



CITY OF KINGSTON
INFORMATION REPORT TO COUNCIL

Report No.: 10-079

TO: Mayor and Council
FROM: Denis Leger, Commissioner of Corporate Services
RESOURCE STAFF: Sheila Kidd, Director of Corporate Asset Operations
Robert (Bud) Steele, Manager of Fleet
DATE OF MEETING: March 23, 2010
SUBJECT: **Green Fleet Policy Information Report**

EXECUTIVE SUMMARY:

The Green Fleet Policy was adopted by Council in September of 2008. The purpose of this report is to update Council on the implementation of the policy during the first two years, 2008 and 2009.

RECOMMENDATION:

This report is for information purposes only.

AUTHORIZING SIGNATURES:

ORIGINAL SIGNED BY COMMISSIONER

Denis Leger, Commissioner of Corporate Services

ORIGINAL SIGNED BY CHIEF ADMINISTRATIVE OFFICER

Gerard Hunt, Chief Administrative Officer

CONSULTATION WITH THE FOLLOWING COMMISSIONERS:

Commissioner Beach, <i>Sustainability & Growth</i>	√
Acting Commissioner Willing, <i>Community Development Services</i>	√
Commissioner Leger, <i>Corporate Services</i>	N/A
Jim Keech, President, <i>Utilities Kingston</i>	√

(N/R indicates consultation not required)

OPTIONS/DISCUSSION:

The Green Fleet Policy was adopted by Council in September 2008 as a guide to assist the City in achieving significant reductions in its greenhouse gas emissions. The Green Fleet Policy outlines a vision and implementation plan that guides the City’s fleet towards vehicles and equipment that leave fewer negative impacts on the environment. The policy goal is to achieve a 10% reduction in carbon dioxide (CO2) emissions over a four-year period (2008-2011). The recommendations in the Policy are captured in three main categories related to: 1) vehicles 2) fuels and 3) management and operational practices.

The purpose of this report is to identify the actions taken in 2008 and 2009 on each recommendation within the three categories.

The chart below, taken from the Green Fleet Policy, indicates the CO2 reduction targets that could be achieved by 2011 if the City implemented the recommendations within the Green Fleet Policy, assuming the fleet will not increase in size between 2008 and 2011.

Summary of CO2 Reduction Opportunities Related to Green Fleet Policy Recommendations from 2008 to 2011

Actions	CO2 Reduction – kg	Financial Impacts
Replacement of vehicles with 7 HEV cars and regular pickup	-29,904	\$41,352 - \$55,352
Replacement of vehicles with 11 compact pickups and 7 HEV cars	- 76,944	(\$53,364 - \$67,364)
Using biodiesel (B20) for transit fuel	-840,246	N/A
TOTAL (based on recommended replacements)	-917,190 (10% reduction)	(\$53,364 - \$67,364)

Of the total target CO2 reduction of 917,190 over the four-year period, 92% or 840,246 is to be achieved by using biodiesel for transit buses. Further, the Green Fleet Policy notes that the City’s ability to reduce both GHG emissions and financial impact will depend on its ability to replace current vehicles with more fuel-efficient models within their classes.

Vehicles

Green Fleet Policy Recommendations:

- Vehicles due for replacement between 2008 and 2011 are to be replaced with fuel-efficient leading vehicles within their classes and that careful attention be given to hybrid models when financially viable and without impact on operational activities.*
- Pickup trucks are to be replaced with more compact and fuel-efficient models when possible.*
- Purchase of vehicles to be based on an RFP process rather than tender and that fuel economy be based on national class leader and become one of the main criteria for vehicle selection. Others should include maintenance requirements and possible operator ease of use (ergonomics).*
- Staff review opportunities to replace ¾-ton pickup trucks with ½-ton pickup trucks on a case-by-case basis at the time of replacement.*

March 23, 2010

- Page 3 -

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5. *Additional research and analysis should be conducted to identify potential ways to incorporate electric cars within the corporate fleet.*
 6. *Any vehicle being purchased by the city not deemed to be the most fuel efficient in its class be forwarded to Council for approval.*

Action Taken:

The policy acknowledges the opportunities to reduce GHG through vehicle replacement over the first three years is limited as some of the larger and specialized vehicles used by various City departments do not yet have efficient and/or hybrid replacement models on the market. Opportunities over the next several years are further limited, as most vehicles due for replacement are larger units such as single-axle 5-ton trucks, ¾-ton cube vans, etc.

For the years 2008 and 2009, the fleet policy identified five trucks that were due for replacement that could be downsized and 3 vehicles that could be added/replaced with Hydro Electric Vehicles (HEV's).

Of the five units identified for replacement only four reached the lifecycle criteria and were changed out. Of these, one vehicle was downsized to a compact pick-up. The remainders were replaced like for like due to operational needs. There were no hybrid cars added to the fleet; however the City purchased the most fuel-efficient vehicles within the Request for Proposals (RFP) specifications.

Fleet staff reviews opportunities to downsize vehicles with the respective departments on a case-by-case basis at the time of replacement. As per the policy, the final decision regarding vehicle specifications resides with the operating units based on operational requirements. The RFP process is used for all vehicle purchases and it incorporates maintenance requirements, operator ease of use (ergonomics) and fuel economy as part of the selection criteria.

Fleet staff continues to research and explore possibilities of incorporating electric cars within the corporate fleet. Hybrid Electric Vehicles are in the market place now and will be incorporated into the fleet where possible. Fully electric vehicles still present challenges regarding speed and maximum travel distances. These challenges must be resolved before becoming fully integrated into the market and subsequently considered for addition to the City's fleet. There are always new products coming on stream and Fleet will continue to review them as options for integration.

Types of Fuel**Recommendations:**

1. *Biodiesel (B20) made from recycled cooking oils and/or animal fat be purchased starting in 2009, to fuel transit buses. B20 should be monitored during the winter months to ensure there are no impacts on transit bus operations and reliability. The level of biodiesel should be adjusted should there be any adverse impacts on operations.*
2. *More research and review be conducted on the possibility of fueling other diesel powered vehicles (which are currently being fueled by coloured diesel) with biodiesel without adverse impacts on the operation.*
3. *Ethanol (E5-E10) be reviewed as an option as Ethanol has been legislated in Ontario. The City should attempt to source gasoline with up to 10% ethanol content provided that the Ethanol content can be shown to be from cellulosic and not from an edible food source.*
4. *Explore the possibility of having access to biodiesel fuel for all fleet through an RFI process. Potential impacts of various levels of biodiesel on smaller engines and operations should be reviewed prior to issuing an RFI.*

March 23, 2010

- Page 4 -

Action Taken:**Bio Diesel**

The Fleet group issued a Request for Proposals (RFP) in November 2008 requesting Bio-Diesel as identified above. At that time, the only Bio-Diesel available was rendered from soybean. The City received no response for B20 produced from recycled cooking oils and/or animal fat. A second RFP was issued in February 2010 to determine whether the market had developed and options had become available. The response to this RFP indicates that the required product, in accordance with the Green Fleet Policy, is now available in the market place. Our plan is to begin using bio-diesel for transit buses by summer 2010. To test the performance and impact of this fuel on our fleet we intend to use the B10 or B20 product during the warmer months and reduce to B5 in the winter.

Ethanol

Ethanol is available in some locations throughout Ontario however it is corn-based not cellulosic as indicated in City policy. Even the corn-based product is not currently available in Kingston through our present external fuel supplier. An inquiry has been made with Suncor, our external fuel supplier, and we have been advised that they hope to provide corn-based Ethanol at their Kingston outlets in the third quarter of 2010. At this time, there is no indication of when cellulosic-based Ethanol will be available.

Management and Operational Practices**Recommendations:**

1. *City continues to implement and monitor its anti-idling by-law with the exception of emergency services and that the City reviews the impact of the by-law on some services provided by Utilities Kingston and Public Works.*

Action Taken:

An update regarding the enforcement of the Idling By-law was presented to the EITP in July 2009 (Report No. 09-024).

2. *Maintenance practices be reviewed to identify additional opportunities to reduce GHG emissions. These practices or products should include vehicle lubricants and spark plugs.*

Action Taken:

As a result of the Green Fleet Policy recommendations, Fleet Services began using bio-degradable hydraulic fluid throughout the fleet in 2008. Large quantities of hydraulic fluid are required to operate accessories on most of our larger trucks as well as industrial equipment such as mowers, sidewalk plows, graders and sweepers.

3. *Review transit buses and identify alternatives (if available) through the transit service review.*

Action Taken:

There has been a significant change in the fleet dynamics over the last four years that supports improved fuel economy/GHG gains. Twenty-five percent of the transit fleet consists of mid-size buses. These smaller units have improved fuel efficiency over the larger 40' coaches.

March 23, 2010

- Page 5 -

Emission guidelines have changed considerably over the past few years and this has forced manufacturers to produce buses with reduced emissions. These advancements reduce greenhouse gas emissions every time older units are replaced with new units. In 2008 and 2009, six full-size buses that ranged in age between 18 and 22 years were replaced.

4. *Further investigate right sizing and downsizing of the fleet which includes a sharing/pooling system (where feasible) with City departments without adverse impacts on service levels. Also, identify detailed opportunities to right size vehicles. This review is to be conducted in collaboration with frontline staff to ensure that operations are not impacted by changes in vehicle sizes and availability. Information on proposed sharing/pooling system to be reported back to Council.*

Action Taken:

The front-line departments are responsible for determining their vehicle and equipment needs. Sharing of vehicles and equipment between departments or work groups is encouraged and does take place where and when possible.

5. *Maintain as much as possible the current number of vehicles in the corporate fleet. This should be accomplished through a sharing/pooling system.*

Action Taken:

Since the inception of the Green Fleet Policy in September 2008 to-date, there have been seven additions to the fleet from various departments within the Corporation. Requests for new fleet additions are scrutinized by staff and options are explored, prior to initiating the purchasing process.

6. *Provide Smart Driver training to staff including heavy-duty vehicle driver training and correct tire inflation training.*

Action Taken:

Smart Driver training is a unique combination of coaching and on-the-road training that can demonstrate how a driver can reduce fuel consumption significantly. To date, Smart Driver training has not been implemented however some components such as Smart Driving Skills and correct tire inflation have been provided to new hires within the Transit group. Currently, there is no formal plan to provide this training across the board.

7. *Ensure that all City non-emergency response vehicles purchases by all City departments be conducted in consultation with the Fleet Services Division to make sure that vehicles are class leaders in fuel efficiency.*

Action Taken:

Purchases for all departments, with the exception of Police and Fire, use Fleet Services for acquisitions.

8. *Explore the possibility of incorporating green fleet within contracted services.*

Action Taken:

The City's purchasing documents (RFPs and tenders) have been updated to include green products and services when and where available.

Summary

The chart below summarizes the results achieved in 2008/2009 versus the opportunities identified in the Green Fleet Policy, for the same period.

Actions		CO2 Reduction (kg)		Cost Reduction (\$)	
Opportunity	Actuals	Opportunity	Actual	Opportunity	Actual
Downsize 5 Trucks to Compact Pickups	Downsized 1 truck to Compact Pickup	(10,080)	(2,100)	\$(36,582)	\$(7,097)
Purchase 3 Hydro Electric Vehicles(HEV's)	0 HEV's purchased	(5,328)	0	31,164	0
Total Based on Vehicle Replacement Opportunities (5%)		(15,408)	(2,100)	(5,418)	(7,097)
Bio Diesels (95%)		(280,082)	0	N/A	N/A
		(295,490)	(2,100)	\$(5,418)	\$(7,097)

Despite limited opportunities in the first two years, staff has made some progress in 2008 and 2009 toward fulfilling the recommendations of the Green Fleet Policy. If the City is to fulfill the recommendations related to vehicles and management and operational practices outlined in the Green Fleet Policy, greater emphasis will be required by all business units to implement the policy recommendations in 2010, 2011 and on an ongoing basis. The implementation of bio-diesel for the transit fleet positions us well to substantially reduce GHG and demonstrate improved results for the next reporting period.

EXISTING POLICY/BY LAW:

By-law 2000-134, *a By-law to Establish Purchasing Policies and Procedures for the City of Kingston Green Fleet Policy for the City of Kingston*

NOTICE PROVISIONS: N/A

ACCESSIBILITY CONSIDERATIONS: This report is available in alternative formats upon request.

FINANCIAL CONSIDERATIONS: N/A

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Greg McLean, Supervisor By-law Enforcement & Animal Control
 Martin Brule, Driver Trainer

EXHIBITS ATTACHED: N/A