Federation of Canadian Municipalities (FCM)
Enviro-Fleets Workshop – November 16th, 2010
London, ON – Briefing Paper

On November 16th, 2010, the first Enviro-Fleets workshop for municipal fleet managers was held in London, Ontario. The workshop was hosted by the Federation of Canadian Municipalities (FCM), in partnership with Fleet Challenge Ontario. The workshop brought together municipal fleet managers and experts from the transportation sector in an all day event where participants experienced group activities, networking opportunities and expert presentations. Altogether, 35 participants attended the event which included the following speakers:

- Lisa Hatina, Project Coordinator, Partners for Climate Protection. Federation of Canadian Municipalities
- Roger Smith, Executive Director, Fleet Challenge Ontario
- Jim Tucker, Fleet Manager, Toronto Region and Conservation Authority
- Andrew Jardine, Professor, University of Toronto
- Melissa Felder, Director of Program Development, Fleet Challenge Ontario
- Ken Fryer, Director, Nekus Consulting Group
- Rakesh Singh, Manager, Environ EC (Canada), Inc.
- Pierro Hirsch, Virage Simulation

Speakers provided attendees information on several key areas of fleet management; including (1) the use of software and monitoring programs to improve fleet performance, (2) fleet management strategies and successes, (3) asset management and economic lifespan, (4) best practices and resources available to fleet managers, (5) biodiesel use in fleet vehicles, (6) software modelling programs to develop green fleet plans, and (7) simulator usage to develop operators skills.

Several discussion periods were also convened to catalyze discussion on how to define green fleets and in addition allow for the sharing of best practices between participants.

Conference Introductions and Motivation

The conference began with the facilitator, Anthony Watanabe from The Innovolve Group, asking the group for a quick introduction, affiliation, and their motivation for attending. The participants introduced themselves and several key topics were raised, some of which included:

"...I want to learn more about alternative fuels and their usage."

"...prove to council that capital cost is only one aspect of fleet management."

"...investigate possible funding sources; our municipality is just learning about green fleets."

"...find out what new vehicle technologies are out there."

"...understand our equipment so that we can better manage our resources."

Other common themes that were mentioned included interest in vehicle procurement, vehicle spec'ing, networking opportunities and what constitutes a green fleet.

First Group Activity – Defining a Green Fleet

The participants were asked to work in small groups, six in total, to discuss one common question: "How do you describe a "green fleet"?"

The six groups shared their definition of a green fleet and identified the following common components as important to defining a green fleet:

- Assets and asset management
- Life cycle value, from purchase to sale
- Socially responsible operations
- Efficiency
- Challenging
- Effective monitoring

The group agreed that greening a fleet has inherent challenges which include determining proper fleet size and make-up, the reduction of CO_2, baselining and proper data monitoring and management, life cycle analyses and replacement cycles. The value of a green fleet to municipalities is difficult to assess and fleet managers need support to serve citizens as sustainably as possible. It was agreed that one major advantage to greening fleets is the buying power of fleets that demand alternatively powered vehicles.

Expert Presentations

Lisa Hatina, Project Coordinator, Partners for Climate Protection. Federation of Canadian Municipalities

The Federation of Canadian Municipalities (FCM) represents over 1,900 members including cities, urban and rural communities. The FCM maintains a strong advocacy role for the representation of municipal interests throughout federal policy development. The Partners for Climate Protection (PCP) program is supported by FCM to reduce greenhouse gases and improve the state of the climate. The PCP program recently expanded to provide funding to municipal fleet managers to "green their fleet". The Enviro-Fleets project offers tools and resources to help fleet managers reduce their carbon emissions which include best practices manuals, webinars, training workshops, and other useful resources. Through partnerships and cooperation, municipal fleets are continuing to improve their performance and reduce their carbon footprint. For more information about FCM, PCP, funding opportunities and helpful resources, please visit www.fcm.ca

Roger Smith, Executive Director, Fleet Challenge Ontario

Fleet Challenge Ontario (FCO) is a not-for-profit program of the Canadian Energy Efficiency Alliance that helps municipal fleet managers reduce the carbon footprint of their fleet. By monitoring several different key performance indicators, fleet managers can save costs through time and resource management of capital and operational expenditures.

FCO offers a comprehensive Fleet Review Program to Ontario municipalities that provides a baseline and outlines over 100 key performance indicators which are useful to fleet management. Through the program, FCO makes well informed recommendations to improve fleet performance. The E3 rating system is a voluntary component of the Fleet Review that operates in the same fashion as LEED certification for buildings and can be awarded after or during a municipal Fleet Review. Participants in the E3 rating system can use a 10 point plan (rating key) to assess their performance and rating eligibility.

Several strategies for greening and for gaining E3 'points' can be utilized by fleet managers which range from replacement strategies, telematics, and renewable fuel usage, among others. These strategies help to reduce greenhouse gases and ultimately reduce costs. A useful tool for all fleet management options is the carbon emissions comparison chart which outlines how much carbon is emitted from different types of fuel which can be found at www.fleetchallenge.ca or www.ghgenius.ca

Question (Q) and Answer (A):

Q. Can the carbon emissions comparison chart be used to assess any type of fuel or vehicle and differing operational characteristics?

A. Yes. It simply depends on the volume of fuel burned. The chart can be used for small compact cars to heavy duty vehicles.

Q. Is there a more descriptive E3 rating key available for fleet managers?

A. Yes. We provide the overview to quickly check your performance and areas of focus of the E3 program. Ken Fryer, who actually conducts E3 audits and assigns fleet ratings, can describe the process in more detail as well.

Ken Fryer: We analyze and assess the effectiveness of staff training provided by managers. I personally have a hands-on approach to validating a green fleet and to issuing E3 ratings. We also follow up with the fleets to gauge the effectiveness of the program afterwards.

Jim Tucker, Fleet Manager, Toronto Region and Conservation Authority (TRCA)

The Toronto Region and Conservation Authority (TRCA) recently took part in FCO's Fleet Review Program. After receiving results, Jim Tucker used several key performance indicators to make the TRCA fleet more efficient. Some of the strategies included right-sizing, alternative fuel use, and driver training. Because of the nature of the TRCA's employee base – which is highly active during the summer months and hires summer students in many departments – Jim Tucker had to strategically plan his budget and green fleet plan. However, he did receive help

from employees in the form of requests to downsize vehicles because of underutilization, which fits directly into some of the recommendations provided by FCO. The TRCA was also able to procure some utility vehicles for the parks which run on a mixture of biodiesel that helps to reduce fuel usage and greenhouse gases.

The TRCA was able to organize and provide fleet operational data that helped inform future procurement and management. Through the Fleet Review Program, the TRCA was able to indentify several key performance indicators and compare their results to municipal averages. Overall, Mr. Tucker is very happy with his fleet's performance and plans on continuing to improve his fleet in the years to come.

Question (Q) and Answer (A):

Q. How did you budget for fuel usage and distribution?

A. Our fuel budget is centralized at the TRCA.

Q. Do you find that employees feel unaccountable for fuel usage? Do your employees try to conserve fuel when the fuel budget is centralized?

A. We've found that the majority of our employees cooperate and try to conserve fuel. Although their individual department is not accountable for fuel usage and budgeting, employees understand the long term benefits of resource conservation.

Q. Do you have problems with high incidents of idling?

A. We've discovered that during the winter months some of our waterfront vehicles have high idle times. The operators needed to idle the vehicles because it was cold outside and needed the extra heating. The TRCA is now investigating the use and benefits of auxiliary power units (APU) to offset the higher incidences of idling.

Q. What type of budget constraints do you face? Have you examined park vehicles?

A. We do have budget constraints and we face these by downsizing our fleet. This strategy has helped us dramatically. We've also utilized utility vehicles in the parks which operate on biodiesel – thereby savings costs and carbon emissions.

Q. Can you explain your low preventative to reactive maintenance ratio?

A. The low ratio is attributed to a low average fleet age, approximately 4.2 years. Since our fleet is young, we rarely need to do reactive maintenance and only service our vehicles at appropriate time intervals.

<u>Andrew Jardine, Professor, University of Toronto</u>

Professor Andrew Jardine is an expert in asset management and economic lifecycles. His work and seminars have helped fleet managers understand their vehicles in terms of assets. One of the single most critical factors in asset management is utilization. Capital investment in any asset would dictate that these assets should only be retained so long as they serve some worthwhile purpose toward achieving the organization's objectives. This begs the question as to why organizations continue to maintain, store, fuel, license, insure and pay all of those

associated vehicle ownership costs for units that are not fully utilized. Put another way, fleet managers could free up the capital and operating expenses tied up in under-utilized and/or redundant vehicles and invest it in upgrading the fleet to include best-in-class, fuel efficient vehicles.

Life Cycle Cost (LCC) models can represent the economic operating and commercial circumstances that a fleet is encountering. Once the model is properly represented, fleet managers can analyze the risks associated with fleet management and establish best practices in order to have the longest life for their vehicles and the greatest return on investment. Once a life cycle costing plan is established and baseline information is gathered, an analysis of performance can be prepared so that a fleet manager could begin to understand and organize important information about their fleet.

Fleet managers often face difficult decisions that require in-depth analysis of costs to secure the best return on investment. Professor Jardine presented the example of a Caterpillar 992D front-end wheel loader that was being heavily used in a mining operation. The client wanted to know whether the unit should be rebuilt or replaced. Factoring in the purchase price ($1M), all costs of operation, resale value, rebuild costs (approximately $500K), sensitivity and uncertainty factors, and using the *methodology of life cycle costing,* the conclusion was to replace, rather than rebuild this unit, despite the high acquisition cost. Essentially, fleet retention decisions should not be only made on the basis of the very visible acquisition cost of the new asset – it is also extremely important to think about all the other components of buying, operating, and replacement. The acquisition cost can always be thought of as being analogous to the small visible surface of a much larger iceberg.

Second Group Activity

Subsequent to the morning presentations, participant groups were formed. Each group was assigned one of the following questions for a 15 minute discussion.

1. Do you incorporate the time value of money in your fleet life cycle analyses?
2. What O & M cost data do you need and collect to assist in establishing the economic life of your fleets?
3. Which items have a fairly steady annual utilization?
4. Do you make repair *vs.* replace decisions?
5. Do you face a similar situation as the Parks and Recreation Department mentioned in the presentation?

Q1. Do you incorporate the time value of money in your fleet life cycle analyses?

A1. We have found that managers do not incorporate the time value into their analyses and organizations generally do not use these types of strategies to their advantage. By extending vehicle life cycles, time *vs.* money values are often forgotten or overlooked.

*Secondary question to Roger Smith and Andrew Jardine: Are interest rates the biggest determining factor to rebuild or replace? N.B – this is one of the questions (Q4) from the above list.

A4. In our opinion, it is not very important. A fleet manager must always ask for the interest rate of discounting to incorporate the best strategy. Taking the value of time into consideration is an important aspect as well as accounting for inflation. You can use this strategy but the discount rate must be high enough because you will never know the true future rate of inflation.

Q2. What O & M cost data do you need and collect to assist in establishing the economic life of your fleets?

A2. It is difficult to gauge the economic life of vehicles in a fleet. There are a lot of components to take into account that include end of life cost. In some cases, the end of life cost is $0. It is also difficult to gauge and compare the value of vehicles that are older. Some managers retain vehicles to extract the capital they originally invested. One may want to analyze the value of these vehicles on shorter replacement schedules and the return from sales at auctions.

Q3. Which items have a fairly steady annual utilization?

A3. Seasonal equipment assumes lower utilization but in some cases, utilization may still be high even when off-season time is taken into account. Although a department has a variety of new and old vehicles, the distribution of these vehicles cannot be equal. In most cases, managers receive newer vehicles and employees receive older vehicles. A balanced rotation is a good strategy to have a good balance of utilization throughout all vehicles.

Q5. Do you face a similar situation as the Parks and Recreation Department mentioned in the presentation?

A5. Yes. We all face the same budgeting, planning, and decision making situations. A fleet needs to be treated as a highly valued asset and skilfully managed to be as efficient and profitable as possible.

*Further comments and questions:

Q. Should a fleet manager keep spare vehicles to have as backup?

A. Downtime cost should be included in the analysis; spare vehicles have a cost as well.

Q. Does an analysis of vehicle assets consider trade-in costs?

A. Yes. The trade-in value is considered and value at auction is considered as well.

Q. Should a fleet manager integrate the cost of spare vehicles into the analysis or should those costs be considered separate and segregated?

A. All costs, including spare vehicles, should be integrated into the analysis.

Melissa Felder, Director of Program Development, Fleet Challenge Ontario

Fleet Challenge Ontario, with the support of the Ontario government, is currently preparing a follow-up document to their 2008 Best Practices Manual; the 2010 Best Practices Manual. This Best Practices Manual stems from the Ontario Municipal Fleet Review and Green Fleet Forum Series, a program designed to assist Ontario municipalities in understanding and delivering on opportunities to instigate fleet efficiencies and achieve associated environmental benefits.

The manual contains information on the following categories:

- The Evolving Global Context for Vehicle Transportation
- Creating a Green Fleet Plan – The Municipal Challenge
- "Data is King"…And Critical to Fleet Efficiency
- Trends in Hybrid and Electric Vehicles
- Maintaining a Successful Green Fleet
- Managing Green Fleet Assets Effectively

Given today's increasingly pressing environmental concerns, along with varying fuel prices and increasing pressures on fossil fuel reserves, a great opportunity exists for the municipal fleet operator to seek out new cost efficiencies while taking a leadership role on environmental issues within their community.

The 2010 Best Practices Manual chapters include important information on issues such as peak oil, internal combustion engine trends and improvements, hybrid incorporation into fleets and their benefits, fleet management and monitoring programs, economic life cycle of vehicles and replacement strategies, policy development and associated standards, and much more. The manual provides information that fleet managers can access to help reduce their fuel consumption, operating costs, and tailpipe emissions through sharing of modern fleet management techniques and proven best management practices.

Information in this manual has been structured to provide topical information to assist fleet managers in initiating, deploying, and maintaining a green fleet. Sections have been developed in consultation with green fleet management experts and forum speakers, Ontario municipal fleet stakeholders, and by the study team. Where applicable, information has been supplemented by additional research.

It is expected that this Best Practices Manual, through providing discussion on and tangible examples of currently available and cost-effective automotive fleet management practices, will enable fleet managers to take action on global warming and poor air quality, while saving money and improving workplace health and community liveability.

The new manual will be available in 2011. Access the 2008 Best Practices Manual now on the FCO website at www.fleetchallenge.ca

Ken Fryer, Director, Nekus Consulting Group

Ken Fryer is a leading Canadian expert on biodiesel. There are several issues facing meeting the national 2% biodiesel fuel standard. Most of the challenges seem to be political in that most people are not aware of biodiesel and its benefits and therefore do not generate the demand required.

When thinking of using biodiesel there are many aspects to consider. For example, how many people are handling the fuel before consumption? What types of trucks are being used to transport the fuel? What is the crop source of the fuel? How will it be blended into conventional diesel? How will the fuel be stored? What is the cloud level of the blend and what are the pricing mechanisms?

Currently there are no WHMIS documents for biodiesel. The only standards in terms of WHMIS are that for diesel. Because there is no WHMIS classification, it is important to understand where the biodiesel is coming from and how it is being blended. Biodiesel must be blended with diesel at temperatures within six or seven degrees of each other or else gelling could occur. Traditionally, splash blending is the most common form of mixing. However, blending at the rack is far more efficient and gives a more homogenous blend. Biodiesel is a solvent and will break down the firm in conventional diesel. In most cases fuel filters will need to be changed at a higher rate initially in vehicles running on a blend of biodiesel because the film will clog filters.

Another consideration of biodiesel is the cloud point. The cloud point of a fluid is the point at which dissolved solids are no longer soluble and create a cloud like appearance. If a fuel reaches its cloud point, it cannot be used. Number two diesel has a cloud point of approximately -19°C. If biodiesel is added to that fuel, the cloud point increases to -16°C. If winter grade diesel is used in place of summer grade, the cloud point will decrease and the effect of biodiesel blending on the cloud point is reduced. Biodiesel is however hydrophilic – water loving – and so will stick to water molecules. Exposure to too much water will cause biodiesel to behave in a soap-like manner, gelling and becoming unusable. Biodiesel can be exposed to water through storage (i.e. not properly draining a fuel storage vessel before adding biodiesel), and through accumulation. Diesel fuel can be delivered with up to 2% water content. The water not only makes bonds with the fuel but will increase the rate of tank erosion.

Since biodiesel is made from renewable sources, it can decompose. Decomposition makes the fuel less harmful if spillage occurs but also contributes to bacterial build up. Bacteria that feed on the organic matter within biodiesel add by-products to the fuel. These by-products can be harmful to engine operation, clogging filters and reducing performance. Generally, biodiesel can be stored for nine months before these types of problems occur.

For vehicles, it is important to remember than biodiesel will degrade rubber components such as hoses and filter seals.

Question (Q) and Answer (A):

Q. What is your opinion on using summer seasonally adjusted number two diesel fuel all year round?

A. If you can use biodiesel all year, there is definitely potential cost savings because there's less kerosene in the fuel. However, using B20 in the winter season does have its challenges. Winter grade diesel has to be used and the biodiesel has to be properly stored to avoid any complications with freezing. Some areas use summer grade diesel with B5 in the summer and B2 in the winter.

Q. What crops supply biodiesel producers? Which crop is the GHGenius program based on?

A. It's hard to tell which crops are used in which biodiesel. Primarily, canola is used but individual biodiesel producers vary in terms of their suppliers and output. The canola biodiesel will start to cloud around -4°C. B100 soy will cloud around -2°C. The problem with soy bean biodiesel is sudden changes in temperature and certain humidity levels that activate the bacteria in the fuel and the biodiesel will froth. Algae are becoming more viable in the search for biodiesel producing sources. At the moment, algae are good candidates because they produce biodiesel at stable rates through natural processes. The drawback is that the net yield is quite low.

The GHGenius program is believed to be based on canola.

Q. In terms of a renewable fuel standard – what will it take to get biodiesel mandated in Ontario and Canada?

A. The major problem is that big oil companies have not put in the infrastructure to support biodiesel incorporation. It will require end users to demand it. Fleets are a great candidate. If all fleets had a common spec and demanded a biodiesel fuel blend, suppliers would listen. If they demand it, there is a large buying power in the form of commitment on a large group level. Without demand, there is no supply.

<u>Rakesh Singh, Manager, Environ EC (Canada), Inc.</u>

The Toronto Fleet Services Division (FSD) is responsible for the implementation of their Green Fleet Plan. Some of the major components of their operations include purchasing, managing, maintenance, and driver training. To address their increasing need for technical support, the City enlisted ENVIRON to design a comprehensive decision making tool to select the best new, green vehicles and assess their performance. This tool is called the Green Vehicle Evaluation and Selection Tool (GVEST).

GVEST is an Excel based program that compares different vehicle technologies based on their environmental performance and cost. The tool encourages fleet managers to make environmentally sensible decisions when procuring vehicles. GVEST takes several factors into account when considering vehicles which includes greenhouse gas emissions as well as criteria air contaminants and also considers input variables such as technology, model year, life span, capacity, and cost data.

The GVEST program demonstrates the potential of well informed decision making on acquiring the best vehicle for fleets, not only based on cost, but also performance and fit.

Question (Q) and Answer (A):

Q. When should a fleet manager use this tool? Should it be utilized before or after planning?

A. The GVEST tool can be used before and after. You can use the tool to plan your decisions, monitor the effects and performance, and model your future decisions based on feedback.

Q. Can you merge data into this program to obtain more detailed, personalized output?

A. Yes. It requires some modification but information can be merged into the program.

Q. In terms of regulating GHGs from heavy duty vehicles, is the GVEST tool useful?

A. The program will need to be adjusted, but you can track heavy duty vehicle GHGs. Some manipulation and data analysis would be required but a simple Excel program could work.

Pierro Hirsch, Virage Simulation

Virage Simulation is a leader in the design and manufacturing of car and truck simulators. Simulators have been used for several decades and were initially designed for airplane pilots. Because of the realistic nature of the training scenarios, pilots could actually complete their training on the ground.

Today, simulators are used for all types of driver training including for operators of light passenger cars to heavy-duty diesel models. As technology continues to improve and simulators become more and more realistic, trainees can experience several different scenarios which prepare them for real-world conditions. Not only are scenarios becoming more realistic, but inputs such as accelerator pedal, brake pedal, gearbox, and steering wheel are designed to provide realistic driver feedback. All these aspects enhance the training experience and help drivers hone their skills in a safe environment.

Several vehicle accidents and driver mistakes can be attributed to a lack of experience. Simulators allow inexperienced drivers to correct and improve bad driving habits in a completely controlled and safe environment. According to Pierro Hirsch:

> *"...simulators allow me to play a driving scenario for a trainee then replay the scenario to show them what they did wrong and right. This type of training is invaluable."*

A new component of simulators that is gaining ground is environmentally responsible vehicle operation – or 'eco-driving'. Ecodriving simulation models train drivers how to properly operate a range of alternatively powered vehicles such as hybrids and electric vehicles (EV). These vehicles require modified driver behaviour to take full advantage of their capabilities. Based on a trial run, Virage Simulations concluded that ecodriving practices can produce fuel economy improvements of up to 40% which equates to significant fuel and energy savings.

In terms of utilization and exposure, simulators require promotion and encouragement from organizations. Simulators should be used as future planning tools and require "seat-time" to be

effective. Although ecodriving practices are not widely utilized at the moment, simulators are helping to reduce greenhouse gases by modifying driver behaviour.

Question (Q) and Answer (A):

Comment: Our municipality has used simulators to teach winter plough operators proper driving and ploughing techniques. For us, there is no comparison to simulators because of the complete reduction of "trial and error" which ends up costing us a lot of money. The drivers' stress and comfort levels are improved before even getting into the vehicles. It is great to provide this training in such a controlled and safe manner.

Q. Are there any mobile units available for renting?

A. Yes, smaller communities can take advantage of rental opportunities if they have resources to provide this type of training.

Q. Can simulators adapt to various payloads and scenarios?

A. Yes, they are very adaptable and we have several different driving scenarios available.

Q. What is the cost of renting a simulator?

A. Variable, but definitely worth the money you will save in the long run.

Final Group Activity

At the end of the day, participants were asked to rejoin their groups and design a prototype green fleet plan applying the information learned during the workshop. Groups chose to use their own municipality or imaginary municipalities to showcase their plans.

All groups designed and delivered their municipal prototypes. All were unique, however common elements included:

- Greening the fleet
- Maintenance plans
- Monitoring fleet performance
- Renewable fuels
- Knowing your fleet inventory
- Proactive behaviour
- Resource management
- Budgeting
- Public, private, political support for initiatives

Participants agreed that fleet management relied on appropriate budgetary planning, data analysis, and support to "green the fleet". Many municipalities face resource limitations and strategic planning is a great way to overcome financial hurdles. Prioritizing is an important component of fleet management especially when environmentally friendly options are considered. Although many municipalities would like to restructure components of their fleet

such as vehicle type and fuel type, these actions take proper planning and time to implement. Greening a fleet requires patience and constant work.

It is important to have public participation and consultation to support fleet managers' plans to green their fleets. Branding creates awareness and demand from constituents for cleaner, more efficient vehicles and operations. Again, these initiatives take time to implement and progress therefore it is inadvisable to boast about quick and easy results.

Approval and support from council is a key component of a successful green fleet. One strategy is to compliment current policy with a simple green fleet initiative, or 'tack-on'. Uptake of these types of policy enhancements is generally high and future tack-on is simpler.

Quantification and monitoring is the responsibility of the fleet manager. Attainable and realistic targets have to be set, reached, and reset. Green fleets continue to progress and evolve. The best criterion to monitor is greenhouse gases (GHG) where a baseline must be calculated and year-over-year sampling conducted to measure improvement. Intensity is the best method to convey emission reduction progress because it does not simply measure gross output, but GHG output per vehicle.

All participants agreed that "greening your fleet" has inherent challenges and does not happen overnight. The improvement period could take several years and consist of replacing older cost-ineffective vehicles, designing a comprehensive monitoring program with the support of staff and council, investing in green technology such as hybrids and electric vehicles, and working with peers to share best practices. Transportation accounts for approximately 30% of GHG emissions in Canada and municipal fleets have the numbers and the prerogative to demand energy efficient vehicles and operations to reduce carbon emissions.

One example of a green fleet prototype plan is featured here for the *Municipality of London.* London has an underutilized fuel storage site which the group deemed "biodiesel ready". Biodiesel would be promoted through the media and stakeholder actions. The municipality could design a voluntary "fleet team" which would be responsible for the promotion and development of green fleet actions. The public and politicians would be called upon to consult and endorse the programs initiatives and actions. The use of an executive sponsor could help gather private industry interest and support. Through benchmarking, the team could properly monitor and modify the fleet to be as efficient as possible to meet its carbon reduction targets. The media could be utilized to publicize efforts and results to create a positive and leadership type identity for the city which would use the headline "*Forest City Goes Green"* to describe its green fleet efforts.

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