Appendix B

Supplemental Information for the 2011 Green Fleet Plan Annual Report

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1.0 Green Fleet Plan Strategies

The following section provides a summary of all of the Green Fleet Plan strategies.

The original Green Fleet Plan had a set of 45 strategies to deploy. This section provides an overview of which strategies were deployed in 2011, and an indication if a summary will be maintained, deleted, or revised. New strategies are also denoted as new and have been added to improve the plan's effectiveness.

Lastly a timeline has been added to denote the timeframe in which each strategy will be deployed. Some strategies that will be deployed every year are denoted as ongoing.

All changes to the original Green Fleet Plan have to be approved prior to implementation.

City of Winnipeg Fleet Management Agency
Annual Green Fleet Plan Strategies - 2011

Reporting Statistics			
Total Actions:	**54**	**Maintain:**	**31**
Actions Implemented:	**21**	**Revise:**	**8**
Actions Remaining:	**33**	**Delete:**	**6**
		New Actions	**9**

1) Right Size the Fleet

Goal: Implement actions to reduce the overall number of vehicles and fuel used by the City's fleet in addition to ensuring all City vehicles are appropriately sized for their required job function.

Actions	Action Implemented	Action Recommendation	Time Line	Responsibility
(a) When a vehicle is due for replacement, WFMA will meet with departments and SOAs to determine whether an existing vehicle actually needs to be replaced to meet operational needs. If the vehicle is not required, it will not be replaced, thus reducing the size of the City's vehicle fleet.	Yes	Maintain	Ongoing	WFMA in cooperation with Departments and SOAs Police and Fire will complete this action within their own respective Depts.
(b) Investigate the feasibility of using bicycles instead of vehicles for relevant applications such as in Parks, Parking authority, some Police patrol staff and City pool vehicles, which is at the discretion of individual departments.	No	Maintain	2012	WFMA in cooperation with Departments and SOAs. Police and Fire will complete this action within their own respective Depts.
(c) Encourage multi-purpose vehicles, such as outfitting one vehicle with multiple attachments so the vehicle can conduct multiple functions, that otherwise would have required two separate vehicles.	Yes	Maintain	Ongoing	WFMA in cooperation with Departments and SOAs. Police and Fire will complete this action within their own respective Depts.
(d) Encourage vehicle sharing amongst Departments and SOAs whereby the vehicle is only needed on a seasonal basis for respective Departments and SOAs. The method to implement will include: · Upon the year a vehicle is to be replaced, Departments and SOAs will advise WFMA of vehicles and equipment that are used for seasonal functions. · WFMA will review opportunities for vehicle sharing from other seasonal use vehicles. · WFMA will provide the recommendation to both departments and will implement the option based on Departmental and SOA approvals. **Revise**: (d) Encourage vehicle sharing amongst Departments and SOAs whereby the vehicle is only needed on a seasonal basis for respective Departments and SOAs. The method to implement will include: - WFMA to compile a list of units that are used on a seasonal basis and assess whether an internal rental unit can be used instead of a new vehicle purchase, or whether any other off season vehicle could be shared between Departments.	Yes	**Revise**	2013	WFMA in cooperation with Departments and SOAs. Police and Fire will complete this action within their own respective Depts.
(e) When a vehicle is up for replacement, the WFMA will meet with Departments to ensure the right size vehicle is purchased for the required job function. This may entail purchasing a smaller vehicle if it meets operational needs or purchasing a larger vehicle in instances where it would improve the fuel efficiency to have a larger vehicle that can carry heavier loads required to undertake a job function.	Yes	Maintain	Ongoing	WFMA in cooperation with Departments and SOAs. Police and Fire will complete this action within their own respective Depts.

2) Purchase the Most Fuel Efficient Light Duty and Lowest Greenhouse Gas Emitting Vehicles where Operationally Feasible
Goal: Purchase the most fuel efficient vehicle or equipment, providing it meets operational requirements of the Department or SOA.

Actions	Action Implemented	Action Recommendation	Time Line	Responsibility
(a) Ensure all light duty fleet tenders put a significant weight on fuel efficiency to ensure light duty vehicles are as fuel efficient as possible. **Revise:** Ensure all light duty fleet bid opportunities have evaluation criteria that put a significant weight on fuel efficiency and lowest greenhouse gas emitting vehicles.	Yes	**Revise**	2012	WFMA in cooperation with Departments and SOAs. Police and Fire will complete this action within their own respective Depts.
(b) Review all light fleet tender processes to ensure the process maximizes the potential to purchase the most fuel efficient vehicle possible, including encouraging a larger set of vendors to bid on City tenders and writing green specifications aimed at reducing fuel use into all City vehicle tenders.	No	Maintain	2012	WFMA in cooperation with Departments and SOAs. Police and Fire will complete this action within their own respective Depts.
(c) Purchase hybrid-electric vehicles for light duty, high and extreme usage vehicles, when operationally proven hybrid models are available and meet operational needs. Fifty percent of all high and extreme usage vehicles will be hybrid where hybrid models exist. **Revise:** Purchase hybrid-electric vehicles for light duty, high and extreme usage vehicles, when operationally proven hybrid models are available and meet operational needs.	No	**Revise**	Ongoing	All Departments and SOAs, with the exception of Police and Fire who will assess the feasibility of this action on a case by case basis.
(d) Purchase fuel efficient diesel vehicles and equipment over less fuel efficient gasoline vehicles and equipment where diesel models are available and meet operational needs, in all cases where the diesel alternative is available. **Revise:** Purchase fuel efficient diesel vehicles and equipment over less fuel efficient gasoline vehicles, providing the diesel unit also has fewer greenhouse gas emissions than its gasoline equivalent, and where diesel models are available and meet operational needs, in all cases where the diesel alternative is available.	Yes	**Revise**	Ongoing	All Departments and SOAs, with the exception of Police and Fire who will assess the feasibility of this action on a case by case basis.
(e) In order to not pursue points (c) and (d) above, a business case would need to be prepared with the Department or SOA in conjunction with the WFMA for the exceptions. Departments will provide the operational requirements for the exceptions and the Agency will prepare the business case.	No	New	Ongoing	
(f) Assess opportunities on a case by case basis for accelerated vehicle replacement for light duty applications (where a vehicle is not yet due for replacement) but that could immediately benefit from a more fuel efficient a vehicle and whereby WFMA can accommodate the resale of the vehicle in question **Revise:** Assess opportunities on a case by case basis for accelerated vehicle replacement for light duty applications (where a vehicle is not yet due for replacement) but that could immediately benefit from a more fuel efficient and less greenhouse gas emitting vehicle and whereby WFMA can accommodate the resale of the vehicle in question.	Yes	**Revise**	Ongoing	WFMA in cooperation with interested Departments and SOAs. Police and Fire will complete this action within their own respective Depts.

3) Replace Older Diesel Engines with Low Emitting Diesel Engines

Goal: Replace older diesel engines with new diesel engines that emit significantly less pollution than older models.

Actions	Action Implemented	Action Recommendation	Time Line	Responsibility
(a) When a diesel unit is due for replacement, replace the older and higher emitting diesel engines with newer low emitting diesel engines.	Yes	Maintain	Ongoing	All Departments and Special Operating Agencies, with the exception of Police and Fire who will assess the feasibility of this action on a case by case basis.
(b) Assess opportunities on a case by case basis for accelerated vehicle replacement of older diesel vehicles not yet due for replacement but that could benefit from a lower emitting diesel engine and whereby WFMA can accommodate the resale of the vehicle in question.	No	Maintain	Ongoing	WFMA in cooperation with interested Departments and SOAs. Police and Fire will complete this action within their own respective Depts.
(c) Investigate the fuel efficiency of tier diesel engines available for purchase and source those that provide better fuel efficiency and improved life cycle costs.	No	**New**	Ongoing	

4) Evaluate and Use Alternative Fuels

Goal: Use Alternative Fuels in City vehicles when they are either mandated or have been evaluated and proven to meet operational and economic needs for the City and whereby environmental benefits are demonstrated.

Actions	Action Implemented	Action Recommendation	Time Line	Responsibility
(a) Continue using the provincially mandated 10% blend of ethanol fuel in all gasoline vehicles and equipment operated by the City.	Yes	Maintain	Ongoing	All Departments and Special Operating Agencies.
(b) Begin using a B2 blend of biodiesel upon renewal of the City fuel tender to comply with anticipated Provincial requirements.	Yes	Maintain	Ongoing	All Departments and Special Operating Agencies
(c) Investigate the feasibility of using higher level blends of biodiesel such as B5. **Revise:**(c) Investigate the feasibility of using higher level blends of biodiesel such as B5 as part of the assessment noted in point (d) below.	No	**Revise**	2012	WFMA in cooperation with Materials Management and all Departments and Special Operating Agencies.
(d) Assess all alternative fuel opportunities as they arise, and where they are operationally feasible. **Revise**: Investigating the use of other alternative fuels such as propane, natural gas and electric.	No	**Revise**	2012	WMFA in cooperation with all Departments and Special Operating Agencies

5) Implement and Enforce a Corporate Anti-idling Policy and Install Idle Reduction Technologies

Goal: Implement and enforce a City wide anti-idling policy that limits the amount of time a City vehicle or piece of equipment can idle and install idle reduction technologies on City vehicles that idle significantly at job sites.

Actions	Action Implemented	Action Recommendation	Time Line	Responsibility
(a) Implement and enforce a City wide anti-idling policy that limits the amount of time a City vehicle or piece of equipment can idle, with an aim to reduce City idling by 50% by 2019.	Yes	Maintain	Ongoing	All Departments and Special Operating Agencies Police and Fire will aim to reduce idling by 5% by 2019 due to the nature of their operations.
(b) Install idle reduction technologies such as auxiliary power units that provide battery power, heating and cooling to vehicles while they are at a job site and require these functions. **Revise:** (b) Install auxiliary power units in vehicles where the vehicle application would benefit from auxiliary power units to provide battery power, heating and cooling functions.	No	**Revise**	Ongoing	All Departments and Special Operating Agencies.
(c) Explore opportunities for improving fuel efficiency in the existing fleet by way of investigating the feasibility of programming existing fleet for automatic vehicle shut off tie that could be deployed to reduce idling time in existing City vehicles.	Yes	Maintain	Ongoing	WFMA Police and Fire will complete this action within their own respective Depts.
(d) Prior to purchasing new vehicles, establish a time limit with the user group to identify a time limit for the engine to be automatically shut off to reduce idling and improve fuel efficiency and then ensure the vehicle is purchased with this automatic shut off enabled	No	**New**	Ongoing	
(e) Pre-programming transmissions to maximize fuel economy performance in the existing and new fleet purchases and identifying other transmission and engine technologies that could provide fuel or emissions reductions	No	**New**	Ongoing	

6) Deploy Fuel Efficient Driver Training

Goal: Deploy fuel efficient driver training to all City vehicle and equipment operators, so that operators can learn specific driving techniques that can reduce fuel use while driving or operating vehicles and equipment in the City's fleet.

Actions	Action Implemented	Action Recommendation	Time Line	Responsibility
(a) Create an internal cross departmental/SOA working group to deploy this strategy.	No	Maintain	2013	WFMA to initiate
(b) The group will be responsible to: · Investigate what driver training program(s) would be suitable for City Departments, starting with an exploration of programs deployed by other municipalities and programs offered by organizations such as the Smart Driver Training offered through the federal government's FleetSmart program or using simulators to provide fuel efficient driver training. The training could also include a component on how to reduce vehicle idling. · Assess how the program will be funded. · Develop a mechanism to measure the success of the program. · Develop a schedule for deploying the fuel efficient driver program.	No	Maintain	2013	Fuel Efficient Driver Training Internal Working Group
(c) Assess which department will be responsible for deploying the driver training program.	No	Maintain	2013	Fuel Efficient Driver Training Internal Working Group
(d) Deploy the training City wide.	No	Maintain	2014	TBD Police and Fire will assess the feasibility of this action on a case by case basis.
(e) Provide WFMA with an annual report on the progress of the program.	No	Maintain	2015	TBD

7) Evaluating New Advanced Vehicles and Technologies

Goal: Evaluate advanced vehicles and technologies that offer the potential to reduce fuel use and emissions in City vehicles and equipment, where pre-established data exist to demonstrate its benefits to reduce fuel use and emissions. The evaluation results will be assessed to consider the adoption of the vehicle or technology fleet wide where appropriate.

Actions	Action Implemented	Action Recommendation	Time Line	Responsibility
(a) Investigate the feasibility of evaluating a large set of all electric vehicles in cooperation with other local public entities. This could include developing a car share opportunity for testing electric vehicles in Manitoba.	No	Delete		WFMA in cooperation with other interested local public entities.
(b) Evaluate a plug in hybrid gas electric vehicle conversion that is part of a project sponsored by the Province of Manitoba. The project includes the conversion of 10 Toyota Prius' to become plug in hybrid gas electric models.	Yes	Delete		Plug in hybrid evaluation complete and report submitted.
(c) Evaluate new hybrid gas electric vehicle models, such as hybrid pick up trucks, as they become available to assess the actual fuel consumption gains and operational functionality. Report on progress.	No	Delete		Number of hybrid evaluations and associated reports completed.
(d) Evaluate a fully electric street sweeper.	No	Delete		Electric street sweeper evaluation complete and report completed.
(e) Identify funding opportunities for the purchase and or evaluation of new and advanced technologies that would lower GHG emissions compared to conventional units.	No	**New**	ongoing	

8) Investigate Maintenance and Management Practices to Reduce Fuel Use

Goal: Investigate opportunities where maintenance or management practices can be modified to reduce fuel use, reduce unnecessary kilometers traveled and/or reduce vehicular emissions.

Actions	Action Implemented	Action Recommendation	Time Line	Responsibility
(a) Ensure planning of proposed relocation of the Agency's main vehicle and repair facility considers the impact on the City's Green Fleet Plan.	Yes	Maintain	2012	WFMA in cooperation with affected Departments and SOAs.
(b) Construct touch-less car washes that use recycled water at City owned fuel sites which enables City vehicles to refuel and receive a car wash at the same location. The intent is to reduce the kilometers traveled and associated fuel use by City vehicles traveling to other car washes offsite.	No	Delete		WFMA
(c) Investigate the feasibility of heating the City's vehicle maintenance facilities and machine shop with used waste oil during the winter months.	Yes	Maintain	2013	WFMA
(d) Ensure all vehicles and equipment are brought to WFMA facilities for regularly scheduled preventative maintenance to ensure that vehicles are operating at peak performance.	Yes	Maintain	Ongoing	All Departments and SOAs, with the exception of Police and Fire's heavy fleet who will conduct their own regularly scheduled PMS at their respective repair facilities.
(e) Ensure tires are always properly inflated to levels prescribed by the owners' manual to ensure optimal fuel efficiency. Some items that could be investigated include: · Investigate the feasibility of WFMA conducting monthly site visits to large City yards to inflate tires of vehicles and equipment that do not have properly inflated tires. · WFMA to investigate opportunities to deploy tire automated tire inflation or monitoring devices. · WFMA to investigate one tire gauge for each light duty vehicle when it is brought in for repair. · Departments to measure the tire inflation levels of their vehicles at a minimum of once per month.	No	Maintain	2014	All Departments and SOAs. Police and Fire will complete this action within their own respective Depts.
(f) Investigate the opportunity to use wide base tires in applicable instances within the fleet. The practices used in other vicinities and can reduce fuel use in vehicles and equipment.	No	Maintain	2014	WFMA Police and Fire will assess the feasibility of this action on a case by case basis.
(g) Ensure all City vehicles and equipment use the appropriate age and model of tires. Inappropriate tires tend to reduce fuel efficiency and present a safety concern.	No	Maintain	2014	WFMA Police and Fire will assess the feasibility of this action on a case by case basis.
(h) Investigate and implement technologies that eliminate the need for operator inputted meter readings at City's controlled fuel sites or yards to ensure higher accuracy of odometer reading for fuel efficiency data analysis.	Yes	New	2012	
(i) Ongoing mechanical and safety training for new vehicle technologies such as hybrid vehicles	Yes	New	Ongoing	
(j) Initiating efforts to maximize efficient route planning to reduce overall kms travelled	No	New	2014	

9) Inclusion of Personal Vehicle Use, Rental Vehicles and Outsourced Work

Goal: Apply the strategies of the Green Fleet Plan to all outsourced work involving vehicles and equipment, after a reasonable amount of consultation has taken place with the private sector bidding on City work.

Actions	Action Implemented	Action Recommendation	Time Line	Responsibility
(a) Ensure any City employee using their personal vehicle for City business follows the principles of the Green Fleet Plan where possible, such as following the anti-idling policy.	No	Maintain	2012	WFMA in cooperation with Departments and SOAs.
(b) Identify the GHG impact associated with personal vehicles used for City business and identify any opportunities to decrease the GHG from these vehicles, such as making a fuel efficient City pool vehicle available for Departments or SOAs.	No	Maintain	2012	WFMA
(c) Explore the opportunity for requiring adherence to the City's anti-idling directive in all outsourced tenders' bid opportunity templates.	No	Maintain	2015	WFMA in cooperation with Departments and SOAs.
(d) Explore the opportunity to prioritize low-emitting engines in call-out lists for outsourced work in City tenders. Consultation with the private sector would be a part of this exploration.	No	Maintain	2015	WFMA in cooperation with Departments and SOAs.
(e) Investigate the feasibility of applying the strategies of the green fleet plan to all pieces of equipment rented by the City for delivery of City services.	No	Maintain	2015	WFMA in cooperation with Departments and SOAs.

10) Transportation Demand Management

Goal: Explore opportunities for deploying Transportation Demand Management to the corporate and employee environment with the aim of reducing unnecessary vehicle kilometers traveled during the work day and for work commutes.

Actions	Action Implemented	Action Recommendation	Time Line	Responsibility
(a) Develop a working group to investigate and implement transportation demand management strategies that could be deployed to reduce the amount of unnecessary vehicle kilometers traveled by City employees during the work day such as ensuring all City boardrooms have access to equipment to conduct teleconferences rather than driving to meetings.	Yes	Maintain	Ongoing	Environmental Coordinator
(b) Develop a working group to investigate transportation demand management strategies that could be deployed to reduce the amount of unnecessary vehicle kilometers traveled by City employees for work commutes such as exploring the development of a carpooling program for City employees, installing bike racks at all City facilities, encouraging the use of transit, and developing informational materials for City employees promoting sustainable transportation options available for work commutes.	Yes	Maintain	Ongoing	Environmental Coordinator

11) Communication and Outreach

Goal: Support internal and external communication and outreach on sustainable transportation.

Actions	Action Implemented	Action Recommendation	Time Line	Responsibility
(a) Undertake a City wide communication strategy to explain the components of the Green Fleet Plan to all relevant Departmental representatives including as many operators of City vehicles and equipment as is feasible.	No	Maintain	2012	WFMA
(b) Continue to provide administrative support to the Red River Valley Clean Cities Coalition Winnipeg Chapter Inc, a non profit organization dedicated to promoting the use of alternative fuels, advanced vehicle technology and sustainable transportation in Manitoba.	Yes	Delete		WFMA
(c) Communicate the efforts of the Green Fleet Plan at conferences, workshops and through the City of Winnipeg's greenspace webpage.	No	Maintain	Ongoing	WFMA
(d) Initiate a quarterly fuel usage report to Departmental Directors and Chief Operating Officers of the Special Operating Agencies to flag any fuel use increases. Any increases over 10% within a quarter will require a written summary to the Agency explaining the rational for the increase so that potential reduction measures can be identified and deployed, and so that factors increasing fuel usage can be documented for future reporting.	No	**New**	2012	

2.0 2012 Fuel Usage

While fuel usage in 2011 increase significantly over the average annual increase, the fuel usage for the first quarter of 2012 is less than the first quarter in 2011 as depicted below:

Department	2011	2012	Change
PW - Streets Mtce	720,173	470,661	(249,513)
Winnipeg Police Service	351,770	364,860	13,091
PW - Parks And Open Space	199,750	177,957	(21,793)
WW - Water Services	177,111	157,327	(19,784)
WW - WasteWater	120,778	103,269	(17,510)
Fire - Heavy	112,425	114,237	1,813
Fire - Light	66,888	62,193	(4,695)
WW - Solid Waste	52,414	70,488	18,074
PPD - Building Services	39,911	35,604	(4,308)
WPA - Parking Authority	27,995	27,362	(633)
Fleet Management Agency	18,053	15,923	(2,131)
PW - Engineering	14,709	13,154	(1,555)
PW - Traffic Signals	14,683	14,598	(85)
Community Services	11,664	9,261	(2,403)
WW - Environmental Standards	7,290	7,428	138
WW - Engineering	4,935	3,337	(1,598)
PW - Human Resources	4,770	3,253	(1,517)
PPD - Other	4,202	4,325	123
Assessment and Taxation Department	3,800	3,823	23
Corporate I.T.	2,335	1,956	(380)
PW - Customer Services	885	641	(244)
PW - Transportation Systems	866	1,094	227
PW - Director	453	374	(80)
PW - Finance & Admin	51	23	(28)
PPD - Golf	31	90	59
Corporate Services	1	1,034	1,033
Quaterly total	**1,959,954**	**1,666,283**	**(293,672)**

3.0 Key Performance Indicators: Statistical Trends

Statistical trends from 2007 to 2011 that were developed and analyzed for the 2011 Green Fleet Plan report are as follows:

	Year				
Statistics	**2011**	**2010**	**2009**	**2008**	**2007**
Units					
Number of Units Acquired	**262**	229	183	252	171
Number of Units Disposed	**108**	139	148	148	174
Number of Light Duty Units	**905**	789	703	700	608
Number of Heavy Duty Units	**296**	298	298	275	293
Number of Specialty Units	**746**	706	702	693	663
Number of Internal Rentals Days	**32,980**	22,616	22,699	23,328	28,972
Number of External Rentals Days	**34,698**	44,578	43,580	43,956	43,578
Total Units	**1947**	1793	1703	1668	1564
Fuel Use					
Gasoline (E10)	**3,658,819**	3,598,488	3,658,404	3,559,645	3,442,382
Diesel (B2)	**3,691,393**	3,522,346	3,397,389	3,251,861	3,188,945
Biodiesel (B10)	**-**	-	85,245	165,628	25,555
Gasoline (E10) - Uncontrolled	**73,139**	64,876	64,899	142,469	154,680
Diesel (B2) - Uncontrolled	**160,035**	160,927	141,506	166,920	192,897
Total Fuel Use	**7,583,386**	7,346,638	7,347,443	7,286,523	7,004,459
%Year over Year fuel use increase/decrease	**3.2%**	-0.01%	0.8%	4.0%	
Km/Hr Travelled					
Light Duty Vehicles km	**13,417,144**	13,536,181	16,184,169	9,633,429	6,902,431
Heavy Duty Vehicles km	**1,598,829**	1,520,888	1,591,789	1,401,795	1,508,432
Specialty Duty Vehicles km	**459,514**	350,315	414,782	287,580	280,514
Heavy Duty Vehicles hr	**171,266**	141,077	160,546	102,167	97,746
Specialty Duty Vehicles hr	**137,760**	130,296	150,391	108,552	120,772
Total Km Travelled	**15,475,487**	15,407,384	18,190,740	11,322,804	8,691,377
Total Hr Travelled	**309,026**	271,373	310,937	210,719	218,518
Fuel Efficiency					
Average Light Fleet L/100 km	**20.76**	20.2	21.5	N/A	N/A
Average Heavy Fleet L/Hr	**7.73**	7.9	6.7	N/A	N/A
GHG Emissions (CO2 Equivalent-Tonnes)					
Gasoline GHG	**8,194**	8,043	8,175	8,128	8,775
Diesel GHG	**10,132**	9,690	9,496	9,174	9,075
Biodiesel GHG	**-**	-	206	400	62
Total GHG Emissions	**18,326**	17,733	17,877	17,702	17,912
% increase/(decrease) GHG Year over year	**3.3%**	-0.8%	1.0%	-1.2%	
% increase/(decrease) GHG Since 1998	**-3.0%**	-6.1%	-5.3%	-6.3%	-5.2%
Annual Average Cost Per Liter Fuel	**$1.08**	$0.91	$0.84	$1.13	$0.924
Annual Fuel Cost	**$ 8,190,057**	$ 6,685,440	$ 6,171,852	$ 8,240,393	$ 6,472,113
Annual Fuel Cost increase/Decrease Year over Year	**$ 1,504,617**	$ 513,589	-$ 2,068,541	$ 1,768,280	
Weather Stats					
Mean Temp (Oct.1-Mar 31)	**-10.4**	-9.3	-11.3		
Mean Temp (Apr 1-Sept 30)	**13.8**	13.7	11.7		
Snowfall mm(Jan 1-Dec.31)	**104.5**	93	129.5		
Rainfall mm (Apr 1-Sept 30)	**302.5**	630	421.5		
KM of Streets Added	**53**	35	23	54	52
Per capita GHG emission	**37.75**	38.46	37.64	37.56	36.76
% Per Capita GHG emission increase since 2007	**3%**	5%	2%	2%	
Per Capita GHG emission increase since 2007 (tonnes)	**0.99**				
Population	**691,800**	682,100	672,900	664,900	658,500
Population Increase Year Over Year	**9,700**	9,200	8,000	6,400	
% Population Increase Since 2007	**5%**				

4.0 Individual Strategy Analysis

The actual operational expenditures and savings were in line or better than what was predicted and approved by Council within the original Green Fleet Plan. The plan is still positioned to save the City money overall. Emissions reductions from deploying Green Fleet Plan strategies in 2011 were 1,192 tonnes CO2 equivalent.

In total twenty four diesel units were purchased instead of less fuel efficient gasoline vehicles and twenty five units were right sized to purchase a smaller vehicle that could meet operational needs.

A full detail of the cost, savings and emissions reduction is detailed below:

COSTS AND BENEFITS BY STRATEGY

Strategy	Key Activity	Operational Expenditures (Millions)				Operational Savings (Millions)				Annual GHG Reduction (Tonnes eCO2/Year)		
		Actuals	Predicted	Predicted		Actuals	Predicted	Predicted		Actuals	Predicted	
		2011	2011	2010 - 2014	2015-2019	2011	2011	2010 - 2014	2015 - 2019	2011	2014	2019
	Level I: Already Planned Expenditure											
Alternative Fuels	10% Ethanol Use	$ -		$ -	$ -	$ -		$ -	$ -	910	878	878
	Level II: Additional Projects											
Fuel Efficient Vehicles	Green Purchasing Specifications	$ -		$ -	$ -	$ -		$ -	$ -	-	236	472
	Hybrid Replacement Program	$ -	$ -	$ 0.61	$ 1.50	$ -		$ 0.21	$ 0.49	-	158	264
	Diesel Replacement Program	$ 0.05	$ 0.06	$ 0.45	$ 0.79	$ 0.05	$ 0.03	$ 0.18	$ 0.31	49	69	75
Right Size the Fleet	Match Vehicle Use to Job Requirement	$ 0.01		$ -	$ -	$ 0.01		$ 0.13	$ 0.13	30	69	75
Alternative Fuels	Biodiesel Use	$ -		$ -	$ -	$ -		$ -	$ -	203	199	199
Idle Reduction	Anti-Idling Policy	$ -		$ -	$ -	$ -		$ 0.82	$ 2.19		670	1,341
	Idle Reduction Technologies			$ 0.14	$ 0.37			$ 0.11	$ 0.20		14	27
Total		$ 0.06	$ 0.06	**$ 1.20**	**$ 2.66**	**$ 0.06**	**$ 0.03**	**$ 1.45**	**$ 3.33**	1,192	**2,293**	**3,332**