September 2011

GREEN FLEET PLAN

The Corporation of the City of Sault Ste. Marie

Prepared by:

Municipal Environmental Initiatives Committee

Fleet Management Sub-Committee

Executive Summary

In March 2010, City Council carried a resolution approving the development of a corporate Green Fleet Plan, which complements the effort to reduce the corporate carbon footprint. The City of Sault Ste. Marie began with the lease of a hybrid to show commitment to utilizing alternative vehicles, and is exploring additional areas to maintain this momentum. Greening the fleet can assist in improving its efficiency, reduce operating and capital costs, fuel consumption and subsequent greenhouse gases.

The City of Sault Ste. Marie has 365 vehicles and 165 pieces of miscellaneous equipment. Fuel consumption is necessary to provide the community a level of service that is expected from the Municipality. The City of Sault Ste. Marie utilizes over 2.76 million litres of unleaded gasoline, clear and coloured diesel, and biodiesel. In 2007, the benchmark year, fuel consumption produced 7,295 tonnes of eCO_2 with costs of over $2.5 million dollars.

The Green Fleet Plan highlights the City's current green initiatives, fleet profile, and future strategies to improve the efficiency of the fleet. Strategies include: driver education; vehicle replacement assessment; traffic control; vehicle efficiency; monitor and track data and information; incentives; remote fuel and materials sites; auxiliary heating and cooling; anti-idling policy and procedures; and route planning and scheduling.

Cost estimates for each strategy will be explored and those deemed cost effective and feasible will be brought back to Council for consideration and approval. Various pieces of information will be collected and measured to determine if this plan's objectives were met, including fuel consumption, fuel prices, weather, staff trained, total vehicles, average age of fleet, and engine hours where applicable. Regular reporting will be completed with an implementation update summarizing the success and challenges.

Acknowledgements

The Municipal Environmental Initiatives Committee and Fleet Management Sub-Committee wishes to thank those who contributed ideas, input and data to this plan, especially:

- Brian Avery, Mechanical Foreman, Equipment and Building Division;
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- Mike Blanchard, Manager of Equipment and Building Maintenance, Equipment and Building Division;
- Bob Camirand, Shop Foreman, Transit Division;
- Don Elliott, Director of Engineering Services, Engineering and Construction Division;
- Bill Freiburger, Commissioner of Finance, Finance Department;
- Tim Gowans, Senior Purchaser, Purchasing Division;
- Don Maki, Chief Building Official, Building Division;
- Brad Miller, Training Supervisor, Transit Division;
- Don Scott, Manager of Transit and Parking, Transit Division;
- Andy Starzomski, Manager of Traffic and Communications, Traffic Division;
- Jim St. Jules, Assistant Fire Chief, Support Services Division, Fire Services; and
- Enzo Tridico, Equipment Mechanic, Equipment and Building Division.

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Introduction

The rising cost of fuel and growing concerns related to air quality are evoking many changes in fleet management. With the Canadian transportation sector responsible for 26%[1] of total GHG emissions, there is an opportunity for fleets across the country to reduce their impact. Many Ontario communities have developed green fleet plans, including North Bay, Thunder Bay, Burlington, Hamilton, Oakville, Ottawa, and Toronto.

The City of Sault Ste. Marie's Municipal Environmental Initiatives Committee is currently developing plans, as per City Council resolution, to reduce the corporate carbon footprint. Part of the plan is to reduce the greenhouse gas (GHG) emissions, fuel consumption and related operating costs from the use of corporately owned and operated vehicles and equipment. Approximately 40% of the corporate carbon footprint is attributed to fuel consumed by the City's fleet and equipment. The City of Sault Ste. Marie would like to demonstrate their environmental leadership and provide an example for local citizens and businesses to follow.

Fuel consumption is a reality for municipalities and is necessary to provide the level of service that citizens want and expect. However, there are ways to reduce operating costs and GHG emissions without compromising service. Technology, innovation and training are all required to optimize the fleet and its operators. A coordinated approach from various departments will be required in order to efficiently and effectively purchase, manage and retire the fleet.

This Green Fleet Plan will highlight current and future strategies to reduce GHGs and optimize fleet operations. In order to identify these items for the City of Sault Ste. Marie, a Green Fleet planning session was held in April, 2010. During this session, staff responsible for fleet management and operations gathered together to determine the goals and strategies to achieve set targets outlined below. Strategies outlined in this report will provide immediate low costs solutions, where others may be implemented over the long-term or prove unfeasible.

1 Environment Canada, Greenhouse Gas Division. *National Inventory Report 1990-2005: Greenhouse Gas Sources and Sinks in Canada*. Ottawa, Environment Canada, 2007 (Cat. No. En81-4/2005E, Table 3-4).

Goals

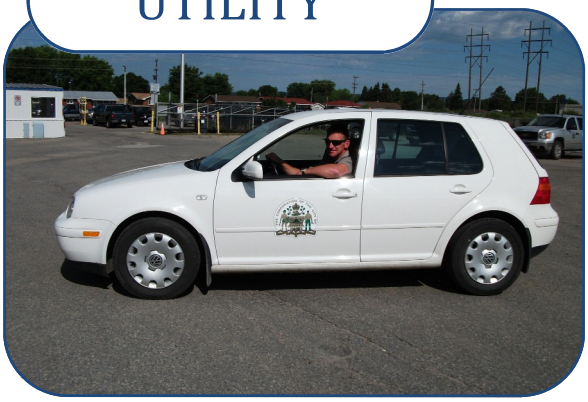
- Reduce fuel consumption;
- Reduce operating costs;
- Reduce capital costs;
- Reduce GHG emissions;
- Raise awareness through local media;
- Utilize alternative fuels;
- Build teamwork;
- Show leadership;
- Gain support and build credibility; and
- Monitor, reduce and maintain average age of fleet

SERVICE

Objectives

- Target 5% reduction of total fuel consumption over 1 year;
- Reduce the number of unnecessary kms driven and hours operated;
- Reduce unnecessary idling;
- Reduce fuel consumption by 26,000 L at Transit Services; and
- Train City staff.

UTILITY



Current Initiatives

Prior to the development of this Plan, the City of Sault Ste. Marie implemented initiatives to improve the efficiency of the municipal fleet, and reduce GHG emissions, fuel consumption, operating costs and servicing. The following initiatives will complement the strategies outlined in this plan.

Idle Free Sault Ste. Marie

In May 2009, a proclamation was endorsed by Council to encourage City staff to turn off their vehicles in an effort to eliminate unnecessary idling.

Promotional material including stickers, keychains and hats were utilized as visual reminders, and galvanized signage was placed at the main entrances of many City facilities creating "Idle Free" zones.

Transit Services has implemented changes based on best practices of other communities. Buses are no longer idling between April 1 and November 1 if parked at the Terminal for more than 3 minutes.

Public Works utilizes Engine Control Modules (ECM) to collect data such as idle times, which is downloaded on a regular basis. The ECM is also programmed to shut down the vehicle after 10 minutes of idling.

Preventative Maintenance

In order to prevent breakdowns and to extend the life of the equipment and vehicle, the following regular maintenance is completed:

- Tire pressure checks;
- Service i.e. oil changes, 300 hour service;
- Oil sampling;
- Exhaust emission testing; and
- LED light replacement.

Additional efforts are made with the reuse of waste oil and waste oil containers, and the purchase bulk synthetic oils.

Transit Services Preventative Maintenance Policy involves the use of high quality lubricants which will subtly reduce the wear and tear on the engines. Stainless steel components are included in new bus specifications as much as possible to reduce the impact of corrosion from road salt in the winter. All buses are taken off the road every six months and are then subjected to a complete mechanical inspection to ensure all components are in good shape.

Current Initiatives

Training

Managers, supervisors, operators, and students all receive training on various topics throughout the year, and the City's idling program continues to be incorporated where possible (e.g. staff meetings, defensive driving).

The Transit Services Training Supervisor, Brad Miller, participated in the SmartDRIVER for Transit Train-the-Trainer workshop in November 2009. Information gained at this course is now incorporated into operator training, as driver behaviour can influence fuel economy and vehicle performance. Training Supervisors also use information from the SmartDriver Instructor's Guide for Heavy Vehicles in their programming.

On occasion experts are brought in to offer their expertise. For example, in April 2009, the City of Sault Ste. Marie hosted Natural Resources Canada's Fuel Management 101 workshop. Staff from various City departments attended and gained tools that will enable them to build a Fuel Management Plan for the municipal fleet.

Exhaust and Filters

Two buses, one pumper, and six Public Works vehicles are currently equipped with particulate filters. A particulate filter collects and oxidizes carbon to remove matter from the exhaust utilizing "active regeneration", a process that increases the heat to oxidize excess carbon in the participate filter. New vehicle acquisitions include this technology where applicable.

Transit Services has auxiliary heaters, including Espar and Webasto models, in over half of their fleet, and EMS have equipped all ambulances with Espar Heater Systems. Diesel engines have become more efficient and produce less waste heat requiring supplemental heating for the interior. Auxiliary heaters can also assist with heat loss during operation (i.e. picking up passengers at a bus stop). These heaters are now being included in the vehicle specification when acquiring new units.

Diesel Exhaust Fluid (UREA), a liquid agent that is utilized in vehicles to reduce the nitrogen oxides emitted, is now included in new heavy duty vehicle specifications. Diesel Exhaust Fluid assists vehicles in meeting the emission standards.

Current Initiatives

Capital Renewal

Right sizing vehicles, replacing older equipment, and multi-tasking the fleet are all current practices across the Corporation. For example, Sault Ste. Marie Police Service switched from the Crown Victoria to the Dodge Charger due to vehicle availability and improved fuel efficiency.

Fire Services has a capital renewal plan extending to 2031. Pumpers are replaced every 15 years and Tankers every 20 years in order to maintain their insurance class rating. Ambulances are replaced with 50% assistance from the Ministry of Health and Long Term Care (MOHLTC) with the oldest vehicle being 7 years old.

Public Works has a capital renewal procedure established in 2002 and revised in 2007 that outlines the general characteristics for replacement of vehicles and equipment. This listing is compared against Ministry of Transportation replacement cycle. Transit Service's replacement schedule is outlined as one bus per year in the Corporate Strategic Plan, but is dependent on available funds.

Fleet Challenge Ontario Municipal Fleet Review program was completed. Data was collected and submitted for analysis. A detailed set of reports were provided to the municipality outlining current fleet characteristics, and recommendations to reduce emissions, fuel and operating costs.

Hybrid Vehicles

In 2007, the City introduced its first hybrid vehicle, the Toyota Prius. This vehicle supported the City's commitment to becoming an environmental leader in the community. The City's Toyota Prius has maintained a fuel economy of 5.9 L/100kms travelling a total of 48,816 kms. Based on this fuel economy 2,880 litres of fuel has been consumed. In 2010, a second hybrid was introduced, the GMC Sierra pick-up truck. Over the course of 10 months the vehicle travelled 42,070 kms and has an average fuel economy of 12.8L/100 kms. In comparison, two other non-hybrid GMC Sierra had an average fuel economy of 15.9 L/100 kms and 18.4 L/100 kms. The City also applied and received a $2,000 Retail Sales Tax (replaced with the Harmonized Sales Tax on July 1, 2010) rebate for this vehicle.

Current Initiatives

Data Collection & Monitoring

Grey Island is a vehicle tracking technology that utilizes Global Positioning System (GPS). Public Works and Transportation utilizes it for route planning, and also accountability tool with regards to customer complaints, accidents investigation tool and verification tool. All ambulances are equipped with Grey Island, and have assisted with vehicle theft.

Gasboy is a petroleum dispensing system that tracks fuel usage by vehicle. Each vehicle is issued a key and manages the distribution of fuel. Vehicle hours are tracked and flags vehicles ready for regular preventative maintenance. Data from Gasboy is organized into a spreadsheet and uploaded into WorkTech.

WorkTech, Work Manager is software that tracks Public Works staff resources, vehicle and fleet assets, and utilization. Work orders, fuel consumption, operating hours, kilometers, license number, fuel type, budgets and costs, internal and external rental rates for equipment are tracked in the management system. The software also tracks values and replacement costs, and provides an analysis for useful life. It provides a history of maintenance, repairs, and recurring preventative maintenance, which assists in identifying vehicles that require reassignment or replacement.

Route Planning

Public Works separates the City into three areas, each with an Area Supervisor. Streets are prioritized based on criteria and discretion of supervisors. Routes are prepared for plowing, snow removal, sidewalks, hills and bus stops.

Transit has pre-established routes for traditional service. Eight routes cover over 170 kilometers. Para bus services are offered on an as needed basis.

Emergency vehicles utilize major artery roads during their operation. It is important to reach the location as quickly as possible in the event of an emergency. Fire Services vehicles respond from areas closest to the incident. EMS vehicles are provincially dispatched and the closest available ambulance responds to the call.

Biodiesel

Biodiesel is naturally-sourced fuel that is often blended with conventional diesel to assist in reducing GHG emissions associated with exhaust. Public Works and Transportation completed biodiesel trials in their fleets. Public Works continues to utilize a B5 blend in two heavy duty vehicles and monitoring outcomes. Transit Services is now fueling all qualifying buses with a biodiesel blend between 5% and 20% depending on the season.

Current Fleet

The City of Sault Ste. Marie has 365 vehicles and 165 pieces of miscellaneous equipment, including chainsaws, trimmers and generators. Table 1 summarizes the fleet size by category, including light duty (LD), heavy duty (HD), off-road vehicles (OR), watercraft (WC), full-size bus (FSB), medium size bus (MSB) and para bus (PB) that utilize clear, dyed and unleaded gasoline. There are some vehicles that would be considered medium duty, but are included elsewhere based on functionality. Miscellaneous equipment is not included in the totals. Total (T) vehicles and average age (AA) are also highlighted. Average age is based on all vehicles in the fleet, but could vary depending on vehicle type.

Table 1 City of Sault Ste. Marie Fleet Size (2010)

Department	Unleaded				Diesel							
	LD	HD	OR	WC	LD	HD	OR	FSB	MSB	PB	T	AA
Cemeteries	7	-	-	-	-	1	11	-	-	-	19	6
CSD	4	-	-	-	-	-	-	-	-	-	4	12
EMS	2	-	-	-	10	-	-	-	-	-	12	5
Engineering	9	1	-	-	-	-	-	-	-	-	10	8
Fire	9	1	-	2	1	10	-	-	-	-	23	10
Landfill	4	1	3	-	-	7	3	-	-	-	18	8
Ontario Works	2	-	-	-	-	-	-	-	-	-	2	10
Parks	37	1	4	-	-	3	13	-	-	-	58	7
Police	18	-	-	-	-	-	-	-	-	-	18	2
Public Works	44	11	4	-	1	28	72	-	-	-	160	10
Transit/Parking	5	-	-	-	-	-	-	27	3	9	44	13
Total	138	15	11	2	12	49	99	27	3	9	365	7

Personal vehicles are utilized for corporate business (e.g. building inspectors) and kilometres travelled are claimed for a flat rate. In 2010, 141,526 kilometres were claimed at a cost of $70,763. An average fuel economy of 10 L/100km (based on building inspectors vehicles) was applied in order to reach 14,152 litres (L).

Current Fleet

Building Division

The Building Division is given separate consideration because staff utilize personal vehicles for daily work . Table 2 highlights the characteristics of the Building Division fleet. Primary work vehicles were identified by staff, but secondary vehicles are utilized.

Staff are paid $0.50 per km for their recorded mileage, as per the collective bargaining agreement and is subject to review, as applicable. In 2010, Inspectors and By-Law Enforcement staff traveled approximately 45,774 km producing approximately 12 tonnes of GHGs and received $22,887 in payment (approximately 32% of mileage costs) ,including kms traveled for training and workshops.

After a site inspection, Building Division staff input data into their laptops which requires the vehicles to remain powered. Idling impacts the vehicle's fuel economy, operating costs and GHG emissions.

Social Services

Social Services staff from Ontario Works and Social Services Divisions also utilize personal vehicles for daily work, including Employment Resource and Employment Placement staff, Case Managers, Property Managers and Tenant Support Clerks. Mileage rates and payment apply as per the corporate vehicle policy and collective agreement.

Additional mileage is claimed by City staff; however, it is not done so on a regular bases. On occasion staff are required to travel off-site for meetings and will monitor and record kms travelled. If staff are permitted to utilize their personal vehicles for out of town travel, i.e. conferences, workshops and training sessions, then the City's travel policy comes into effect. This policy is reviewed and updated periodically.

Table 2 Building Division Fleet (2010)

Year	Make	Model	Engine Size (L)	Drive Train	Cylinders	Fuel Economy[2] l/100km
2005	GMC	Canyon	3.5	Auto	5	13.1
2005	Chevrolet	Cobalt	2.2	Manual	4	9.5
2005	Chevy	Equinox	3.4	AWD	6	12.7
2005	Ford	F150	4.6	Automatic	8	16.0
2006	Ford	Ranger	2.3	Automatic	4	11.1
2007	GMC	Sierra	5.3	Auto 4x4	8	15.0
2010	GMC	Terrain	2.4	Auto/AWD	4	10.1

2 Natural Resources Canada. 2011. Transportation: Fuel Consumption Ratings. [Online]. Available at: http://oee.nrcan.gc.ca/transportation/tools/fuelratings/ratings-search.cfm. Date Accessed: 18 August 2011.

Fuel Consumption

Fuel consumption is necessary to provide the community a level of service that is expected from the Municipality. Table 3 shows that the City of Sault Ste. Marie utilizes over 2.76 million litres of unleaded gasoline, clear and coloured diesel, and biodiesel. Fuel consumption produced 7,295 tonnes of eCO_2 with subsequent costs of over $2.5 million dollars. Public Works and Transportation Department operate approximately 82% of the vehicles owned by the City and utilize 83% of the fuel.

Table 3 Fuel Usage by Type and Division (2007)

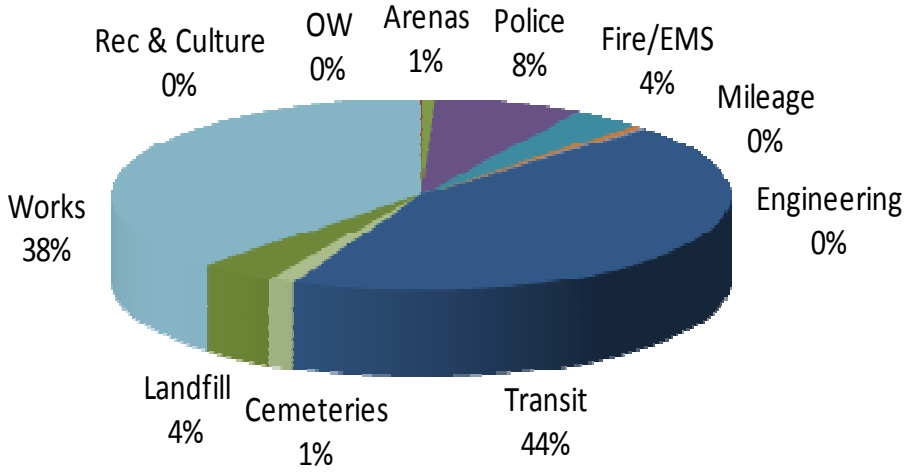
	Unleaded (L)	Cost ($)	Diesel (L)	Cost ($)	Bio-diesel (L)	Cost ($)
CSD - Arenas	15,239.51	15,779.61				
CSD – Marinas*	60,395.40	58,738.72	33,542.60	29,569.00		
CSD - Rec & Culture	264.46	297.46				
Engineering	5,993.33	6,285.91				
Fire/EMS	20,880.60	19,682.38	77, 615.60	69,747.97		
OW	2,697.28	2,810.54				
Police	208,416.31	211,228.94				
PWT - Cemetery	18,971.60	18,063.71	17,527.90	13234.50		
PWT - Landfill			105,216.40	81345.73		
PWT - Works	277,296.38	264,170.29	732,727.30	607,963.54		
PWT - Transit	1,203.72	1,241.43	1,165,356.89	1,051,192.26	416.00	487.05
Mileage**	14,211.07	58,617.77				
Total	625,569.65	656,916.76	2,131,428.60	1,853,423.38	416.00	487.05

* Purchase costs only. Price does not reflect revenue from the sale of fuel. Not utilized by the City fleet. Resale to patrons.

** Mileage is not a Division of the City, but reflects the fuel consumed by employees utilizing their personal vehicles for work purposes. Individual claims are made by the employees and approved by Department heads.

Fuel Consumption

Figure 1 Total Fuel Usage by Division (2007)



Strategies

A brainstorming session was held with appropriate representatives from various Departments to determine potential strategies that staff would like to see implemented. Each participant was asked to identify at least one strategy that will compliment existing strategies. The group was then given colour coded stickers ranging from 1 through 4, 1 being the most important. Each participant placed their numbers beside what they believed were the 4 most important strategies. Each number was given a weighted value 1 (most important) equaled 4 points; 2 equaled 3 points; 3 equaled 2 points; and 4 equaled 1 point. The totals were tallied and ranked in order of priority.

Assessment Criteria

Participants were asked to think of the following assessment criteria when ranking their strategies: feasible; attainable; cost effective; reliable; sustainable; replicable; and practical. Table 4 outlines all the potential strategies for the Green Fleet Plan and the scoring matrix.

Strategies

Table 4 Green Fleet Potential Strategies and Scoring Matrix

Strategies / Rating	1	2	3	4	Total
Driver Education	X X X	X X		X X	20
Vehicle Replacement Assessment	X X	X X		X	15
Traffic Control	X X X				12
Vehicle Efficiency		X	X X	X X	9
Monitor & Track Data			X X X X		8
Incentives	X			X X	6
Remote Fuel & Material Sites			X X X		6
Auxiliary Heating & Cooling		X		X X	5
Anti-Idling Policy & Procedure	X				4
Route Planning & Scheduling		X			3
Fuel Usage Data Collection		X			3
Data Collection & Distribution Technology		X			3
Round About		X			3
Work from Home/Remote Work			X		2
Multi Tasking Vehicles				X	1
Improve Cycling Facilities					0

Driver Education

Training sessions with supervisors and operators is essential, as driver behaviour can influence the efficiency and fuel economy of the vehicles. Defensive driving training assists with improving health and safety.

Actions:

- Annually schedule training sessions to review defensive driving, vehicle maintenance, and unnecessary idling information.

Participants: Training Staff, All Departments

Incentives

To develop staff buy-in through the use of incentives e.g. carpooling parking spots, fuel economy competition. Staff need to have a stake & ownership in the project to motivate and entice participation.

Actions:

- Brainstorm low-cost incentives to offer employees (e.g. competition-based initiative).

Participants: Environmental Initiatives Coordinator

Strategies

Vehicle Replacement

There are policies and procedures in place in some Departments that identify vehicles that require replacement and ensure the services provided are maintained. This helps ensure a younger fleet, which is often more efficient. Maintaining a young fleet has been recommended for keeping operating costs down and maximizing performance.

Actions:

- Update and develop corporate vehicle replacement policy and procedures;
- Replace oversized/undersized vehicles to maximize job performance and ensure rightsizing of fleet;
- Replace older inefficient vehicles with new more efficient models or alternative vehicles (i.e. hybrid, electric, etc.), as funds are available;
- Monitor and track personal vehicle mileage relative to corporate fleet operating costs and GHG emissions; and
- Include efficiency standards in vehicle and equipment specifications, including EnerGuide fuel economy ratings.

Participants: Fleet Manager – All Departments, Purchasing

Traffic Control

Improve efficiency of traffic services to reduce idle times e.g. signal optimization and coordination. Establishing a Traffic Control Centre can improve the coordination of signals, data collection and response to failed signals, and reduce congestion, fuel consumption, emissions, travel time, and idling.

Actions:

- Coordinate and optimize traffic signals to improve flow of traffic;
- Obtain a computer controlled and user activated system that would allow the collection of accurate, real time, traffic information and optimization; and
- Explore potential funding opportunities that will allow for a financially viable business case for a Traffic Control Centre.

Participants: Traffic

Strategies

Vehicle Efficiency

Efficiency is choosing vehicles that will complete the same task without sacrificing performance, while reducing fuel and GHG emissions. Increasing overall efficiency of the fleet can be achieved by reassigning or eliminating extra vehicles and equipment. Replacement or new acquisitions should include efficiency specifications.

Actions:

- Right size vehicles for job functionality and operator, and maximize loads to reduce unnecessary trips;
- Review vehicle and equipment usage and identify opportunities for downsizing;
- Track fuel economy in the fleet to identify inefficient vehicles;
- Obey speed limits;
- Include efficient and innovative technologies i.e. LED lighting, diesel particulate filter, diesel exhaust fluid (UREA), and exhaust gas recirculation (EGR) in vehicle specifications;
- Minimum fuel efficiency standards in vehicle specifications for tenders; and
- Update and develop preventative maintenance schedules, including key performance checks (i.e. tires).

Participants: Fleet Manager—All Departments, Purchasing

Monitor & Track Data

Collect and analyze data from various sources, including invoice data, engine control module (ECM), and WorkTech.

Actions:

- Staff or dealers to retrieve relevant information from the ECM bi-annually on applicable vehicles;
- Explore alternative forms of information collection e.g. Strategic Mapping Inc. / DataTrans. Investigate a pilot project/trial of equipment; and
- Have additional Departments utilize WorkTech to provide consistent information across the Corporation.

Auxiliary Heating/Cooling

An auxiliary power unit will assist in warming the engine and the interior while the engine is shut down. This will assist in reducing idle time for vehicle warm up. Auxiliary heaters are separate from auxiliary power units because they are only powered when the vehicle is running.

Actions:

- Obtain costs and pilot an auxiliary power unit in one of the Public Works and Transportation vehicles.

Participants: Public Works and Transportation

Strategies

Remote Fuel/Material Sites

Operations may be more efficient if remote fuel and material sites were available.

Actions:

- Determine costs to complete a feasibility study to determine potential costs savings related to remote fueling and material sites, and confirm requirements from the Ministry of Environment;
- Complete feasibility study if cost effective; and
- Explore benefits and disadvantages to having other Departments fuel at the remote sites (i.e. Public Works) instead of at the vendor.

Participants: Public Works

Anti-Idling Policy & Procedures

Idling produces a fuel economy of o L/100kms. In order to reduce unnecessary idling, policy and procedures must be developed providing specific guidelines for compliance.

Actions:

- Develop an Idle Free Policy for City staff.

Participants: Senior Management, Fleet Manager – All Departments, Environmental Initiatives Coordinator

Route Planning & Scheduling

Route planning is a way to optimize time and limit kilometers, through travelling the shortest and most efficient route.

Actions:

- Optimizing vehicle routes and scheduling;
- Minimize # of unproductive trips;
- Reduce unauthorized personal use; and
- Investigate the use of GPS units, where applicable.

Participants: Public Works and Transportation, Fire Services

Exploring and implementing feasible strategies will assist the City in building a more efficient fleet. Benefits of an efficient fleet include reduced GHG emissions, operating and capital costs, noise, leaks and spills, and improved air quality.

Method of Evaluation

Over time, data will be collected from relevant vendors and reductions/ increases in consumption will be noted. Consumption data will be utilized as the benchmark given that fuel prices are volatile. Weather will have to be considered as a variable to savings, and operating cost savings/increases will be calculated from average fuel prices. Other indicators will include number of staff trained, total number of vehicles, average age of fleet, and engine hours where applicable. Engine hours is a more accurate measurement of vehicle operation, as some vehicles may be utilized all day long, but only travel a few kilometres.

Implementing and pursuing the identified actions will be dependent on available funds and Council approval. Achievements can be made, but some barriers may be encountered.

Barriers & Challenges

Average Age

The average age of the City of Sault Ste. Marie's fleet varies by Department, and is often controlled by the respective vehicle replacement policies. A young fleet can reduce the chance of failure, "improved fuel economy, emissions, safety, power [and] performance, comfort, drivability, and reliability".

Transit Services provides an example of how an older fleet can impact municipal services. There are buses in the fleet that are beyond the normal retirement age of 12 years and implementing new programs can be limited. For example, Transit Services ran a successful Idle Free campaign, but due to fleet performance could not continue the program during the winter months. Fuel economy and emissions are also higher in the 21 year old, 2 stroke engine buses.

Predictability in the Transit Fleet is also critical. For example, if there is a failure on a route an additional bus has to be dispatched to the area, passengers require transfer to a new bus, and the bus would have to be towed to the garage for inspection and repair. Older vehicles in all departments have more frequent maintenance incidents, and parts are also more difficult to obtain.

Barriers & Challenges

Data

Methods for data collection have changed over time, and assumptions must be made when data is not attainable. For example, staff mileage is recorded on an individual basis, and is paid out based on kilometers travelled. Total payout is easily attained via Dynamics (e.g. $50,000.00 / $0.50 = 100,000 kms). Various vehicles are utilized by staff utilize and fuel economy must be assumed to obtain consumption (e.g. 10 litres per 100 kms). Mileage rates change over time, so averages have been used.

Litres of fuel is collected by vendor and organized by individual department. However, this doesn't account for staff filling up at other departments fueling stations, and results in some departments reporting higher fuel consumption. Furthermore, not all vehicles are able to utilize available ECM controls to monitor and track at an individual scale.

Attitude

Staff needs to be involved in the process and feel that they have a stake in the outcome to ensure buy-in, especially when the vehicle is often the office of the employee. If programs are met with resistance and opposition it could compromise the outcomes. City staff must ensure an interdepartmental approach to developing a green fleet, as many strategies overlap Departments.

Funding

Budgets have been created and controlled on a departmental basis to acquire and maintain fleets and equipment. Funds may also be unexpectedly reallocated. For example, Transit Services required funds to upgrade existing infrastructure (e.g. fare boxes and next stop announcements) rather than replace existing units. Replacement procedures and policies assist with budgetary requirements, and some fleets receive assistance from external sources. However, external funding to obtain new equipment is often limited. Once those funds are no longer available the number of vehicles and equipment acquired may be reduced or eliminated.

Building a business case for vehicle and equipment replacement can be difficult if data related to life-cycle costs is limited. WorkTech provides a system for inputting life-cycle information and provides a means for analysis. However, not all Departments utilize WorkTech for all its functionality.

A completely green fleet is a moving target and over time there will be new technologies and innovations that can be incorporated (e.g. electric vehicles). As these become available, the City should actively engage in pilot projects. Procedures and policies need to be living documents in an effort to incorporate future changes.

Legislation, Regulations & Programs

Accessibility for Ontarians with Disabilities Act, 2005

The Accessibility for Ontarians with Disabilities Act is intended to remove barriers and develop and enforce standards related to customer service, information and communications, built environment, employment and transportation for people with disabilities. Standards are currently being developed and will indicate ways in which the fleet will need to comply. Transit Services is working towards accessibility, including two community buses, and Para Bus service that complements conventional service.

Ontario Bus Replacement

In 2002, a Bus Replacement Program was introduced in Ontario that provided financial assistance, one third of the cost of the bus, to improve the conditions of the transit sector. Improving the average age of the fleet can increase the reliability and availability of buses, as well as improving accessibility needs of passengers. In 2010, the Ontario Government cancelled this program, and now the City of Sault Ste. Marie, along with many other municipalities, will now have to reevaluate financing for fleet renewal.

Corporate Strategic Plan

The City of Sault Ste. Marie's Strategic Plan states that the corporation will be a leader in the provision of efficient, affordable and quality services supporting a progressive and sustainable community. Environmental stewardship is identified as a corporate value, using resources wisely to maintain and create a livable City for future generations, minimizing the footprint of our activities on the environment. Fleet operations will require consistency with the City's strategic plan, vision and values.

Drive Clean

Heavy duty diesel vehicles and buses across the province are required to pass emissions testing through Ontario's Drive Clean program. Emission testing is tied to vehicle registration, and is required annually beginning after the fifth calendar year of ownership. At this time, Sault Ste. Marie is not within the jurisdiction for testing of light duty vehicles. Emissions are regulated under the Environmental Protection Act, which prohibits excessive visible vehicle exhaust and the removal or alteration of emissions control equipment.

Legislation, Regulations & Programs

Health & Safety

The City of Sault Ste. Marie takes the health and safety of staff very seriously. Many policies and procedures have been developed to reduce injury, occupational illness and other accidental losses. Health and safety should be considered when selecting vehicles to complete tasks. Rightsizing vehicles for the job, but also for operator ergonomics, will promote a safer work environment. Many tasks will require the use of vehicles with large capacity (e.g. loaders, sanders) and others may utilize smaller vehicles (e.g. transporting the driver).

MOHLTC Ontario Provincial Land Ambulance and Emergency Response Vehicle Standard requires ambulances to meet performance tests. The MOHLTC also provides financial assistance to the Municipality (50%) through the Ambulance Subsidy Program and the other 50% comes from DSSAB. Ambulances are replaced on a 7 year cycle. Fire Services requires vehicles that are 15 years or younger to maintain Underwriters Insurance Front Line Standards.

Ontario Traffic Manual

Ontario Traffic Manual is a series of guides for traffic practitioners to follow when developing and implementing traffic related infrastructure and systems, including signs and signals. The City of Sault Ste. Marie will maintain consistency, as per the manual and staff discretion.

Incentives, Initiatives & Networks

The following are a list of financial incentives and networks that staff should renew or obtain membership on:

- Federation of Canadian Municipalities – Green Municipal Fund
- Ontario Ministry of Transportation –Transportation Demand Management Municipal Grant Program
- Ontario Sales Tax Rebate, Vehicle Acquisition Discounts
- Tax for Fuel Conservation is a cost applied to new passenger vehicles using 6.0 or more L/100 kms or SUVs using 8.0 or more L/100 kms[4].
- "Tax Credit for Fuel Conservation (TCFFC) of up to $100 is available to purchasers of new passenger cars that use less than 6.0 litres of gasoline or diesel fuel per 100 kilometres of highway driving.[5]"
- Ontario's Gas Tax Program - Transit
- Green Fleet Expo
- Canadian Association of Municipal Fleet Managers; Canadian Association of Fleet Supervisors; National Fire Prevention Association; Municipal Equipment & Operations Association, Canadian Urban Transit Association

4 Government of Ontario. 2009. Tax for Fuel Conservation. [Online]. Date Accessed 06 June 2011. Available at: http://www.rev.gov.on.ca/en/guides/rst/513.html.

5 Government of Ontario. 2009. Tax for Fuel Conservation. [Online]. Date Accessed 06 June 2011. Available at: http://www.rev.gov.on.ca/en/guides/rst/513.html.

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