

Municipal Fleets that help the budget – and the environment

Pilot Project summary from Clean Foundation

Municipalities are increasingly under pressure to adapt to changing environmental and economic conditions. To find long-term stability, their asset and operations planning must meet both economic and environmental goals.

The *Municipal Fleet Initiative* was a pilot project carried out by Clean Foundation to equip municipalities to be able to assess, value and plan to integrate plug-in electric vehicles into their light-duty fleet management and capital asset planning. The project also developed strategies to assist municipalities to address real and perceived barriers to the adoption and use of plug-in vehicles by staff.

The initiative was funded as part of the Nova Scotia Moves Grant of Department of Energy, with addition funding and in-kind support from Nova Scotia Power Inc., as well as FleetCarma, a division of CrossChasm Technologies Inc. that provides a modeling and simulation technology that enables managers to identify the best fit vehicle for each duty cycle in the fleet portfolio.

From September 2014 to March 2015, Clean worked with the Towns of Bridgewater and New Glasgow, both communities with populations below 10,000.

In collaboration with FleetCarma, Clean and fleet managers, each town identified candidate vehicles from the fleet for installation of FleetCarma devices to collect actual powertrain data.

This data was analyzed by FleetCarma to help build a business case for the replacement of conventional vehicles with plug-in vehicles.

Simultaneously, Clean employed a community-based social marketing approach to identify barriers and benefits to adopting electric vehicles.

Clean administered surveys to departmental and fleet supervisors and municipal employees. The surveys were designed to assess vehicle use, benefits and barriers to integrating plug-in vehicles, and general awareness, knowledge and comfort level with plug-in vehicles amongst employees.

Each town was provided with a final report on electrifying their fleet, which included a replacement suitability analysis.

Town of Bridgewater

The analysis revealed that ten vehicles in its light-duty fleet could be replaced with plug-in models. Over the fleet's lifetime, this could:

- Generate a total cost savings of over \$110,000 – a 12% reduction in the fleet budget.
- CO₂ emissions reduction of greater than 280 tonnes (55%).
- Gasoline consumption would be reduced by nearly 120,000 litres (76%).

Town of New Glasgow

The analysis conducted for the Town of New Glasgow revealed similar potential:

- Projected total cost savings in the fleet budget of over \$250,000 (18%).
- Reduction in CO₂ emissions of over 3,700 tonnes (74%).
- Reduced gasoline consumption of over 300,000 litres (69%).

Survey data of employees in both communities revealed that both groups manifested a range of barriers related to plug-in vehicle adoption and use:

- 1) Concerns about the range of electric vehicles.
- 2) Limited access to battery charging facilities.
- 3) Aggressive driving styles which could greatly reduce the range of electric vehicles.
- 4) Not using the right-sized vehicle for the job
- 5) The high capital cost of conversion.

Targeted recommendations were provided to the municipalities to assist them in overcoming these barriers. Recommendations for the first three barriers focused on targeted training and education of drivers and fleet managers.

The final two barriers can be addressed by the towns by using the information provided to

develop an electric vehicle (EV) replacement strategy with a focus on the replacement that makes the most sense from a “right vehicle” point of view, and the greatest total cost of ownership savings.

The survey data also identified the primary benefit of plug-in vehicle integration was the enhanced environmental sustainability of the municipal fleet.

Based on the FleetCarma and survey data, integrating EVs into the light-duty fleets of both Towns is entirely achievable and provides significant cost savings and environmental benefits. We recommend starting with one EV replacement within the fiscal year, using this as a pilot project.

Leadership of the towns including town council, senior staff and business leaders can play an important role in promoting this valuable change to communities. Any electric vehicle integrated into a fleet should be well branded and highly visible.

We recommend encouraging employees to experience the benefits of driving an EV. Share success stories among employees and the public. And finally, publicly recognize the efforts of those drivers who have chosen to be early adopters.



Clean Foundation provides the knowledge, tools and inspiration needed to encourage individual actions that add up to positive environmental change.

We are a non-profit, non-governmental organization working in energy, water, transportation and waste to help create a sustainable, vibrant society.