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## REGULAR COUNCIL

TO: **Mayor & Council**

DATE: **May 3, 2011**

FROM: **General Manager, Engineering**

FILE: **0360-20(fbc)**

SUBJECT: **E3 Fleet Gold Rating Award for Vehicle Fleet Management**

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## RECOMMENDATIONS

The Engineering Department recommends that Council receive this report as information.

## INTENT

The purpose of this report is to inform Council about an award that the City has recently received from the Fraser Basin Council in relation to the City's fleet of vehicles.

## BACKGROUND

The City's fleet of vehicles is managed and maintained by the Engineering Department's Operations Division. The Division has placed a strong focus on improving the performance of the fleet in relation to the City's sustainability objectives, including a more intense focus on greenhouse gas emissions. This focus is consistent with the Climate Action Accord that was executed between the City and the Province, which committed the City to achieving carbon neutral operations by 2012. To meet this commitment, the City of Surrey joined the Fraser Basin Council's E3 (Energy, Environment, and Excellence) Fleet program and began tracking annual greenhouse gas (GHG) performance of the fleet. The reduction of fleet GHG emissions is embedded in the recently adopted Corporate Emissions Action Plan (CEAP).

## DISCUSSION

The Fraser Basin Council's E3 Fleet Rating is Canada's premier green fleet rating and certification program that was designed and launched to provide a road map for fleet "greening" in public and private sector fleets. The E3 Fleet Rating system uses a point-based Rating System Checklist, much like the LEED program for green buildings. It rates fleet performance, with points granted for excellence in fleet management and demonstrated energy / emissions performance. Using this framework, fleets can be rated at the Bronze, Silver, Gold or Platinum level. E3 Fleet Rating is based on verification by a third party, who through a site visit verifies the E3 Fleet Standards. To maintain an E3 Fleet Rating status, the vehicle fleet must be rated at a minimum once every two years.

## City of Surrey Receives Gold Rating

The City of Surrey has achieved an E3 Fleet Gold rating from the Fraser Basin Council, which places Surrey among the top-rated green fleets in Canada. To date, the only other municipal fleets in Canada to receive the E3 Fleet Gold Rating are:

- City of Hamilton;
- Enbridge Utility;
- City of Vancouver; and
- Corporation of Delta.

A Gold rating for Surrey represents not only demonstrated reductions in GHG emissions and an investment in low or no-carbon vehicles and energy efficient technologies but also a commitment to staff development and management excellence.

The following actions contributed to achieving an E3 Fleet Gold Rating for the City's fleet:

- **Fleet Action Plan:** Fuel and GHG baselines were established from 2005-2008; a commitment to reduce vehicle carbon emissions by 20% by the year 2020 was established; and communications were developed and circulated to create awareness and staff buy-in to the commitment.
- **Training and Awareness:** Staff orientation approaches were developed and implemented and fuel efficient driver training was undertaken with City drivers.
- **Idling Reduction:** The City adopted an idling reduction policy, which included employee training and implementation of auto-shut-off technology in fleet vehicles.
- **Vehicle Purchasing:** The City specified fuel efficient or alternative technology vehicles in its purchases.
- **Fuel Data Management:** Automated fuel data management systems and consumption monitoring and reporting systems have been implemented.
- **Operations & Maintenance:** Regular and consistent vehicle maintenance standards including emissions testing and environmental standards for waste management (e.g. for disposal of oil recycling and shop maintenance) have been established and are being followed.
- **Trip & Route Planning:** City staff utilizes route optimization techniques and leverages automatic vehicle location (AVL) technologies for snow and ice control operations.
- **Utilization Management:** Methods are employed to ensure the efficient and optimal use of vehicles (so as to reduce the prevalence of underutilized vehicles).
- **Fuel Efficiency:** The City has demonstrated year over year gains in fleet fuel efficiency (expressed in km / L per unit of fuel), averaging a 1.3% efficiency gain / year.
- **Greenhouse Gas Performance:** The City has demonstrated reductions in GHG emissions with an 18% reduction in emissions over the most recent two-year period.

## NEXT STEPS

In accordance with the Climate Action Accord, Climate Action Revenue Incentive Program (CARIP) and the CEAP, the City is required and committed to annually measuring and publicly reporting corporate GHG emissions related to the City operations, including those emissions generated by private companies who provide contract services to the City.

The Engineering Department is currently working on a number of additional fleet-related initiatives that will further solidify the City as a leader in the application of innovative and sustainable fleet management. Some of these initiatives include:

1. Surrey is the only municipality in Canada to host two municipal hydrogen fuelling stations. Both of these stations are fully funded by the Canadian Hydrogen Fuel Cell Association in an effort to advance Fuel Cell Vehicle (FCV) development and technology as well as expand the hydrogen fuel manufacturing industry and infrastructure.
2. The City is operating two zero-emission Ford Focus hydrogen fuel cell vehicles (FCV) and is working toward expanding the number of FCV's through a partnership with Powertech Labs. Surrey is establishing itself as a desirable market area for major original equipment manufacturers (OEMs) that have stated a commitment to the deployment of consumer FCVs in the next 2 to 3 years.
3. Over the course of 2011, the Engineering Department will introduce a number of 100% electric vehicles (EVs) that will include OEM technology (EVs manufactured by major car builders) as well as conversion technology (internal combustion vehicles converted into 100% EVs). The pilot project will assist the City in assessing the performance of and establishing the appropriate operational changes that are required to ensure that this type of vehicle will be effective in its deployment as part of the City's fleet. The vehicle fuelling (time), the range of vehicle operation, vehicle reliability and vehicle maintenance requirements will all be studied.
4. The waste collection contract that will be up for tender in 2011 will require the deployment of Compressed Natural Gas (CNG) garbage trucks for residential waste collection services for Surrey households. This will represent the first deployment of a CNG "municipal" waste collection truck in Canada for residential curbside service (a nominal number of CNG deployments have already occurred in Canada but for commercial services only).

Natural gas is the primary alternative fuel being used in waste collection truck fleets. Natural gas emits 20 to 30% less GHGs compared to gasoline and diesel fuels. Also, since natural gas does not pool when it is spilled, its use and storage is not as impactful from a contamination perspective to soil, surface water or groundwater.

5. In partnership with SFU's School of Mechatronics (Surrey campus), the Engineering Department is co-sponsoring a postdoctoral research project. The project, which was initiated in April 2011, is focused on developing a clean energy systems modeling tool that will help the Engineering Department better assess the pros and cons of low carbon alternatives to gas and diesel municipal fleet vehicles from a triple bottom-line perspective. The scope includes the evaluation of the City's alternative fuel vehicles (i.e. EVs, FCV, CNG and Hybrid) versus incumbent gas engine vehicles with respect to comparisons between full life-cycle costs (capital, operational, depreciated costs), environmental pros and cons, operational and logistics benefits, limitations, etc. The validated modeling tool will subsequently be utilized by the Engineering Department to develop an evolving "best fit or balance" for the City's municipal vehicle fleet based on gas/diesel combustion engine vehicles and vehicles powered by alternative technologies.

The City will continue working with its contractors who have sizeable vehicle fleets with a view to encouraging them to establish a fleet greening program such as the E3 Fleet Program, which will lead to reduced GHG emissions associated with City services.

## **SUSTAINABILITY CONSIDERATIONS**

The activities outlined in this report will assist in achieving the goals and objectives of the City's Sustainability Charter. Fleet greening activities are consistent with actions identified in the CEAP to meet the 20% GHG emissions reduction target and are also consistent with the following action items in the Sustainability Charter:

- EN 1: Energy Efficiency, including taking steps in its own operations to reduce energy consumption and also to reduce its production of Greenhouse gases; achieve energy efficiency and demonstrate community sustainability leadership by incorporating alternative energy systems where feasible; and make the public aware of the City's energy initiatives, successes and pilot projects; and
- EN3: Vehicle Fleet Programs, including policies to right-size the City's vehicle fleet, look at the carbon footprint of its equipment, and analyze costs and benefits of alternative fuels.

## **CONCLUSION**

The City of Surrey is committed to implementing actions identified in the Corporate Emissions Action Plan in support of the Sustainability Charter. The City's fleet greening activities are critical for achieving corporate emission reduction targets but are also exemplary actions that can act to encourage similar actions by the private sector in Surrey. The City is proud of having achieved the E3 Fleet Gold Rating from the Fraser Basin Council and looks forward to the implementation of further enhancements to the fleet management program with a view to maintaining a leadership position in this area.

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