

**TO:** Mayor Kelly and Members of Halifax Regional Council

**SUBMITTED BY:**



Wayne Anstey, Acting Chief Administrative Officer



Cathie O'Toole, Acting Deputy Chief Administrative Officer - Corporate Services and Strategy

**DATE:** 2 June, 2009

**SUBJECT:** **Sustainable Procurement Initiatives: Vehicle Right Sizing Filter and Life Cycle Evaluation Methodology**

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**ORIGIN**

- Corporate Local Action Plan to Reduce Greenhouse Gas Emissions, September 2005
- Information Reports, Green and Sustainable Procurement, October 2007 and August 2008
- Information Report, Needs Based Tendering / Life Cycle Costing, March 2007
- Corporate Sustainability Filter

**RECOMMENDATION**

It is recommended that Regional Council:

1. Endorse the adoption of the Vehicle Right Sizing Filter and;
2. Endorse the adoption of the Life Cycle Evaluation Methodology for General Fleet Purchases as outlined in this report.

## **BACKGROUND**

In the early 2000's, Regional Council adopted four key operating Themes: Excellence in Governance, Excellence in Service Delivery, Safe Communities, and a Healthy, Sustainable, Vibrant Community. Under the theme of Sustainability, four pillars have been identified: Fiscal, Social, Environmental, and Cultural. Under the environmental pillar, HRM has adopted a set of Clean Air, Clean Land, Clean Water, and Clean Energy plans and strategies.

Council approved the Regional Plan which included an Emissions Reduction Functional Plan.

Under the Clean Air Strategies, Regional Council approved a Corporate Local Action Plan to Reduce Greenhouse Gas Emissions. Key components are the Green and Sustainable Fleet Initiatives which have a profound impact on the Sustainability Commitments of Halifax Regional Municipality. The plan summarized the following measures related to Fleet activities:

- Fleet Downsizing and Multi-Use Vehicles
- Replacing Light Duty Gasoline Vehicles with Diesel Units
- Biodiesel Fuel Initiative
- Improve Fuel Efficiency
- Reduce Unnecessary Vehicle Use and Adopt Driver Training Program
- Commuter Trip Reduction Program
- Anti-Idling Campaign
- Alternative Fuels and / or Vehicles
- Parking Incentives for Alternative Fuel / Vehicle Use
- Green Procurement Policy

Council approved an overarching theme of Sustainability for its council focus areas for 2009/10.

The initiative outlined in this report is one of the many measures staff have actioned and is specifically supplementary to the Green Procurement Policy measures recommended. See appendix A for a list of other projects and measures staff have undertaken recently.

## **DISCUSSION**

As a leader in sustainability, Halifax Regional Municipality recognizes the opportunities in making fuel efficient and environmentally responsible vehicle selections, while providing safe and reliable equipment for staff and the public, and maintaining long term fiscal responsibility. The inventory of Fleet is comprised generally of the following categories:

- Fire, Police and Emergency (Police Cruisers, Fire Trucks)
- Transit (Buses)
- General Fleet (Cars, Light duty trucks, SUV's including Fire and Police General Fleet)
- Heavy Equipment (Loaders, Dump Trucks)

The scope of this specific initiative applies to the acquisition, lease, and rental of the General Fleet which represents approximately 25% percent of the total fleet. The aim is to reduce the relative GHG emissions and fuel consumption in new vehicles selected for the fleet inventory while ensuring that operational staff are assigned safe and reliable equipment that meets the operational service delivery requirements.

This report is intended to formally introduce two elements to the procurement process of new fleet vehicles:

1. A formal Vehicle Right Size Filter
2. The formal Life Cycle Analysis methodology for evaluating Fleet Vehicle Solicitations.

### **Vehicle Right Size Filter**

The intent of the Vehicle Right Size Filter is to ensure that the right vehicle is selected for the intended operational requirements, while minimizing our environmental impact and total long term costs.

Currently, Fleet Services and Client staff informally discuss operational and functional requirements prior to the budgeting and requisitioning of fleet vehicles. This informal, common sense, discussion ensures that fleet purchases are made in a manner that meets our organizational requirements and balances our environmental objectives. Ensuring that the fleet is versatile (to accommodate winter and summer operations), appropriate (to ensure the right equipment for operational requirements) and environmentally progressive is a balancing act that requires diligent collaboration between clients, Fleet Services, and Procurement.

The Filter will be formally applied in the annual Budgeting / Business Planning process. Similarly to the formalized processes required with a new Full Time Employee Request Business Case or a Capital Project Supplementary Form, this formalized document shall ensure that the previous informal collaborative discussion will be firmly embedded in our governance and business processes. Implementation of the formalized filter will ensure diligent collaboration between Fleet Services, the respective client, and Financial Services. Further, employing the Right Size Filter will enable standardization alternatives for annual Fleet Purchase Requirements. Standardization will assist HRM in reducing operating and maintenance costs, as well as initial acquisition costs. It will give staff the opportunity to investigate opportunities to introduce alternative fuel, hybrid, electric or other progressive equipment into the fleet on a strategic basis.

The Vehicle Requirements Form, as per the attachment, is the tool that will formalize this process. The Form requires the following information:

- Functional description of need
- Explanation of usage
- Estimated Mileage (city / hwy - which is data required for Life Cycle Analysis)
- Requested Vehicle Type and Basic Specification
- Plus, the form will refer Clients to a Supplementary SUV Justification Form, if an SUV is

- requested to ensure that those needs are clearly reviewed.
- Approval from the Client Business Unit Director and the Manager of Fleet Services

The SUV Justification document shall ensure that an SUV is selected from operational need by using the following criteria:

- Multi-passenger (3 or more passengers, plus driver)
- Towing not appropriate for a Pick Up Truck
- Regular Off-road or Hazardous Weather impacted Roads
- Required for Law Enforcement or Emergency Services

The SUV Justification Form is a common sense filter to ensure that any requirements identified for a SUV are scrutinized to ensure the need truly exists for such a vehicle selection.

Vehicles will be selected according to average or usual anticipated use. Occasional vehicle needs that exceed the capacity of the selected vehicle will be met through vehicle sharing or renting. Coupled together, the Vehicle Requirements Form and SUV Justification Form comprise the Vehicle Right Size Filter that staff shall employ to ensure that new vehicle acquisitions meet the organizations needs and goals and objectives.

### **Life Cycle Analysis Methodology**

In the past several years, Procurement and Fleet Services staff have reviewed a variety of Life Cycle Analysis methodologies for the tendering for Fleet Vehicles.

The formal adoption of the proposed Life Cycle Analysis Methodology shall ensure that vehicles solicited are evaluated on the two key environmental attributes: fuel efficiency and emissions. This methodology ensures a very transparent, simple, yet effective tool to evaluate and award solicitations for vehicle requirements.

80%	Total Cost of Ownership: Leasing / Financing Cost + Expected Fuel Consumption for term of vehicle ownership
20%	Environmental Protection Agency Greenhouse Gas Emission Rating

A sample evaluation is in the attachments.

All evaluation criteria is quantitative and obtained as follows:

Mileage	Vehicle Requirements Form
Fuel Price	HRM Fuel Contract
Fuel Consumption rating	Natural Resources Canada EnerGuide Fuel Consumption Guide
Greenhouse Gas Score	Environmental Protection Agency Green Vehicle Guide

While examining methodologies to employ life cycle analysis on Fleet purchases, staff collaborated with other organizations and stakeholders to identify the important elements of a formalized methodology, of note were:

- Transparency, which we have accomplished with Government Ratings from NRCan and EPA. The evaluation is completely quantitative.
- Simplicity, which we have accomplished with this methodology. Following receipt of bids from vendors, and after obtaining the data on the proposed vehicles from the government websites, final scoring takes only a few moments.
- Consistency, which we have accomplished by collaborating with other agencies. This ensures that the method HRM will employ will be seen from other governmental agencies.
- Environmental effectiveness, which we have accomplished by using both Fuel Consumption and Emissions data in the analysis. This ensures that vehicle selection will be heavily factored by environmental attributes.
- Commercial effectiveness, which is accomplished in this methodology by looking at the total overall, long term cost of vehicle acquisition and operation.

Warranty and Repairs and Maintenance costs are not included in the Life Cycle Analysis Methodology. While they are important factors, they add a complexity to the analysis that would jeopardize the transparency, simplicity, and consistency of the methodology.

The adoption of the Vehicle Rightsizing Filter and the Life Cycle Methodology shall ensure that new vehicles are specified to meet the needs of the organization in a manner that reflects our goals and objectives, including sustainability. And, evaluation of vehicle tenders shall employ a fair and transparent methodology that heavily factors environmental attributes. These actions demonstrate the municipalities continued progress in sustainable procurement initiatives and meeting the measures outlined in the Corporate Local Action Plan to Reduce Greenhouse Gas Emissions.

## **BUDGET IMPLICATIONS**

The application of the vehicle rightsizing filter will ensure that vehicles purchased will be appropriate for the intended function. The application of life cycle Methodology will ensure that tender award considers environmental factors, and total long term costs, not just the lowest invoice price.

## **FINANCIAL MANAGEMENT POLICIES / BUSINESS PLAN**

This report complies with the Municipality's Multi-Year Financial Strategy, the approved Operating, Capital and Reserve budgets, policies and procedures regarding withdrawals from the utilization of Capital and Operating reserves, as well as any relevant legislation.

**ALTERNATIVES**


1. Council could reject endorsement adoption of the Vehicle Right Size Filter.
2. Council could reject endorsement of the proposed Life Cycle Evaluation Methodology and direct staff to return with an alternative Methodology.


**ATTACHMENTS**


1. Appendix A
2. Draft Vehicle Requirements form
3. Draft SUV Justification form
4. Sample Life Cycle Analysis for 1 small car
5. Sample Life Cycle Analysis for lease of 10 pick up trucks

A copy of this report can be obtained online at <http://www.halifax.ca/council/agendasc/cagenda.html> then choose the appropriate meeting date, or by contacting the Office of the Municipal Clerk at 490-4210, or Fax 490-4208.

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Report Approved by:   
For Mike Labrecque, Director, Transportation and Public Works

Report Approved by:   
Phillip Townsend, Acting Director, Infrastructure and Asset Management

## **Appendix A**

### Examples of Fleet Related Sustainability Initiatives

- SMARTRIP - HRM SmartCars for staff for business travel requirements
- hrmsmarttrip.ca to encourage car pooling for commuting
- Encouragement of active transportation by staff, including the provision of bike lockers at Alderney Gate
- Biodiesel Fuel Initiative: Product testing with Metro Transit fleet
- Anti Idling Campaign and Internal HRM Anti Idling Policy

### Examples of other Sustainable Procurement Initiatives

- HRM Catering and Meeting Guidelines
- EcoLabelling large number of commodities, including: paint, cleaning supplies, and office equipment,
- Play equipment commodity review
- Green battery initiative
- Enhanced janitorial specifications (Solid waste source separation and ecolabelling of materials)
- Commodity review and progressive specification change of Inventory and Stores Items
- Paper consolidation and sustainable specification enhancement and paper reduction initiative
- Enabling of electronic bid submissions, electronic payment, and enhanced utilization of electronic alternatives in business processes
- Incorporate of “take back” provisions on price agreements to ensure end of life stewardship
- Incorporation of Anti idling policy as a condition of service agreements
- Identification and selection of environmentally preferred stationary and office supplies requirements
- Packaging reduction initiatives, including approval of bulk lubricant dispensing system in 2009 / 2010 capital budget



## Vehicle Requirements Form

Attachment 2

Please complete this form and obtain authorization from your Director and forward with your Requisition.

Requisition Number	
Department	
Contact Person	
Telephone Number	

Type of Procurement	<input type="checkbox"/> Purchase <input type="checkbox"/> Lease If leasing, term _____
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### Right Sizing

In accordance with HRM Greening our Fleet Guidelines, consideration must be given to a vehicle's intended uses and proportion of time it will be needed for such uses. Take into consideration that intermittent transportation needs can be met through rental and sharing of pooled vehicles. The objective of right-sizing is to obtain the right vehicle for the job while maximizing fuel efficiency and environmental responsibility.

Please describe in detail what the vehicle will be used for:

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Intended vehicle assignment	<input type="checkbox"/> Individual Use <input type="checkbox"/> Pooled Vehicle If pooled, # of staff using _____
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Type of Use	Percentage of Time	Explanation
1. Single Occupancy		
2. Passenger		
3. Cargo		(Specify type of cargo)
4. Hauling		(Specify equipment being hauled)
5. Off Road		(Specify requirement)

Annual Kilometres

Total estimated Annual Kilometres	
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# Vehicle Requirements Form

Attachment 2

Split between highway and city driving	% Highway:	% City:
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Type of Vehicle Required (please check one)

<input type="checkbox"/> Sub-compact	<input type="checkbox"/> Compact	<input type="checkbox"/> Mid Sized	<input type="checkbox"/> Station Wagon	<input type="checkbox"/> Passenger Van
<input type="checkbox"/> SUV	<input type="checkbox"/> 1/4 tonne pick up truck	<input type="checkbox"/> 1/2 tonne pick up truck	<input type="checkbox"/> Other:	

Additional Options

Number of Passenger Doors Required: _____ A	Tire and Wheels: <input type="checkbox"/> All Season Tires <input type="checkbox"/> Snow Tires <input type="checkbox"/> Special Tire Size: _____ <input type="checkbox"/> Full Size Spare (Trucks only)
Powertrain / Engine # of cylinders: _____ <input type="checkbox"/> Hybrid <input type="checkbox"/> Diesel <input type="checkbox"/> Other: _____ F	Drive Train: <input type="checkbox"/> Automatic <input type="checkbox"/> Manual <input type="checkbox"/> 4WD <input type="checkbox"/> All Wheel Drive <input type="checkbox"/> Limited Slip
Lighting System: (additional Lighting Requirements)	Paint and Trim Paint Color: Trim / Markings
Convenience Features <input type="checkbox"/> Tilt Steering <input type="checkbox"/> Cruise Control <input type="checkbox"/> Power Mirrors <input type="checkbox"/> Power Steering <input type="checkbox"/> Power Windows <input type="checkbox"/> Rear Seat heater ducts <input type="checkbox"/> Split front bench seat <input type="checkbox"/> Bucket Seats <input type="checkbox"/> Cloth Upholstery <input type="checkbox"/> Carpeted Floor <input type="checkbox"/> Vinyl Floor <input type="checkbox"/> Mud Flaps	Additional Mandatory Specifications T

Please outline any physical changes or modifications planned to vehicle that may affect the end value or resale value:

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Authorization  
Business Unit Director

Name	Signature	Date
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General Manager of Fleet Services

Name	Signature	Date
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# SUV Justification

Attachment 3

Please complete this form in conjunction with the Vehicle Requirements Form

Requisition Number	
Department	
Contact Person	
Telephone Number	

Justification Criteria	<input type="checkbox"/> Necessary for Police or Fire and Emergency Services Operational Requirements (please clarify in Explanation section) <input type="checkbox"/> Regularly driven off road or on unimproved roads <input type="checkbox"/> Regularly driven where weather creates road conditions where clearance becomes an issue <input type="checkbox"/> Regularly driven with driver plus 3 or more passengers <input type="checkbox"/> Regularly driven in conditions requiring 4 x 4
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Explanation
<div style="text-align: center; font-size: 48px; font-weight: bold;">           D R A F T         </div>

Authorization  
Business Unit Director

Name	Signature	Date
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## Sample Life Cycle Analysis HRM General Fleet Purchase

**Scope:**

1 only Small Car,  
4 door,  
automatic transmission,  
4 Cylinder Engine  
50,000 KM per year (10,000 Hwy / 40,000 City)

Vendor	Vehicle	Purchase Price
Vendor A	Chevrolet Cobalt	\$17,900
Vendor B	Honda Civic Hybrid	\$26,350
Vendor C	Toyota Corolla	\$19,500

\*Note for sake of illustration, costs are imaginary

**Evaluation**

Item	Quantity	Chevrolet Cobalt	Honda Civic Hybrid	Toyota Corolla
Purchase Price		\$17,900	\$26,350	\$18,065
Including Net HST		\$18,513.79	\$27,253.54	\$20,168.66
Fuel Consumption Highway*	5 years x 10,000km = 50,000km	5.9 L / 100 km** x 50,000 km x \$1 = \$2,950	4.7 L / 100 km** x 50,000 km x \$1 = \$2,350	5.6 L / 100 km** x 50,000 km x \$1 per litre = \$2,800
Fuel Consumption City*	5 years x 40,000km = 200,000km	8.7 L / 100km** x 200,000 x \$1 per litre = \$17,400	4.7 L / 100 km x 200,000 x \$1 per litre = \$8,600	7.4 L / 100 km** x 200,000km x \$1 per litre = \$14,800
Total LifeCycle Cost		\$38,863.79	\$38,203.54	\$37,768.66
Score out of 80	low price/ price x 80	\$37,768.66 / \$38,863.79 = 78	\$37,768.66 / \$38,203.54 = 79	80 (low price)
EPA Greenhouse Gas Score*** Rating x 2		14	20	16
Total		92	99	96
			Highest Score	

\*Using \$1 per litre as contract price for sake of illustration

\*\*Fuel Consumption derived from Natural Resources Canada Fuel Consumption Guide

\*\*\*Greenhouse Gas Score derived from EPA Green Vehicle Guide

Note: if there were a situation where there was a tie, the lowest cost would prevail.

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## Sample Life Cycle Analysis HRM General Fleet Purchase

**Scope:**

10 only 1/4 ton Pick Up Truck, 4X4  
48 Month Lease,  
automatic transmission,  
40,000 KM per year (20,000 Hwy / 35,000 City)

Vendor	Vehicle	48 month Lease
Vendor A	Ford F 150	\$500 / month = \$24,000
Vendor B	Chevrolet Silverado 15	\$520 / month = \$24,960
Vendor C	Dodge Ram 1500	\$480 / month = \$23,040

\*Note for sake of illustration, costs are imaginary

**Evaluation**

Item	Quantity	Ford F 150	Chevrolet Silverado 15	Dodge Ram 1500
48 Month Lease		\$24,000	\$24,960	\$23,040
Including Net HST		\$24,822.96	\$25,815.88	\$23,830.04
Fuel Consumption Highway*	4 years x 5,000km = 20,000km	10.8 l / 100km** x 20,000 km x \$1 = \$2,160	10.3 l / 100km** x 20,000 km x \$1 = \$2,060	10.8 l / 100km** x 20,000 km x \$1 = \$2,160
Fuel Consumption City*	4 years x 35,000km = 140,000km	15.6 l / 100km** x 140,000 x \$1 = \$21,840	14.7 l / 100km** x 140,000 x \$1 = \$20,580	16.2 l / 100km** x 140,000 x \$1 = \$22,680
Total LifeCycle Cost		\$48,822.96	\$48,455.88	\$48,670.04
Score out of 80	low price / price x 80	\$48,455.88 / \$48,822.96 = 79	80 (low price)	\$48,455.88 / \$48,670.04 = 80
EPA Greenhouse Gas Score*** Rating x 2		6	6	4
Total		85	86	84
			Highest Score	

\*Using \$1 per litre as contract price for sake of illustration

\*\*Fuel Consumption derived from Natural Resources Canada Fuel Consumption Guide

\*\*\*Greenhouse Gas Score derived from EPA Green Vehicle Guide

Note: if there were a situation where there was a tie, the lowest cost would prevail.