complex and ever-changing. Fleet managers need to keep abreast of laws on activities on a diverse range of fronts from environmental regulations to safety. There should be a central point of focus, headed by trained and expert personnel, to coordinate the fleet risk management strategy of the organization.

As mentioned previously, the vehicle fleet can be one of the most significant costs to an organization, not only in terms of capital investment but also for operating and administrative costs. Both fixed costs and operating costs are increasing as vehicles are becoming more expensive to purchase and to operate. Consolidating management can decrease administrative costs and bulk purchasing for vehicles, as well as maintenance and fuel services, can result in significant savings.

Centralization, then, is a clear best practice in fleet management as it results in efficiencies, maximizes personnel expertise, delivers a cohesive risk strategy, and ultimately saves money.

In the Municipality, few fleet functions are centralized. The budget process and replacement plan fall under the Finance Department (Treasurer) and are coordinated and adjusted annually by the Treasurer in conjunction with the main fleet user departments. Initial MVR checks and licensing are also centrally administered. The project team believes there is an opportunity to centralize more fleet functions without negatively impacting departmental operations. The following functions should be centralized:

- Fleet Maintenance – Public Works operates from a single maintenance bay and three overflow bays in Buckhorn. Their mechanic maintains the bulk of the fleet with repairs in excess of capacity being outsourced. Recreation and Facilities vehicles and Building and Planning vehicles are serviced at a third-party facility. Fire has a long-standing arrangement with a Peterborough city-employee, who inspects and maintains the Fire fleet on-site, on a part-time basis.

  Centralization would not *necessarily* mean that all Preventative Maintenance (PM) and repairs would be done at a Municipal facility. Rather, it would mean that the decisions to repair in-house or outsource, and which vendor to use at what cost, would be centralized. This would provide for better strategies to improve efficiency and lower cost from an enterprise-wide perspective.

- Fleet Safety – Currently, departments are responsible for all aspects of driver safety and training. There is no corporate safety program to address issues such as regular Motor Vehicle Record (MVR) checks, pre and post trip inspections, commercial vehicle regulatory compliance, crash review, driver training, and risk reduction.

- Fleet Management – There is no single staff person in the organization who is known as the Fleet Manager and who is regarded as the go-to authority on all aspects of fleet operations. A position should be created and staffed with a qualified person. This would **not** remove the ability of Department Heads to advise on their requirements, but would provide a central point for coordinating maintenance, parts, fuel, telematics, safety and other fleet requirements.

Recommendation 1: Centralize fleet operations by creating a municipal-wide fleet asset management, maintenance, and safety program.

Recommendation 2: Assign municipal fleet management responsibilities to one individual.

(2) Policies Need to Be Developed.

Municipal organizations benefit from a robust fleet policy framework comprised of a Fleet Policy Manual, a Driver's Handbook and Service Level Agreements (SLAs) with all departments that need vehicles and equipment to support their operations.

The Policy Manual provides a reference for managers and staff to refer to as different situations arise and serves as a baseline for all employees to understand the mission, requirements, and constraints of the fleet management program. Without such a manual, departments are left to exercise their own judgment on a range of important fleet issues such as the type of vehicles that will be purchased, when vehicles will be replaced, and whether replaced vehicles are sold or kept in service to meet other program needs. This situation inevitably leads to wide variations in fleet conditions and practices among departments and limits the ability of the Municipality to implement best management practices.

A Driver's Handbook is a supporting document that contains the information that needs to be readily available to drivers. It should include a signatory page indicating that a driver is aware of and will comply with its contents. Drivers should be required to review and sign the document annually, and their signature should also allow management to access their Motor Vehicle Record (MVR). Information in this document should include the requirements for pre and post-trip inspections, actions in case of accident and driver obligations to report all driving infractions on a timely basis.

The third requirement, SLAs, are written agreements between the internal fleet organization and each of their customers that specify the responsibilities of each party. In a typical SLA, Fleet may be responsible to ensure a specific availability of vehicles,

accomplish repairs in a specified timeframe and have final sign-off on vehicle acquisitions. Each fleet customer, on the other hand, will be responsible to make vehicles available for scheduled PM, keep vehicles in a clean state and pay a predetermined rate for maintenance and repair. As the Municipality has no fleet organization servicing other departments; SLAs are not currently in use.

Trent Lakes has several policies that relate to fleet use, acquisition and disposal - AD02 *Use of Municipal Vehicles*, AD39 *Capital Asset Policy*, AD66 *Strategic Asset Management Plan* and AD53 *Disposal of Municipal Assets*. The first document deals solely with fleet while the other documents cover all assets of the Municipality. AD02 has content that is appropriate to a Fleet Policy Manual such as vehicle assignment and taxable benefits, but also information more suited to a Driver Handbook such as prohibitions on distracted driving and idling. Creating policy documents streamlined for the intended audience would benefit managers and drivers alike.

Recommendation 3: Use the sample documents provided under separate cover to develop a comprehensive fleet policy framework.

2. Acquisition and Disposal

Vehicle acquisition is the process of identifying the need for a new or replacement vehicle, creating specifications for the asset, conducting an RFP or bid process, evaluating bids, and bringing the new asset into the fleet. The methods used to acquire and dispose of vehicles and equipment directly impact fleet performance and cost.

Acquisition processes should be designed to balance fleet users' transportation needs with efficiencies resulting from volume purchasing and standardization of vehicle types, restrictions on optional equipment to those that are a business requirement, volume purchasing, government discounts, and the level of effort and amount of time required to acquire vehicles.

The acquisition process begins with procedures to determine the business requirements of the end user organization that will utilize the vehicle and then translating this into vehicle specifications that describe the configuration, technical features, and functional capabilities required. Specifications should include maintenance experience with particular types of vehicles and systems and balance the need for custom design features (which can be expensive and delay delivery of vehicles) with standard equipment.

Service manuals, parts list, driver and mechanic training, and any specialized shop or diagnostic tools should also be included in purchase specifications - particularly for

specialized equipment. Additionally, procedures should be in place to inspect vehicles upon delivery to ensure their compliance with order specifications.

Once vehicles and equipment have reached the end of their useful life or completed their duty tour, remarketing and disposal processes should be designed to maximize resale proceeds and ensure assets that have been replaced are removed from the fleet rather than retained.

(1) The Municipality Appropriately Buys Most Vehicles from Cooperative Purchasing Contracts.

The Municipality explores existing cooperative contracts with neighbouring municipal and other government sources as a priority for vehicle acquisition. The specification process is largely left to departments to determine their needs. Centralization of this activity would promote efficiencies, as previously noted.

(2) Disposal Processes Can Be Improved.

In terms of fleet disposal, the best management practice is to use an off-site auction company to sell assets because such companies provide specialized expertise, hold frequent sales, reach a large audience of potential buyers, and eliminate the need for a Municipality to store used vehicles on its property for months until the next auction. The Municipality meets this best practice.

The use of trade-ins may be warranted in certain circumstances. The Municipality used this method for a loader in 2018 and received a trade-in value of $30,000 on the unit being replaced. Consideration should be given to trade-in on a case by case basis with attention paid to the price of the vehicle purchased and the auction value of the replaced unit.

It is also best practice to dispose of vehicles that have been replaced *immediately*. This practice avoids the ongoing maintenance costs associated with even a fully depreciated vehicle. User departments sometimes try to retain these vehicles as spares, mistakenly thinking they are “fully paid for.” Examples of vehicles that have been replaced and not disposed of include Truck Unit 501 (Public Works), Plow unit 499 (Public Works) and two 2011 pick-up trucks assigned to Recreation and Facilities.

Instead of retaining these vehicles and building a ‘shadow’ fleet of vehicles that have been replaced, the Municipality should establish appropriate vehicle allocations for all organizations, particularly Recreation and Facilities, and ensure replaced vehicles are not retained. This will ensure, in turn, that the fleet is in compliance with the establishment

approved by Council and that there is complete transparency with regards to how many vehicles are established and held by each Department.

Recommendation 4: Dispose of vehicles as they are replaced and discontinue the practice of retaining old vehicles, which creates an off book 'shadow fleet'.

3. Maintenance and Repair

Fleet maintenance and repair processes have a significant impact on vehicle availability, reliability, safety, economy, and environmental integrity. The principal ingredients of fleet maintenance are staffing, facilities and equipment, parts, and commercial (i.e., sublet or outsourced) services. The challenge of any fleet maintenance process is to mix these ingredients together to maximize operating performance while minimizing costs. Since there is no consolidated approach to maintenance, the effectiveness of each program will be discussed at the departmental level.

(1) Public Works Requires an Improved Facility.

The Public Works Department has a facility at Buckhorn with one dedicated maintenance bay and three overflow bays. The facility is old, and the bay is barely large enough to maintain heavy equipment. In fact, the mechanic cannot walk around heavy equipment if the door is closed. Having a single bay is less than ideal as any time parts are needed, the vehicle must be shuttled out of the bay or it blocks the bay for other use. Industry best practice is to allocate 1.5 bays per light-duty mechanic and 2.5 per heavy-duty mechanic. Since this is a mixed fleet, the ideal would be 3-4 fully functional bays.

This study did not look at the need for a new facility, however, if recommendations from the facility audit are pursued, the new facility design should meet the following specifications: heavy-duty bays should be 25 feet wide by 75 feet long to accommodate large vehicles, light-duty bays should be 20 feet wide by 35 feet long. Ideally, these bays should be drive-thru.

Parts are dispersed in three main areas in the Buckhorn facility as there is no single space large enough to consolidate parts. Parts had been neglected for many years and there were very old items taking up valuable space. Recent efforts have resulted in improvements in organization and accessibility of parts. In a new

facility, attention should be given to a consolidated parts room and mezzanine storage for bulky items, such as tires.

Recommendation 5: Implement the recommendations of the separate Facility Audit and centralize fleet operations in a new purpose-built facility.

Recommendation 6: Incorporate the bay dimensions and recommendation for a consolidated parts room into the planning process for a new shop.

(2) The Use of an Outsourced Mechanic by Fire is Efficient.

The Municipality has four tankers and four pump trucks, all subject to National Safety Code (NSC) and National Fire Protection Association (NFPA) regulations. Annual inspections are required of both the vehicle and the apparatus. Note that a specialized Emergency Vehicle Technician (EVT) is not a mandatory requirement, but their knowledge and experience may be useful and is considered a best practice in the industry.

Fire has allocated the maintenance and repair of these specialty vehicles, as well as the other vehicles in their fleet, to a part-time mechanic who does inspections and repairs at Trent Lakes facilities. The mechanic arranges through suppliers for Fire to be billed directly for parts and charges an hourly rate of $50 for his time. The 2018 requirement was for 195 hours to inspect and maintain seven pieces of equipment. This mechanic also conducted maintenance and repairs for the remainder of the fire vehicles for a total of 265.5 hours in 2018. The reasonable hourly rate, access to parts, and convenience of on-site repair make this option efficient for the pumpers and tankers. Maintenance of the other Fire vehicles could be done with in-house resources in the future (see Vehicle Equivalency Unit explanation below).

The Municipality should ensure oversight that all inspections are being done to NSC standards. We understand that utilization of the Fire fleet is very low and routine maintenance is correspondingly infrequent. ULC rated pump tests are appropriately outsourced to a qualified facility. Having a centralized approach to the management of all the Municipality's maintenance requirements would ensure that proper oversight is in place.

Recommendation 7: Centralize the scheduling of maintenance and inspection of Fire equipment and related record keeping with the rest of the Municipal fleet and continue to use the part-time mechanic for fire equipment.

Recommendation 8: Complete maintenance and repair of remaining Fire vehicles (outside of pumpers and tankers) in-house.

(3) Recreation and Facilities Vehicles Should be Maintained by the Municipality.

The Recreation and Facilities Department has five pick-up trucks. Two trucks were purchased in 2017 but the old vehicles were retained due to growth needs. This means that three of the trucks are from 2011 and are well outside the five-year replacement guideline. The trucks are all maintained by a commercial vendor (Bobcaygeon AutoTech).

There is no proactive Preventive Maintenance (PM) program for department vehicles. The trucks have oil life sensors and are taken in when they are at 25%. A time interval should also be added for scheduling purposes to ensure that vehicles receive maintenance at least twice per year. Two of the vehicles are used principally for seasonal peaks (summer) and vehicles are rotated to balance utilization. PM and repair of these vehicles (less warranty work) should be centralized and performed in-house.

Recommendation 9: Centralize maintenance and repair of Recreation and Facilities vehicles and adhere to industry-recommended PM intervals.

(4) Staffing Levels Require Minor Adjustment.

With no dedicated fleet department, various individuals in Headquarters and the individual departments assume fleet responsibilities. Functional assignments for staff are summarized in the following table:

Table 4: Personnel with Fleet Responsibilities

Position		Key Roles and Responsibilities
CAO	1.0	• Oversees the general operation of the fleet maintenance program. • Makes strategic decisions regarding long-term direction and organizational structure. • Supervises management and staff. • Responsible for organizational performance including customer service and budget.
Treasurer	1.0	• Prepares and maintains the 10-year capital replacement plan • Prepares the annual budget • Coordinates the RFP process
Corporate Services	1.0	• Arranges for vehicle disposal • Coordinates licensing requirements • Maintains driver records

Position		Key Roles and Responsibilities
Directors (Recreation and Facilities, Fire, Public Works, Building and Planning)	4.0	• Oversee fleet operations in their department • Ensure safety of departmental personnel and equipment • Ensure drivers have the necessary qualifications (along with Treasurer and HR)
Foreman	1.0	• Acts as one of the PW foremen • Manages and orders parts • Assists mechanic as required
Mechanic	1.0	• Maintains Public Work's vehicles
Part-time Mechanic	.2	• Maintains Fire vehicles • Conducts inspections
Drivers	20-25	• Perform circle checks • Keep hours of service logs • Initiate PMs • Assist mechanic as required

In the following paragraphs we provide our findings and analysis related to mechanic staffing requirements.

The number of technicians and related positions required for a maintenance operation to operate effectively is primarily driven by the size and composition of the fleet it serves. Because most fleet operations service a wide variety of vehicles and equipment, it is necessary to establish a relative measure that allows for the evaluation and comparison of staffing needs and costs.

A process known as vehicle equivalent unit (VEU) analysis is used to equate the level of effort required to maintain dissimilar types of vehicles to a passenger car, which is given a baseline VEU of 1.0. Our work with other fleet organizations has shown that a VEU of 1.0 is equal to between 10 and 15 annual maintenance Labour hours, depending upon several factors unique to each organization. All other types of vehicles are allocated a VEU value based on their relationship to a passenger car. For example, a loader or grader is given a VEU of 5. This means that these pieces of construction equipment on average require five times the annual maintenance hours of a passenger car, or between 50 and 75 hours per year.

For this project, we assigned a VEU for each make and model of vehicle. The 72 active vehicles in the fleet total 201 VEUs[1]. Therefore, the Municipality maintains a fleet that is the equivalent of 201 sedans. The table below summarizes our VEU calculations:

[1] Note this does not include small equipment items such as chain saws, blowers, trimmers, etc.

Table 5: VEUs Per Vehicle Type

Type	Units	VEU/Unit	Tot VEU
ATV	3	1.0	3
Boats	3	1.0	3
Construction	12	5.0	60
Emergency Vehicle – Lite	2	2.5	5
Emergency Vehicle – Med	7	2.5	17.5
Emergency Vehicle – HVY	8	7	56
Pickup	13	1.5	19.5
Truck – Med	11	2.5	27.5
Miscellaneous	2	2	4
Trailer	11	.5	5.5
Grand Total	**72**		**201**

The next step in our analysis is to determine the number of Labour hours required to maintain one VEU. The baseline is 10 hours per year, but adverse or challenging conditions can increase this to 15 or in extreme situations even more. Conversely, good conditions can drive Labour demand down by a material level. The following table shows what Labour demand would be for the Municipality's fleet at varying levels. All calculations use an industry average of 1456 annual productive mechanic hours to determine the number of mechanics required.

Table 6: Labour Demand

Demand Level	Mechanic Hours Required	FTE Mechanics Required
Labour demand at 10 hours/VEU	2,001	1.4
Labour demand at 11 hours/VEU	2,211	1.5
Labour demand at 12 hours/VEU	2,412	1.7
Labour demand at 13 hours/VEU	2,613	1.8
Labour demand at 14 hours/VEU	2,814	2.0
Labour demand at 15 hours/VEU	3,015	2.1

In making a determination relative to where an organization falls on the range of hours per VEU shown on the above table, we consider several factors that are unique to each fleet. These factors include fleet age and condition, usage levels, degree of outsourcing, and overall operating environment. For the Municipality, we determined the Labour factor required to properly maintain the fleet is 15 hours per VEU. Our calculation for this is shown in the following table:

Table 7: Calculation of Labour Hours Per VEU

Baseline hours required per VEU	10.0	Standard starting point for mixed vocational fleets.
Adjustment for utilization levels	1.5	Territory served is large with rural roads.
Adjustment for facility and tools	2.0	The shop is undersized which impacts mechanic productivity.
Adjustment for parts support	0.0	Good parts support
Adjustment for mechanic skills and training	1.5	Mechanic is new to Trent Lakes and works alone or with assistance of driver.
Adjusted hours per VEU	15.0	Adjusted hours per VEU.

While a fleet mechanic's salary is based on 2,080 hours per year (52 weeks x 40 hours per week), only approximately 1,456 Labour hours per year (70% of annual hours) are available to perform actual maintenance work (the remaining payroll hours are lost to vacation, sick time, holidays and indirect time such as training and meetings). Therefore, a fleet mechanic can be assigned a total of between 97 and 146 VEUs per year (1,456 hours available per year divided by 10 or 15 hours per VEU). The following table shows how we calculate this figure.

Table 8: Mechanic Productive Hours

Payroll Days/Hours / Year	260/2,080	
Hours paid but not at work	Days/Year	Hours/Year
• Holidays	12	96
• Vacation	15	120
• Sick Leave	10	80
• Other leave (workers comp, jury, FMLA, Military, etc.)	4	32
Hours at Work but Not in the Shop		
• Reason	Days/Year	Hours/Year
• Training	5	40
• Meetings	5	40
• Admin paperwork	5	40
• Total Indirect / Day	15	120
Hours in the Shop but Not Working on Vehicles During Standard 8 Hr Day		
• Reason	Hours/Day	Hours/Year
• Breaks	0.5	110
• Cleanup/Waiting	0.3	66
• Total Indirect / Day	0.8	174
Total Expected Direct Hours		**1,456**

Table 8: Mechanic Productive Hours

% Direct	70%

A few adjustments need to be made to this analysis including accounting for overtime and outsourcing. Each of these factors is discussed below.

In terms of overtime, the previous mechanic posted 265 and 243.5 hours in 2017 and 2018. During the same time period, he took 407.5 hours out of banked time. We will use the net of OT less banked time, as an estimate of the OT actually needed going forward (508.5 – 407.5 = 101 hours). This equates to only 50.5 overtime hours required per year.

The next number we wanted to discover is how many total hours of outsourced work the Municipality uses annually. We know that the total outsourced bill is $87,845 and we know that, as an industry benchmark, approximately 50% of this would be Labour hours. We determined that, since we know the exact number of hours and cost of the Fire portion of this, we should take that piece out. Fire used their outsourced mechanic a total of 265.5 hours at a cost of $13,275. When we subtract the fire costs from total outsource costs, we arrive at $74,570. As stated, 50% of expenditures with vendors are Labour costs, and we use an average Labour rate of $120. The outsourced hours would total 310 ((74,570/2)/120)) = 310 hours. Total outsourced hours are 310 + 265.5 for Fire = 565.5.

The following table provides a summary of the staffing analysis described in the preceding paragraphs.

Table 9: Summary of Staffing Requirements

	Hours	FTE
Base Labour Demand	3,015	2.1
Labour Outsourced	(565.5)	(0.4)
Inhouse Labour Demand	2,449	1.7
Base Labour Supply	1,456	1
Plus Overtime	50	0.03
Total Labour Supply	1,506	1
Deficit	1,109	(.6)

In summary, our analysis indicates that the Municipality is understaffed by .6 mechanics given the current level of OT and the use of the outsourced mechanic in Fire. Since the shop is undersized, there is no space currently to accommodate another mechanic. Once a new facility is built, however, a second mechanic should be hired and all non-warranty work on all vehicles (less fire apparatus) should be done in-house. This will result in productivity gains inherent in having a two-person shop and avoid overtime and the 310 hours of outsourcing.

Table 10: Most Efficient Organization

Position	Number
Foreman/Fleet Supervisor	1
Technicians	2
Total	**3**

Recommendation 10: Add a mechanic position, minimize use of overtime, and reduce outsourcing.

(5) Training and Expertise

The position of fleet manager should be created as a single point for fleet management functions. The individual assigned to the position should be provided with specialized training in fleet management. Both consultants who worked on this project hold the Certified Automotive Fleet Manager designation from NAFA Fleet Management Association. This program is a self-study program in maintenance, asset, financial, risk, business, fuel and information management that requires approximately 200 hours of study. More information can be found at https://www.nafa.org/f/Home.aspx?viewmode=0

Recommendation 11: Ensure that the individual appointed to oversee fleet activities receives appropriate training.

(6) The Municipality Should Establish and Track Key Performance Indicators.

Performance measurement is a valuable management tool that can be used to increase the efficiency and accountability within an organization. The use of year-to-year historical data and industry benchmarks to measure performance can provide management staff with the data necessary to recognize and diagnose potential problem areas in the fleet organization. Performance measures also provide the organization with the information necessary to communicate the value of the services it provides.

The Municipality has some general asset management performance metrics. Once a centralized fleet approach is adopted, the Municipality should establish a series of fleet-specific goals and performance indicators to be distributed on a regular basis to all departments. In our view, it is not possible for an organization to optimize its performance without establishing concrete, measurable, and challenging goals. Goals contribute focus and motivation to the success equation.

We recommend the following measures:

- **Fleet Availability**: This measure tracks the percentage of the fleet that is available for work each day. The calculation is simply the total number of vehicles and pieces of equipment in the fleet divided by the number of vehicles out of service for repair (i.e. in the shop, waiting in the dead line to come into the shop, or at a vendor). The target of performance for this KPI is 95%. Data was not available for us to calculate performance in this area.

- **Service Turnaround Time**: This measure tracks the percentage of repairs that are completed within 24 and 48 hours. The target of performance for this KPI is 70% of repairs and services completed in 24 hours and 90% in 48 hours. Data was not available for us to calculate current performance in this area.

- **PM Compliance**: This KPI measures the percentage of PMs and scheduled inspections that are completed before they are overdue. The target of performance for this KPI is 95%.

The Municipal fleet department should track these KPIs each month. If actual performance lags targets to a significant degree, remedial plans should be developed to bring performance in line with expectations.

Recommendation 12: Refine fleet performance measures and regularly communicate performance to departments.

(7) PM Scheduling and Compliance Varies

A well-designed and executed preventive maintenance (PM) program is the cornerstone of effective fleet maintenance. The objective of a PM program is to minimize equipment failure by maintaining a constant awareness of the condition of equipment and correcting defects before they become serious problems. A PM program minimizes unscheduled repairs by causing most maintenance and repair activities to occur through scheduled inspections. An effective PM program pays dividends not only in improved equipment safety and reliability, but also financially, by extending the life of equipment, minimizing the high cost of breakdowns, and reducing lost employee productivity resulting from equipment downtime.

Compliance across municipal departments vary. Fire follows a rigorous program that complies with all regulatory standards. Recreation and Facilities simply sends their trucks in for maintenance when the oil indicators are at 25%. Public Works has a bigger mix of vehicles. The commercially rated vehicles are subject to preventative maintenance scheduling, but it is not consistently applied over the remainder of their vehicles.

Recommendation 13: Introduce a proactive PM program across all departments.

(8) Parts Allocation and Billing Can Be Improved

The acquisition, management, and provision of replacement parts to mechanics is a key ingredient of the in-house fleet maintenance process. An efficient parts program is essential to producing effective and productive fleet maintenance operations. The goals of a fleet parts program are to:

- Facilitate productive maintenance by ensuring the right part is available to mechanics when and where they need them.
- Obtain parts at a reasonable cost.
- Provide appropriate control over the stockroom.

The most significant aspect of parts supply, in our view, is the impact that the function has on the efficiency and effectiveness of the fleet maintenance operation, and the productivity of the drivers of fleet vehicles. The ability of the parts operation to provide

the right products, at the right place, and at the right time, is critical to the efficient operation of the maintenance shop. Mechanic productivity and repair quality depend on it. The timely availability of high-quality repair and service parts also affects fleet availability. Service and repair activities which are consistently delayed due to the unavailability of parts, translates into reduced operator productivity, and the need for spare vehicles and a larger fleet to support the same level of services.

At the Buckhorn facility, parts are located in several rooms on the second floor. The facilities are not secure and there is no parts staff. The mechanic, foreman, or the driver can access parts as needed.

Parts are ordered by the mechanic or foreman. The parts are billed to a specific vehicle as they are ordered (not as they are used) which means there is technically no unbilled inventory on shelves.

Recent improvements have included the disposal of obsolete parts and the creation of parts 'kits', where parts designated for a specific vehicle are brought together for easy access.

Recommendation 14: Change the parts allocation process to bill when part is used for better inventory control.

4. Fleet Replacement and Lifecycle Management

Our evaluation of the Municipality's fleet replacement practices is based on principles of effective capital asset management that are well established in the fleet industry. These principles provide the framework we used to conduct this project. The philosophical underpinnings of this framework are:

- Failure to replace vehicles on time costs an organization more money – both in hard dollars and in indirect costs.

- An old fleet has a negative impact on staff productivity as unreliable vehicles must be frequently driven to the shop rather than to work.

- If a fleet is old, there are likely more vehicles in service than needed as departments seek to have extra vehicles to act as backups and spares, so they can survive the increased unreliability of front-line vehicles.

- The older vehicles in a fleet also use more fuel and emit more pollution because standards for emissions and fuel economy were lower in the past than they are now.

- Finally, older vehicles are not as safe as new ones for the simple reason that they lack many of the advanced safety features that are standard with new cars (such as cameras, sensors, lane departure warning, collision avoidance systems, side curtain air bags, etc.)

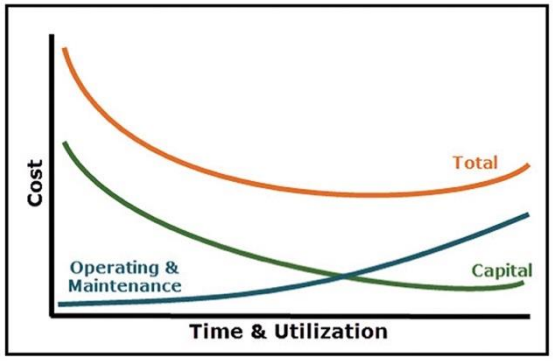
There four key aspects of a best practice-based fleet replacement program are outlined below.

- **Creation of reasonable replacement cycle criteria that identify when fleet assets should be retired in order to minimize life-cycle costs.**

  The age and accumulated miles of vehicles fundamentally impacts the cost and performance of a municipal fleet. The foundation for a successful fleet replacement program is the development of reasonable replacement criteria. Replacement criteria are a set of parameters that initiate planning for the replacement of an asset. Fleet replacement parameters are generally set as time (months in service) and use (miles or engine hours) for each class of vehicles and equipment in the fleet.

  Equipment capital costs tend to decline over time (because annual depreciation is highest in the initial years of ownership), while operating and maintenance costs increase. The combination of these two basic curve functions results in a "U-Shaped" total cost curve. The economic theory of vehicle and equipment replacement predicts that vehicles and equipment should ideally be replaced during the flat portion of the curve; that is, at the time annual operating costs begin to outweigh capital costs.

  Replacing an asset at this point produces the lowest life-cycle costs. The chart to the right, which is from APWA's publication "Managing Public Equipment", illustrates this concept.



  The total cost curve can vary significantly for different types of equipment. Factors that impact total costs and life-cycle timing include purchase prices, differences in operating environments, utilization levels, maintenance practices, rates of depreciation, etc. Consequently, replacement criteria must be developed for all types of equipment in a fleet.

- **A multiple year fleet capital plan that projects future year replacement based on the replacement cycles developed in step 1 above.**

  Once reasonable replacement cycles have been established, an organization needs to develop a long-range replacement plan to forecast funding requirements

for vehicles and equipment. The primary purpose of such a plan is to identify peaks and valleys in future year funding needs so financial planners and decision makers can accommodate this in the budget process.

The variability in annual funding requirements is inherent to owning any large fleet as vehicles age out and are driven at different rates. Therefore, static funding of the same amount as last year is insufficient to properly replace a fleet.

Moreover, a long-range plan does a good job of illustrating that funding replacement of vehicles is not discretionary and is a recurring annual expense. Thus, suggestions that the organization "saves money" by cutting the fleet replacement budget are not valid and actually just increase future year budget requirements.

- **Budgeting practices that make funds available each year to replace vehicles in accordance with the replacement plan.**

  Many organizations find it difficult to budget enough funds to replace their vehicles. This is largely because many public-sector organizations do not have good processes in place to deal with the sometimes large yearly variability of spending requirements when revenues to finance these costs are largely fixed.

  There are three basic financing approaches available to government organizations: cash appropriations each fiscal year, establishment of a reserve fund, and some sort of borrowing (such as bonds, lease-purchasing, certificates of participation, etc.). The reserve fund and debt approaches are generally better than use of cash because they spread the capital cost of vehicles over several years which makes budgeting for vehicle replacements easier.

- **A process for prioritizing spending the money secured in the replacement plan in the coming fiscal year.**

  The last step in an effective fleet replacement program is a short-term replacement decision making process that identifies and prioritizes when to replace individual vehicles and pieces of equipment. While the replacement plan will project when vehicles need to be replaced years in advance, real world conditions often require adjustments once money is available to be spent. For instance, some vehicles often need to be replaced sooner than forecast (because they have been destroyed in an accident or due to expensive repairs that are required) and some vehicles will turn out to be in good shape and can be kept in service another year or more past the replacement guidelines. Therefore, several factors in addition to age and mileage, need to be used to identify the specific units most deserving of replacement in any given year. These factors include historical repair costs, type of use (such as severe duty, mission critical or back-up), reliability, and an assessment of a candidate unit's current condition.

Many organizations have developed a point system that mixes the factors listed above into a quantitative process of assigning replacement priorities. This has the advantage of taking most of the politics out of the replacement decision-making process because all stakeholders (including budget staff and departments that use vehicles) understand the factors being considered.

Our findings and recommendations in this area are provided in the following paragraphs.

(1) Some Fleet Replacement Criteria Require Adjustment

The Municipality has established replacement cycles for its fleet to facilitate long-term planning. Replacement criteria are defined in the Municipality's Asset Management Policy.

Replacement cycles are shown in the following table.

Table 11: Fleet Replacement Cycles

Type	Cycle (Years)
Pickups	5
Tandems	10
Heavy-duty Pickups	7
Trailers	15
Construction Equipment	15
Pumpers/Tankers (Fire)	20
Weighted Average	**11.3**

For the most part, planned replacement cycles are within industry norms in terms of years. The one exception is pickups which Trent Lakes replaces at 5 years compared to an industry average of 7 or 8 years, depending on use. It would be beneficial to have a kilometers/hours of use criterion to accompany the age. For example, pickups would be replaced at 7 years or 200,000 km, whichever comes first.

(2) Some Vehicles Have Exceeded Their Useful Lives

The distribution of the fleet by model year indicates that the fleet is being replaced within the established guidelines with a few exceptions. The average age of the pickup fleet is driven up by the practice of retaining vehicles that have already been replaced. This creates a shadow fleet of older vehicles.

Another discrepancy is the older tanker truck that has been retained by Fire because of facility size restrictions. Even with this old pumper, the class average is 10.4 years. When it is not included, the average age is 7.6. This pumper will be replaced once renovations have been done on the facility to accommodate the larger units that have become

standard. Finally, several older tandem dump trucks are in the fleet and drive up the average age of this class.

As shown in the following table, the average age of vehicles in the fleet exceeds 50% of the current average replacement cycle for some types of vehicles.

Table 12: Average Age of Key Fleet Classes

Type	Replacement Cycle (Years)	Average Age	% of Repl. Cycle
Pickups	5	7.1	70%
Tandems	10	7.3	73%
Trailers	15	6.1	41%
Construction Equipment	15	6.1	41%
Pumpers and tankers (Fire)	20	10.4	52%

(3) The Municipality Has Developed a Long-Range Fleet Replacement Plan

The Municipality has developed a multi-year capital replacement plan for its fleet. As previously mentioned, this is a clear best practice for organizations that own fleets of vehicles and equipment.

For the most part this plan has enabled the Municipality to keep current with replacement funding requirements (with the few exceptions noted above). Our forecast of funding requirements for the next few years is shown in Table 13 below. A list of vehicles forecast for replacement in each year is provided in the Appendix to this report.

Table 13: Replacement Funding Requirements by Department

Department	2020	2021	2022	2023	2024
Building	$0	$0		$49,372	$0
Fire	$157,110	$391,053	$118,018	$0	$10,525
Public Works	$764,126	$486,042	$717,307	$350,570	$668,578
Recreation & Facilities	$0	$0	$0	$53,974	$0
Grand Total	**$921,235**	**$877,095**	**$835,325**	**$453,916**	**$679,103**

The Municipality should ensure its budgeted funding levels are adequate to support replacement of vehicles in accordance with established replacement cycles and the long-range plan.

Recommendation 15: **Ensure budgeted funding levels are adequate to support replacement of vehicles in accordance with established replacement cycles.**

5. Fleet Technology

Comprehensive, accurate, and readily accessible records regarding fleet operations are essential to optimize performance and manage costs. In the past, fleet maintenance records were kept on paper - work orders, vendor invoices, and handwritten notes. However, as with all business activities, fleet maintenance shops have evolved to using management information systems to document operations and produce management reports. Having all maintenance and other data available in a computerized system and accessible by all fleet program stakeholders, provides an effective tool for managing shop operations, an efficient way to retrieve and report key information, and a basis for timely management decisions.

(1) The Use of Technology Requires Improvement

The Municipality has no central Fleet Management Information System (FMIS) and has integrated minimal technology in the management of fleet, maintenance and fuel. The following table provides a summary description of the core technology tools utilized by the Municipality in the course of its fleet operations. The name of each technology tool or application is accompanied by a description of its functionality and the primary ways in which it captures information pertinent to fleet management.

Table 14: System Descriptions

System	Description
City Wide	• Asset Management • Capital Projects Model
Fire Pro	• Fire Assets • Maintenance scheduling
MESH	• Vehicle dispatch • Circle checks • Operations Management (Rec) • Vehicle Maintenance (PW)

For centralization to succeed, all departments must use a common system with the capability of consolidating data and reports. That system should, as a minimum, have a complete vehicle roster and track vehicle usage (odometer readings), fuel usage, in-house and outsourced maintenance (including Labour and parts), parts inventories and accidents. City Wide sells a work order module that would integrate with the asset management module Trent Lakes already owns. https://psdrcs.com/asset-manager/

Recommendation 16: Consider investing in the work order module of City Wide to improve access to management information for fleet and other activities.

6. Cost Recovery Methods

There are two ways that operating funds can be provided to a fleet services organization 1) through direct budget appropriations to the organization and/or to user departments or 2) through the use of a cost recovery system and associated charge-back rates that recoup the organization's costs through charges to customer organizations for the resources and services provided to them.

There are several reasons why the use of a cost recovery system with charge-back rates is preferable to directly providing budget appropriations to a fleet management organization, a department that uses vehicles, or some combination of the two. One is that an effective cost recovery system improves the consumption and provision of fleet resources by demonstrating the links between the choices departments make, along with the behavior of their drivers, and the costs of the vehicles and related services they consume. Another reason for implementing an industry best practice-based charge-back system is to promote fair and justifiable treatment of departments that use vehicles. When fleet users pay only for the resources they consume, there is no cross-subsidization of fleet costs under a properly designed and implemented cost recovery system.

Since using a charge-back system to finance a fleet operation means selling services rather than providing them free of charge, departments behave much more cost effectively than they do when resources are given to them. For the same reason, users also put much more pressure on fleet management organizations to charge competitive prices for goods and services than they do when they receive these resources free of charge.

In contrast, the purpose of charging costs back to internal customers is to improve the management of government operations by promoting the clarity and recognition of costs. Achievement of this objective requires fleet cost recovery systems be designed to enable fleet users to understand, care about, and manage fleet costs (for example, to purchase the least costly vehicle to meet their business needs, to keep the size of their fleet to the minimum size possible, and to operate vehicles properly). This requires that the rate structure and billing process clearly illustrate the linkage between department behavior and the costs they pay.

Cost recovery methods based on usage (i.e. by the mile or engine hour) or time (i.e. monthly) systems do a poor job of demonstrating this relationship because they treat vehicle costs as either completely fixed (in the case of time-based rates) or entirely

variable (in the case of usage-based rates). In reality, some vehicle costs are fixed while others are variable.

A cost recovery system that directly charges back fleet costs to departments for the resources and services they consume, makes it easier for both fleet users and fleet management service providers to see how much specific services cost. When transaction costs are itemized on customer bills, this type of rate structure encourages the efficient provision and consumption of fleet resources and services. Time and usage-based rates, as well as cost allocation systems, in contrast, make it difficult to discern what portion of a user department's monthly charges are associated with vehicle maintenance, fuel, fleet management services, etc.

(4) The Municipality Does Not Charge Fleets Costs Back to Departments.

The Municipality does not charge fleet costs back to departments. Budget is allocated directly to individual departments for fleet operating costs. Finance does direct annual allocations to fund for vehicle purchases. Individual Departments are held accountable during budget review when they are asked to justify operating costs associated with vehicle use.

Cost recognition could be improved if departments were charged directly for fleet operating and capital costs. Operating costs should be based on transactions (i.e. for each mechanic Labour hour, each repair part, each vendor invoice, each liter of fuel) while capital costs should be based on an amortization schedule corresponding to vehicle costs and replacement cycles.

Recommendation 17: Explore the development of cost charge-back rates as fleet functions are centralized.

7. Fuel Operations

The Municipality operates four above ground storage fuel facilities at Cavendish, Galway, Buckhorn and 49. They are located at the Firehalls at each of these locations. The fuel infrastructure is old and unsecured. If the power goes out, fuel can only be sourced from Cavendish as it is a manual pump system.

Fuel tracking is done by paper and pen, recorded on sheets located at each location. These sheets are collected monthly and the totals are recorded in a spreadsheet by Finance. Often the totals do not reconcile. In this case, each department is charged a percentage of the unallocated costs according to fuel use. For example, if Recreation and Facilities used 20% of the allocated fuel during a month, they would be charged 20% of

the unallocated fuel. Fuel is a departmental line item and not allocated to individual vehicles. Annual fuel spend is just over $213,000.

Municipal personnel reported that a study on fuel automation was recently done and that the Municipal Council decided not to invest in fuel infrastructure or automation at that time. We did not receive a copy of the study but recommend that the Municipality revisit the topic of fuel automation and consider automating fuel sites to improve accountability and inventory control. Major providers of automated fuel systems include Fuel Master, Trac Engineering, and EJ Ward.

Recommendation 18: Explore and adopt a fuel automation solution.

8. Fleet Assignment and Utilization

The primary cost drivers for any organization that operates vehicles is the size and composition of the fleet. The more vehicles an organization owns, the higher the annual cost, because there are costs associated with ownership and operation of every asset in the fleet. Even under-utilized vehicles consume fuel and maintenance resources each year. More importantly, these units also lose value every day even if they are older and are fully depreciated on the books.

Time and effort are also required to maintain appropriate licenses, registrations, tags, fleet inventory records, insurance, fuel cards, AVL equipment, radios, etc. Consequently, all organizations should develop processes to manage the size of their fleet.

A good fleet size management program starts with recognition that an organization does not have to own all the units necessary to conduct its business. It simply must have access to the equipment when it is needed, at a reasonable cost. This can be accomplished any number of ways, such as buying a unit and permanently assigning it to an operating department; buying a unit and assigning it to a motor pool for shared use; renting a unit on an as-needed basis; or reimbursing employees for using their personal vehicle. A good fleet utilization management program normally considers the risks and benefits of each option and uses a combination of all these methods.

Organizations should develop processes to analyze data on the utilization of vehicles to pinpoint opportunities to optimize fleet size, composition, and deployment. Fleet centralization would assist in this area.

Recommendation 19: Conduct a detailed fleet-rightsizing study to determine the number of vehicles, including spares, needed to meet service level and emergency response commitments.

Appendix A – Forecast of Replacement Vehicles

Unit #	Dept Name	Description	2020	2021	2022	2023	2024	2025
1	Fire	Emg Pickup 1/2 T		$61,510				
2	Fire	Emg Pickup 1/2 T			$61,510			
4	Fire	Emg Pickup 1/2 T						
14	Fire	ATV					$10,525	
17	Fire	Boat Fire	$14,308					
24	Fire	ATV						
27	Fire	Boat Fire	$4,776					
34	Fire	ATV						
37	Fire	Boat Fire	$11,516					
407	Public Works	Tandem						
408	Public Works	Tandem						
423	Public Works	Tandem		$277,531				
424	Public Works	Tandem			$276,463			
426	Public Works	Chipper						$52,542
427	Public Works	Tag Trailer						
435	Public Works	Loader						
440	Public Works	Grader						
450	Public Works	Pickup	$40,067					$45,096
470	Public Works	Pickup	$58,824					$66,207
475	Public Works	Tandem			$136,474			
476	Public Works	Tandem						
477	Public Works	Loader					$240,022	
478	Public Works	Tandem	$260,899					
479	Public Works	Tandem	$249,756					
480	Public Works	Loader						
481	Public Works	Bulldozer						
482	Public Works	Excavator						
486	Public Works	Loader		$208,511				
489	Public Works	Pickup				$78,362		
490	Public Works	Pickup					$91,140	
491	Public Works	Tandem						
494	Public Works	Excavator						
495	Public Works	Grader						
496	Public Works	Loader						

Unit #	Dept Name	Description	2020	2021	2022	2023	2024	2025
498	Public Works	Sweeper	$154,579					
501	Public Works	Pickup						
502	Public Works	Pickup						
503	Public Works	Tandem			$304,370			
505	Public Works	Tractor/Mower				$220,053		
506	Public Works	Pickup						
507	Public Works	Tandem					$337,416	
508	Public Works	Pickup				$52,155		
509	Public Works							
6001	Rec & Fac	Pickup				$53,974		
6002	Rec & Fac	Pickup						
6003	Rec & Fac	Pickup						
6004	Rec & Fac	Pickup						
6005	Rec & Fac	Enclosed Trailer						
6006	Rec & Fac	Dump Trailer						
AR68323	Building	Pickup				$49,372		
ATVT14	Fire	ATV Trailer						$4,880
ATVT24	Fire	ATV Trailer						
ATVT34	Fire	ATV Trailer						
BT17	Fire	Boat Trailer	$3,577					
BT27	Fire	Boat Trailer	$1,607					
BT37	Fire	Boat Trailer	$2,879					
FT	Fire	Forestry Trailer		$5,000				
FT	Fire	Forestry Trailer		$5,000				
HR1	Fire	Emg Pickup 3/4 T						
HR3	Fire	Emg Pickup 3/4 T						
P11	Fire	Fire Truck Pumper						
P21	Fire	Fire Truck Pumper	$61,939					
P31	Fire	Fire Truck Pumper						
P41	Fire	Fire Truck Pumper						
PT13	Fire	Fire Truck Tanker		$319,543				
PT23	Fire	Fire Truck Tanker						
PT33	Fire	Fire Truck Tanker						
PT43	Fire	Fire Truck Tanker						
R12	Fire	Emg Pickup 1/2 T						
R22	Fire	Emg Pickup 1/2 T	$56,508					$65,508

Unit #	Dept Name	Description	2020	2021	2022	2023	2024	2025
R32	Fire	Emg Pickup 1/2 T			$56,508			
R42	Fire	Emg Pickup 1/2 T						
ZAMB	Rec & Fac	Zamboni						

Appendix B – Best Management Practices

This interim deliverable represents an important step for the analysis of organizational structure and management of fleet-related activities. It allows the project team to report its preliminary findings and issues. In order to make the assessments of organizational, management and operational strengths and improvement opportunities, the project team developed a set of diagnostic and performance measures which we call “best management practices” against which to evaluate the various functions performed in Trent Lakes.

The project team utilized a variety of data collection and analytical techniques to compare current operations against measures of effective fleet operations in municipal organizations. This best management practices assessment provides measures of operation for all major fleet functions in the municipality. The best practices consist of:

- Statements of “best or prevailing practices” based on the study team’s experience in evaluating high-performing fleet operations in other municipal organizations.

- Statements of “best practices” or “recommended practices” or performance targets derived from national professional service organizations (such as APWA, and NAFA).

- Identification of whether the municipality meets these performance targets.

The purpose of this section is to develop an initial overall assessment of fleet operations and to identify any opportunities for organizational and operational improvements. The assessment is presented in a checklist format. The checklist identifies where the municipality does or does not meet the target. Descriptions for improvement opportunities are included after the checklist. The issues identified in this review will be analyzed further by the project team, leading to the development of the draft report.

Best Practice / Operational Target	Meets Target	Does Not Meet Target	Improvement Opportunity and Comments
Governance and Fleet Administration			
Fleet program is centralized to capture economies of scale.		✓	There is no centralization of fleet activities. Each division is responsible for their own assets and repairs and operates them in their own way.
Policies are in place that define program objectives, operator responsibilities, and service standards.		✓	There is a general policy on the “Use of Municipal Vehicles” but no written policies on vehicle maintenance, replacement, fuel, parts, etc. Fire has standards defined in Fire Pro.
A Driver Handbook outlines key driver responsibilities and drivers sign to acknowledge compliance annually.		✓	The Municipality has no driver handbook.
A formal process exists for ensuring compliance with Provincial and Federal commercial driver license requirements.		✓	Commercial vehicle licensing standards are not specifically mentioned in policy.
Procedures exist to monitor compliance with commercial pre-trip inspection requirements.	✓		Drivers do pre-trip inspections and a file is kept on each vehicle.
A formal fleet safety program exists for driver and operator training in general and for problem drivers.		✓	Driver training is a divisional responsibility.
A formal policy exists governing home assignment of vehicles and compliance with Revenue Canada tax reporting requirements.	✓		This is covered in the Vehicle Use policy.
Service level agreements (SLAs) are in place to ensure that the fleet organization and its customers are working in a collaborative manner.		✓	There are currently no SLAs in place with any customers and there is no fleet organization, as such.
Annual surveys are conducted to assess customer satisfaction.		✓	Customer satisfaction surveys related to fleet services have never been done

Best Practice / Operational Target	Meets Target	Does Not Meet Target	Improvement Opportunity and Comments
A formal performance measurement system is in place to track the effectiveness of service outcomes, and performance levels compare reasonably well to industry benchmarks.		✓	No performance management process is in place.
Asset utilization policies and guidelines are clearly defined to ensure that vehicles and equipment are allocated properly based on job requirements. Utilization thresholds are in place and enforced.		✓	There are general guidelines with regards to vehicle replacement. A utilization review has never been conducted.
Processes are in place to capture utilization data from available sources and to validate and analyze the data.		✓	Each division tracks odometer meetings individually and there is no central repository of this information. Fire has their own.
Motor Pool vehicles are available for occasional transportation needs. Motor Pools reduce the number of assigned vehicles in the fleet and reduce mileage reimbursements.		✓	There is no motor pool.
The fleet program is operated as an internal service fund.		✓	The fleet is budgeted for in the annual budget process.
A cost charge-back system is in place that promotes transparency and incentivizes fleet users to reduce ownership and operating costs.		✓	There is no charge-back system in place for fleet.
A replacement policy is in place and asset replacement cycle guidelines reasonably follow industry norms.	✓		The project team will evaluate replacement cycles against industry standards in the next phase of the project.
A multiple-year fleet equipment replacement plan has been developed to identify future peak year funding requirements so that this can be dealt with in a planned manner.	✓		The project team will evaluate the adequacy of replacement funding levels in the next phase of the project.
Acquisition and Disposal			

Best Practice / Operational Target	Meets Target	Does Not Meet Target	Improvement Opportunity and Comments
Focus is on matching vehicle design to meet specific customer job requirements and customers are given ample input into the specification process.		✓	Most Divisions purchase what they feel they need with no central vetting.
Non-technical requirements such as parts lists, repair manuals, diagnostic tools, and training are included in vehicle specifications.	✓		
Cooperative purchasing agreements are used in order to take advantage of volume pricing.	✓	✓	Divisions have used other municipal contracts for some purchases.
Vehicle upfitting processes minimize the use of in-house resources for vehicle upfitting and put newly acquired vehicles into service as quickly as possible. When post-delivery upfitting is necessary, ensure that the associated costs are captured and codified properly in *FMIS* and capitalized where appropriate.	✓		
Vehicle decommissioning practices ensure that vehicles are disposed of in the most efficient and cost-effective manner possible. Vehicles determined to no longer be needed are physically removed from service to control fleet size.		✓	The Municipality regularly retains vehicles that have been replaced at the end of their formal lifecycle.
Maintenance and Repair			
Staffing levels are consistent with the size and type of vehicles in the fleet.		✓	There is a single position for a mechanic and that position is currently vacant. An analysis of staffing adequacy will be done in the next phase of the project.
Ratio of supervisory and support positions to technicians is reasonable.		✓	One foreman is informally responsible for fleet activities in Public Works.

Best Practice / Operational Target	Meets Target	Does Not Meet Target	Improvement Opportunity and Comments
A comprehensive PM program is in place that complies with manufacturer recommendations. Customers receive notification of scheduled service dates and compliance levels are 95% or better.	✓	✓	Each Division treats PMs differently and the adherence to OEM guidelines is not consistent.
Outsourcing v. Insourcing processes determine the best option (capability, cost, downtime, etc.) for undertaking a repair. Fleet uses outsourcing to manage peak workloads.		✓	Public Works outsources some work and the other Divisions outsource almost all work. There is no overall municipal strategy to determine the most economical approach.
Shop business hours have been set for customer convenience.	✓		The Municipal shop is only used by Public Works and is open during work hours.
Customers are always called when repairs are complete.	✓		
Field service is available for roadside breakdowns and construction equipment.	✓		
Warranty recoveries are actively pursued for both repairs and parts.	✓		
A formal skills assessment and training plan has been developed to keep employees current with changes in the fleet management industry.		✓	No formal training plan is in place for technicians or others involved in fleet management.
Repair parts are readily available through a combination of efficient stockroom operations and just in time delivery from parts suppliers.		✓	There is no positive control of PW inventory as the parts room is fairly ‘open’ due to minimum manning. Parts are allocated on purchase, so records are not very accurate.
Fuel management practices are in place to ensure competitive pricing, security against theft, ensure that fuel sites are well maintained, pumps and equipment are fully operational, storage tank integrity is monitored, and the sites are in full compliance with all federal, state, and local government regulations.		✓	Fuel is dispersed amongst four sites and all records are manual.

Best Practice / Operational Target	Meets Target	Does Not Meet Target	Improvement Opportunity and Comments
Facilities are designed and built to provide adequate working space for maintenance technicians. Work bays are large enough to accommodate the type of equipment assigned to the shop and to provide safe working distances between bays. Supply hoses and electrical outlets are of industrial quality and easily accessed. The building has adequate and properly designed storage for tools and supplies. The entrance/ exit to bays are traffic friendly and avoid multiple vehicle movements. The building, offices, bays, doors, and lighting are all fully functional and in good repair.		✓	There is no single facility with enough space to maintain the entire fleet.
Shop tools and equipment are available to allow mechanics to perform work efficiently and safely.	✓		The Public Works Shop has appropriate tools and equipment are available.
Management Systems			
A fleet system is in place that uses modern technology and provides up to date functionality for asset management, maintenance management, performance measurement, and cost reporting.		✓	There is no Fleet Information Management System in place. Laptops with the MESH system are used by some Divisions for pre-trip inspections.
Data integrity procedures produce accurate and timely fleet information.		✓	There is no central source of fleet data.
Access to the fleet system is readily available to all staff, including parts clerks and technicians.		✓	There is no FIMS.
All members of staff have been appropriately trained in the use of the fleet system.		✓	There is no FIMS.
A fuel management system is in place.		✓	There is no fuel system in place
The fuel system has a fuel card assigned to each vehicle and a secure PIN for each driver.		✓	There is no fuel system in place

Best Practice / Operational Target	Meets Target	Does Not Meet Target	Improvement Opportunity and Comments
A telematics system is in place to improve routing and scheduling of services, identify driver training issues, and provide timely fleet data.		✓	Divisions are trialing the MESH system.
Information produced by systems are routinely used to make management decisions and reports are provided to customer departments.		✓	

Based upon the assessment presented in this table, there are many opportunities for improvement identified for the fleet program. These changes may increase efficiency and effectiveness, improve operations and accountability, and/or enable greater use of technology. Each potential improvement opportunity, and others that may be identified through further analysis, will be evaluated during the next phase for development of specific recommendations.