

CITY OF ANN ARBOR – GREEN FLEETS POLICY

Green Fleets Policy Background

Ann Arbor City Council adopted a resolution on August 21, 2000 requesting that the City Administrator develop a “Green Fleets” policy for Council approval that reduces both fuel use and emissions of the municipal operations through more intelligent use and purchase of vehicles and fuel-using equipment. The Green Fleets Program is another important step in reducing the impacts of fuel use on public health and on the environment. Operating our fleet more efficiently provides environmental benefits and reduces the cost of operation.

Existing City programs already contribute to the goals of the Green Fleets policy. On October 20, 1997, Ann Arbor became a member of the Cities for Climate Protection program, a coalition of over 500 local governments worldwide that promote community-based initiatives to reduce global warming emissions. In April 1999, the City of Ann Arbor, along with a coalition of local fleets and fuel providers, became a designated member of the US Department of Energy’s Clean Cities Program. This allows local participation in the distribution of federal funds for the purchase of alternative fuel vehicles and the establishment of alternate fuel infrastructure. The Ann Arbor Area Clean Cities Program currently includes over 900 alternate fuel vehicles operating locally, including 150 City of Ann Arbor vehicles. Each of these alternate fuel vehicles significantly reduces vehicle emissions. For instance, a vehicle fuelled by compressed natural gas emits 80 percent less carbon monoxide (CO) and oxides of nitrogen (NO_x) emissions than its conventionally fuelled counterpart. These Clean Cities vehicle and fuel initiatives improve local air quality and reduce greenhouse gas emissions, protecting public health and enhancing the quality of life in member cities and surrounding areas.

The City of Ann Arbor, with a fleet of over 400 vehicles, recognizes that transportation emissions threaten public health and the global climate, and proposes this Green Fleets policy to address these problems directly at the local level and to lead by example for other municipalities, local fleets and individual drivers. The policy provides that the City purchase the most cost-effective and least polluting vehicles and fuel using equipment possible that still meet the operational requirements of the intended use. To accomplish this objective, fuel efficiency standards are included in procurement decisions. The Green Fleets review process also includes "right-sizing" fleets by reducing vehicle size and eliminating old and underused vehicles. The effectiveness of the program is measured by fuel use reduction and sets a target of 10 percent reduction in total annual fuel use by 2012.

The Mission

Through implementation of this Green Fleets policy, all Service Units that own/operate vehicles and fuel-using equipment shall seek to decrease total gasoline and diesel use by 10 percent by 2012, resulting in reduced emissions.

1 Goals

- 1.a The goal of all City Service Units shall be to purchase and use the most cost-effective and lowest emission vehicle or equipment possible, while still meeting the operational requirements of the department. Fleet assets shall be selected, acquired, and utilized in a manner that provides for the best possible support of City operations through environmentally responsible fleet management.

2 Objectives

- 2.a Optimize the fleet size – eliminate unused or underused vehicles
- 2.b Increase the fleet average fuel economy – make miles per gallon (mpg) a critical purchase criterion
- 2.c Minimize vehicle miles traveled (VMT) – route optimization, trip elimination
- 2.d Reduce vehicle size when appropriate
- 2.e Reduce emissions of carbon dioxide (CO₂), a critical greenhouse gas produced through combustion of fossil fuels.
- 2.f Reduce emissions of carbon monoxide (CO), nitrous oxides (NO_x), volatile organic compounds (VOCs), and particulate matter (PM)—all pollutants produced by combustion of fossil fuels that endanger public health.
- 2.g Increase the use of alternative fuel vehicles and equipment.

3 Measures of Success

- 3.a The primary measures of the City's success in accomplishing the above objectives is the decrease in annual total gallons of gasoline and diesel fuel used.
- 3.b The secondary measure of the City's success in accomplishing the above objectives is the reduction of carbon dioxide (CO₂) and other emissions.

4 Establishment of Green Fleets Team

- 4.a The Green Fleets Team shall be appointed by the City Administrator.
- 4.b This Team will include, but not be limited to, representatives from:
 - 4.b.1 Environmental Coordination Services,
 - 4.b.2 Finance & Administrative Services
 - 4.b.3 Safety Services,
 - 4.b.4 Community Services and
 - 4.b.5 Public Services
- 4.c The function of this Team shall be to develop and monitor policies and procedures related to the purchase of City vehicles and fuel-using equipment to achieve the goals and objectives of the program. The Team will report findings to the Energy Commission and Environmental Commission as appropriate.

5 Funding

- 5.a The purchase of "green" vehicles, equipment and products with better fuel economy or lower emissions or that use an alternate fuel often is more expensive. A "Green Incentive" shall be put in place that allows the purchase of "green" vehicles, equipment or products if the price is within 20 percent including rebate, of the lowest bid for that vehicle, equipment or product class and is recommended by the Green Fleets Team. The 20 percent funding incentive shall serve as a guideline, but not as a limit, to determine the "greener" vehicle recommendation. It is very difficult to put a dollar value on "greener" qualities. Therefore the Team will be responsible for making recommendations on acceptable incremental cost increases for improved environmental performance. For example, if a vehicle shows very

little improvement in fuel economy or emissions but costs 15 percent more, it may not be recommended. Conversely, if a vehicle shows a very large improvement for 25 percent more cost, it may be recommended even though over the 20 percent guideline. Funding from outside sources such as State and Federal grants shall be pursued to assist in the purchase of "green" vehicles, including alternative fuel vehicles and fueling facilities.

6 Fleet Inventory

- 6.a The City shall create and maintain a complete inventory of the vehicles in its fleet. This inventory should include not only the type and number of fleet vehicles, but also the amount and types of fuel used, the costs associated with their use, and the resulting pollution. This inventory is critical if goals are to be set and success measured for the fleet.
- 6.b All City vehicles and equipment that operate on gasoline, diesel, electricity, or other energy sources are included in this policy.

7 Baseline for Evaluation of Effectiveness

- 7.a The baseline year for determining the effectiveness of the Green Fleets program will be FY 2002-2003. Each fleet manager shall develop a FY 2002-03 fleet baseline to facilitate the evaluation of annual Green Fleets Plans. Baseline information shall include:
 - 7.a.1 Vehicle number, year, make, model, drive train (2- or 4-wheel drive), transmission type, VIN number;
 - 7.a.2 Miles per gallon per vehicle --actual if possible, EPA rating if actual not available;
 - 7.a.3 Type of fuel used;
 - 7.a.4 Average cost per gallon (or gallon equivalent) of fuel;
 - 7.a.5 Average fuel cost per mile, if available;
 - 7.a.6 Annual miles driven per vehicle, if available;
 - 7.a.7 Total fuel consumption per vehicle;
 - 7.a.8 Vehicle function;
 - 7.a.9 Estimated emissions per mile for each pollutant by vehicle type/class (defined in 1 above) based on EPA tailpipe standards for carbon monoxide (CO), nitrogen oxides (NO_x), and particulate matter (PM); and
 - 7.a.10 Carbon dioxide (CO₂) calculations based on gallons (or equivalent) of fuel consumed.
- 7.b Environmental Coordination Services shall provide items 9 and 10 to the Green Fleets Team.

- 7.c Fleet managers shall be responsible for providing this baseline data in a reliable and verifiable manner to the Green Fleets Team.

8 Green Fleets Strategies To Be Employed By the City

8.a Optimizing Fleet Size

- 8.a.1 The vehicles targeted for a reduction in fleet size shall include the following:

- 8.a.1.i Light duty vehicles (passenger cars, light duty pick up trucks and vans) that use less than 200 gallons per year.

- 8.a.1.ii Light duty vehicles over 7 years old or heavy-duty (>8,500 lbs) trucks over 10 years old.

- 8.a.2 Vehicles in either of these categories will be earmarked for removal from the City fleet through the annual vehicle auction. It is anticipated that these vehicles will be removed over a number of years to reduce the impact to the fleet. The determination of which vehicles are to be eliminated shall be at the discretion of the fleet manager and department heads, who currently are being asked to justify vehicle usage. These vehicles will be eliminated with agreement from the Green Fleets Team.

- 8.a.2.i Flexibility is necessary to allow exemptions when warranted. For example, we may choose to keep an eleven-year old vehicle with low usage that is earmarked for removal, and replace a vehicle that is a younger vehicle with worse fuel economy and/or dirtier emissions.

- 8.a.3 No vehicle will be purchased to replace the removed vehicle. It shall be removed from the fleet database, and the miles normally traveled by the removed vehicle will be distributed to other transportation modes.

- 8.a.4 Specialized function vehicles may be exempted from removal if purchasing Service Unit can justify retention and the Green Fleets Team approves this justification. Justification for exemptions must be presented in writing to the Team. It is expected that there will be exceptions with regard to some emergency services vehicles because of special uses. However, there still may be viable green vehicle/equipment options to support some emergency needs and functions. It shall be the policy of the City to purchase or lease emergency response vehicles that comply with the requirements of this section to the extent that the purchase or lease of such

vehicles does not unacceptably reduce the ability to provide safe, quality services.

8.b Increase Average Fuel Economy

8.b.1 When purchasing new vehicles, fuel efficiency targets (miles per gallon or mpg) shall be determined for each of four vehicle classes. These targets are at or slightly above the average fuel economy for each vehicle class. For model year 2004 the targets would have been:

VEHICLE CLASS*	MPG TARGET**
Compact Cars	26
Midsize and Full-Size Cars	20
Minivans/Mini-pickups	19
2X4 Trucks	16
Passenger/Cargo Vans	15
4X4 Trucks	15

* Vehicle class is based on EPA categories for combined cargo and passenger volume in the Model Year 2004 Fuel Economy Guide.

** These figures are based on a 90 percent city-10 percent highway driving cycle typical for City-operated vehicles.

This classification applies to light-duty vehicles only (under 8,500 pounds gross vehicle weight). Heavy-duty vehicles (over 8,500 pounds gross vehicle weight) are not subject to fuel economy regulations and fuel economy data for these vehicles is unavailable at the present time.

8.b.2 MPG targets shall be reviewed annually by the Green Fleets Team and modified based on vehicles available for that model year.

8.b.3 Vehicle purchase requests shall be reviewed and minimum fuel economy targets will be employed when possible. Managers are encouraged to purchase the most fuel-efficient vehicle available that can meet the operational needs of the department.

8.b.4 Request for exemptions to the fuel economy targets shall be submitted in writing to the Green Fleets Team and exemptions awarded if the Team feels there is sufficient justification.

8.c Minimize Vehicle Miles Traveled (VMT)

- 8.c.1 For vehicles that operate on fixed routes, such as solid waste pick-up and meter reading, route optimization should be employed. In general, all routes should be planned to optimize the route and trips chained together to reduce required travel time and distance.
- 8.c.2 Encourage meetings at centralized locations to reduce necessary travel.
- 8.c.3 Encourage and enable teleconferencing to reduce necessary trips.
- 8.c.4 Vehicles shall not be left idling unless a running engine is necessary to protect public safety, to prevent harm to contents of the vehicle, run auxiliary equipment in performance of a job, or to maintain health of occupants while performing duties. Vehicles are not to be left idling to warm up a vehicle.
- 8.c.5 Where applicable and/or appropriate, use alternative modes of transportation, such as buses, carpools, vans, or bikes.
- 8.c.6 Incorporate bicycles and low-speed electric vehicles into the general carpools as a fair weather option for short trips.
- 8.d Reduce Vehicle Size
 - 8.d.1 Encourage the selection of vehicles of a smaller class size whenever possible to achieve increased miles per gallon. Requests for new vehicle purchases must be supplemented with written justification addressing the need for a specific model and type. Fleet managers shall work with vehicle operators to determine whether a proposed vehicle could be downsized and still complete its required function within the department. For example, whenever possible, full-size trucks and vans should be downsized to light duty vehicles, four-wheel drives replaced with two-wheel drives or large engines replaced with smaller engines.
- 8.e Reduce Vehicle Emissions of Greenhouse Gases
 - 8.e.1 Combusting one gallon of fossil fuel produces approximately 20 pounds of CO₂. Increasing fuel economy reduces the amount of fuel required to travel the same distance, and consequently reduces the amount of CO₂ produced by City operations.
- 8.f Reduce health-threatening emissions of carbon monoxide (CO), nitrous oxides (NO_x), volatile organic compounds (VOCs), and particulate matter (PM).

- 8.f.1 The City shall attempt to obtain the “cleanest” vehicles possible as measured by available emissions certification standards.
 - 8.f.1.i Light Duty Vehicles: All City departments shall purchase or lease only models of passenger vehicles and light duty trucks that are rated as low emission vehicle (LEV) or better by the EPA.
 - 8.f.1.ii Heavy Duty Vehicles: When purchasing or leasing Heavy Duty Vehicles, City departments shall purchase or lease only Heavy Duty Vehicles whose engines are certified as low-emission.
- 8.f.2 Emissions targets shall be reviewed annually by the Green Fleets Team and modified if cleaner vehicles become available. For example, some ultra-low emission vehicles (ULEV) are available in California but not sold in Michigan today. When they are distributed nationwide the City will have more purchase options.

8.g Increase Use of Alternate Fuel Vehicles and Equipment

- 8.g.1 As a means to reduce fossil fuel consumption, reduce vehicle emissions and achieve the goals of the Green Fleets and Clean Cities programs, a minimum of 10 percent of vehicle fleet purchases annually shall be alternate fuel vehicles (AFVs). Hybrid vehicles may be counted towards achieving this 10 percent quota.
- 8.g.2 Fleet managers shall provide a list of alternate fuel vehicles in their fleets to the Green Fleets Team to allow the Team to determine compliance with the 10 percent AFV requirement.
- 8.g.3 As noted under the Finance section of this document, both internal budgets and external grants would be eligible to cover the anticipated premiums for an alternate fuel version of a fleet vehicle or piece of motorized equipment.
- 8.g.4 “Clean” fuels (such as low-sulfur diesel, compressed natural gas, ethanol and biodiesel) shall be used when feasible. Feasibility will include considerations of vehicles or equipment able to utilize the “clean” fuel, fuel availability and fuel price.

9 Fuel-using Equipment

- 9.a City departments shall purchase or lease portable or stationary fuel-using equipment that is powered by alternate fuels if available and within the 20 percent green incentive, including rebates. If an alternate fuel option is not available, strong consideration shall be given to purchasing the most fuel efficient, cleanest burning fuel-using equipment.

10 Exemptions

- 10.a The Green Fleets Team may grant an exemption from the requirements of this Policy to a City Service Unit requesting an exemption under the following circumstances:
- 10.a.1 Where the requesting Service Unit demonstrates that no model of motor vehicle or motorized equipment is available which will comply with the requirements of this Policy and still meet the specifications of the Service Unit for its intended purpose.
 - 10.a.2 Where the requesting Service Unit demonstrates to the satisfaction of the Team each of the following:
 - 10.a.2.1 That the cost of the vehicle or motorized equipment that complies with the requirements of this Policy is more than 20 percent higher than the cost of an equivalent vehicle or motorized equipment powered by gasoline or diesel fuel; and
 - 10.a.2.2 That the Service Unit has attempted to apply for, but failed to receive, funding for the purchase or lease of the vehicle or motorized equipment that complies with the requirements of this Policy from sources other than the City's General Fund; and
 - 10.a.2.3 That the amortized cost differential cannot be recovered over the operating life of the vehicle or motorized equipment that complies with the requirements of this Policy through a reduction in fuel, maintenance, and other costs incurred during the operating life of such vehicle or equipment.
 - 10.a.3 Where the requesting Service Unit demonstrates to the satisfaction of the Team that the use of a vehicle or motorized equipment that complies with the requirements of this Policy would significantly disrupt Service Unit operations due to the lack

of adequate fueling and/or maintenance facilities for that motor vehicle or motorized equipment.

- 10.b In the case that the Team grants an exemption, the requesting department shall purchase or lease the model of motor vehicle or motorized equipment that will meet Service Unit specifications and has the highest fuel efficiency and lowest available emissions ratings available within the 20 percent Green Incentive purchase price.

11 Vehicle Maintenance

- 11.a All vehicles shall be inspected and emissions tested at least once per year. If the vehicle fails to pass inspection, it shall be tuned. Should a vehicle not comply with its certified emission standard—even after tuning—it must be repaired to satisfactorily comply with the standard or be removed from the fleet.
- 11.b Ecologically sound products, such as coolants and specialized oils, shall be used where available, when cost effective, and when they do not void manufacturer's warranty.
- 11.c Re-treaded tires shall be purchased for large-wheeled or slow-moving vehicles.

12 Operation of Bi-Fuel Vehicles

- 12.a No bi-fuel vehicle owned by the City may be powered by gasoline, diesel, or other petroleum-based fuel while operating within the City unless the manufacturer recommends otherwise. In such cases the maximum recommended use of alternative fuel shall be required. Bi-fuel vehicles owned by the City shall bear a notice stating the requirements of this subsection, posted in one or more locations that are plainly visible to the vehicle operator.

13 Reducing Other Environmental Impacts of Vehicles

- 13.a In addition to tailpipe emissions, motorized vehicles and equipment may have other negative environmental impacts that can occur in their production, operation, and eventual disposal. Radiator fluids and other substances used in vehicles can have harmful consequences for the environment. Of particular concern are persistent, bioaccumulative, and toxic materials (PBTs), such as mercury, lead and arsenic, which can be released at the end of the life of a vehicle. When opportunities are identified, the City and fleet managers should attempt to reduce the

production, operation and end-of-life environmental impacts of the vehicles it purchases.

14 Annual Reporting

- 14.a Fleet managers shall provide an annual report by September 1st to the Green Fleets Team for the prior fiscal year providing information to demonstrate how well the fleet is in compliance with the Green Fleets Policy.
- 14.b This report shall include an updated inventory of all vehicles and fuel using equipment as well as a list of vehicles purchased and vehicles removed from the City fleet in the prior fiscal year.
- 14.c In addition, the report shall include the following:
- 14.c.1 A list of Vehicles classified by rated vehicle weight and year
 - 14.c.2 Make and model
 - 14.c.3 Drive train (2-wheel drive or 4-wheel drive)
 - 14.c.4 Transmission type
 - 14.c.5 Engine Size (liters)
 - 14.c.6 City vehicle number and VIN number
 - 14.c.7 Average miles per gallon (mpg) per vehicle
 - 14.c.8 Type of fuel used
 - 14.c.9 Annual miles driven per vehicle
 - 14.c.10 Annual fuel consumption per vehicle
 - 14.c.11 Vehicle function
 - 14.c.12 Estimated emissions per mile for each pollutant by vehicle type/class (defined in 1 above) based on EPA tailpipe standards for the following:
 - Carbon Monoxide (CO),
 - Nitrogen Oxides (NO_x),
 - Particulate Matter (PM), and
 - Carbon Dioxide (CO₂) per gallons (or equivalent) consumed.
- 14.d Fleet Managers shall be responsible for providing these data in a reliable and verifiable manner. These data will be submitted to the Team in conjunction with an annual Green Fleets Plan for evaluation.
- 14.e Annual Reports shall be reviewed by the Green Fleets Team and shall be used to determine program effectiveness and to target under-utilized vehicles for removal.

- 14.f The annual Green Fleets Plan shall be developed using any/all of the options listed above plus any other alternatives deemed appropriate to achieve the goals of the Plan. These strategies allow considerable margin for the creative development of a plan that will have greatest potential to green the City's fleet.

Definitions

- “Alternate Fuel” means any fuel other than gasoline, diesel, and other substantially petroleum-based fuels that are less polluting than gasoline or diesel fuel. Alternate Fuel shall include, but is not limited to, natural gas, propane, ethanol (E-85), biodiesel (20 percent blend or above) and electricity.
- “Alternate Fuel Vehicle” means any motor vehicle powered by alternate fuels.
- “Bi-Fuel Vehicle” means any motor vehicle designed to operate on two distinct fuels, one of which is an alternative fuel. These vehicles do not run on a mixture of fuels.
- “City Service Unit” means any organizational Unit that provides services to the City of Ann Arbor.
- “Compact Car” means a light duty vehicle with total interior volume between 100 and 109 cubic feet.
- “Fuel Burning Equipment” means any implement powered by an internal combustion engine.
- “Heavy Duty Vehicle” means any motor vehicle, licensed for use on roadways, having a manufacturer's gross vehicle weight rating greater than 8,500 pounds.
- “Hybrid Vehicle” means a motor vehicle that draws propulsion energy from onboard sources of stored energy that are both an internal combustion/heat engine that runs on combustible fuel, and a rechargeable energy storage system.
- “Large Car” means a light duty vehicle with total interior volume of 120 or more cubic feet.
- “Light Duty Vehicle” is any vehicle with a gross vehicle weight of less than or equal to 8,500 pounds. Light duty vehicles include passenger cars, light duty trucks, sport utility vehicles (SUV), minivans and pick-up trucks. Light duty vehicles are currently subject to Tier 1 emissions standards under the Clean Air Act Amendments of 1990.
- “Light Duty Truck” means any motor vehicle, with a manufacturer's gross vehicle weight rating of 8,500 pounds or less, which is designed primarily for purposes of transportation of property or is a derivative of such a vehicle, or is available with special features enabling off-street or off-highway operation and use.
- “Low Emission Vehicle” means any motor vehicle that meets or exceeds the standards set forth by the US Environmental Protection Agency for Low Emission Vehicles.

- “Midsize Car” means a light duty vehicle with total interior volume between 110 and 119 cubic feet.
- “Motor Vehicle” means a vehicle powered by energy from a motor, as opposed to a vehicle powered by human effort.
- “NO_x” means oxides of nitrogen.
- “Particulate Matter (PM)” means solid or liquid particles of soot, dust, smoke, fumes, aerosols or other airborne material.
- “Passenger Vehicle” means any motor vehicle designed primarily for transportation of persons and having a design capacity of twelve persons or less.
- “Tier 1” means emissions standards enacted by 1990 amendments to the Clean Air Act that required a 40 percent reduction in emissions from the 1981 standard by 1994. Tier 1 light-duty standards apply to all light duty vehicles, permitting higher acceptable emissions levels for heavier light duty vehicles like trucks.

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Credits

This policy was created by the Green Fleets Policy Workgroup:

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This Green Fleets Policy was created with the help of the International Council for Local Environmental Initiatives “Green Fleets Program Guidelines” at <http://www.greenfleets.org/>.

Preparation included the review of programs and plans from the following US cities:

[Denver, Colorado](#): “Green Fleets” Executive Order (the model for Green Fleets)

[Arcata, California](#): “Green Fleets” Proclamation

[Alachua County, Florida](#): “Green Fleets” Fleet Management Policy

[Los Angeles, California](#): Council Order to Improve Fleet Efficiency

[San Francisco, California](#): “Healthy Air and Smog Prevention” Ordinance

[Fort Collins, Colorado](#): Fleet Services ULEV City Policy

[Santa Monica, California](#): “Vehicle Management Program” City Policy

[Sacramento, California](#): “Heavy-duty Low Emission Vehicle Acquisition Policy” City and County Council Resolution