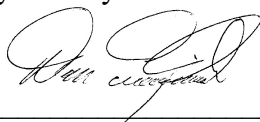


Item No. 10.1.2
Halifax Regional Council
9 February 2010

TO: Mayor Kelly and Members of Halifax Regional Council

SUBMITTED BY:



Dan English, Chief Administrative Officer



Wayne Anstey, Deputy Chief Administrative Officer - Operations

DATE: 4 February 2010

SUBJECT: **Award Sole Source - Conserve Nova Scotia Funding, Metro Transit
EMP MiniHybrid Kits**

ORIGIN

This report originates from staff following acceptance of Conserve Nova Scotia of an application for the funding of two EMP MiniHybrid Thermal Kits.

RECOMMENDATION

It is recommended that Halifax Regional Council:

- 1) Approve an increase to Capital Project CTI00695, Emission Reductions Initiative, by \$52,200 (the amount of funding provided by Conserve Nova Scotia).
- 2) In accordance with the Sole Source Policy {Administrative Order 35, Section 8 (11)} authorize the purchase of two EMP MiniHybrid Thermal kits from Cummins Eastern Canada Ltd for a Total Price of \$53,989.94 (net HST included) with funding from Capital Project CTI00695.
- 3) Authorize the Mayor and Clerk to execute the funding agreement with Conserve Nova Scotia as per Attachment B.

BACKGROUND

Conserve Nova Scotia

The Government of Nova Scotia is committed to having one of the cleanest and most sustainable environments in the world by 2020. As government's agency for energy efficiency, Conserve Nova Scotia will help reach this goal by providing Nova Scotians with practical, affordable and meaningful ways to make energy efficiency a part of their lives. Through their many programs, social marketing and information campaigns, they are encouraging all Nova Scotians to make better energy choices every day, at home, at work and on the road. Conserve Nova Scotia is responsible for the planning, development, and co-ordination of policies and programs for energy efficiency and conservation, including public education and behavioural change. They serve as a focal point for all forms of energy efficiency and conservation measures through partnerships with federal, provincial, municipal, private sector and not-for-profit agencies.

The vision of Conserve Nova Scotia is to create a culture of energy efficiency and conservation among Nova Scotians.

Conserve Nova Scotia's mission is to provide practical, meaningful, and affordable solutions that help Nova Scotians:

- make better energy choices,
- use energy more efficiently,
- reduce energy consumption, and
- reduce the effects of Nova Scotia's collective energy use on the environment and its climate.

Conserve Nova Scotia is being wound up on March 31, 2010 and replaced by an external Office of Energy Efficiency. This project must be completed prior to March 31, 2010.

Delivery and installation of the units can be accomplished before March 31, 2010.

DISCUSSION

As per the January 12, 2010 Council Report (Attachment C), staff have identified a Fuel Efficiency project that is being tested. With the funding of 2 additional units by Conserve Nova Scotia, the test sample of now 5 buses, of the total fleet of 170 will give staff the opportunity to better evaluate the success of the technology.

This technology is proven in areas of similar application and geography. Staff are expecting positive results.

Viewing this initiative through an economic, environmental, and social lens, this project is positive on all accounts. It is funded by a Provincial Energy Efficiency program, it will reduce fuel costs for HRM. It will reduce air pollutants and GHG emissions. It is also a safer technology than hydraulic cooling systems.

BUDGET IMPLICATIONS

Budget Summary: Capital Account No. CTI00695

Cumulative Unspent Budget	\$71,010.06
Less: Award	\$53,989.94
Plus Funding (Conserve NS):	<u>\$52,200.00</u>
Balance	\$69,220.12

* This project was estimated in the Approved 2006 / 2007 Capital Budget at \$125,000.

The balance of funds will be used for further Fuel Efficiency projects.

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

There are no recommended alternatives

ATTACHMENTS

Attachment A - Sole Source Policy, Administrative Order 35, Section 8 (11).

Attachment B - Draft funding agreement


Attachment C - Council Report, January 12, 2010


**Award Sole Source - Conserve Nova Scotia Funding,
Metro Transit EMP MiniHybrid Kits - 4 -
Council Report**

9 February 2010

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.

Report Prepared by: Richard MacLellan, Acting Manager, SEMO, 490-6056

Procurement Approval by: 
Anne Feist, Operations Manager, Procurement 490-4200

Report Approved by: 
Phillip Townsend, Director, Infrastructure and Asset Management, 490-7166

Administrative Order 35
Procurement Policy Section 8 (11)
Sole Source/Single Source Purchases

(11) **Sole Source/Single Source Purchases:** The terms and conditions of a sole source/single source purchase shall be negotiated. A sole source/single source purchase occurs:

- (a) To ensure compatibility with existing products, facilities or service, to recognize exclusive rights, such as exclusive licences, copyright and patent rights, or to maintain specialized products that must be maintained by the manufacturer or its representative.
- (b) Where, for technical reasons, there is an absence of competition and the goods or services can be supplied by a particular supplier and no alternative or substitute exists.
- (c) For the procurement of goods or services the supply of which is controlled by a supplier that is a statutory monopoly.
- (d) For the purchase of goods on a commodity market.
- (e) For work to be performed on or about a leased building or portions thereof that may be performed only by the lessor.
- (f) For work to be performed on a property by a contractor according to the provisions of a warranty or guarantee held in respect of the property or the original work.
- (g) For the procurement of a prototype of a first good or service to be developed in the course of and for a particular contract for research, experiment, study or original development, but not for any subsequent purchases.
- (h) For the procurement of a good or service for testing or trial use.
- (i) For the purchase of goods under exceptionally advantageous circumstances such as bankruptcy or receivership, but not for routine purchases.
- (j) For the procurement of original works of art.
- (k) For the procurement of goods intended for resale to the public.
- (l) Where the Municipality has a rental contract with a purchase option and such purchase option could be beneficial to the Municipality.
- (m) Notwithstanding anything in this policy, where a purchase is determined by Council to be fair and reasonable and is made from a nonprofit corporation supported by the Municipality, such a purchase may be made as a single source purchase.
- (n) Where items are offered by sale by tender, auction or negotiation such purchase will be deemed to be a single source purchase and the CAO may authorize the submission of a bid or the conduct of negotiations where the CAO determines the purchase to be clearly in the best interest of Halifax Regional Municipality.
- (o) Where goods or consulting services regarding matters of a confidential or privileged nature are to be purchased and the disclosure of such matters through an open tendering process could reasonably be expected to compromise government confidentiality, cause economic disruption or otherwise be contrary to the public interest. Purchases of this nature must be approved by the CAO
- (p) Where compliance with an open tendering process may interfere with the Municipality's ability to maintain security or order or to protect human, animal or plant life or health.

THIS CONTRIBUTION AGREEMENT made in duplicate as of the _____ day of _____, 20____.

BETWEEN:

**HER MAJESTY THE QUEEN IN RIGHT
OF THE PROVINCE OF NOVA SCOTIA**, as
represented by the Minister responsible for Conserve
Nova Scotia (the "Province")

OF THE FIRST PART

- and -

**HALIFAX REGIONAL
MUNICIPALITY** (the "contribution grant recipient")

OF THE SECOND PART

WHEREAS Halifax Regional Municipality is retrofitting Metro Transit buses with a Mini-Hybrid system to decrease fuel use, greenhouse gas emissions and air pollution, (the "Project");

AND WHEREAS the Province, through its current business plan, supports initiatives that help make transportation more environmentally sustainable;

AND WHEREAS the Grant Recipient is willing to develop the Project;

NOW THEREFORE in consideration of the mutual covenants contained herein, the parties agree as follows:

1.0 PROGRAM AREAS TO WHICH FUNDING APPLIES

- 1.01 The Grant Recipient agrees to perform activities that address the Project which is more fully described in Schedule "A" attached hereto.
- 1.02 Unless the parties otherwise arrange, the Grant Recipient shall obtain, supply and pay for all labour, materials, facilities and approvals necessary or advisable to develop the Project.
- 1.03 Nothing in this Agreement shall be interpreted or construed to prohibit or limit the right of the Grant Recipient to provide services for any person, government or agency.
- 1.04 (a) Unless advised otherwise by the Province, the contact person for Conserve Nova Scotia is Josh McLean, telephone (902) 424-3795, fax (902) 424-0799, email mcleanja@gov.ns.ca
(b) Unless advised otherwise by the Grant Recipient, the contact person for the Grant Recipient is Richard MacLellan, telephone (902)490-6056, fax (902) _490-5862.

2.0 TERM OF AGREEMENT

- 2.01 Subject to Articles 3.01 (Provincial Funding) and 7.0 (Termination), this Agreement shall be for a term that begins on the date of the signing of this Agreement and ends March 31, 2010.

3.0 PROVINCIAL FUNDING

- 3.01 The Province's obligation to pay money to the Grant Recipient under this Agreement is subject to an appropriation being available in the fiscal year of the Province during which payment becomes due.

- 3.02 Subject to Articles 3.01 and 7.0, the Province agrees to provide funding in the amount of up to \$52,200 Canadian to the Grant Recipient, with payment schedules as follows:

(vvvvvvvvvvvvvvvvvvvv) \$ 52,200 upon proof of installation of the equipment detailed in Schedule A. Copies of invoices/receipts with the total installed cost must be provided along with the invoice to Conserve Nova Scotia. All invoices and documentation must be received by March 31, 2010.

- 3.03 The Grant Recipient shall not commit or purport to commit the Province to pay any money except as authorized by this Agreement.

4.0 GRANT/ACKNOWLEDGEMENT

- 4.01 The Province requires that the Grant Recipient visibly recognize Conserve Nova Scotia's support in all materials, publications and programs related to the grant.

- 4.02 Conserve Nova Scotia's support must also be acknowledged by speakers during all public events related to the grant, and grant recipients must provide Conserve Nova Scotia with the opportunity to speak at all public events related to the grant.

- 4.03 Conserve Nova Scotia's support must be recognized in any and all advertising used to promote projects funded by the grant and all advertising must be approved by Conserve Nova Scotia prior to printing/distribution.

- 4.04 Recognition of Conserve Nova Scotia's support must be commensurate with that given to corporate or other sponsors or donors for similar support.

- 4.05 Prior to publishing, the Grant Recipient must forward final material, including acknowledgement, to the Agency. At its sole discretion, Conserve Nova Scotia reserves the right to order the acknowledgement removed.

- 4.06 Conserve Nova Scotia logos and marks and sample messages are available at <http://www.conservens.ca>. These logos and marks are for use by Conserve Nova Scotia partners and the Grant Recipient only.

5.0 RECORDS/DOCUMENTS

- 5.01 In order for the Province to be informed about the nature of the development of the Project, the Grant Recipient agrees to permit the Province, its employees, agents or auditors, full access to all records, accounts and facilities and to meet with members of staff of the Province at mutually agreeable times.
- 5.02 It is understood that in the event of a serious incident or breach of this Agreement, initial contact with the Grant Recipient shall be made through the Chief Executive Officer of the Grant Recipient and the Chair of the Board of Directors of the Grant Recipient and, in the event of such an incident or breach, that any contact with staff of the Grant Recipient shall be arranged through the Grant Recipient.

6.0 CONFLICT OF INTEREST

- 6.01 The Grant Recipient shall avoid situations which might cause a conflict of interest and shall immediately notify the Province if any such conflict does or might appear to arise.
- 6.02 The Grant Recipient agrees that it has read and understands the Code of Conduct for Civil Servants contained in Chapter 9 of Management Manual 500 available on the Internet at www.gov.ns.ca/psc and that, as a condition of its engagement under this Agreement, it will observe the Code.

7.0 TERMINATION

- 7.01 Either the Province or the Grant Recipient may terminate this Agreement at any time without cause or liability upon providing 30 days notice in writing to the other party.
- 7.02 The Province may immediately terminate this Agreement if the Grant Recipient breaches or defaults on any term or condition and fails to remedy the same in a manner deemed satisfactory to the Province within five (5) days of being given written notice of the breach or default.
- 7.03 The termination of this Agreement shall not affect any rights, duties, obligations or liabilities that arise or have accrued prior to the effective date of termination.
- 7.04 Where the Agreement is terminated or expires, the Grant Recipient shall, if requested, immediately turn over to the Province copies of all documents, records, reports and other materials which have been maintained by the Grant Recipient or its officers, employees, members and staff pursuant to this Agreement.

8.0 RELATIONSHIP

- 8.01 Pursuant to this Agreement, the Grant Recipient is recipient of a discretionary grant of funding from the Province. The Grant Recipient and any employee, servant, agent,

contractor or volunteer of the Grant Recipient are not an agent, employee or servant of the Province.

- 8.02 The Grant Recipient has no authority to bind the Province to any agreement and agrees that it will not hold itself out as having any authority within the Province or on behalf of the Province.

9.0 NOVA SCOTIA WORKERS' COMPENSATION ACT COVERAGE

- 9.01 If applicable, the Grant Recipient will ensure that coverage under the Nova Scotia *Workers' Compensation Act* is maintained for all of its employees and for any contractor of the Grant Recipient which performs work on the Project.

10.0 CONFIDENTIALITY

- 10.01 This Agreement is subject to the provision of the *Freedom of Information and Protection of Privacy Act* and the Province shall make any decision respecting release of this Agreement in compliance with that Act.

11.0 COMPLIANCE WITH LAWS AND PROVINCE'S PROCEDURES

- 11.01 The Grant Recipient shall comply and shall require its contractors and employees to comply with all applicable laws, orders, rules and regulations.
- 11.02 The Grant Recipient shall ensure compliance with related procurement policies and procedures, their own or the Province's, whichever applies.

12.0 MISCELLANEOUS

- 12.01 All references to monetary amounts in this Agreement or any Schedule shall be to Canadian dollars.
- 12.02 Time shall be of the essence in this Agreement.
- 12.03 This Agreement shall be governed by and construed in accordance with the laws in force in Nova Scotia. The parties hereto submit to the jurisdiction of the court of Nova Scotia.
- 12.04 This Agreement constitutes the whole Agreement unless amended in writing and signed by both parties.
- 12.05 No modifications or waiver of the obligations of any party to this Agreement shall be effective unless made in writing and signed by each of the parties to this Agreement.
- 12.06 Any notice, demand or request herein provided or permitted to be given by any party to another shall be in writing and may be served by personal service or fax, addressed as

follows:

- (d) To the Province: Conserve Nova Scotia
5151 George Street, Suite 601
P.O. Box 153
Halifax, Nova Scotia B3J 2M4
- Attention: Heather Foley Melvin
Chief Executive Officer
- Telephone: (902) 424-0790
Fax: (902) 424-0799
- (b) To Grant Recipient: Halifax Regional Municipality
PO Box 1749
Halifax, Nova Scotia B3J 3A5
- Attention: Richard MacLellan
Telephone: 490-6056
Fax: 490-5862
E-mail: maclelri@halifax.ca

Any party may at any time give notice in writing to the other of any change of address of the party giving such notice and the address therein specified shall be deemed to be the address of such party for the purpose of giving notice hereunder.

- 12.07 Those provisions of this Agreement which, by their terms, are intended to survive or which must survive in order to give effect to the continuing obligations of the Province and the Grant Recipient shall survive the termination of the Agreement.
- 12.08 This Agreement shall be binding upon the parties hereto, their respective heirs, administrators, successors and assigns.
- 12.09 The Grant Recipient agrees that any recourse or remedy arising with this Agreement arises from contract, and that it shall not have a claim or remedy, in damages or otherwise, in tort arising with performance or non-performance of this Agreement.
- 12.10 The Grant Recipient certifies that it has reviewed and fully understands this Agreement and agrees this Agreement constitutes the whole agreement between the parties, and no representation or statement not expressly contained herein shall survive this Agreement or be binding upon the Province.
- 12.11 Any discretionary authority or right under this Agreement is not subject to the expectations, reasonable or otherwise, of the parties to the agreement and any action taken pursuant to a

discretionary provision is deemed to be an exercise in good faith.

- 12.12 No term or provision of this Agreement shall be deemed waived and no breach excused, unless the waiver or consent to the breach is in writing, signed by the party making the waiver or giving the consent. Any consent by a party or waiver of a breach by the other, whether expressed or implied, shall not constitute to, waiver of, or excuse for any different or subsequent breach or continuation of the same breach, unless expressly stated.
- 12.13 If any term or provision of this Agreement shall be found to be illegal or unenforceable, this Agreement shall otherwise remain in full force and effect, and such term or provision shall be deemed removed from the Agreement.
- 12.14 Where anything is required to be done by the Province pursuant to this Agreement, it may be done by anyone duly authorized by the Province to act on its behalf.
- 12.15 The signatories to this Agreement hereby personally warrant that they have the full power and authority to enter in this Agreement on behalf of their respective parties and that the person signing this Agreement on behalf of each has been properly authorized and empowered.

IN WITNESS WHEREOF the parties hereto have executed this Agreement the day and year first above written.

SIGNED, SEALED & DELIVERED
in the presence of

Witness

Witness

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**HER MAJESTY THE QUEEN IN
RIGHT OF THE
PROVINCE OF
NOVA SCOTIA**

) Minister
responsible for
Conserve Nova Scotia

**HALIFAX REGIONAL
MUNICIPALITY**

) **Peter Kelly,**
Mayor

Cathy Mellett, Municipal Clerk

SCHEDULE A

Halifax Regional Municipality (HRM), Metro Transit Fleet, Mini Hybrid Retrofit Project

Background

HRM owns and operates a fleet of approximately 170 New Flyer Buses.

Each bus travels approximately 60,000 kilometers per year, using approximately 38,000 litres of diesel fuel. For the fleet, the annual totals are approximately 6.5 million litres of diesel fuel. Buses create approximately 90 tonnes of GHG emissions each per year.

Opportunity

Engineered Machined Products Inc has developed and proven through a number of comparable trials and sales, an effective retrofit solution that will provide an approximately 10% reduction in fuel consumption.

The retrofit, called Mini Hybrid, essentially replaces former hydraulic engine cooling equipment with an electric fan solution, with some internal smarts that reduces the load on the engines resulting in the fuel economy.

The cost per retrofit is \$26,100 plus HST.

Project Plan

Currently, HRM is paying to retrofit two buses in 2009/10, and will receive a third bus retrofitted at no charge. Conserve Nova Scotia will match the costs incurred by HRM to retrofit an additional two buses, paying up to \$52,200 before HST. Installations will be completed and Conserve NS will be invoiced before March 31, 2010.

In return, HRM will provide Conserve NS with quarterly reports for one year following the installation of the equipment. These reports will include information on the estimated fuel savings from the installed equipment. As Conserve Nova Scotia will likely no longer exist after March 31, 2010, these reports shall be provided by HRM to either another government department (that has assumed Conserve Nova Scotia responsibilities) or Efficiency Nova Scotia.

With the fuel savings from the retrofits, HRM Fleet Services will provide funding to the Capital Account to enable further future Fleet Services green initiatives (for perhaps more Mini-Hybrid

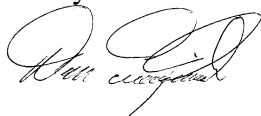
retrofits or testing other new emerging technology solutions).

HRM will assume all risks with the technology and its installation of the equipment on its buses.

Item No. 11.1.1
Halifax Regional Council
January 12, 2010

TO: Mayor Kelly and Members of Halifax Regional Council

SUBMITTED BY:



Dan English, Chief Administrative Officer



Wayne Anstey, Deputy Chief Administrative Officer - Operations

DATE: 10 December 2009

SUBJECT: **Award Sole Source - Purchase of Three (3) miniHybrid Retrofits for Metro Transit Bus Fleet, Testing and Trial: Fuel Efficiency Project**

ORIGIN

- Greenhouse Gas Emissions Reduction Plan, September 2005
- Staff identification of a Fuel Efficiency Project with significant economic and environmental potential

RECOMMENDATION

It is recommended that Halifax Regional Council, in accordance with the Sole Source Policy {Administrative Order 35, Section 8(11)}, authorize the purchase of three Engineered Machined Products Inc., mini Hybrid Thermal Systems to Cummins Eastern Canada for a Total Price of \$53,989.94 (net HST included) with funding from CTI00695 as outlined in the Budget Implications section of this report.

BACKGROUND

In 2005, as part of the work to prepare the Greenhouse Gas Emissions Reduction Plan, HRM worked with ICLEI Energy Services to create a Greenhouse Gas Emissions Inventory. The summary of that inventory demonstrated that our emissions were broken down as follows:

Sector	GHG (Tonnes)
Buildings	56,078
Fleet	8,533
Street Lights	10,371
Water and Sewage	26,511
Total	101,493

HRM has a corporate commitment to reduce GHG by 20% from 2002 levels by 2012.

Fleet Services has adopted and been the corporate lead on a number of measures focusing on reducing the Vehicle Fleet GHG emissions, including:

- Anti-idling Programme
- Bio Diesel initiatives
- Green Vehicle Filter and Life Cycle Selection

In order to meet the Sector commitment of 20% reduction in GHG levels, economically viable technological solutions and projects are required.

The Metro Transit Bus Fleet has a number of units that would be candidates for this retrofit. The target group will be 170 New Flyer buses. These buses are between 2 and 10 years old, each emitting approximately 90 tonnes of GHG per year and consuming approximately 38,000 litres of diesel fuel (costing approximately \$24,700 per bus per year).

DISCUSSION

Staff has identified an exciting opportunity for fuel efficiency and emissions reduction and recommend to conduct trials with the Metro Transit fleet to prove the performance expectations. The bus retrofit systems have been installed in 32 Canadian and American Cities. In Canada, both Montreal and Vancouver have had trouble free installations. Atlanta Georgia have made the retrofit standard in their fleet and are having their new order of 100 New Flyer buses built with

**Award Sole Source - Purchase of Three (3)
miniHybrid Retrofits for Metro Transit Bus Fleet,
Testing and Trial: Fuel Efficiency Project - 3 -
Council Report**

January 12, 2010

the product to save the cost of a later retrofit. Fleet Services is working with our bus builder to see if this system can be installed during the build of the Articulated buses that are currently on order.

Engineered Machined Products Inc., has successfully introduced the miniHybrid Thermal System. A high efficiency, next generation thermal cooling system for municipal transit buses. This system won the EPA (Environmental Protection Agency) 2008 Clean Air Award. Product information is in Attachment B.

The miniHybrid thermal system replaces a transit buses traditional hydraulic fan with a slide-in, controllable electric fan package. The retrofit provides a number of benefits, including:

- Reduced fuel consumption of approximately 10%
- Resulting in reduced GHG emissions
- Reduced risk of Hydraulic Failures or Fire Incidents
- Reduced Noise
- Reduced Maintenance Costs

The initiative has the following payback analysis:

	Per Bus	Fleet of 170 Buses*
Cost Per unit	\$26,100	\$4,437,000
Annual Fuel Reduction	3,800 liters	646,000 liters
Annual Reduction in Fuel Costs (at \$0.65 / l)	\$2,470	\$419,900
Annual Reduction in Maintenance Costs	\$2,000	\$340,000
Annual Reduction in Total Costs	\$4,470	\$759,900
Annual Reduction in GHG Emissions	9 tonnes	1530
Payback period	5.8 years	5.8 years
Contribution to GHG Reduction Commitment	0.09%	15.3%

*Note: this is potential or projected savings if all units receive the retrofit. Currently HRM does not have funding to execute this project to the entire Bus Fleet.

Aside from the payback analysis, a key reason that this retrofit solution is favourable to Fleet Services is the minimal downtime to complete a retrofit. It can be incorporated with regular planned maintenance activities and ensure no further disruption to Metro Transit operations. It is a clean and tidy, simple and effective solution.

**Award Sole Source - Purchase of Three (3)
miniHybrid Retrofits for Metro Transit Bus Fleet,
Testing and Trial: Fuel Efficiency Project - 4 -
Council Report**

January 12, 2010

Funding

In order to shorten the payback period, HRM staff is preparing funding applications for assistance with the potential expansion of this project. Additionally, if successful, staff will return to Regional Council with a request to approve further funding of this project from Sustainable Communities Reserve Q127.

Procurement

In order to continue to explore the market for technological solutions to assist Fleet Services in meeting HRM's environmental and economic goals related to fuel efficiency, an Expression of Interest will be called seeking retrofit solutions that provide a comparable or better fuel efficiency achievement at a comparable or better payback period or return on investment.

Following the anticipated successful trial of these three installed units, and identification of potential Provincial or Federal funding assistance, a public solicitation shall be issued to establish a longer term contract to address as much as the fleet as funding will enable.

BUDGET IMPLICATIONS

Budget Summary:	Capital Account No. CTI00695	
	Cumulative Unspent Budget	\$125,000.00
	Less: Award	<u>\$ 53,989.94</u>
	Balance	\$ 71,010.06

* This project was estimated in the Approved 2006 / 2007 Capital Budget at \$125,000.

The balance of funds will be used for further Fuel Efficiency projects.

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

Regional Council may choose to not enable the Test / Trial of this technology.

**Award Sole Source - Purchase of Three (3)
miniHybrid Retrofits for Metro Transit Bus Fleet,
Testing and Trial: Fuel Efficiency Project - 5 -
Council Report**

January 12, 2010

ATTACHMENTS

Attachment A - Sole Source Policy, Administrative Order 35, Section 8 (11)
Attachment B - Product Information, EMP miniHybrid

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.

Report Prepared by: Richard MacLellan, Acting Manager Sustainable Environment Management Office, 490-6056



Report Approved by:

Scott Sears, Quality Analyst, Fleet Services, 490-4412

Procurement Approval by:



Anne Feist, Operations Manager, Procurement 490-4200



Report Approved by:

Ken Reashor, A/ Director, Transportation and Public Works 490-4855

Administrative Order 35
Procurement Policy Section 8 (11)
Sole Source/Single Source Purchases

(11) **Sole Source/Single Source Purchases:** The terms and conditions of a sole source/single source purchase shall be negotiated. A sole source/single source purchase occurs:

- (a) To ensure compatibility with existing products, facilities or service, to recognize exclusive rights, such as exclusive licences, copyright and patent rights, or to maintain specialized products that must be maintained by the manufacturer or its representative.
- (b) Where, for technical reasons, there is an absence of competition and the goods or services can be supplied by a particular supplier and no alternative or substitute exists.
- (c) For the procurement of goods or services the supply of which is controlled by a supplier that is a statutory monopoly.
- (d) For the purchase of goods on a commodity market.
- (e) For work to be performed on or about a leased building or portions thereof that may be performed only by the lessor.
- (f) For work to be performed on a property by a contractor according to the provisions of a warranty or guarantee held in respect of the property or the original work.
- (g) For the procurement of a prototype of a first good or service to be developed in the course of and for a particular contract for research, experiment, study or original development, but not for any subsequent purchases.
- (h) For the procurement of a good or service for testing or trial use.
- (i) For the purchase of goods under exceptionally advantageous circumstances such as bankruptcy or receivership, but not for routine purchases.
- (j) For the procurement of original works of art.
- (k) For the procurement of goods intended for resale to the public.
- (l) Where the Municipality has a rental contract with a purchase option and such purchase option could be beneficial to the Municipality.
- (m) Notwithstanding anything in this policy, where a purchase is determined by Council to be fair and reasonable and is made from a nonprofit corporation supported by the Municipality, such a purchase may be made as a single source purchase.
- (n) Where items are offered by sale by tender, auction or negotiation such purchase will be deemed to be a single source purchase and the CAO may authorize the submission of a bid or the conduct of negotiations where the CAO determines the purchase to be clearly in the best interest of Halifax Regional Municipality.
- (o) Where goods or consulting services regarding matters of a confidential or privileged nature are to be purchased and the disclosure of such matters through an open tendering process could reasonably be expected to compromise government confidentiality, cause economic disruption or otherwise be contrary to the public interest. Purchases of this nature must be approved by the CAO
- (p) Where compliance with an open tendering process may interfere with the Municipality's ability to maintain security or order or to protect human, animal or plant life or health.

EMP

Mini-Hybrid



What is in a Mini-Hybrid?

Components included in Mini-Hybrid Base Kit:

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-



Power 450



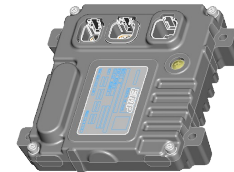
**F11
Electric Fans**



**Optimized Radiator
and CAC**



**C-20
Fan Controllers**



**CS-20
System Controller**

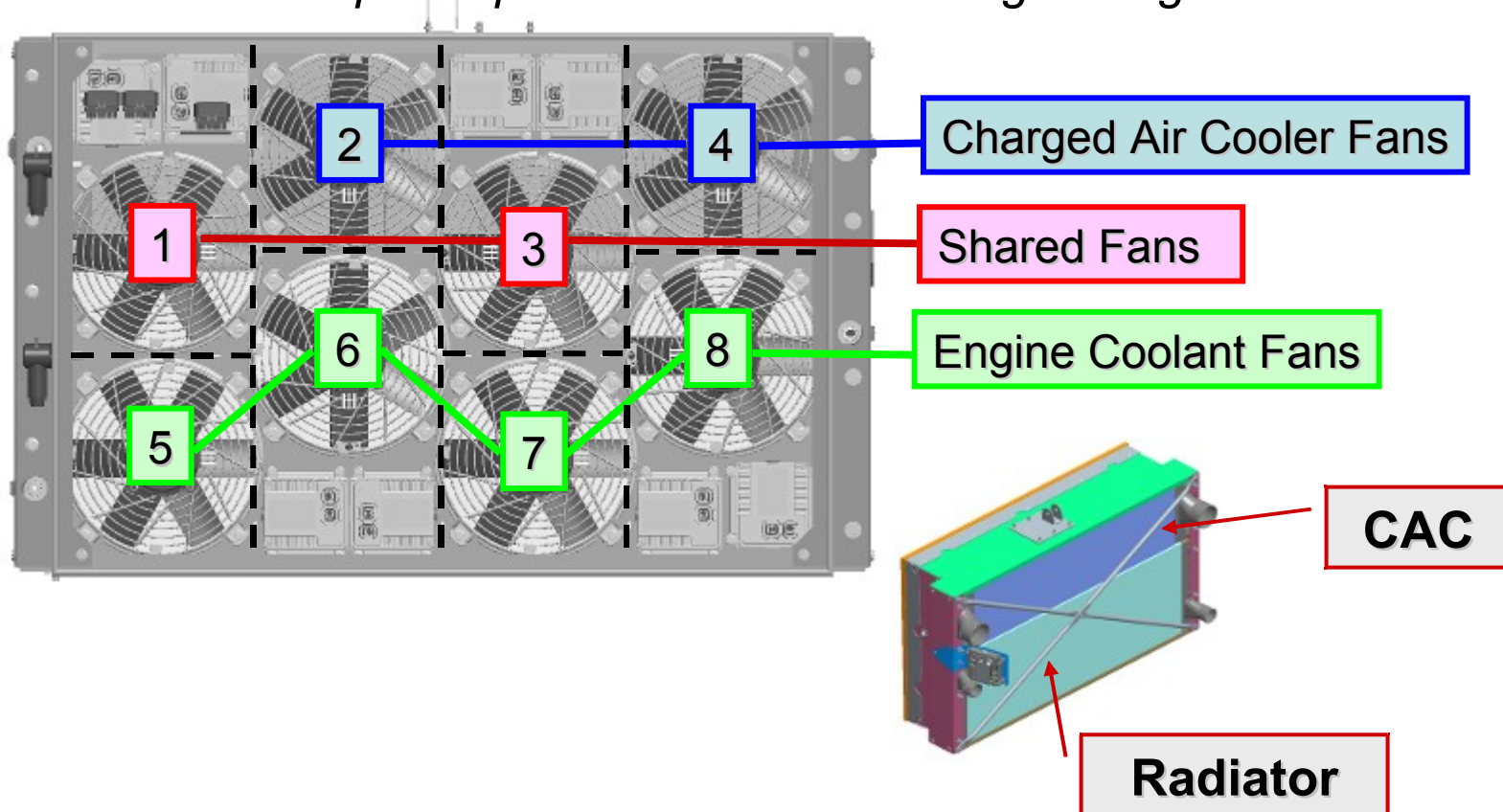


Current Mini-Hybrid Sites



How Does It Work?

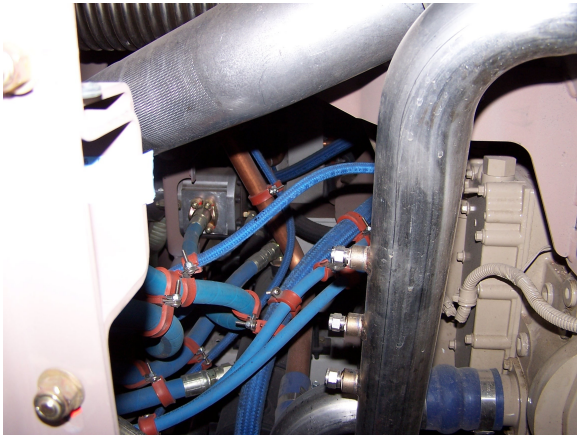
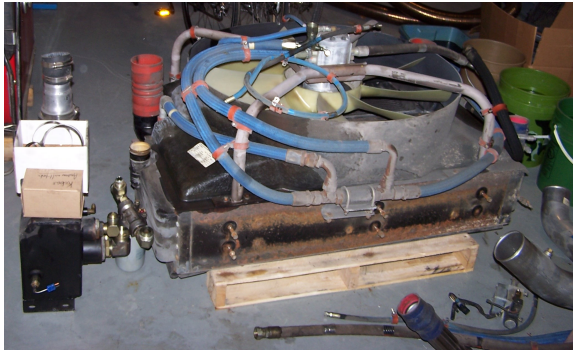
Mini-Hybrid (MH8) is an electric only fan system that replaces traditional mechanical fan. MH8 is electronically controlled to cool both charged air and engine coolant separately. MH8 is independent of engine speed and control - capable provide full load cooling at engine idle.



Components: Before and After

What Components are Being Replaced?

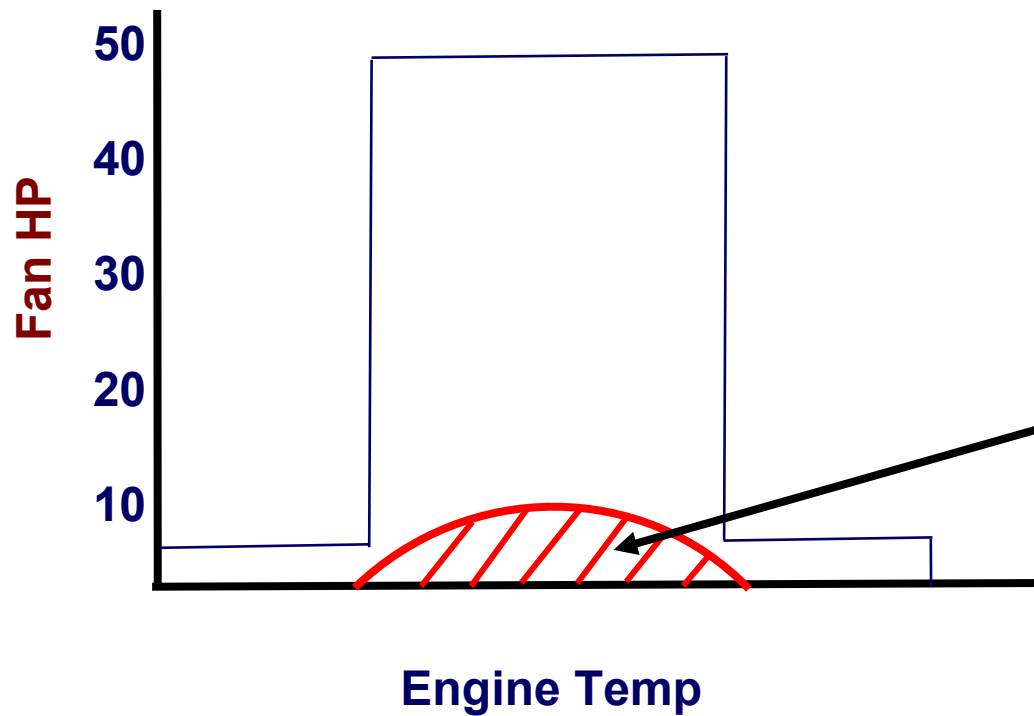
HYDRAULIC



ELECTRIC



Power Consumption – Primary Cooling for Transit Bus

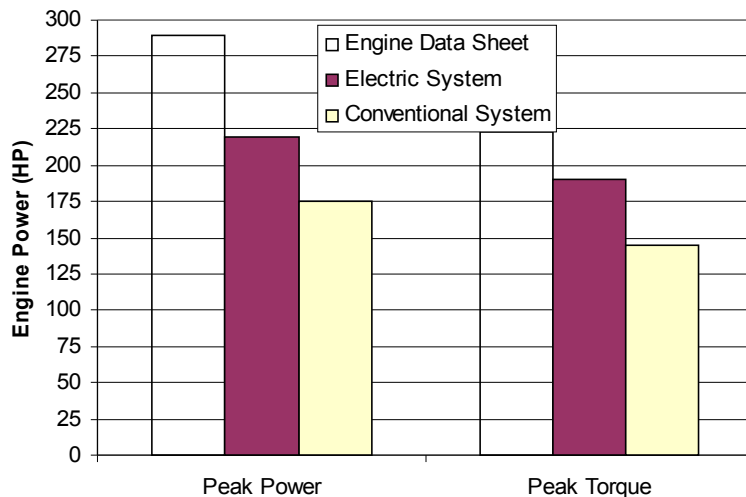


**Mini-Hybrid Thermal Kit
draws only 5-6 HP**

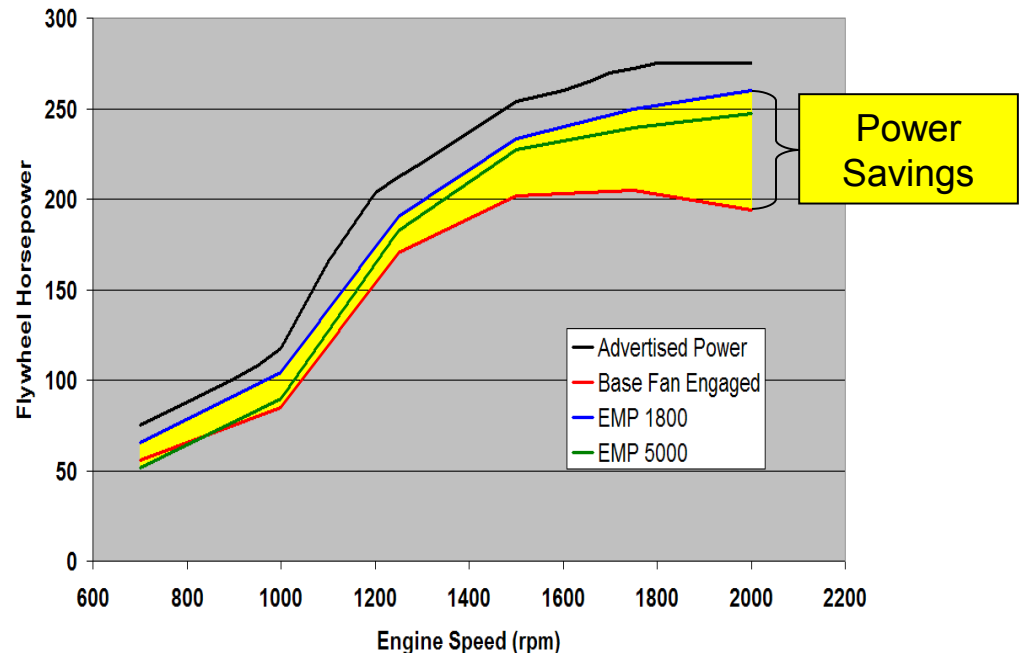
Power to the Wheels

Put the power where you need it, at the wheels. Mini-Hybrid provides up to an additional 50 HP at the wheel. At the second speed setting of (1800 rpm) of the Mini-Hybrid kit has less parasitic loss than the mechanical fan turned off!

Horsepower Delivered to Wheels



Net Engine Power Relative to Advised Power Curve
Shop Air supplied to Bus, No Steering Input, AC Off, Interior Lights Off



Noise and Weight Advantages

The Mini-Hybrid fans run under 2000 rpm the majority of the time. At this level, the cooling system produces only an additional 2 dBA over fan off mode. With the removal of the hydraulic pump, fluid, fan, etc., MH8 is a 300 lb weight savings over the conventional cooling system.

50 feet from bus centerline data			
	condition	baseline (dBA)	EMP Kit (dBA)
exterior measurements	background level	62.5	56.8
	full power pull away left	94.9	87.8
	full power pull away right	81.4	78.8
	idle left	71.3	see idle data for EMP kit
	idle right	67.6	see idle data for EMP kit
	passby left	94.3	86.6
	passby right	85	80.7
interior measurements	background	51.5	48.3
	back seat	86.7	88.5
	driver seat	84.8	83.8

Idle data for EMP kit		
	left (dBA)	right (dBA)
idle fans @ 0 rpm	68.6	
idle fans @ 1000 rpm	68.3	68.1
idle fans @ 2000 rpm	69.3	67.8
idle fans @ 2500 rpm	70.5	69.3
idle fans @ 3000 rpm	74.8	71.1
idle fans @ 3200 rpm	75.2	68.8
idle fans @ 4000 rpm	78.8	72.5
idle fans @ 5000 rpm	86.7	77.2



**Curb Side
Quiet RPM**

Fan Speeds and Full Load Cooling

Fan Speed	% Time On
Off	19.3%
750 RPM	30.6%
1813 RPM	27.1%
2875 RPM	20.5%
3938 RPM	2.0%
5000 RPM	0.7%
5500 RPM	0.0%

99% of the time, cooling system demand is less than 125 amps
97% of the time, cooling system demand is less than 71 amps
76% of the time, cooling system demand is less than 34 amps
49% of the time, cooling system demand is less than 15 amps

Safety, Maintenance, Diagnostics

Mini-Hybrid reduces thermal events by eliminating the hydraulic fan system. Maintenance is easy with a manual reverse feature for a maintenance saving of up to \$2000.00 per annum per bus. Also, MH8 comes with a diagnostic light for easy detection of problems.

**Reversal Push
Button**



**Diagnostics
LED**

Top 5 Facts About Mini-Hybrid

1. Reduces parasitic loads on engine providing better fuel economy, reduction of green house gases and more power to the wheels.
2. MH8 operates on over 150 Transit buses in 20+ properties, accumulated 3 million miles the last 2 years.
3. EMP components have been designed and validated for Military and Off-Highway applications.
4. Mini-Hybrid all but eliminates hydraulics providing a safer and easier maintainable cooling system.
5. Return on investment.

Transit Bus Total Miles Reported

TRANSITS	Engine	MILES REPORTED SINCE	TOTAL MILES*
Ann Arbor Transportation Authority -MI	DDC50 (Gillig)	Sept '08 – August '09	30,037
Broward County Transit – Florida	ISL 280 (Nabi)	Sept '08 – August '09	201,078
CATA – Lansing, MI	Detroit Diesel S40 (New Flyer)	July '07-Jan '08	637,378
CATA – Lansing, MI	Detroit Diesel S50 (New Flyer)	July '07-Jan '08	172,374
CATA – Lansing, MI	Cummins ISL (New Flyer)	January '07 – Jan '08	495,412
CATA – Lansing, MI	CAT C9 60' (New Flyer)	January '08 – Jan '08	158,620
Chapel Hill	Gillig	July 09-August 09	5050
Interurban Transit Partnership – Grand Rapids, MI	Gillig-ISL 280	May 09-August 09	77,861
Jacksonville Transit – FL	(Gillig)	June 09-August 09	4,260
King County Metro – Seattle, WA	CAT C9 (New Flyer)	Sept. 07-August 09	192,410
Lynx – Orlando FL	Cummins ISL (Gillig)	Jan-June '09	39,063
MARTA – Atlanta, GA	DDC 50 (New Flyer)	March '07	990,348
MBTA – Boston	ISL CNG (NABI)	December '07	102,322
MBTA – Boston	DDC Series 60 (Neoplan)	Jan – June '09	21,579
Metro Transit – St. Paul MN	(1) Cummins ISL (New Flyer)	June 09- August 09	32,945
Miami-Dade Transit – FL	8.5L DDC 50 (NABI)	July 07-August 09	384,747

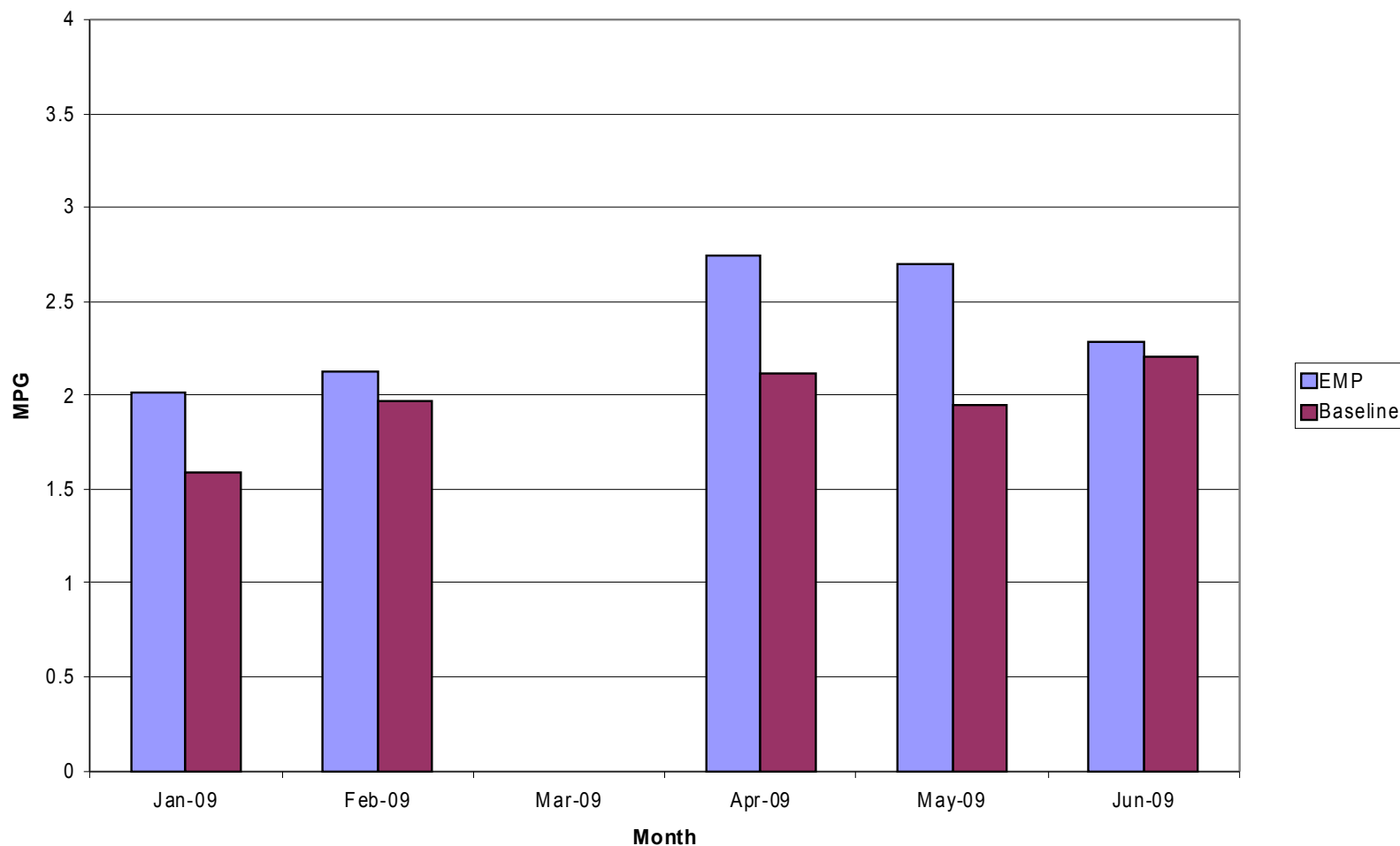
Transit Bus Total Miles Reported

TRANSITS	Engine	MILES REPORTED SINCE	TOTAL MILES*
NYCT 40' (New York, NY)	Detroit Diesel S50 (New Flyer)	November '07-Sept '08	247,632
NYCT Articulated	Detroit Diesel S50 (New Flyer)	April '08-Sept '08	54,893
Oahu Transit – Ohau Hawaii	Cummins ISL (Gillig)	Jan-July '09	31,211
Oahu Transit – Ohau Hawaii	Cummins ISL (New Flyer)	Jan-July '09	30,680
Omnitrans – San Bernardino, CA	John Deere 2005 (New Flyer)	January '07 – August '09	142,483
Palm Trans – West Palm Beach FL	Cummins ISM (Gillig)	Jan – July '09	285,476
Oahu Transit – Ohau Hawaii	Cummins ISL (Gillig)	Jan-July '09	31,211
Riverside Transit – Riverside CA	DDC 50 CNG (NABI)	Nov 07-August 09	98,899
Trimet – Portland OR	Cummins 8.3L ISL (New Flyer)	Oct. 06-August 09	662,041
Valley Metro – Mesa, AZ	C Gas Plus LNG	April 07-August 09	147,102
WMATA – Washington, DC	C Gas Plus CNG (New Flyer)	July 07- August 09	249,305
*Total miles includes: estimated use for sites no longer reporting *			5,526,417

Over 5 Million Miles

MBTA (Boston) Fuel Economy Results

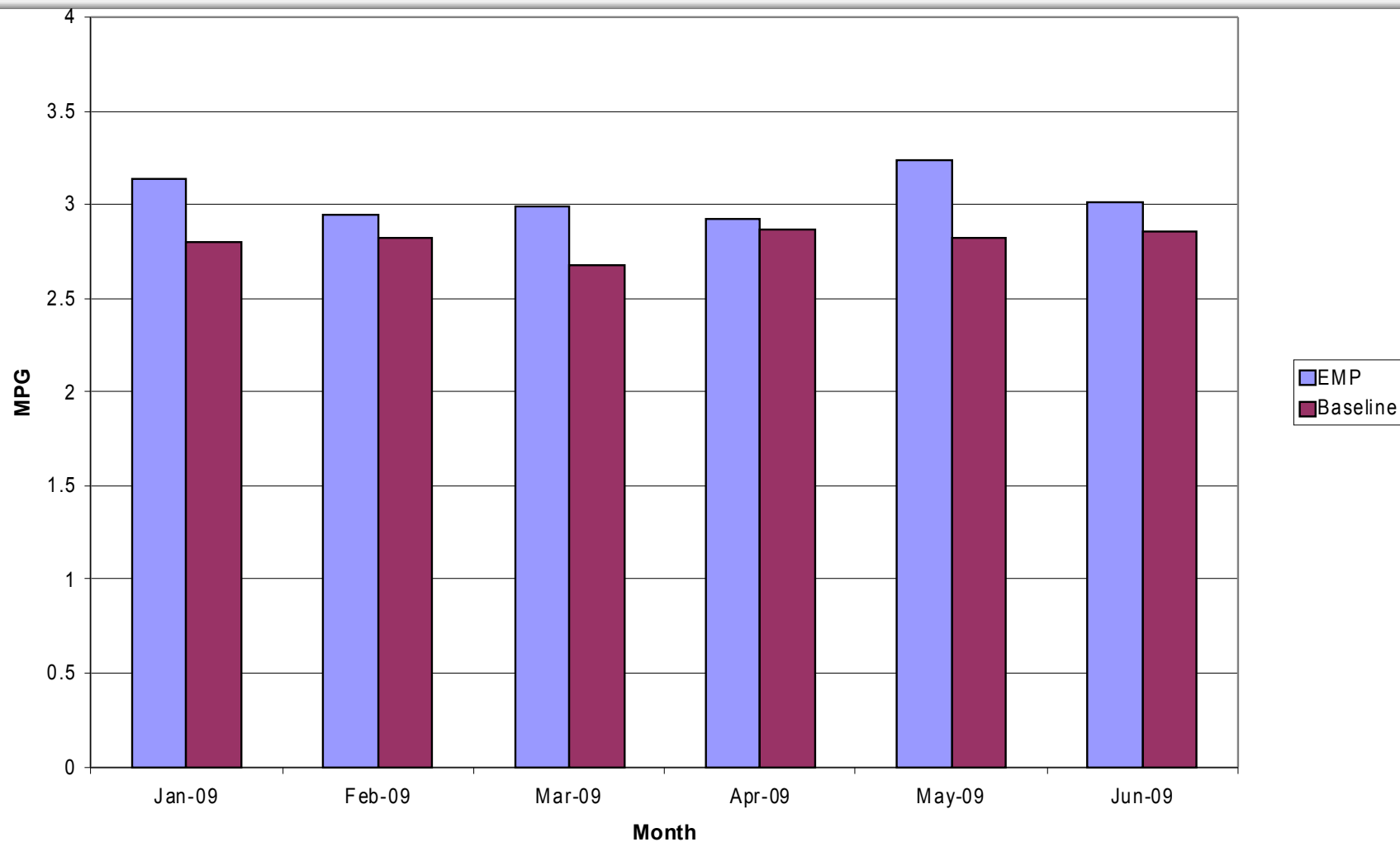
MBTA - 60' Neoplan



Average improvement 21%

Riverside Transit Fuel Economy Results

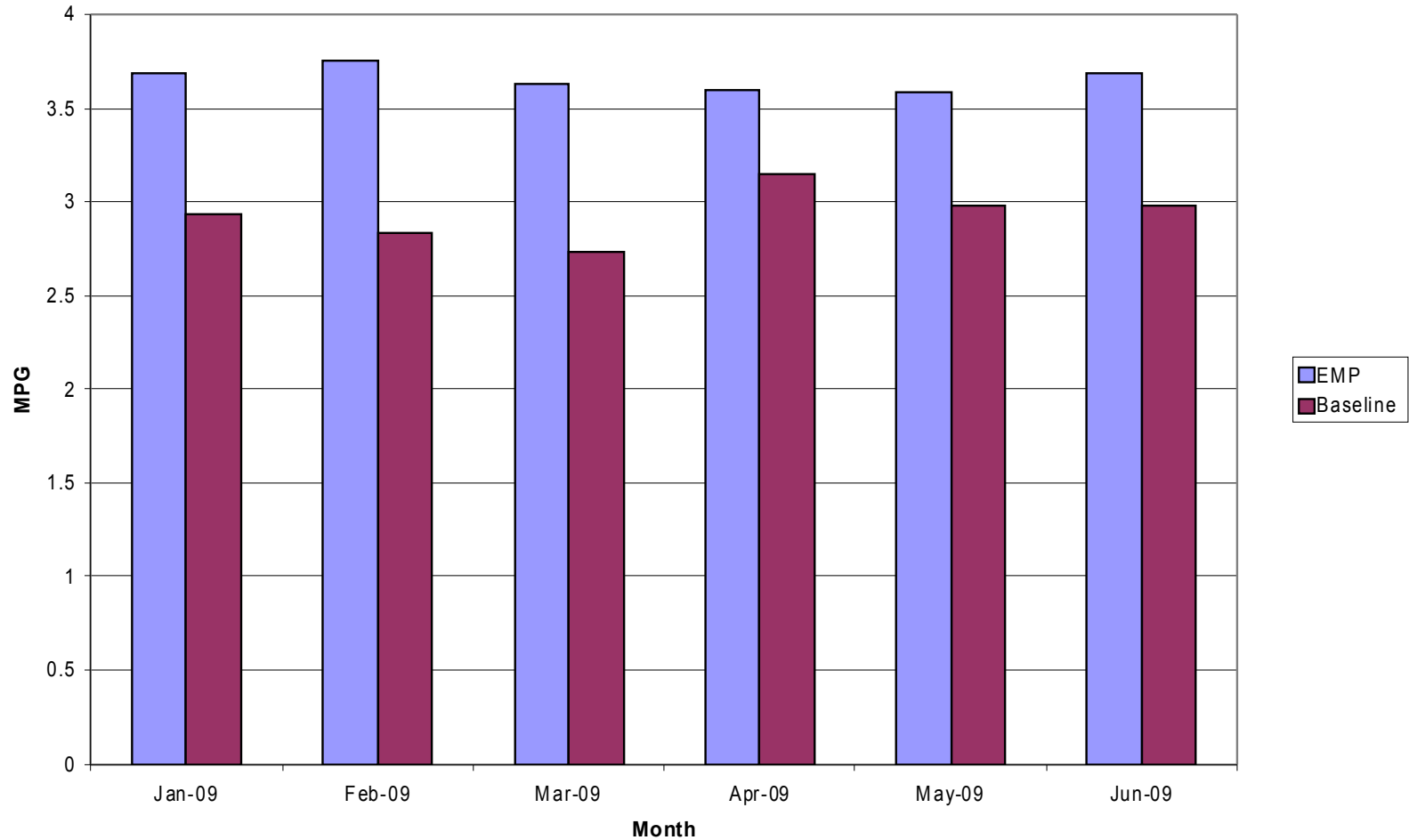
Riverside Transit



Average improvement 8%

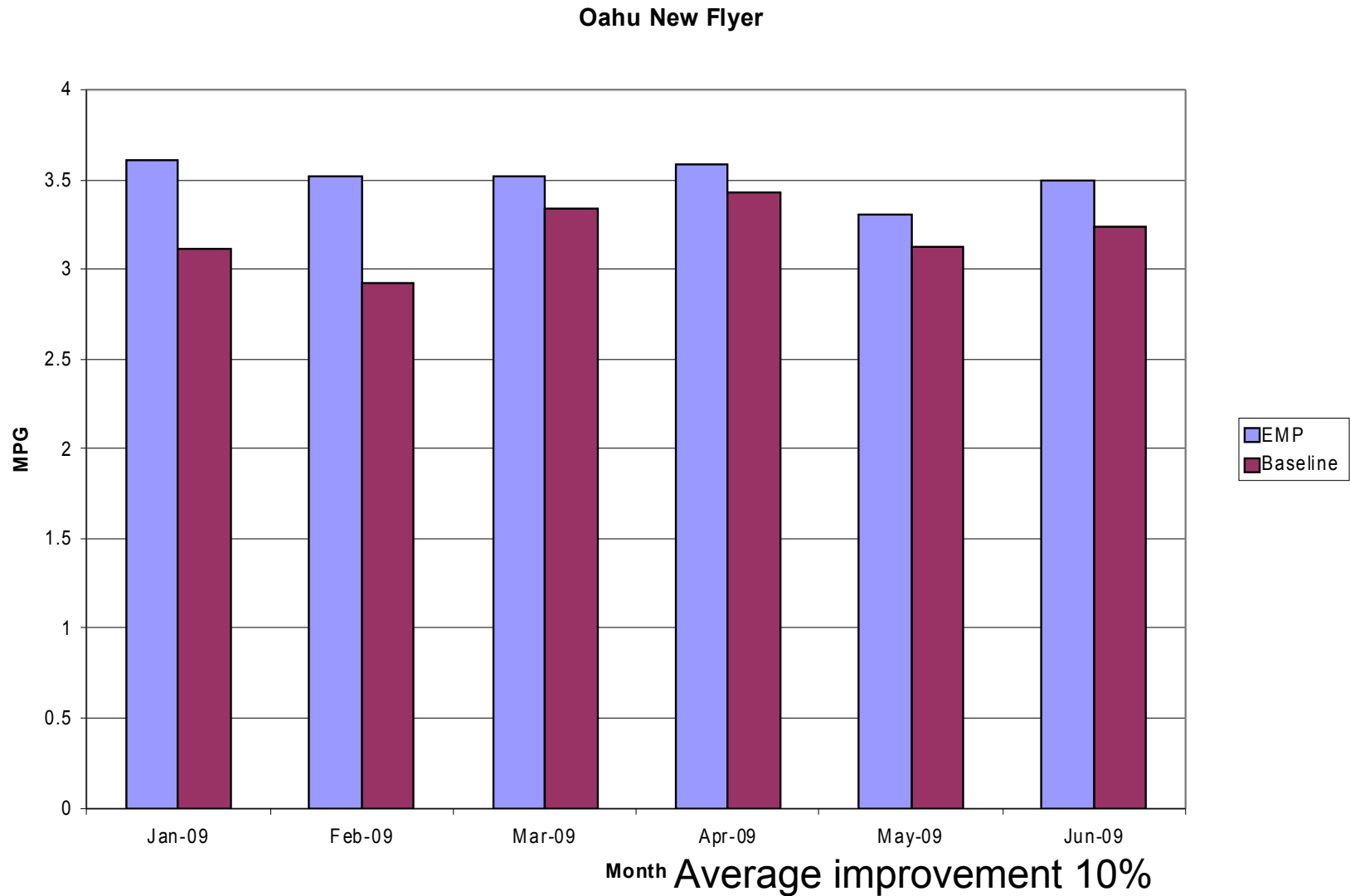
Broward County Transit

Broward Cty Transit



Average improvement 25%

Oahu Transit – New Flyer



Mini-Hybrid provides more fuel savings throughout the engine rpm range. Fuel economy ranges vary depending on duty cycle, climate, and engine type

